

# Power Management Solutions

## Selector Guide



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## SWITCHING REGULATORS | DC/DC POWER CONVERSION

CPU Core (Controllers) Maximum Operating Input Voltage &lt; 55V

Part Number	V <sub>CC</sub> (Min) (V)	V <sub>CC</sub> (Max) (V)	I <sub>Q</sub> (Typ) (mA)	Shutdown Current (Typ) (mA)	f <sub>sw</sub> (MHz)	Soft Start	Regulated Output Phase	Package	Notes
MP2953B	4.75	5.25	18	1	0.2 to 1	Int	6	QFN-40 (5x5)	PMBus interface, VR12.5
MP2935	4.5	5.25	8	0.05	0.2 to 2	Int	4	QFN-40 (6x6)	VR12.5
<b>N</b> MP2965	3	3.6	30	0.15	0.2 to 3	Int	7	QFN-48 (6x6)	VR13.HC/AVSBUS
<b>N</b> MP2888A	3	3.6	30	0.15	0.2 to 5	Int	10	QFN-40 (5x5)	NVIDIA OpenVReg
<b>N</b> MP2853	3	3.6	34	0.11	0.2 to 3	Int	4	QFN-40 (5x5)	AMD SVI 2.0 compliant, supports 3-bit PVID mode, PMBus/I <sup>2</sup> C compliant

CPU Core Power (Intelli-Phase™)

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>OUT</sub> (Max) (A)	I <sub>sw</sub> Limit (Typ) (A)	Shutdown Current (Typ) (mA)	f <sub>sw</sub> (MHz)	PWM Logic (V)	Package
MP86905	4.5	16	50	75	0.08	0.1 to 2	3.3	QFN-23 (4x4)
<b>N</b> MP86945A	4.5	16	60	90	0.01	0.1 to 2	3.3	TQFN-25 (4x5)
<b>N</b> MP86934	4.5	16	25	60	0.03	0.1 to 2	3.3	TQFN-21 (3x4)
<b>N</b> MP86933	4.5	16	12	25	-	0.1 to 2	3.3	TQFN-13 (3x3)

## SWITCHING REGULATORS | DC/DC POWER CONVERSION

Step-Down Converters (Buck) Maximum Operating Input Voltage 1.5V ≤ V<sub>IN</sub> ≤ 6V

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>OUT</sub> (Max) (A)	I <sub>Q</sub> (Typ) (µA)	V <sub>FBI</sub> (Typ) (V)	f <sub>sw</sub> (MHz)	Power Good	External Soft Start	Light-Load Efficiency	Constant-On-Time (COT)	100% Duty Cycle Industrial	Package	Notes
MP28200	2	5.5	0.2	0.5	-	1.5	✓	-	✓	✓	✓	QFN-12 (2x2)	Ultra-low I <sub>Q</sub>
<b>S</b> MP28310	2	5.5	0.3	0.5	-	1.5	✓	-	✓	✓	✓	CSP-12 (1.2x1.6)	Ultra-low 500nA I <sub>Q</sub> , ultra-small package, 300mA buck + 100mA LDO, prog. V <sub>OUT</sub> by CTRL, COT, PG, functionally equivalent to TPS62743
MP21600	2.3	5.5	0.6	11	0.6	2.4	-	-	✓	✓	✓	QFN-6 (1x1.5)	High switching freq., ultra-small package
MP28301	2	5.5	0.7	0.5	0.6	1.5	✓	-	✓	✓	✓	QFN-12 (2x2)	Ultra-low 500nA I <sub>Q</sub> , 700mA buck + 100mA LDO, prog. V <sub>OUT</sub> by CTRL, COT, PG
<b>S</b> MP28210	2	5.5	1	0.5	-	1.5	✓	-	✓	✓	✓	CSP-12 (1.2x1.6)	Ultra-low 500nA I <sub>Q</sub> , ultra-small package, prog. V <sub>OUT</sub> by CTRL, COT, PG
MP2141N	2.3	5.5	1	11	0.6	2.2	✓	-	✓	✓	✓	SOT563 (1.6x1.6)	Output discharge, power good only for fixed V <sub>OUT</sub> version
MP2148	2.3	5.5	1	10	0.6	2.2	✓	-	✓	✓	✓	QFN-6 (1x1.5)	High switching freq., ultra-small package

## SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Down Converters (Buck)

Maximum Operating Input Voltage  $1.5V \leq V_{IN} \leq 6V$ 

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{OUT}$ (Max) (A)	$I_Q$ (Typ) ( $\mu$ A)	$V_{FB}$ (Typ) (V)	$f_{SW}$ (MHz)	Power Good	External Soft Start	Light-Load Efficiency	Constant-On-Time (COT)	100% Duty Cycle	Industrial	Package	Notes
MP21148	2.3	5.5	1	500	0.6	2.4	✓	-	✓	✓	-	-	QFN-6 (1x1.5)	Forced CCM, low ripple across entire load range
MP2149	2.7	6	1 (2x)	45	0.608	1	-	-	✓	-	-	-	TSOT23-8	Dual-channel
MP2151	2.5	5.5	1	25	0.6	1.1	✓	-	✓	✓	✓	-	SOT563 (1.6x1.6), UTQFN (1.2x1.6)	1% $V_{FB}$ accuracy, output discharge, adjustable and fixed $V_{OUT}$ versions
<b>N</b> MP2181	2.5	5.5	1	21	0.6	1.2	✓	-	✓	✓	✓	-	SOT583 (1.6x2.1)	1% $V_{FB}$ accuracy, output discharge, ext. soft start
MP2141Q	2.3	5.5	1.5	20	-	2.2	-	-	✓	✓	✓	-	SOT563 (1.6x1.6)	Fixed 0.61V/1.8V output voltage, output discharge, VSEL for PFM/PWM
MP2152	2.5	5.5	2	25	0.6	1.1	✓	-	✓	✓	✓	-	SOT563 (1.6x1.6), UTQFN (1.2x1.6)	1% $V_{FB}$ accuracy, output discharge, adjustable and fixed $V_{OUT}$ versions
<b>N</b> MP2172C	2.38	5.5	2	450	0.6	1.1	-	-	-	✓	✓	-	UTQFN (1.2x1.6)	Forced CCM, 1% $V_{FB}$ accuracy, output discharge
<b>N</b> MP2182	2.5	5.5	2	21	0.6	1.2	✓	-	✓	✓	✓	-	SOT583 (1.6x2.1)	1% $V_{FB}$ accuracy, output discharge, ext. soft start
<b>S</b> MP2192C	2.5	5.5	2	25	0.6	1.1	-	-	-	✓	✓	-	WLCSP-6 (1.23x0.86)	Forced CCM, 1% $V_{FB}$ accuracy, fast output discharge, P2P with the MP2193
MP2122	2.7	6	2 (2x)	45	0.608	1	-	-	✓	-	✓	✓	TSOT23-8	Dual-channel
MP2166 MPQ2166	2.7	6	2 (2x)	60	0.6	3	✓	-	✓	-	✓	✓	QFN-18 (2x3), QFN-18 (2.5x3.5)	Dual-channel, external soft start
MP2153	2.5	5.5	3	25	0.6	1.1	✓	-	✓	✓	✓	-	SOT563 (1.6x1.6), UTQFN (1.2x1.6)	1% $V_{FB}$ accuracy, output discharge, adjustable and fixed $V_{OUT}$ versions
<b>S</b> MP2193	2.5	5.5	3	25	0.6	1.1	✓	-	✓	✓	✓	-	WLCSP-6 (1.23x0.86)	
<b>N</b> MP2164	2.5	5.5	3	50	0.6	2.3	✓	-	✓	✓	✓	-	QFN-12 (2x2)	Forced PWM and auto-PFM option, stable with low-ESR output ceramic capacitors
MP8843	2.6	6	3	60	0.6	1 to 2	✓	-	✓	✓	-	-	QFN-12 (2x2)	I <sup>2</sup> C interface, prog. $V_{OUT}$ , power-save mode
<b>N</b> MP2183	2.5	5.5	3	21	0.6	1.2	✓	✓	✓	✓	✓	-	SOT583 (1.6x2.1)	1% $V_{FB}$ accuracy, output discharge
MP2188	2.5	5.5	3 (2x)	80	0.6	1.2	✓	-	✓	✓	✓	-	QFN-16 (2.2x2.6)	Dual-output, output discharge
MP2131	2.7	5.5	4	19	0.6	1.2	✓	-	✓	✓	✓	-	QFN-12 (2x2)	Output discharge, high efficiency
<b>N</b> MP2184	2.5	5.5	4	21	0.6	1.2	✓	✓	✓	✓	✓	-	SOT583 (1.6x2.1)	1% $V_{FB}$ accuracy, output discharge
MP2145	2.8	5.5	6	40	0.6	1.2	✓	-	✓	✓	-	-	QFN-12 (2x3)	Output discharge, PWM/PFM mode, and dynamic voltage scaling
MPQ8616-6	1.5	6	6	1050	0.61	Prog	✓	✓	-	✓	-	✓	QFN-14 (3x4)	CCM, non-latch OVP, and OCP
MP8847	2.7	6	6	300	0.6	0.85 to 2.2	✓	-	✓	-	-	-	QFN-14 (2x3)	I <sup>2</sup> C interface, prog. $V_{OUT}$ , power-save mode
<b>N</b> MP8770C	3	17	8	100	0.6	0.7	✓	✓	-	✓	-	-	QFN-16 (3x3)	Forced CCM, wide $V_{IN}$ range, fast load transient response
MP8771	3	17	10	100	0.6	0.7	✓	✓	✓	✓	-	-	QFN-16 (3x3)	Fast load transient response, SCP, UVP, OCP, and hiccup mode

## SWITCHING REGULATORS | DC/DC POWER CONVERSION

Step-Down Converters (Buck)

Maximum Operating Input Voltage  $1.5V \leq V_{IN} \leq 6V$

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{OUT}$ (Max) (A)	$I_Q$ (Typ) ( $\mu$ A)	$V_{FB}$ (Typ) (V)	$f_{SW}$ (MHz)	Power Good	External Soft Start	Light-Load Efficiency	Constant-On-Time (COT)	100% Duty Cycle	Industrial	Package	Notes
MPQ8616-12	1.5	6	12	1050	0.61	Prog	✓	✓	-	✓	-	✓	QFN-14 (3x4)	CCM, non-latch OVP, OCP
MP8774	3	18	12	100	0.6	0.7	✓	✓	✓	-	-	-	QFN-16 (3x3)	Wide $V_{IN}$ range, fast load transient response, SCP, UVP, OCP, hiccup
<b>N</b> MP8774H	3	18	12	100	0.6	1.4	✓	✓	✓	-	-	-	QFN-16 (3x3)	
MPQ8612-16	1.5	6	16	1000	0.61	Prog	✓	✓	✓	-	✓	-	QFN-17 (4x4)	DCM, non-latch OVP, OCP
MPQ8612-20	1.5	6	20	1000	0.61	Prog	✓	✓	✓	-	✓	-	QFN-17 (4x4)	

Step-Down Converters (Buck)

Maximum Operating Input Voltage  $\leq 28V$

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{OUT}$ (Max) (A)	$I_Q$ (Typ) (mA)	$V_{FB}$ (Typ) (V)	$f_{SW}$ (MHz)	Power Good	External Soft Start	Light-Load Efficiency	Constant-On-Time (COT)	Package	Notes
MP1479	4.2	18	1	0.19	0.805	0.8	-	-	✓	✓	SOT563 (1.6x1.6)	Low UVLO
MP2313	4.5	24	1	0.2	0.8	2	-	-	✓	-	TSOT23-8	High frequency, light-load mode (AAM pin)
MP2388	4.5	21	1	0.2	0.798	2	-	-	✓	-	QFN-8 (1.5x2.5)	Small package, ultra-thin profile option
MP2317	7.5	26	1	0.15	0.791	0.6	-	-	✓	-	TSOT23-6	Low current limit version of MP2314, optimized EMI
MP2322	3	22	1	0.005	0.6	1.25	✓	-	✓	✓	QFN-8 (1.5x2)	Ultra-low $I_Q$ , small package, output discharge
MP1476	4.2	18	2	0.19	0.805	0.8	-	-	✓	✓	SOT563 (1.6x1.6)	Fast load transient response, OCP, and hiccup
MP2318	4.5	24	2	0.2	0.8	2	-	-	✓	-	TSOT23-8	High frequency, light-load mode (AAM pin)
MPQ2314	4.5	24	2	0.18	0.791	0.5	-	-	✓	✓	TSOT23-8	AAM power-save mode, industrial grade
<b>N</b> MP2332H	4.2	18	2	0.2	0.805	1.2	✓	✓	-	✓	SOT583 (1.6x2.1)	High frequency, forced CCM, good regulation, SCP/OVP/UVP function
MP2321	4	19	2	0.04	0.6	Prog	✓	✓	✓	-	QFN-14 (2x3)	Forced PWM or auto-PFM/PWM mode selectable, 100% duty cycle
MP2392	4.2	24	2	0.2	0.805	0.65	✓	✓	✓	✓	SOT583 (1.6x2.1)	Good regulation, SCP/OVP/UVP function
<b>N</b> MP2331H	4.2	24	2	0.2	0.805	1.2	✓	✓	-	✓	SOT583 (1.6x2.1)	High frequency, forced CCM, good regulation, SCP/OVP/UVP function
<b>N</b> MP2344	7.5	26	2	0.17	0.791	0.6	-	-	✓	-	TSOT23-6	P2P with MP2317/MP2345, optimized EMI
<b>N</b> MP2345	7.5	26	2.5	0.17	0.791	0.6	-	-	✓	-	TSOT23-6	P2P with MP2317/MP2344, optimized EMI
MP2393	4.2	24	3	0.2	0.805	0.65	✓	✓	✓	✓	SOT583 (1.6x2.1)	Good regulation, SCP/OVP/UVP function
<b>N</b> MP2333H	4.2	18	3	0.2	0.805	1.2	✓	✓	-	✓	SOT583 (1.6x2.1)	High frequency, forced CCM, good regulation, SCP/OVP/UVP function
MP2330H	4.2	24	3	0.2	0.805	1.2	✓	✓	✓	✓	SOT583 (1.6x2.1)	High frequency, good regulation, SCP/OVP/UVP function
MP1477	4.2	17	3	0.2	0.805	0.8	-	-	✓	✓	SOT-563 (1.6x1.6)	Fast load transient response, OCP, and hiccup
MP1477H	4.2	17	3	0.2	0.805	1.2	-	-	✓	✓	SOT563 (1.6x1.6)	High frequency

## SWITCHING REGULATORS | DC/DC POWER CONVERSION

Step-Down Converters (Buck)

Maximum Operating Input Voltage  $\leq 28V$ 

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{OUT}$ (Max) (A)	$I_D$ (Typ) (mA)	$V_{FB}$ (Typ) (V)	$f_{SW}$ (MHz)	Power Good	External Soft Start	Light-Load Efficiency	Constant-On-Time (COT)	Package	Notes
MP2223	4.5	18	3/2	1	0.8	0.54	-	-	✓	-	TSOT23-8	Dual 3A/2A buck, 180° out-of-phase operation
<b>N</b> MP2348	4.2	24	4	0.2	0.802	0.65	-	✓	✓	✓	SOT583 (1.6x2.1)	Forced PWM, auto-PFM/PWM and ultrasonic mode selectable
<b>N</b> MP8854	2.85	18	4	0.42	0.72	0.5 to 1.25	✓	✓	✓	✓	QFN-14 (3x4)	I <sup>2</sup> C prog. FB range, integrated telemetry, accurate output voltage/current, readback via I <sup>2</sup> C
MP8864	4.5	21	4	0.5	0.6	1.6	✓	✓	✓	-	QFN-15 (3x3)	I <sup>2</sup> C interface, prog. $V_{OUT}$ , power-save mode
<b>N</b> MPQ8626	4	16	6	0.65	0.6	0.6/1.1/2.2	✓	-	✓	✓	QFN-14 (2x3)	Prog. current limit, proprietary switching loss reduction, pre-biased start-up, stable with zero-ESR output capacitor, excellent load regulation
<b>S</b> MP2349	4.5	24	6.5	0.105	0.6	0.7	-	-	✓	✓	QFN-11 (2X2)	7.5A peak, DC auto-tune loop, proprietary switching loss reduction technique, forced PWM, auto-PFM/PWM and ultrasonic mode selectable
<b>N</b> MPQ8633A	4	16	16	0.65	0.6	0.6/0.8/1	✓	-	✓	✓	QFN-21 (3x 4)	
<b>N</b> MPQ8633B	4	16	20	0.65	0.6	0.6/0.8/1	✓	-	✓	✓	QFN-21 (3x 4)	Prog. current limit, programmable frequency, voltage tracking, proprietary switching loss reduction, pre-biased start-up, stable with zero-ESR output capacitor, excellent load regulation
<b>N</b> MPQ8634A	4	16	12	0.65	0.9	0.6/0.8/1	✓	-	✓	✓	QFN-21 (3x 4)	
<b>N</b> MPQ8634B	4	16	20	0.65	0.9	0.6/0.8/1	✓	-	✓	✓	QFN-21 (3x 4)	
<b>N</b> MPQ8645P	4	16	30	2.5	0.6	0.4/0.6/0.8/1	✓	-	✓	✓	TQFN-25 (4x5)	Scalable multi-phase operation, output voltage, true remote sense, programmable output voltage, programmable current limit, programmable frequency, PMBus interface
<b>S</b> MP2328	4.2	28	2	0.16	0.5	0.43	✓	✓	✓	✓	SOT583 (1.6x2.1)	High-efficiency, for white goods
<b>S</b> MP2338	4.2	28	3	0.16	0.5	0.43	✓	✓	✓	✓	SOT583 (1.6x2.1)	
MP2316	4	19	3	0.04	0.6	Prog	✓	✓	✓	✓	QFN-14 (2x3)	High efficiency, 100% duty cycle
MP2326	3.9	19	4	0.04	0.6	Prog	✓	✓	✓	✓	QFN-14 (2x3)	Selectable PFM/PWM mode, 100% duty cycle
MP8715	4.5	21	4	0.66	0.805	0.5	✓	✓	-	-	QFN-14 (3x4), SOIC-8E	100% duty cycle, ext. frequency sync
MP1499	4.5	16	4	0.6	0.807	0.5	-	✓	✓	-	QFN-10 (2x3)	Ext. frequency sync
MP2384	4.5	24	4	0.105	0.6	0.7	✓	-	✓	✓	QFN-11 (2x2)	Output discharge, OCP, OVP, UVP, ther. shutdown with auto-retry, P2P with MP2329/MP2386
MP2225	4.5	18	5	0.32	0.6	0.5	-	-	✓	-	TSOT23-8	High-efficiency, 5A peak, ext. frequency sync
MPQ8623	4	16	6	0.65	0.9	0.6/1.1/2.2	✓	-	✓	✓	QFN-14 (2x3)	Prog. current limit, prop switching loss reduction, pre-biased start-up, stable w/ zero-ESR output cap, excellent load regulation
MP8861	2.85	18	6	0.42	0.72	0.5 to 1.25	✓	✓	✓	✓	QFN-14 (3x4)	I <sup>2</sup> C prog. FB range, integrated telemetry, accurate output voltage/current, readback via I <sup>2</sup> C
MP2236	3	18	6	0.15	0.6	0.6	-	-	✓	✓	TSOT23-8	Pin-to-pin with MP2225
MP2229	4.5	21	6	0.4	0.6	Prog	-	✓	✓	-	QFN-14 (3x3)	Current mode, external frequency sync
MP8865	4.5	21	6	0.5	0.6	1.6	✓	✓	✓	-	QFN-15 (3x3)	I <sup>2</sup> C interface, prog. $V_{OUT}$ , power-save mode
MP2329	4.5	24	6.5	0.105	0.6	0.7	✓	-	✓	✓	QFN-11 (2x2)	Output dis., OCP, OVP, UVP, thermal shutdown with auto-retry, P2P with MP2384/MP2386



## SWITCHING REGULATORS | DC/DC POWER CONVERSION

Step-Down Converters (Buck)

Maximum Operating Input Voltage  $\leq 28V$ 

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{OUT}$ (Max) (A)	$I_Q$ (Typ) (mA)	$V_{FB}$ (Typ) (V)	$f_{SW}$ (MHz)	Power Good	External Soft Start	Light-Load Efficiency	Constant-On-Time (COT)	Industrial	Package	Notes
MPQ8636-4	4.5	18	4	0.86	0.611	Prog	✓	✓	-	✓	✓	QFN-16 (3x4)	CCM, non-latch OVP, prop. switching loss red., pre-biased start-up, stable w/ zero-ESR output capacitor
MP2329C	4.5	24	6.5	0.105	0.6	0.7	✓	-	✓	-	-	QFN-11 (2x2)	Forced CCM version of MP2329
MP2386	4.5	24	8	0.105	0.6	0.7	✓	-	✓	✓	-	QFN-11 (2x2)	Output dis., OCP, OVP, UVP, thermal shutdown with auto-retry, P2P with MP2384/MP2329
MP2276	2.7	16	8	0.6	0.8	0.6/1.1/2	✓	✓	✓	✓	-	QFN-14 (2x3)	Prog. current limit, selectable mode of op. forced CCM or pulse-skip op. at light load
MP8770	4.5	17	8	0.1	0.6	0.7	✓	✓	✓	✓	-	QFN-16 (3x3)	Fast load transient response, SCP, UVP, OCP, and hiccup
<b>N</b> MP8770C	3	17	8	0.1	0.6	0.7	✓	✓	-	✓	-	QFN-16 (3x3)	Forced CCM, wide $V_{IN}$ range, fast load transient response
MP8867	4.5	17	8	0.56	0.6	1.5	✓	✓	✓	-	-	QFN-14 (3x4)	I <sup>2</sup> C interface, prog. $V_{OUT}$ , power-save mode
MP8759	4.5	26	8	0.117	0.6	0.7	✓	-	✓	✓	-	QFN-12 (2x3)	USM, PFM/PWM selection, hiccup mode OCP and UVP, output discharge
<b>N</b> MP2238	4.2	18	8	0.15	0.6	0.6	-	-	✓	✓	-	QFN-12 (2x3)	1% $V_{FB}$ accuracy, hiccup OCP
MP8771	4.5	17	10	0.1	0.6	0.7	✓	✓	✓	✓	-	QFN-16 (3x3)	Fast load transient response, SCP, UVP, OCP, and hiccup
MPQ8636A-10	4.5	18	10	0.86	0.611	Prog	✓	✓	-	✓	✓	QFN-16 (3x4)	CCM, latch-off OVP/OCP
MP8758H	4.5	22	10	0.19	0.604	0.5	✓	-	✓	✓	-	QFN-21 (3x4)	Thermal auto-retry, hiccup mode OCP and UVP, PFM/PWM mode
MP8714	4.5	17	10	0.56	0.6	Prog	✓	✓	✓	-	-	QFN-14 (3x4)	External frequency sync, current mode
MP8868	4.5	17	10	0.56	0.6	1.5	✓	✓	✓	-	-	QFN-14 (3x4)	I <sup>2</sup> C interface, prog. $V_{OUT}$ , power-save mode
MP8720	4.5	26	10	0.14	0.6	0.7	✓	-	✓	✓	-	QFN-16 (3x3)	Output discharge, adjustable current limit, forced CCM or PSM selection, over-current limit, latch-off reset
MP8774	3	18	12	0.1	0.6	0.7	✓	✓	✓	✓	-	QFN-16 (3x3)	Wide VIN range, fast load transient response, SCP, UVP, OCP, and hiccup
<b>N</b> MP8774H	3	18	12	0.1	0.6	1.4	✓	✓	✓	✓	-	QFN-16 (3x3)	Wide VIN range, fast load transient response, SCP, UVP, OCP, and hiccup
MP8869S	2.85	18	12	0.42	0.72	0.5 to 1.25	✓	✓	✓	✓	-	QFN-14 (3x4)	$V_{OUT}$ adjustable up to 5.5V with FB pin, integrated telemetry, accurate output voltage/current, readback via I <sup>2</sup> C
MP8719	4.5	26	12	0.85	0.6	0.5/0.7	✓	-	-	✓	-	QFN-16 (3x3)	Output discharge, USM, buck converter with $\pm 1A$ LDO and buffered reference
MPQ8636H-20	4.5	18	20	1	0.611	Prog	✓	✓	-	-	✓	QFN-29 (5x4)	CCM, hiccup OVP
<b>S</b> MP8796	4	16	30	0.7	0.6	Prog	✓	✓	✓	✓	-	TQFN-25 (4x5)	Prog. current limit, scalable multi-phase operation, remote sense, selection of hiccup or latch-off for OCP, OVP, and OTP
<b>S</b> MP8796B	4	16	30	2.5	0.6	Prog	✓	-	-	✓	-	TQFN-25 (4x5)	Digital with PMBus



## SWITCHING REGULATORS | DC/DC POWER CONVERSION

Step-Down Converters (Buck) Maximum Operating Input Voltage < 55V

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>OUT</sub> (Max) (A)	I <sub>O</sub> (Typ) (mA)	V <sub>FB</sub> (Typ) (V)	f <sub>SW</sub> (MHz)	Power Good	External Soft-Start	Light-Load Efficiency	Sync Rectifier	Industrial	Package	Notes
MP4410	4.5	36	0.1	0.02	1	Prog	✓	-	-	✓	-	QFN-10 (3x3)	Low I <sub>O</sub>
MP4568	4.5	45	0.1	0.02	1	Prog	-	✓	-	✓	✓	QFN-10 (3x3)	Programmable peak-current limit
MPQ2459	4.5	55	0.5	0.73	0.812	480	-	-	-	-	✓	TSOT23-6	Built-in power MOSFET
MPQ2456	4.5	50	0.5	0.73	0.85	1200	-	-	✓	-	✓	TSOT23-6	OCP
MP4566	4.5	36	0.6	0.035	1	1000	-	-	✓	-	-	QFN-8 (2x3)	-
MPQ2451	3.3	36	0.6	0.13	0.794	2000	-	-	✓	-	✓	TSOT23-6L, QFN-6L	-
MP2454	3.3	36	0.6	0.06	0.8	2300	✓	✓	-	-	✓	QFN-10 (3x3)	Ext. frequency sync
<b>N</b> MP2457	5	36	0.6	0.065	0.8	2000	-	-	✓	-	✓	TSOT23-6	Power meters only
MPQ4458	3.8	36	1	0.12	0.8	Prog	-	-	✓	-	-	TQFN-10 (3x3)	Integrated high-side MOSFET
MPQ4558	3.8	55	1	0.14	0.8	Prog	-	-	✓	-	✓	QFN-10 (3x3), SOIC-8E	Current-mode control
<b>N</b> MP4431 MPQ4431	3.3	36	1	0.01	0.8	Prog	✓	✓	✓	✓	✓	QFN-16 (3x4)	Selectable forced CCM or AAM, prog. soft-start time, good EMI, and low-dropout mode
MP2269	3.3	30	1	0.012	0.8	Prog	✓	✓	✓	✓	-	QFN-15 (2x3)	Current-mode control, low I <sub>O</sub> , forced PWM and auto-PFM/PWM selection, low-dropout mode
MPQ4459	3.8	36	1.5	0.12	0.8	Prog	-	-	✓	-	✓	TQFN-10 (3x3)	Current-mode control
MPQ2490	4.5	36	1.5	0.5	0.805	700	✓	✓	-	-	✓	SOIC-8	Prog. output-current limit
MPQ4561	3.8	55	1.5	0.14	0.795	Prog	-	✓	✓	-	-	QFN-10 (3x3)	Internal high-side MOSFET
<b>N</b> MP4425M MPQ4425M	4	36	1.5	0.6	0.2	2200	-	-	-	-	✓	QFN-13 (2.5x3)	PWM dimming and OCP/SCP protection, external frequency sync
MP9942 MP9942A	4	36	2	0.5	0.792	410	✓	-	✓	✓	-	TSOT23-8	Forced CCM, consumer grade, external frequency sync
MP4420H MPQ4420H	4	36	2	0.5	0.792	410	✓	-	-	✓	✓	TSOT23-8	External frequency sync
MPQ4560	3.8	55	2	0.14	0.797	Prog	-	-	✓	-	✓	QFN-10 (3x3), SOIC-8E	AEC-Q100 qualified
MP2499	4.5	55	2	0.5	0.8	100	-	✓	-	-	-	SOIC-16	Programmable output current
<b>N</b> MP4432 MPQ4432	3.3	36	2.2	0.01	0.8	Prog	✓	✓	✓	✓	✓	QFN-16 (3x4)	Selectable forced CCM or AAM, prog. soft-start time, good EMI, and low-dropout mode
MPQ4460	3.8	36	2.5	0.12	0.8	Prog	-	-	✓	-	-	QFN-10 (3x3)	Prog. output current
MP2560	4.5	42	2.5	0.12	0.8	Prog	-	-	✓	-	-	QFN-10 (3x3), SOIC-8E	Current-mode control
MP2565	4.5	50	2.5	0.12	0.8	Prog	-	-	✓	-	-	QFN-10 (3x3), SOIC-8E	Integrated internal high-side
MP2496	7	36	2.5	1.6	-	350/250/ 150	-	-	-	-	-	QFN-26 (4x4)	Integrated smart USB charging port, auto-detect, cable compensation
MP2499A	5	36	3	0.7	0.792	Prog	-	-	✓	✓	-	QFN-13 (2.5x3)	Current-mode control, ext. frequency sync, output line drop compensation

## SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Down Converters (Buck)

Maximum Operating Input Voltage &lt; 55V

Part Number	V <sub>in</sub> (Min) (V)	V <sub>in</sub> (Max) (V)	I <sub>OUT</sub> (Max) (A)	I <sub>o</sub> (Typ) (mA)	V <sub>FB</sub> (Typ) (V)	f <sub>sw</sub> (kHz)	Power Good	External Soft Start	Light-Load Efficiency	Sync-Rectifier	Industrial	Package	Notes
MP4423H MPQ4423H	4	36	3	0.5	0.79	410	✓	-	-	✓	✓	QFN-8 (3x3)	External frequency sync
MP9943/A	4	36	3	0.5	0.79	410	✓	-	✓	✓	-	QFN-8 (3x3)	Consumer grade, 36V max, ext. frequency sync
<b>N</b> MP4433 MPQ4433	3.3	36	3	0.01	0.8	Prog	✓	✓	✓	✓	✓	QFN-16 (3x4)	Sel. forced CCM or AAM, prog. soft-start time, good EMI, and low-dropout mode
MP4570 MPQ4570	4.5	55	3	0.45	1	Prog	✓	✓	✓	✓	✓	TSSOP-20EP	External frequency sync
MP2263	3.3	30	3	0.012	0.8	Prog	✓	✓	✓	✓	-	QFN-15 (2x3)	Current mode control, low I <sub>o</sub> , forced PWM & auto-PFM/PWM selection, low-dropout mode
<b>S</b> MP8883 MPQ8883	3.5	45	3	0.6	-	Prog	✓	-	✓	✓	✓	QFN-16 (3x3)	Current mode, I <sup>2</sup> C interface, OTP, external frequency sync
MP4462 MPQ4462	3.8	36	3.5	0.12	0.792	Prog	-	-	-	✓	✓	QFN-10 (3x3), SOIC-8E	AEC-Q100 qualified
MP4473	4.5	36	3.5	0.5	0.815	Prog	✓	✓	✓	✓	✓	QFN-20 (3x4)	High frequency
MP4430 MPQ4430	3.3	36	3.5	0.01	0.8	Prog	✓	✓	✓	✓	✓	QFN-16 (3x4)	Selectable forced CCM or AAM, programmable soft-start time, good EMI, low-dropout mode
<b>N</b> MP2491C	4	32	6	0.45	0.5	490	✓	-	✓	✓	-	QFN-13 (2.5x3)	Adjustable current limit, V <sub>out</sub> scaling control
MP8675	4.5	42	6	0.9	0.808	420	-	-	-	✓	-	SOIC-8E	Synchronizable gate driver, ext. frequency sync
<b>S</b> MPQ8886 MP8886	4	45	3 x 2	0.012	0.6	600	✓	-	-	✓	-	QFN-26 (5x5)	Dual 3A/single 6A digital prog. synchronous buck regulator, AEC-Q100 qualified

## Step-Down Converters (Buck)

Maximum Operating Input Voltage &lt; 100V

Part Number	V <sub>in</sub> (Min) (V)	V <sub>in</sub> (Max) (V)	I <sub>OUT</sub> (Max) (A)	I <sub>o</sub> (Typ) (mA)	V <sub>FB</sub> (Typ) (V)	f <sub>sw</sub> (kHz)	Power Good	External Soft Start	Light-Load Efficiency	Sync-Rectifier	Industrial	Package	Notes
MP4569	4.5	75	0.3	0.02	1	1000	✓	✓	-	✓	✓	QFN-10 (3x3), SOIC-8E	Integrated high-side/low-side
MP2420	4.5	75	0.3	0.02	1	Prog	✓	✓	-	✓	✓	TSSOP-16	Watchdog
<b>S</b> MP4541	10	80	0.8	0.015	1	Prog	-	-	✓	✓	-	SOIC8-EP	High efficiency at light load
<b>S</b> MP5423	25	100	0.3	-	-	200	-	-	✓	✓	-	SOIC8-EP	650mA current limit, 5V LDO, 3.3V LDO
<b>S</b> MP4581	10	100	0.8	0.015	1	Prog	-	-	✓	✓	-	SOIC-8EP	High efficiency at light load
<b>S</b> MPQ8880 MP8880	3.5	60	4	-	-	200 to 2500	✓	-	-	✓	-	QFN (4x5)	Digital prog. sync, AEC-Q100 qualified

## SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Down Controllers

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_O$ (Typ) (mA)	$V_{FB}$ (V)	$f_{SW}$ (kHz)	Soft Start	Package	Notes
MP2910	5	12	0.6	0.8	300	Int	SOIC-14, SOIC-8E	Synchronous PWM DC/DC linear, specific power good indicator for Intel, Grantsdale FSB_VTT power sequence
MP2905	3	28	0.6	0.6	Adj 200 to 500	Ext	MSOP-10	Ideal for applications greater than 15A
MP2908A	4	60	0.75	0.8	Adj 100 to 1000	Ext	TSSOP-20EP, QFN-20 (3x4)	Industrial grade, power good, programmable CCM, AAM, pulse-skipping mode

## Step-Up Charge Pumps

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{OUT}$ (A)	$I_O$ (Typ) (mA)	$f_{SW}$ (kHz)	Industrial	Package	Notes
MP9361	2.8	5	0.11	2	1350	✓	TSOT23-6	Fixed 5V <sub>OUT</sub> , high performance, regulated, internal soft start, OCP, SCP, inrush current limit
MP9218	2.8	5	0.11	2	1350	-	QFN-6 (2x2)	Fixed 5V <sub>OUT</sub> , high performance, regulated

## Step-Up Controllers

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{OUT}$ (A)	$f_{SW}$ (kHz)	$I_O$ (Typ) (mA)	$V_{FB}$ (Typ) (V)	Soft Start	Package	Notes
MP3910	5	35	1	Adj 30 to 400	0.288	1.237	Ext	MSOP-10	Supports pulse-skipping mode at light-load, 0.95 max duty cycle
MP3910A	9	14	1	Adj 30 to 400	0.288	1.237	Ext	SOIC-8E	
MP6002	10	100	3	550	1	1.21	Int	SOIC-8E	Flyback/forward DC/DC converter, 30W, integrated 150V power switch
MP6001	10	100	2	550	1	1.21	Int	SOIC-8E	Flyback/forward DC/DC converter, 15W, integrated 150V power switch
MP6003	10	100	-	550	1	1.21	Int	SOIC-8E	Monolithic flyback/sepic DC/DC converter

## Step-Up Converters (Boost)

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{SW}$ Limit (Typ) (A)	$I_O$ (Typ) (mA)	$V_{OUT}$ Range (V)	$f_{SW}$ (kHz)	Package	Notes
MP3209	2.5	6	0.35	0.64	3 to 22	1400	TSOT23-5, UTQFN-8 (2x2)	Int. compensation, tiny inductors and capacitors (+J168:J192) can be used
MP3217	2.5	6	0.5	0.46	$V_{IN}$ to 36	670	TSOT23-6	Cycle-by-cycle OCP, UVLO, thermal shutdown, P2P with MAX5025-5028
MP1400	2.7	7	0.6	0.2	-0.9 to -6	1500	CSP-8 (0.8x1.6)	Output adj. from -0.9V to -6V, very small size
MP5418	2.3	5	0.2	0.22	0V to $-V_{IN}$	30 to 550	QFN-10 (1.8x1.4)	Dual output, negative charge pump, adjustable regulator
MP3416	0.8	5.5	1	0.009	1.8 to 5.5	1500	TSOT23-8, QFN-8 (1.5x2.2)	Output disconnect, down mode, sync
MP3120	0.8	5	1.2	0.47	2.5 to 5	1100	TSOT23-6	Output disconnect, LDO mode, sync
MP3430	2.7	5.5	1.2	0.3	2.7 to 90	1300	QFN-16 (3x3)	APD current monitoring (1:10 or 1:2 ratio) with 5% accuracy and 50ns response time, prog. APD current limit and protection, int. comp. and soft start

## SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Up Converters (Boost)

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{SW}$ Limit (Typ) (A)	$I_L$ (Typ) (mA)	$V_{OUT}$ Range (V)	$f_{SW}$ (kHz)	Package	Notes
MP3410	1.8	6	1.3	0.36	2.5 to 6	550	TSOT23-5	Output disconnect, sync
MP3414	0.6	4	1.8	0.035	1.8 to 4	1000	TSOT23-8	Output disconnect, sync
MP1541	2.5	6	1.9	0.64	3 to 22	1300	TSOT23-5	Internal current limit
MP1542	2.5	22	2.6	0.7	3 to 22	700/1300	MSOP-8	Prog. soft start
MP3414A	1.8	5.5	3	0.022	1.908 to 5.5	1000	TSOT23-8	Wider input version of MP3414, sync
MP3213	2.5	22	3.5	0.7	3 to 22	700/1300	MSOP-8E	Prog. soft start
MP1530	2.7	5.5	3.6	1.3	2.7 to 22	1400	QFN-16 (3x3), TSSOP-16	Triple output charge pump, LDO for TFT bias
MPQ1530	2.7	5.5	3.6	1.3	2.7 to 22	1400	QFN-16 (3x3)	Triple output charge pump, LDO for TFT bias, industrial grade
MP3415	1.8	5.5	4.2	0.022	1.98 to 5.5	1000	QFN-12 (2x2)	Output disconnect, sync
MP3425	3.1	22	5	0.65	3.1 to 55	Prog 300 to 2000	QFN-14 (3x4)	Prog. UVLO and EN hysteresis, industrial grade
MP3421	1.9	5.5	5.5	0.043	2.5 to 5.5	600	QFN-14 (2x2)	Output disconnect, sync
MP3422	1.9	5.5	6.5	0.043	2.5 to 5.5	600	QFN-14 (3x4)	Output disconnect, sync
MP3426	3.2	22	8.5	0.65	3.2 to 35	Prog 300 to 2000	QFN-14 (3x4)	Prog. UVLO, soft start, UVLO hysteresis, industrial grade
MP3423	1.9	5.5	9	0.043	2.5 to 5.5	600	QFN-14 (2x2)	Output disconnect, sync
MP3424	2	5.5	9.5	0.32	3 to 5.5	580	QFN-14 (2x2)	Current prog., output disconnect, sync
<b>S</b> MP3437	2.7	16	9.5	0.38	$V_{IN}$ to 16	600	TSOT23-8, QFN-10 (2x2.5)	Selectable PSCM/USM/FCCM, prog. UVLO and hysteresis, auto pass-through mode in PSM
<b>S</b> MP3434	0.8	22	3	0.15	$V_{IN}$ to 22V	1200	SOT583	High efficiency, fully integrated sync boost, prog. UVLO and hysteresis
<b>N</b> MP3432	2.7	13	10	0.51	$V_{IN}$ to 16	600	QFN-13 (3x4)	Selectable PSM/USM/FCCM, prog. switch peak current limit, auto pass-through mode in PSM when $V_{IN} > V_{OUT}$ , sync
MP3429	0.8	13	21.5	0.45	1 to 16	600	QFN-13 (3x4)	Selectable PSM/USM/FCCM, prog. UVLO and hysteresis, sync
MP3431	2.7	13	21.5	0.45	1 to 16	600	QFN-13 (3x4)	Selectable PSM/USM/FCCM, prog. input current limit, prog. UVLO and hysteresis, sync
MP3428A	3	20	25	0.65	3 to 22	600	QFN-22 (3x4)	Input disconnect function, ext. soft start, prog. UVLO and hysteresis, sync



## SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Up Energy Storage (Dying Gasp)/Power Backup Manager PMICs

	Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	V <sub>STG</sub> (Max) (V)	I <sub>LIMIT</sub> Charging (A)	I <sub>LIMIT</sub> Dumping (A)	I <sub>Q</sub> (Typ) (mA)	V <sub>FB</sub> (V)	Package	Notes
N	MP5505E	2.7	7	30	0.54	6	2 (Max)	0.801/0.795	QFN-20 (3x4)	Input current limit, adjustable dV/dt slew rate, reverse-current protection
	MP5455	2.7	7	30	0.5	5	2 (Max)	0.79	QFN-20 (3x4)	For USB Type-C HDMI interface reference design
	MP5507E	2.7	7	30	0.5	5	2 (Max)	0.79	QFN-16 (2.5x3.2)	Bus power good indicator, adj. dV/dt slew rate for VB start-up, 1.2MHz buck release mode switching frequency, smaller package version of MP5505A
	MP5512	4	18	40	0.96	5	1	0.8	QFN-28 (4x5)	Prog. storage and release voltage, hot-swap management unit for PCIe
	MP5515	2.8	18	32	0.5 to 2	6.5	3 (Max)	0.8	QFN-30 (5x5)	Prog. high-efficiency, lossless energy storage and power backup management unit for SSD and HDD applications

## Step-Up LNBs

	Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	Standard	I <sub>OUT</sub> (Max) (A)	22kHz Tone Signal Generated	Package	Notes
	MP8124	8	14	DiSEqC 1.x	0.5	Int	QFN-14 (2x3)	Boost converter with internal switch, low-noise LDO output, line drop compensation, selectable V <sub>OUT</sub> compensation, adjustable output SS
S	MP8128	8	14	DiSEqC 1.x and DiSEqC 2.x	1	Selectable Int or Ext	QFN-20 (3x3)	With I <sup>2</sup> C interface, low-noise LDO output, selectable output voltage

## Buck-Boost

	Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>SW</sub> Limit (Typ) (A)	I <sub>Q</sub> (Typ) (mA)	V <sub>FB</sub> (V)	f <sub>SW</sub> (kHz)	Sync	Package	Notes
N	MP8860	2.8	22	1	1	-	500	✓	QFN-16 (3x3)	1A I <sub>OUT</sub> , 4-switch buck-boost converter with I <sup>2</sup> C interface
N	MP8862	2.8	22	2	1	-	500	✓	QFN-16 (3x3)	2A I <sub>OUT</sub> , 4-switch buck-boost converter with I <sup>2</sup> C interface
	MP2155	2	5.5	2.2	0.08	0.496	1000	✓	QFN-10 (3x3)	Power-save mode, load disconnect
N	MP28160	2.5	5.5	2.5	0.22	-	1800	✓	CSP-12 (1.4x1.8)	0.5A I <sub>OUT</sub> , buck-boost converter, 3.3V fixed output voltage
	MP28163	2	5.5	2.9	0.07	0.496	1100	✓	QFN-10 (3x3)	Power-save mode, load disconnect
N	MP28167-A	2.8	22	3	1	1	Selectable: 500/750	✓	QFN-16 (3x3)	3A I <sub>OUT</sub> , 4-switch, integrated buck-boost converter with FB pin, I <sup>2</sup> C interface
N	MP28167	2.8	22	3	1	-	500	✓	QFN-16 (3x3)	3A I <sub>OUT</sub> , 4-switch buck-boost converter, fixed output voltage options available
N	MP8859	2.8	22	3	1	-	500	✓	QFN-16 (3x3)	3A I <sub>OUT</sub> , 4-switch buck-boost converter with I <sup>2</sup> C interface
	MP28164	1.2	5.5	4.2	0.025	0.5	2000	✓	QFN-11 (2x3)	Power-save mode, load disconnect
S	MP4245	4	36	6	0.3	0.1/0.4/0.72/1.6	Selectable: 250/350/420	✓	QFN-21(4x5)	4-switch USB PD solution buck-boost converter, spread spec. sel., I <sup>2</sup> C interface and 2-time prog. MTP
S	MP2980	5	36	Prog	0.07/0.055	Prog	Selectable: 200/300/400/600	✓	QFN-32 (4x4)	4-switch buck-boost controller with I <sup>2</sup> C interface
S	MP2984	5	36	Prog	0.07/0.055	Prog	Selectable: 200/300/400/600	✓	QFN-32 (4x4)	USB Type-C PD buck-boost controller with I <sup>2</sup> C int., <50mA steps cur. limit adj. through IPWM pin

## LDO | DC/DC POWER CONVERSION

Part Number	$V_{in}$ (Min) (V)	$V_{in}$ (Max) (V)	$I_{out}$ (mA)	$I_q$ (Typ) ( $\mu$ A)	Load Regulation (%)	PSRR @ 1kHz (dB)	$V_{FB}$ (V)	Dropout Voltage (mV)	Package	Notes
MP2000	1.35	6	150	65	0.001	50	0.5	250: (IO: 100mA) 300 (IO: 150mA)	TSOT23-5	Low-voltage input (1.35V to 6V)
MP8801	2.7	6.5	150	125	0.001	70	1.22	150 (IO: 150mA)	TSOT23-5	Low noise, excellent for RF app, lower cost
MP8802	2.7	6.5	250	125	0.001	70	1.22	230 (IO: 250mA)	TSOT23-5	Excellent for RF applications, lower cost
MP20056	2.5	5.5	250	150	0.003	63	0.8	100 (IO: 250mA)	QFN-8 (2x2), TSOT23-5	Fixed output, current limiting and thermal protection
MP20041	2.5	6	300 (2x)	114	0.003	65	-	75 (IO: 100mA) 220 (IO: 300mA)	QFN-8 (2x2)	Dual fixed output, P2P with RT9012
MP2002	1.35	6.5	500	100	0.001	26	0.5	290 (IO: 500mA)	QFN-8 (2x3)	Low-voltage input, power good
MP8904	2.5	6.5	500	100	0.001	26	0.496	300 (IO: 500mA)	QFN-8 (2x3)	Power good output, industrial grade
MP20045	2.5	5.5	1000	110	0.000	56	1.5	140 (IO: 1000mA)	QFN-8 (3x3), SOIC-8E	High input/output current with fast response, fixed and adj. +0252 output voltages
MP20051	2.5	5.5	1000	110	0.000	63	0.8	140 (IO: 1000mA)	QFN-8 (3x3)	Industrial grade
MP20046	2.7	5.5	2000	75	0.000	70	-	210 (IO: 2000mA)	SOIC-8E, QFN-10 (3x3)	High input/output current with fast response
MP20073	1.3	6	2000	-	-	-	-	-	MSOP-8E	DDR2/3 termination regulator
MP20075	1.3	3.6	3000	-	-	-	-	-	MSOP-8E	DDR2/3/3L/4 termination regulator, VDRV = 3.3V

## High-Performance, Low-Dropout Linear Regulators

MP2016	4	42	30	12	0.003	50	1.23	700 (IO: 30mA)	QFN-8 (2x3), TSOT23-5	Ideal for automotive
MP2015A	2.5	24	150	3.3	0.005	41	1.215	700 (IO: 150mA)	TSOT23-4, QFN-6 (2x2), QFN-8 (3x3)	EN pin
MP2019	3	40	300	10	0.04	45	1.25	420 (IO: 300mA)	SOIC-8EP	Industrial grade
MP2014	3	40	500	10	0.03	45	-	750 (IO: 500mA)	TO252-5	Low $I_q$
MP2018	3	16	500	10	0.03	45	-	750 (IO: 500mA)	TO252-5	Low $I_q$ , fixed output voltage, power good
MP2005	1	5.5	800	100	0.001	65	0.5	70 (IO: 800mA)	QFN-8 (2x3)	Fast transient, 48dB PSRR at 1MHz
MP2030	1.1	5	3000	220	0.001	32	0.5	150 (IO: 3000mA)	QFN-10 (3x3), QFN-32 (5x5)	Dual supply, fast transient, bias supply, power good, current limit, int. thermal protection

## SUPERVISORY | DC/DC POWER CONVERSION

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>Q</sub> (Typ) (µA)	Threshold Accuracy (%)	Reset Threshold Accuracy (%)	Delay Time (ms)	Package	Notes
MP6400	1.8	6	1.6	1	1	2.1 to 10000	QFN-10 (3x3)	Power-save mode, load disconnect
MPQ6411	4.8	5.2	-	-	-	-	QFN-10 (3x3)	Power-save mode, load disconnect
<b>N</b> MP6420	3.6	18	3	0.5	-	3000 to 4600	TSOT23-8	Battery protection IC for 2-3 series cell Li-ion with integrated protective MOSFET and PTC interface
<b>N</b> MP6412	2.2	12	1	-	-	-	QFN-10 (1.4x1.8)	Ultra-low I <sub>Q</sub> load switch controller with reset timer

## MOSFET DRIVERS | DC/DC POWER CONVERSION

## Half-Bridge Gate Drivers

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	Bootstrap Supply (Max) (V)	Peak Pull-Up Current (A)	Peak Pull-Down Current (A)	Rise Time (ns)	Fall Time (ns)	Turn-On Delay (ns)	Turn-Off Delay (ns)	Package	Notes
MP18024	9	16	100	3	4.5	15	9	20	20	SOIC-8E	4A, high frequency
MP1906	10	16	80	0.35	1	50	30	80	80	SOIC-8	High performance
MP1907	4.5	18	100	1.5	2.5	12	9	18	20	QFN-10 (3x3)	2.5A, high frequency
MP18021A	9	18	100	1.5	2.5	12	9	16	16	SOIC-8E, QFN-8 (3x3)	2.5A, high frequency, industrial grade
MP18021	9	18	100	1.5	2.5	12	9	16	16	SOIC-8EP, QFN-8 (3x3)	High frequency, N-channel MOSFET with 1ns matching delay
<b>S</b> MP1909	4.5	12	50	2	4	10	6	110	30	SOT583	Low I <sub>Q</sub> , support 100% duty, 30V, high frequency
MP1917	8	17	115	2.6	4.5	15	15	20	20	QFN-8 (4x4)	105V, 4A, high frequency
MP1917A	8	15	115	2.6	4.5	15	15	20	20	QFN-10 (4x4)	100V, 4A, high frequency

## PMICS &amp; MULTIPLE OUTPUTS | DC/DC POWER CONVERSION

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	V <sub>OUT</sub> (V)	V <sub>FBI</sub> (V)	I <sub>SW</sub> Limit (Typ) (A)	f <sub>SW</sub> (kHz)	Package	Notes
MP28300	2	5.5	Buck: 0.8/1.0/1.2/ 1.5/1.8/2.5/3.3 LDO: 1.3/1.8/3.3	-	0.6	1500	QFN-12 (2x2)	Ultra-low 500nA I <sub>Q</sub> , 300mA buck + 100mA LDO, programmable V <sub>OUT</sub> by CTRL, COT, PG
<b>S</b> MP28310	2	5.5	Buck: 1.2/1.5/1.8/ 2.5/2.8/3.0/3.3 LDO: 1.8/2.8/3.0	-	0.6	1500	CSP-12 (1.2x1.6)	Ultra-low 500nA I <sub>Q</sub> , ultra-small package, 300mA buck + 100mA LDO, programmable V <sub>OUT</sub> by CTRL, COT, PG
MP28301	2	5.5	Buck: 0.8/1.0/1.2/ 1.5/1.8/2.5/3.3 LDO: 1.2/2.5/3.0	-	1.2	1500	QFN-12 (2x2)	Ultra-low 500nA I <sub>Q</sub> , 700mA buck + 100mA LDO, programmable V <sub>OUT</sub> by CTRL, COT, PG
MP5408	6	36	5.1/5.17/5.3	-	Converter: 13 USB SW1: 3.45 USB SW2: 2.75	Prog	QFN-26 (5x5)	Integrated, smart, dual USB charging ports, auto-detect, supports USB type-C 5V at 3A DFP mode



# PMICS & MULTIPLE OUTPUTS | DC/DC POWER CONVERSION

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	V <sub>OUT</sub> (V)	V <sub>FB</sub> (V)	I <sub>SW</sub> Limit (Typ) (A)	f <sub>SW</sub> (MHz)	Package	Notes
<b>MP5403</b>	2.7	6	Ch 1: 0.9/1.1/2.5/2.85 Ch 2: 0.9/1.2/1.8/2.5	0.6	Ch 1: 5.6 Ch 2: 4.7	1500	UTQFN-20 (2.5x3)	Configurable mini PMIC, two buck converters (2.5A/3.5A) + one load switch (3A)
<b>MP5403B</b>	2.7	6	0.6V to 6V	0.6	Ch 1: 8.5 Ch 2: 7	1500	UTQFN-20 (2.5x3)	Mini PMIC, dual peak buck (4A/5A) + one load switch (2A)
<b>MP5416</b>	2.8	5.5	Prog	Prog	Prog	Prog	QFN-28 (4x4)	I <sup>2</sup> C bus and one-time programmable (OTP) function, programmable V <sub>OUT</sub> /f <sub>SW</sub> /I <sub>SW</sub> via I <sup>2</sup> C/OTP, configurable mini PMIC, four buck converters (4.5A/4A/2.5A/2A) + four 300mA LDOs and one 10mA RTC LDO
<b>N</b> <b>MP5418</b>	2.3	5	V <sub>OUT</sub> 1: 0 to -V <sub>IN</sub> V <sub>OUT</sub> 2: 0V to -CTL	-	1	30 to 550	QFN-10 (1.4x1.8)	Negative charge pump + an adjustable negative regulator
<b>N</b> <b>MP5470</b>	4	16	0.55 to 7	Prog	Prog	800	QFN-22 (3x4)	I <sup>2</sup> C interface, four buck converters, parallel mode for higher current, one GPIO pin
<b>S</b> <b>MP5417</b>	2.8	5.5	Prog	Prog	Ch 1/3: 4 Ch 2/4: 2	Prog	QFN-28 (4x4)	I <sup>2</sup> C bus and one-time programmable (OTP) function, programmable V <sub>OUT</sub> /f <sub>SW</sub> /I <sub>SW</sub> via I <sup>2</sup> C/OTP, four buck converters + two LDOs + two GPIO pins
<b>S</b> <b>MP5413</b>	2.7	5.5	Prog	Prog	Prog	Prog	WLCSP-38 (2.7x3.1)	Ultra-small package, sleep mode control, I <sup>2</sup> C bus and one-time programmable (OTP) function, programmable V <sub>OUT</sub> /f <sub>SW</sub> /I <sub>SW</sub> via I <sup>2</sup> C/OTP, four buck converters + two LDOs + two GPIO pins
<b>N</b> <b>MP5461</b>	V <sub>IN</sub> 1: 4.2V V <sub>IN</sub> 2: 2.5V	V <sub>IN</sub> 1: 22V V <sub>IN</sub> 2: 5.5V	3.3	-	2.5	1800	CSP-12 (1.4x1.8)	Dual-input 0-ring switches, power path selection input/indication, fast SCP on OR <sub>OUT</sub> , fast reverse block within 2µs on OR <sub>OUT</sub> , output OVP for buck-boost converter
<b>N</b> <b>MP5423</b>	25	100	14/5/3.3	-	0.65	200	SOIC8-EP	One 300mA buck converter + two LDOs (100mA/40mA)
<b>S</b> <b>MP5424</b>	2.7	5.5	2.7 to 5.5	Prog	LDO: 0.43/ 0.8 Ch 1/3: 4.5 Ch 2/4: 4.4	1100	QFN-26 (3.5x4.5)	I <sup>2</sup> C bus and multiple-time programmable (MTP) function, programmable V <sub>OUT</sub> via I <sup>2</sup> C/MTP, configurable mini PMIC, four buck converters (2A/2.5A/4.5A/4.5A) + three LDOs (0.3A) + one load switch (3A), power-on reset output
<b>N</b> <b>MP5415</b>	3.6	5.5	0.6 to 2.18 (V <sub>OUT</sub> 1/3) 0.8 to 3.9 (V <sub>OUT</sub> 2/4)	V <sub>FB</sub> 1: 1.4 V <sub>FB</sub> 2: 1.5 V <sub>FB</sub> 3: 1.375 V <sub>FB</sub> 4: 3.3	Ch 1/2/3: 1 Ch 2: 2	Prog	QFN-28 (4x4)	Four bucks (1A, 1A, 1A, 2A), + four 300mA LDOs, one 10mA RTC LDO, I <sup>2</sup> C interface, OTP, flexible system programming features
<b>S</b> <b>MP8855</b>	2.7	22	Buck-Boost: 0.6 to 22 Buck: 0.6 to V <sub>IN</sub> Boost (3x3) 3.7 to 22 Boost (3x4) 2.7 to 22	Prog	7.5	1000	QFN-21 (4x4)	Five-topology selection by PSEL pin, (1 buck-boost, 2 bucks, 1 interleaving buck, 1 interleaving boost, 1 buck + 1 boost), MTP-programmable parameters
<b>S</b> <b>MPQ7920-AEC1</b>	2.7	5.5	0.4 to 3.5875 or V <sub>IN</sub>	V <sub>FB</sub> 1: 1.375 V <sub>FB</sub> 2: 1.35 V <sub>FB</sub> 3: 1.375 V <sub>FB</sub> 4: 0.675	Ch 1: 4.5 Ch 2: 2.5 Ch 3: 4.5 Ch 4: 2	Adj	QFN-26 (3.5x4.5)	Buck converters, RTC dedicated LDO, four low-noise LDOs, I <sup>2</sup> C interface, 2-time programmable MTP
<b>S</b> <b>MP5479</b>	2.7	5.5	0.4V to 3.5875V or V <sub>IN</sub>	V <sub>FB</sub> 1: 1.375 V <sub>FB</sub> 2: 1.35 V <sub>FB</sub> 3: 1.375 V <sub>FB</sub> 4: 0.675	Ch 1: 4.5 Ch 2: 2.5 Ch 3: 4.5 Ch 4: 2	Adj	QFN-26 (3.5x4.5)	Four buck and five LDO, flexible system settings via I <sup>2</sup> C and MTP

## FLYBACK | DC/DC POWER CONVERSION

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{SW}$ Limit (Typ) (A)	$I_a$ (Typ) (mA)	$V_{FB}$ (V)	$f_{SW}$ (MHz)	Package	Notes
MP6004	14	80	2.05	0.38	1.99	10 to 200	QFN-14 (3x3)	13W, integrated 180V power switch
<b>S</b> MP6005	8	80	$0.8V \times 160mV / R_{SENSE}$	0.45	2	250	MSOP-10	Flyback/forward controller with PSR or SSR, 2A gate and 0.8A sync drivers
MP6001	10	100	2	1	1.21	-	SOIC-8E	15W, integrated 150V power switch
MP6002	10	100	4	1	1.21	-	SOIC-8E	30W, integrated 150V power switch

## FULLY INTEGRATED POE PD SOLUTIONS | DC/DC POWER CONVERSION

Part Number	Pass Device	Current Limit (mA)	Thermal Protection	IEEE Detection & Classification	Package	Notes
MP8004	100V, 1 $\Omega$ DrMOS	420	✓	802.3af	QFN-20 (4x6)	13W PoE PD interface and PWM converter
MP8007	100V, 0.48 $\Omega$ DrMOS	840	✓	802.3af	QFN-28 (4x5)	13W primary-side regulated flyback without optocoupler feedback, 200kHz $f_{SW}$
MP8008	100V, 0.48 $\Omega$ DrMOS	840	✓	802.3af/at	QFN-28 (4x5)	25.5W PoE PD interface and peak-current mode flyback controller
<b>S</b> MP8009	100V, 0.48 $\Omega$ DrMOS	840	✓	802.3af/at	QFN-28 (4x5)	PD interface and PSR/SSR controller
<b>N</b> MP8007H	100V, 0.48 $\Omega$ DrMOS	840	✓	802.3af	QFN-28 (4x5)	13W primary-side regulated flyback without optocoupler feedback, 300kHz $f_{SW}$

## DC/DC CONTROLLERS FOR POE | DC/DC POWER CONVERSION

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{SW}$ Limit (Typ) (A)	$I_a$ (Typ) (mA)	$V_{FB}$ (V)	$f_{SW}$ (MHz)	Package	Notes
MP3900	8.6	12	$0.2V / R_{SENSE}$	0.18	0.816	330	MSOP-8	Boost controller, 10V gate driver
MP6001	10	100	2	-	-	55 to 550	SOIC-8E	15W, integrated 150V power switch
MP6002	10	100	4	1	1.21	55 to 550	SOIC-8E	30W, integrated 150V power switch
MP6004	14	80	2.05	0.38	1.99	10 to 200	QFN-14 (3x3)	13W, integrated 180V power switch
<b>S</b> MP6005	8	80	$0.8V \times 160mV / R_{SENSE}$	0.45	2	250	MSOP-10	Flyback/forward controller with PSR or SSR, 2A gate and 0.8A sync drivers

## POE PSE CONTROLLERS | DC/DC POWER CONVERSION

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	ICUT	ILIM	PoE Standards Supported	FET	MPS Method	Pair Control	Operating Temperature Range (°C)	Number of PSE Ports	Package	Notes
<b>S</b> MP3924	44	57	Prog	Prog	802.3af/at	-	DC Disconnect	-	-40 to +125	4	QFN-32 (5x5)	Power over Ethernet, automatic mode and I <sup>2</sup> C command control mode

## POE PD IDENTITY | DC/DC POWER CONVERSION

Part Number	Pass Device	Current Limit (mA)	Thermal Protection	IEEE Detection & Classification	Package	Notes
<b>MP8003A</b>	100V, 0.48Ω DrMOS	840	✓	802.3af/at	QFN-10 (3x3)	25.5W PoE PD controller
<b>MP8001</b>	100V, 0.8Ω DrMOS	420	✓	802.3af	SOIC-8	15W PoE PD controller

## DIGITAL REGULATORS | DC/DC POWER CONVERSION

	Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>OUT</sub> (mA)	I <sub>D</sub> (Typ) (mA)	V <sub>FB</sub> (Typ) (V)	f <sub>SW</sub> (MHz)	Power Good	External Soft Start	Light-Load Efficiency	Sync Rectification	Constant-On-Time (COT)	Package	Notes
<b>S</b>	<b>MP8833</b>	2.7	5.5	<b>1.5</b>	1	2.5	Prog	-	✓	-	-	-	QFN-16 (2x3)	I <sup>2</sup> C interface, TEC current monitor, external sync function
	<b>MP8843</b>	2.6	6	<b>3</b>	0.06	0.6	1000 to 2000	✓	✓	✓	✓	-	QFN-12 (2x2)	Prog. V <sub>OUT</sub> , power-save mode
<b>N</b>	<b>MP8854</b>	2.85	18	<b>4</b>	0.42	0.72	500 to 1250	✓	✓	✓	✓	✓	QFN-14 (3x4)	I <sup>2</sup> C prog. FB range, integrated telemetry, accurate output voltage/current, readback via I <sup>2</sup> C
	<b>MP8861</b>	2.85	18	<b>6</b>	0.42	0.72	500 to 1250	✓	✓	✓	✓	✓	QFN-14 (3x4)	
	<b>MP8864</b>	4.5	21	<b>4</b>	0.5	0.6	1600	✓	✓	✓	✓	-	QFN-15 (3x3)	Prog. V <sub>OUT</sub> , power-save mode
	<b>MP8846</b>	4.5	8	<b>6</b>	0.5	0.6	1600	✓	✓	✓	✓	-	QFN-15 (3x3)	
	<b>MP8847</b>	2.7	6	<b>6</b>	0.3	0.6	850 to 2200	✓	-	✓	✓	-	QFN-14 (2x3)	
	<b>MP8865</b>	4.5	21	<b>6</b>	0.5	0.6	1600	✓	✓	✓	✓	-	QFN-15 (3x3)	Prog. V <sub>OUT</sub> , power-save mode
	<b>MP8867</b>	4.5	17	<b>8</b>	0.56	0.6	1500	✓	✓	✓	✓	-	QFN-14 (3x4)	
	<b>MP8868</b>	4.5	17	<b>10</b>	0.56	0.6	1500	✓	✓	✓	✓	-	QFN-14 (3x4)	
	<b>MP8869S</b>	2.85	18	<b>12</b>	0.42	0.72	500 to 1250	✓	✓	✓	✓	✓	QFN-14 (3x4)	V <sub>OUT</sub> adjustable up to 5.5V with FB pin, integrated telemetry, accurate output voltage/current, readback via I <sup>2</sup> C

## MPM POWER MODULES | POWER MODULES

Step-Down

 $[V_{IN} \text{ Max} \leq 6V]$ 

Part Number	$I_{OUT}$ (A)	$V_{IN}$ (V)	$I_O$ (µA)	Light-Load Efficiency	Power Good	I <sup>2</sup> C Interface	Soft Start	Protection Features (OCP/SCP/UVLO/OTP)	Package	Notes
MPM3804	0.6	2.3 to 5.5	11	✓	✓	-	Internal	✓	QFN-10 (2x2x0.9)	Adjustable $V_{OUT}$ , excellent load and line regulation
MPM3804-12	0.6	2.3 to 5.5	11	✓	✓	-	Internal	✓	QFN-10 (2x2x0.9)	1.2V fixed $V_{OUT}$ , sync, ultra-small QFN package
MPM3804-18	0.6	2.3 to 5.5	11	✓	✓	-	Internal	✓	QFN-10 (2x2x0.9)	1.8V fixed $V_{OUT}$ , sync, ultra-small QFN package
MPM3804-25	0.6	2.3 to 5.5	11	✓	✓	-	Internal	✓	QFN-10 (2x2x0.9)	2.5V fixed $V_{OUT}$ , sync, ultra-small QFN package
MPM3804-33	0.6	2.3 to 5.5	11	✓	✓	-	Internal	✓	QFN-10 (2x2x0.9)	3.3V fixed $V_{OUT}$ , sync, ultra-small QFN package
MPM3805	0.6	2.5 to 6	17	✓	✓	-	Internal	✓	QFN-12 (3x2.5x0.9)	Ultra-low $I_O$ , adjustable $V_{OUT}$
MPM3805-12	0.6	2.5 to 6	17	✓	✓	-	Internal	✓	QFN-12 (3x2.5x0.9)	Ultra-low $I_O$ , 1.2V fixed $V_{OUT}$
MPM3805-18	0.6	2.5 to 6	17	✓	✓	-	Internal	✓	QFN-12 (3x2.5x0.9)	Ultra-low $I_O$ , 1.8V fixed $V_{OUT}$
MPM3805-25	0.6	2.5 to 6	17	✓	✓	-	Internal	✓	QFN-12 (3x2.5x0.9)	Ultra-low $I_O$ , 2.5V fixed $V_{OUT}$
MPM3805-33	0.6	2.5 to 6	17	✓	✓	-	Internal	✓	QFN-12 (3x2.5x0.9)	Ultra-low $I_O$ , 3.3V fixed $V_{OUT}$
<b>N</b> MPM3811	1	2.3 to 5.5	340	✓	-	-	Internal	✓	QFN-10 (2x2x1.6)	Peak 1.2A, sync, ultra-small QFN package, excellent load and line regulation
MPM3810	1.2	2.5 to 6	17	✓	✓	-	Internal	✓	QFN-12 (3x2.5x0.9)	Ultra-low $I_O$ , adjustable $V_{OUT}$
MPM3810-12	1.2	2.5 to 6	17	✓	✓	-	Internal	✓	QFN-12 (3x2.5x0.9)	Ultra-low $I_O$ , 1.2V fixed $V_{OUT}$
MPM3810-18	1.2	2.5 to 6	17	✓	✓	-	Internal	✓	QFN-12 (3x2.5x0.9)	Ultra-low $I_O$ , 1.8V fixed $V_{OUT}$
MPM3810-25	1.2	2.5 to 6	17	✓	✓	-	Internal	✓	QFN-12 (3x2.5x0.9)	Ultra-low $I_O$ , 2.5V fixed $V_{OUT}$
MPM3810-33	1.2	2.5 to 6	17	✓	✓	-	Internal	✓	QFN-12 (3x2.5x0.9)	Ultra-low $I_O$ , 3.3V fixed $V_{OUT}$
<b>N</b> MPM3822C	2	2.7 to 6	500	✓	-	-	Internal	✓	QFN-18 (2.5x3.5x1.6)	Ultra-low ripple, sync, adjustable output from 0.6V, forced CCM
MPM3820	2	2.7 to 6	40	✓	✓	-	Internal	✓	QFN-20 (3x5)	Adjustable output from 0.6V, ultra-low $I_O$
MPM3830	3	2.7 to 6	40	✓	✓	-	Internal	✓	QFN-20 (3x5x1.6)	High light-load efficiency
<b>N</b> MPM3833C	3	2.7 to 6	500	✓	-	-	Internal	✓	QFN-18 (2.5x3.5x1.6)	Ultra-low ripple, sync, adjustable output from 0.6V, forced CCM
MPM3840	4	2.8 to 5.5	40	✓	✓	-	Internal	-	QFN-20 (3x5x1.6)	Light-load efficiency, 100% duty cycle, low $I_O$
<b>N</b> MPM3860	6	2.75 to 7	100	✓	-	-	Internal/External	✓	QFN-24 (4x6x1.6)	Sync, adjustable output from 0.6V, forced CCM

Step-Down

 $[6V < V_{IN} \text{ Max} \leq 24V]$ 

MPM3606	0.6	4.5 to 21	200	✓	-	-	Internal	✓	QFN-20 (3x5x1.6)	Output adjustable from 0.8V, fast transient response
MPM3606A	0.6	4.5 to 21	300	✓	✓	-	Internal	✓	QFN-20 (3x5x1.6)	Power good, power-save mode at light load, output adjustable from 0.8V
MPM3610	1.2	4.5 to 21	200	✓	-	-	Internal	✓	QFN-20 (3x5x1.6)	Output adjustable from 0.8V, low $I_O$
MPM3610A	1.2	4.5 to 21	200	✓	✓	-	Internal	✓	QFN-20 (3x5x1.6)	Output adjustable from 0.8V, low $I_O$ , power good
MPM3620	2	4.5 to 24	200	✓	-	-	Internal	✓	QFN-20 (3x5x1.6)	Adjustable output from 0.8V
MPM3620A	2	4.5 to 24	200	✓	✓	-	Internal	✓	QFN-20 (3x5x1.6)	Power good, adjustable output from 0.8V

## MPM POWER MODULES | POWER MODULES

Step-Down ( $6V < V_{IN} \text{ Max} \leq 24V$ )

	Part Number	$I_{OUT}$ (A)	$V_{IN}$ (V)	$I_o$ ( $\mu$ A)	Light-Load Efficiency	Power Good	I <sup>2</sup> C Interface	Soft Start	Protection Features (OCP/SCP/UVLO/OTP)	Package	Notes
N	MPM3632C	3	4 to 18	1200	-	✓	-	Internal	✓	QFN-20 (3x5x1.6)	Sync, output adjustable from 0.8V, forced CCM
S	MPM3650	5	2.75 to 17	110	-	✓	-	Internal/External	✓	QFN-24 (4x6x1.6)	Sync, adjustable output from 0.6V, high efficiency, ultra-thin
N	MPM3683-7	8	2.7 to 16	650	✓	✓	-	Internal	✓	QFN-28 (7x7x4)	Peak 10A, ultra-low ripple, ultra-fast transient response
N	MPM3695-10	10	3.3 to 14	-	-	✓	✓	Internal	✓	LGA (8x8x2)	10A continuous $I_{OUT}$ , 0.5V to 5V output, parallel up to 60A peak, ultra-thin
	MPM3682	10	2.5 to 18	860	✓	✓	-	Internal/External	✓	QFN-57 (12x12x4)	Programmable $f_{sw}$ , output adjustable from 0.65V to 5V
	MPM3684	15	2.5 to 18	860	✓	✓	-	Internal/External	✓	QFN-65 (12x15x4)	Programmable $f_{sw}$
N	MPM3695-25	20	3 to 16	-	-	✓	✓	Internal	✓	QFN-59 (10x12x4)	Peak 25A, 0.5V to 5.5V output, parallel up to 50A peak
	MPM3686	20	2.5 to 18	860	✓	✓	-	Internal/External	✓	QFN-65 (12x15x4)	Programmable $f_{sw}$
S	MPM3695-100	100	3 to 16	-	-	✓	✓	Internal	✓	BGA (15x30x5.2)	0.5V to 3.3V output range, parallel up to 800A

Step-Down ( $24V < V_{IN} \text{ Max} \leq 36V$ )

	MPM3506A	0.6	4.5 to 36	580	-	✓	-	Internal	✓	QFN-19 (3x5x1.6)	36V/0.6A, output adjustable from 0.8V
	MPM3510A	1.2	4.5 to 36	580	-	✓	-	Internal	✓	QFN-19 (3x5x1.6)	36V/1.2A, high voltage, output adjustable from 0.8V
S	MPM3520E	2	4 to 36	700	-	✓	-	Internal	✓	LGA-8 (10x10x4.2)	36V/2A, metcal can power module, ultra-low EMI, output adjustable from 1.0V to 5.0V
N	MPM3550E	5	4 to 36	450	✓	✓	-	Internal	✓	LGA-18 (12x12x4.2)	36V/5A, metcal can power module, ultra-low EMI, output adjustable from 1.0V to 12.0V

Step-Down ( $V_{IN} \text{ Max} > 36V$ )

N	MPM3570E	0.3	4.5 to 75	30	✓	✓	-	Internal	✓	LGA-8 (10x10x4.2)	75V/0.3A, metcal can power module, ultra-low EMI, $V_{OUT}$ adjustable from 1.0V to 5.0V
S	MPM3593	3	3.5 to 45	11	✓	✓	✓	Internal	✓	QFN-41 (6x8x1.6)	45V/3A, high efficiency, I <sup>2</sup> C interface, synchronous buck, OTP
N	MPM3530	3	4.5 to 55	450	✓	✓	-	External	✓	QFN-44 (12x10x4)	55V/3A continuous output, programmable $f_{sw}$ with external sync function

Step-Down Multiple Output ( $V_{IN} \text{ Max} \leq 45$ )

	Part Number	$I_{OUT}$ (A)	# of Outputs	$V_{IN}$ (V)	$I_o$ ( $\mu$ A)	Light-Load Efficiency	Power Good	I <sup>2</sup> C Interface	Soft Start	Protection Features (OCP/SCP/UVLO/OTP)	Package	Notes
	MPM38111	Dual 1A	2	2.7 to 6	45	✓	-	-	Internal	✓	QFN-14 (4x4x1.6)	Ultra-low $I_o$
	MPM38222	Dual 2A	2	2.7 to 6	45	✓	-	-	Internal	✓	QFN-14 (4x4x1.6)	Ultra-low $I_o$
S	MPM3596	Dual 3A	2	3.5 to 45	50	-	-	✓	Internal	✓	QFN-45 (10x10x4)	Single 6A $I_{OUT}$ , parallel operation up to 36A
N	MPM54304	Quad 3A	4	4 to 16	1500	-	-	✓	Internal	✓	LGA-33 (7x7x2)	MTP programmable

## MPM POWER MODULES | POWER MODULES

Step-Up/Down & Step-Up ( $V_{IN}$  Max  $\leq$  22V)

Part Number	Converter Type	$I_{OUT}$ (A)	$V_{IN}$ (V)	$I_o$ ( $\mu$ A)	Power Good	I <sup>2</sup> C Interface	Soft Start	Protection Features (OCP/SCP/UVP/LO/OTP)	Package	Notes
<b>S</b> MPM4106	Boost	0.6	1.8V to 5.5V	29	-	-	Internal	✓	QFN-13 (2.2x2.6x1.6)	High efficiency, 1MHz $f_{SW}$ internal compensation
<b>S</b> MPM4330	Boost	3	2.7V to 22V	4mA	✓	✓	Internal	✓	LGA-51 (8x14)	High efficiency
<b>S</b> MPM4730	Buck-Boost	5	3.0V to 22V	150mA	✓	✓	Internal	✓	LGA-51 (8x14)	High efficiency

## mEZ POWER MODULES | POWER MODULES

Boost ( $V_{IN}$  Max  $<$  6V)

Part Number	$I_{OUT}$ (A)	$V_{IN}$ (V)	$V_{OUT}$ (V)	Light-Load Efficiency	Power Good	Soft Start	Protection Features (OCP/SCP/UVP/LO/OTP)	Package	Notes
mEZD41501A-A	1	2.7 to 4.2	5	-	-	Int	OTP	SiP-6 (27x20)	600kHz, high efficiency
mEZD41502A-A	2	2.7 to 4.2	5	-	-	Int	OTP	SiP-6 (27x20)	High efficiency
mEZD41503A-A	3	2.7 to 4.2	5	-	-	Int	OTP	SiP-6 (27x20)	High efficiency

Boost ( $V_{IN}$  Max  $\geq$  6V)

mEZD41501A-B	1	2.7 to 10	12	-	-	Int	OTP	SiP-6 (27x20)	600kHz, high efficiency
mEZD41501A-C	1	2.7 to 13	15	-	-	Int	OTP	SiP-6 (27x20)	600kHz, high efficiency
mEZD41502A-B	2	2.7 to 10	12	-	-	Int	OTP	SiP-6 (27x20)	600kHz, high efficiency
mEZD41502A-C	2	3.4 to 13	15	-	-	Int	OTP	SiP-6 (27x20)	600kHz, high efficiency
mEZD41503A-B	3	2.7 to 10	12	-	-	Int	OTP	SiP-6 (27x20)	600kHz, high efficiency

Buck Buck ( $V_{IN}$  Max  $\leq$  24V)

mEZD71201A-A	1	4.5 to 24	1	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71201A-B	1	4.5 to 24	1.2	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71201A-C	1	4.5 to 24	1.5	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71201A-D	1	4.5 to 24	1.8	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71201A-E	1	4.5 to 24	2.5	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71201A-F	1	4.5 to 24	3.3	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71201A-G	1	6.5 to 24	5	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71202A-A	2	4.5 to 24	1	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$

## mEZD POWER MODULES | POWER MODULES

Buck (Buck ( $V_{IN}$  Max  $\leq$  24V))

Part Number	$I_{OUT}$ (A)	$V_{IN}$ (V)	$V_{OUT}$ (V)	Light-Load Efficiency	Power Good	Soft Start	Protection Features (OCP/SCP/UV/LU/OTP)	Package	Notes
mEZD71202A-B	2	4.5 to 24	1.2	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71202A-C	2	4.5 to 24	1.5	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71202A-D	2	4.5 to 24	1.8	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71202A-E	2	4.5 to 24	2.5	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71202A-F	2	4.5 to 24	3.3	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71202A-G	2	6.5 to 24	5	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71203A-A	3	5 to 16	1	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71203A-B	3	5 to 16	1.2	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71203A-C	3	5 to 16	1.5	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71203A-D	3	5 to 16	1.8	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71203A-E	3	5 to 16	2.5	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71203A-F	3	5 to 16	3.3	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD71210A-A	10	4.5 to 17	1	-	✓	Int	OCP, OTP, SCP	SiP-10 (27x20)	400kHz $f_{SW}$
<b>N</b> mEZD81260A	60	5 to 16	6.5	-	✓	Int	OVP, UV, OCP, OTP Protection	LGA-28 (25x15.5)	Digital sync, open-frame module

Buck (24 <  $V_{IN}$  Max  $\leq$  36V)

mEZD72401A-A	1	4.5 to 36	1	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72401A-B	1	4.5 to 36	1.2	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72401A-C	1	4.5 to 36	1.5	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72401A-D	1	4.5 to 36	1.8	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72401A-E	1	4.5 to 36	2.5	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72401A-F	1	4.5 to 36	3.3	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72401A-G	1	4.5 to 36	5	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72401A-H	1	6.5 to 36	12	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72402A-A	2	4.5 to 36	1	-	-	Int	OCP, OTP, OVP/UV, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$



## mEZ POWER MODULES | POWER MODULES

Buck ( $24 < V_{IN} \text{ Max} \leq 36V$ )

Part Number	$I_{OUT}$ (A)	$V_{IN}$ (V)	$V_{OUT}$ (V)	Light-Load Efficiency	Power Good	Soft Start	Protection Features (OCP/SCP/UVLO/OTP)	Package	Notes
mEZD72402A-B	2	4.5 to 36	1.2	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72402A-C	2	4.5 to 36	1.5	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72402A-D	2	4.5 to 36	1.8	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72402A-E	2	4.5 to 36	2.5	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72402A-F	2	4.5 to 36	3.3	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
mEZD72402A-G	2	6.5 to 36	5	-	-	Int	OCP, OTP, OVP/UVP, SCP, Hiccup	SiP-3 (10x20)	400kHz $f_{SW}$
<b>N</b> mEZS91202A	2.5	7 to 36	5	-	-	Int	OCP, OTP	SiP-4 (13x45)	USB charger, efficiency up to 95%
<b>N</b> mEZDPD3603A	3	4.5 to 36	0.6 to 12	✓	✓	Int	OTP, SCP	LGA (15x15)	DC/DC power supply with PMBus
<b>N</b> mEZDPD3603AS	3	4.5 to 36	0.6 to 12	✓	✓	Int	OTP, SCP	DIP (16x23)	DC/DC power supply with PMBus
<b>N</b> mEZDPD4506A	6	4 to 45	0.6 to 22	✓	✓	Int	OCP, OTP, OVP/UVP, SCP	DIP (8.8x18.8)	DC/DC power supply with PMBus
<b>N</b> mEZDPD4506AS	6	4 to 45	0.6 to 22	✓	✓	Int	OCP, OTP, OVP/UVP, SCP	LGA (10x10)	DC/DC power supply with PMBus
<b>N</b> mEZDPD1620A	20	4 to 16	0.6 to 5.5	✓	✓	Int	OCP, OTP, OVP/UVP, SCP	DIP (16x23)	Peak 25A, DC/DC power supply with PMBus

Buck ( $V_{IN} \text{ Max} > 36V$ )

mEZDPD1620AS	20	4 to 16	0.6 to 5.5	✓	✓	Int	OCP, OTP, OVP/UVP, SCP	DIP (16x23)	Peak 25A, DC/DC power supply with PMBus
mEZD74800A-A	0.3	4.5 to 75	3.3	-	-	Int	OCP, OTP, SCP, Hiccup	SiP-3 (10x20)	Low EMI
mEZD74800A-B	0.3	4.5 to 75	5	-	-	Int	OCP, OTP, SCP, Hiccup	SiP-3 (10x20)	Low EMI
<b>N</b> mEZD74003L-ADJ	3	5 to 45	1.23 to 15	✓	-	Int	UVLO, OCP, OTP, OVP	LGA (11x15)	Available in fixed output voltages of 3.3V, 5V, 12V, with integrated inductor
<b>N</b> mEZD94003A-ADJ	3	5 to 45	1.23 to 15	✓	-	Int	UVLO, OCP, OTP, OVP	LGA (11x15)	Available in fixed output voltages of 3.3V, 5V, 12V, without integrated inductor
<b>PoE</b>									
<b>N</b> mEZS84801A	1	37 to 57	12	-	✓	Int	OCP, OTP, OVP	SiP-20 (45x39)	12W, IEEE 802.3af-compliant PoE-powered device
<b>USB</b>									
<b>N</b> mEZS91202A	2.5	7 to 36	5	-	-	Int	SCP, OTP, OCP	(31x13.28)	High-efficiency USB charger

## REGULATORS | AUTOMOTIVE

### Buck Regulators 5V to 6V Secondary Synchronous Buck

	Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>OUT</sub> (A)	I <sub>SW</sub> Limit (Typ) (A)	I <sub>O</sub> (Typ) (µA)	V <sub>FB</sub> (V)	f <sub>SW</sub> (kHz)	R <sub>DS(on)</sub> (mΩ)	Fixed Output Versions (V)	Soft Start	External Sync	Forced CCM	AAM	COI Control	Fixed Frequency	Wideband Flank QFN Option	Package	Notes
N	MPM3805A-AEC1	2.6	6	0.6	1	17	0.6	3500	120/70	1.2, 1.8	Int	-	✓	-	✓	-	✓	QFN-12 (2.5x3.0x0.9)	Module with integrated inductor
	MPQ2171-AEC1	2.5	5.5	1	4.5	-	0.6	2800	80/40	-	Int	-	✓	-	✓	-	-	TSOT23-8	Output discharge, 100% duty cycle
N	MPM3810A-AEC1	2.6	6	1.2	2.1	17	0.6	3500	120/70	1.2, 1.8	Int	-	✓	-	✓	-	✓	QFN-12 (2.5x3.0x0.9)	Module with integrated inductor
	MPQ2172-AEC1	2.5	5.5	2	4.5	-	0.6	2800	80/40	-	Int	-	✓	-	✓	-	-	TSOT23-8	Output discharge, 100% duty cycle
	MPQ2169-AEC1	2.7	6	1.4 + 1.4	2	60	0.6	350 to 3000	55/20	-	Ext	✓	✓	✓	-	✓	✓	QFN-18 (2.5x3.5)	Dual outputs of 1.4A/1.4A or 0.8A/2A, 100% duty cycle operation
	MPQ2143-AEC1	2.5	5.5	3	4.8	40	0.6	1200	80/40	-	Int	✓	-	✓	✓	-	-	TSOT23-8	Output discharge, 100% duty cycle
N	MPQ2124-AEC1	2.7	6	3	6.7	42	0.6	300 to 2200	35/25	-	Ext	-	✓	✓	-	✓	✓	QFN-11 (2x3)	100% duty cycle
	MPQ2166-AEC1	2.7	6	2+2	2	60	0.6	350 to 3000	55/20	-	Ext	✓	✓	✓	-	✓	✓	QFN-18 (2.5x3.5), QFN-18 (2x3)	Dual outputs of 2A/2A or 1A/3A, 100% duty cycle operation
N	MPQ2167-AEC1	2.7	6	4	6.7	42	0.6	300 to 2200	35/25	-	Ext	-	✓	✓	-	✓	-	QFN-11 (2x3)	100% duty cycle
N	MPQ2167B-AEC1	2.7	6	4	6.7	42	0.6	300 to 2200	35/25	-	Ext	✓	✓	✓	-	✓	✓	QFN-11 (2x3)	100% duty cycle
N	MPQ2167A-AEC1	2.7	6	6	9	42	0.6	300 to 2200	35/25	-	Ext	✓	✓	✓	-	✓	✓	QFN-14 (3x3)	100% duty cycle

### Buck Regulators 36V to 45V Primary Synchronous Buck

	Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (ABS Max)	I <sub>OUT</sub> (A)	I <sub>SW</sub> Limit (Typ) (A)	I <sub>O</sub> (Typ) (µA)	V <sub>FB</sub> (V)	f <sub>SW</sub> (kHz)	R <sub>DS(on)</sub> (mΩ)	Fixed Output Versions (V)	Soft Start	External Sync	Spread Spectrum	Digital Interface	Forced CCM	AAM	COI Control	Fixed Frequency	Wideband Flank QFN Option	Package	Notes
N	MPQ4300-AEC1	3.5	50	0.5	2	-	-	470	95/50	3.3, 3.8, 5	Int	✓	✓	-	✓	✓	-	✓	-	QFN-16 (4x3), QFN-16 (3x3)	MPQ4300 spread spectrum family, low component count
N	MPM3509B-AEC1	4	40	0.6	5	600	0.8	410	90/50	-	Int	✓	-	-	✓	-	-	✓	✓	QFN-17 (3x5x1.6)	Ultra-compact module with integrated inductor, BST/VCC capacitors
N	MPM3509-AEC1	4	40	0.9	3	600	0.8	2200	90/50	-	Int	✓	-	-	✓	-	-	✓	✓	QFN-17 (3x5x1.6)	
N	MPQ4301-AEC1	3.5	50	1	3	-	-	470	95/50	3.3, 3.8, 5	Int	✓	✓	-	✓	✓	-	✓	-	QFN-16 (4x3), QFN-16 (3x3)	MPQ4300 spread spectrum family, low component count
	MPQ4431-AEC1	3.3	40	1	2.5	10	0.8	350 to 2500	90/80	3.3, 5	Ext	✓	-	-	✓	✓	-	✓	✓	QFN-16 (3x4)	Low I <sub>O</sub> , good EMI, and low-dropout mode
	MPM3515-AEC1	4	40	1.5	4	600	0.8	2200	90/50	-	Int	✓	-	-	✓	-	-	✓	✓	QFN-17 (3x5x1.6)	Ultra-compact module with integrated inductor, BST/VCC capacitors
	MPQ4415M-AEC1	4	40	1.5	4	600	0.8	450 to 2200	90/50	-	Int	✓	-	-	✓	-	-	✓	✓	QFN-13 (2.5x3)	Integrated input capacitor

# REGULATORS | AUTOMOTIVE

**Buck Regulators**

**36V To 45V Primary Synchronous Buck**

Part Number	V <sub>in</sub> (Min) (V)	V <sub>in</sub> (ABS Max)	I <sub>out</sub> (A)	I <sub>sw</sub> Limit (Typ) (A)	I <sub>o</sub> (Typ) (µA)	V <sub>FB</sub> (V)	f <sub>sw</sub> (kHz)	R <sub>DS(on)</sub> (mΩ)	Fixed Output Versions (V)	Soft Start	External Sync	Spread Spectrum	Digital Interface	Forced CCM	AAM	COT Control	Fixed Frequency	Wettable Flank QFN Option	Package	Notes
<b>N</b> MPQ4415A-AEC1	4	40	1.5	4	600	0.8	450 to 2200	90/50	-	Int	✓	-	-	✓	-	✓	✓	QFN-13 (2.5x3)	-	
<b>N</b> MPQ4302-AEC1	3.5	50	2	5	-	-	470	90/50	3.3, 3.8, 5	Int	✓	✓	-	✓	✓	-	✓	QFN-16 (4x3), QFN-16 (3x3)	MPQ4300 spread spectrum family, low component count	
<b>N</b> MPQ4312-AEC1	3.3	50	2	5.5	10	0.8	350 to 530	40/17	3.3, 5	Ext	✓	✓	-	✓	✓	-	✓	QFN-20 (4x4)	MPQ4312 low I <sub>o</sub> spread spectrum family	
MPQ4420H-AEC1	4	40	2	4.2	500	0.8	410	90/55	-	Int	✓	-	-	✓	-	✓	-	TSOT23-8	-	
MPQ4420A-AEC1	4	40	2	5.6	500	0.8	410	90/55	-	Int	✓	-	-	✓	-	✓	-	TSOT23-8	-	
MPQ4432-AEC1	3.3	40	2.2	5.2	10	0.8	350 to 2500	90/40	3.8, 5	Ext	✓	-	-	✓	✓	-	✓	QFN-16 (3x4)	Low I <sub>o</sub> , good EMI, and low-dropout mode	
<b>N</b> MPQ4303-AEC1	3.5	50	3	6	-	-	470	90/50	3.3, 3.8, 5	Int	✓	✓	-	✓	✓	-	✓	QFN-16 (4x3), QFN-16 (3x3)	MPQ4300 spread spectrum family, low component count	
<b>N</b> MPQ4313-AEC1	3.3	50	3	5.5	10	0.8	350 to 530	40/17	3.3, 5	Ext	✓	✓	-	✓	✓	-	✓	QFN-20 (4x4)	MPQ4312 low I <sub>o</sub> spread spectrum family	
MPQ4433-AEC1	3.3	40	3	5.8	10	0.8	350 to 2500	90/40	5	Ext	✓	-	-	✓	✓	-	✓	QFN-16 (3x4)	Low I <sub>o</sub> , good EMI, and low-dropout mode	
MPQ4423H-AEC1	4	40	3	4.4	500	0.8	410	85/55	-	Int	✓	-	-	✓	-	✓	✓	QFN-8 (3x3)	-	
MPQ4423A-AEC1	4	40	3	5.7	600	0.8	410	85/55	-	Int	✓	-	-	✓	-	✓	-	QFN-8 (3x3)	-	
<b>S</b> MPQ8883-AEC1	3.5	48	3	1 to 8	-	-	250 to 2500	95/50	1.8 to 12	Int	✓	✓	✓	✓	✓	-	✓	QFN-16 (3X3)	I <sup>2</sup> C interface, OTP, digitally programmable output voltage, freq. compensation, protection, slew rate, and more	
MPQ4473-AEC1	4.5	40	3.5	6.6	500	0.8	200 to 1000	40/20	-	Ext	-	-	-	-	✓	-	-	QFN-20 (3x4)	-	
MPQ4430-AEC1	3.3	40	3.5	5.8	10	0.8	350 to 2500	90/40	3.8, 5	Ext	✓	-	-	✓	✓	-	✓	QFN-16 (3x4)	Low I <sub>o</sub> , good EMI, low-dropout mode	
<b>N</b> MPQ4314-AEC1	3.3	50	4	8	10	0.8	350 to 530	40/17	3.3, 5	Ext	✓	✓	-	✓	✓	-	✓	QFN-20 (4x4)	MPQ4312 low I <sub>o</sub> spread spectrum family	
MPQ4470-AEC1	4.5	40	5	8	500	0.8	100 to 1000	40/20	-	Ext	-	-	-	-	✓	-	-	QFN-20 (3x4)	Programmable soft-start time, SCP, OCP, OVP latch	
MPQ4470A-AEC1	4.5	40	5	8	500	0.8	100 to 1000	40/20	-	Ext	-	-	-	-	✓	-	-	QFN-20 (3x4)	Programmable soft-start time, SCP, OCP	
<b>N</b> MPQ4315-AEC1	3.3	50	5	8	10	0.8	350 to 530	40/17	3.3, 5	Ext	✓	✓	-	✓	✓	-	✓	QFN-20 (4x4)	MPQ4312 low I <sub>o</sub> spread spectrum family	
<b>N</b> MPQ4480-AEC1	4.2	40	6	17	1000	1	235 to 2200	20/15	-	Int	✓	✓	-	-	-	-	✓	QFN-25 (4x5)	Adjustable line drop compensation, forced PWM mode, low-dropout mode	
<b>N</b> MPQ4316-AEC1	3.3	50	6	13	10	0.8	350 to 530	40/17	3.3, 5	Ext	✓	✓	-	✓	✓	-	✓	QFN-20 (4x4)	MPQ4312 low I <sub>o</sub> spread spectrum family	
<b>N</b> MPQ4436-AEC1	3.3	50	6	13	10	0.8	350 to 530	40/17	3.3, 5	Ext	✓	✓	-	✓	✓	-	✓	QFN-20 (4x4)	Multi-phase, low I <sub>o</sub>	
<b>N</b> MPQ4317-AEC1	3.3	50	7	13	10	0.8	350 to 530	40/17	3.3, 5	Ext	✓	✓	-	✓	✓	-	✓	QFN-20 (4x4)	MPQ4312 low-I <sub>o</sub> spread-spectrum family	
MPQ2918-AEC1	4	40	Cntrl	-	750	0.8	100 to 1000	-	-	Ext	✓	-	-	✓	✓	-	✓	TSSOP-20EP, QFN-20 (3x4)	High max duty cycle (99.5%)	

## REGULATORS | AUTOMOTIVE

### Buck Regulators

### HV Synchronous Buck

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (ABS Max)	I <sub>OUT</sub> (A)	I <sub>SW</sub> Limit (Typ) (A)	I <sub>O</sub> (Typ) (µA)	V <sub>FB</sub> (V)	f <sub>SW</sub> (kHz)	R <sub>DS(on)</sub> (mΩ)	Fixed Output Versions (V)	Soft Start	External Sync	Forced CCM	AAM	Hysteretic Control	Fixed Frequency	Package	Notes
MPQ4569-AEC1	4.5	80	0.3	0.72	20	1	-	1200/450	-	Ext	-	-	✓	✓	-	QFN-10 (3x3), SOIC-8E	Programmable soft start
MPQ4569A-AEC1	4.5	80	0.3	0.72	20	1	-	1200/500	-	Ext	-	-	✓	✓	-	QFN-10 (3x3)	Programmable soft start, default enable on
MPQ2420-AEC1	4.5	80	0.3	0.72	20	1	-	1200/450	-	Ext	-	-	✓	✓	-	TSSOP-16	Integrated separate windowed watchdog die
MPQ2420A-AEC1	4.5	80	0.3	0.72	20	1	-	1200/450	-	Ext	-	-	✓	✓	-	TSSOP-16	Integrated separate windowed watchdog die, default enable on
<b>N</b> MPQ4590-AEC1	7.5	700	0.4	0.66	200	1.7	-	13.5	-	Int	-	✓	-	✓	-	SOIC-8E	Primary-side CV control, supporting buck, buck-boost, boost, and flyback topologies
<b>N</b> MPQ4571-AEC1	4.5	65	1	1.9	30	0.8	200 to 2200	200/45	-	Int	✓	✓	✓	-	✓	QFN-12 (2.5x3)	Low I <sub>O</sub> , compact
<b>N</b> MPQ4572-AEC1	4.5	65	2	3.5	30	0.8	200 to 2200	200/45	-	Int	✓	✓	✓	-	✓	QFN-12 (2.5x3)	Low I <sub>O</sub> , compact
MPQ4570-AEC1	4.5	60	3	5.7	520	1	100 to 1000	90/70	-	Ext	✓	-	✓	-	✓	TSSOP-20EP	Programmable soft-start time
MPQ2908A-AEC1	4	60	Cntrl	-	750	0.8	100 to 1000	-	-	Ext	✓	✓	✓	-	✓	TSSOP-20EP, QFN-20 (3x4)	High max duty cycle (99.5%)

### Buck Regulators

### Buck Controllers

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>O</sub> (Typ) (µA)	I <sub>SW</sub> (Typ) (µA)	V <sub>FB</sub> (V)	f <sub>SW</sub> (kHz)	Fixed Output Versions (V)	Soft Start	External Sync	Forced CCM	AAM	Fixed Frequency	Wettable Flank QFN Option	Package	Notes
MPQ2908A-AEC1	4	60	750	0.5	0.8	100 to 1000	-	Ext	✓	✓	✓	✓	✓	TSSOP-20EP, QFN-20 (3x4)	High max duty cycle (99.5%)
MPQ2918-AEC1	4	40	750	0.5	0.8	100 to 1000	-	Ext	✓	✓	✓	✓	✓	TSSOP-20EP, QFN-20 (3x4)	High max duty cycle (99.5%)

### Buck Regulators

### Buck Modules

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>OUT</sub> (A)	I <sub>SW</sub> Limit (Typ) (A)	I <sub>O</sub> (Typ) (µA)	V <sub>FB</sub> (V)	f <sub>SW</sub> (kHz)	R <sub>DS(on)</sub> (mΩ)	Fixed Output Versions (V)	Soft Start	External Sync	Spread Spectrum	Digital Interface	Forced CCM	AAM	COT Control	Fixed Frequency	Wettable Flank QFN Option	Package	Notes
<b>N</b> MPM3805A-AEC1	2.6	6	0.6	1	17	0.6	3500	120/70	1.2, 1.8	Int	-	-	-	✓	-	✓	-	✓	QFN-12 (2.5x3.0x0.9)	Module with integrated inductor
<b>N</b> MPM3810A-AEC1	2.6	6	1.2	2.1	17	0.6	3500	120/70	1.2, 1.8	Int	-	-	-	✓	-	✓	-	✓	QFN-12 (2.5x3.0x0.9)	Module with integrated inductor
<b>N</b> MPM3509B-AEC1	4	40	0.6	5	600	0.8	410	90/50	-	Int	✓	-	-	✓	-	-	✓	✓	QFN-17 (3x5x1.6)	Ultra-compact module with integrated inductor, BST/VCC capacitors
<b>N</b> MPM3509-AEC1	4	40	0.9	3	600	0.8	2200	90/50	-	Int	✓	-	-	✓	-	-	✓	✓	QFN-17 (3x5x1.6)	Ultra-compact module with integrated inductor, BST/VCC capacitors
MPM3515-AEC1	4	40	1.5	4	600	0.8	2200	90/50	-	Int	✓	-	-	✓	-	-	✓	✓	QFN-17 (3x5x1.6)	Ultra-compact module with integrated inductor, BST/VCC capacitors

## REGULATORS | AUTOMOTIVE

### Buck Regulators

### Non-Synchronous Buck

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>OUT</sub> (A)	I <sub>SW</sub> Limit (Typ) (A)	I <sub>Q</sub> (Typ) (µA)	V <sub>FB</sub> (V)	f <sub>SW</sub> (kHz)	R <sub>DS(on)</sub> (mΩ)	Fixed Output Versions (V)	Soft Start	External Sync	Spread Spectrum	Digital Interface	Forced CCM	COT Control	Fixed Frequency	Package	Notes
MPQ2459-AEC1	4.5	60	0.5	1.25	730	0.8	480	1000	-	Int	-	-	✓	-	✓	TSOT23-6	Superior light-load efficiency	
MPQ2451-AEC1	3.3	40	0.6	1	130	0.8	2000	500	3.3, 5	Int	-	-	✓	-	✓	TSOT23-6L, QFN-6L	Internal comp and SS, programmable	
MPQ2454-AEC1	3.3	40	0.6	1.8	60	0.8	350 to 2300	200	-	Ext	✓	-	✓	-	✓	QFN-10 (3x3), MSOP-10EP	Superior light-load efficiency	
MPQ4558-AEC1	3.8	60	1	1.9	140	0.8	200 to 2000	250	-	Int	-	-	✓	-	✓	QFN-10 (3x3), SOIC-8E	Superior light-load efficiency	
MPQ4559-AEC1	3.8	60	1.5	2.3	140	0.8	200 to 2000	250	-	Int	-	-	✓	-	✓	QFN-10 (3x3)	Superior light-load efficiency	
MPQ4561-AEC1	3.8	60	1.5	2.5	140	0.8	250 to 2000	300	-	Ext	-	-	✓	-	✓	QFN-10 (3x3)	Superior light-load efficiency	
MPQ4560-AEC1	3.8	60	2	3.2	140	0.8	250 to 2000	250	-	Int	-	-	✓	-	✓	QFN-10 (3x3), SOIC-8E	Superior light-load efficiency	
MPQ4462-AEC1	3.8	40	3.5	5.5	120	0.8	250 to 4000	150	-	Int	-	-	✓	-	✓	QFN-10 (3x3), SOIC-8E	Superior light-load efficiency	
<b>N</b> MPQ4467-AEC1	3.3	40	2.5	5.6	10	0.8	350 to 2500	95	-	Ext	✓	-	✓	-	✓	QFN-16 (3x4)	Low dropout, selectable in-phase or 180° out-of-phase	
<b>N</b> MPQ4468-AEC1	3.3	40	3	5.8	10	0.8	350 to 2500	90	-	Ext	✓	-	✓	-	✓	QFN-16 (3x4)	Low dropout, selectable in-phase or 180° out-of-phase	
<b>N</b> MPQ4469-AEC1	3.3	40	5	7.7	10	0.8	350 to 2500	90	-	Ext	✓	-	✓	-	✓	QFN-20 (4x5)	Low dropout, selectable in-phase or 180° out-of-phase	
MPQ2362-AEC1	4.75	25	Dual 2	3.4	2000	1.222	380	180	-	Int	✓	-	✓	-	✓	TSSOP-20F	Dual output	

### Buck-Boost Regulators

### Buck-Boost Converters

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	V <sub>OUT</sub> (Max) (V)	I <sub>OUT</sub> (Typ) (A)	I <sub>Q</sub> (Typ) (µA)	f <sub>SW</sub> (kHz)	R <sub>DS(on)</sub> (mΩ)	Interface	Spread Spectrum	Fixed Frequency	Webtable Flank QFN Option	Package	Notes
<b>N</b> MPQ8875A-AEC1	2.2	42	0.5 to 36	5	200	100 to 750	2x 10/20	I <sup>2</sup> C	✓	✓	✓	QFN-34 (4x5)	30W, OTP programmable, four-switch buck-boost with advanced protection

### Boost Regulators

### Synchronous Boost

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	V <sub>OUT</sub> (Max) (V)	I <sub>SW</sub> Limit (Typ) (A)	I <sub>Q</sub> (Typ) (µA)	V <sub>FB</sub> (V)	f <sub>SW</sub> (kHz)	R <sub>DS(on)</sub> (mΩ)	Fixed Output Versions	Fixed Frequency	Package	Notes
MPQ3410-AEC1	1.8	6	6	1.3	360	1.19	550	530/300	✓	-	TSOT23-5	Output disconnect
<b>N</b> MPQ3428A-AEC1	3	20	22	19	110	1.2	600	18	✓	-	QFN-22 (3x4)	Input disconnect function, external high-side gate drive
<b>N</b> MPQ3431A-AEC1	0.8	13	16	21	25	1.0	470	15/11.5	✓	-	QFN-13 (3x4)	Programmable input current limit, supports 40W peak power load from 3.3V, selectable PSM and FCCM, adaptive COT

## REGULATORS | AUTOMOTIVE

### Boost Regulators

### Boost Controllers

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_O$ (Typ) ( $\mu$ A)	$I_{SD}$ (Typ) ( $\mu$ A)	$V_{FB}$ (V)	$f_{SW}$ (kHz)	Soft Start	Sync	Package	Notes
<b>S</b> MPQ3910A-AEC1	5	35	0.29	1	1.5	30 to 400	Ext	✓	MSOP-10	Peak current mode, light-load operation, supports >10A, OVP, SCP, OTP

### Boost Regulators

### Non-Synchronous Boost

Part Number	$V_{IN}$ (Min) (V)	$V_{SW}$ (Max) (V)	$V_{OUT}$ (Max) (V)	$I_{SW}$ Limit (Typ) (A)	$I_O$ (Typ) ( $\mu$ A)	$V_{FB}$ (V)	$f_{SW}$ (kHz)	$R_{DS(ON)}$ (m $\Omega$ )	Fixed Output Versions	Package	Notes
MPQ3425-AEC1	3.1	55	55	5	650	1.23	300 to 2000	90	-	QFN-14 (3x4)	Programmable UVLO and EN hysteresis
MPQ3426-AEC1	3.2	45	35	8.5	650	1.23	300 to 2000	90	-	QFN-14 (3x4)	Programmable UVLO and EN hysteresis

### DDR Memory Power

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$I_{OUT}$ (Typ) (A)	Accuracy for VTT, VTTREF (mV)	V Driver (V)	Package	Notes
<b>N</b> MPQ20073-AEC1	1.3	6	2	30	3.3	MSOP-8E	DDR2/3 termination regulator

### Audio Products (Class-D Audio Amplifiers)

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$P_{OUT}$ (W)	Efficiency (%)	THD+N (%)	PSRR (dB)	Type	Package	Notes
<b>N</b> MPQ7790-AEC1	5.5	18	15	90	0.79 @ 1W	20	Mono	TSSOP-20EP	Low EMI, analog input Class D for mono speaker in bridge-tied load configuration

### Supervisory Circuits

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	Reset Threshold (V)	Threshold Accuracy (%)	$I_O$ (Typ) ( $\mu$ A)	Package	Notes
MPQ6400-33-AEC1	1.8	5.5	3.07	$\pm$ 1.0	1.6	QFN-6 (2x2)	Voltage supervisor, 3.3V
<b>N</b> MPQ6400-01-AEC1	0.9	5.5	0.4	$\pm$ 1.0	1.6	QFN-6 (2x2)	Voltage supervisor, adjustable
MPQ6411-AEC1	4.8	5	4.5	-	16	SOIC-8E	5V $V_{DD}$ , windowed watchdog, power-on reset
MPQ6411-33-AEC1	3.1	3.3	2.9	-	10	SOIC-8E	3.3V $V_{DD}$ , windowed watchdog, power-on reset

### Analog Switches

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	Switcher Current (A)	$t_{ON}$ (ns)	$t_{OFF}$ (ns)	Power Supply Current ( $\mu$ A)	Fixed Output Versions	Bandwidth (MHz)	$R_{DS(ON)}$ (m $\Omega$ )	Package	Notes
MPQ2735-AEC1	1.65	5.5	0.1	29	23	1	-	50	0.25	QFN-10 (1.4x1.8)	Low-voltage 0.45 $\Omega$ dual SPDT analog switches, separate control inputs

## REGULATORS | AUTOMOTIVE

### Load Switches

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	Load Current	I <sub>Q</sub> (Typ) (mA)	R <sub>DS(on)</sub> (mΩ)	Package	Notes
MPQ5073-AEC1	0.5	5.5	2	0.18	50	QFN-12 (2x2)	Adjustable current limit
<b>S</b> MPQ5069-AEC1	4.5	28	10	1.5	7	QFN-22 (3x5)	Adjustable current limit

## USB CHARGERS | AUTOMOTIVE

### USB PD Solutions

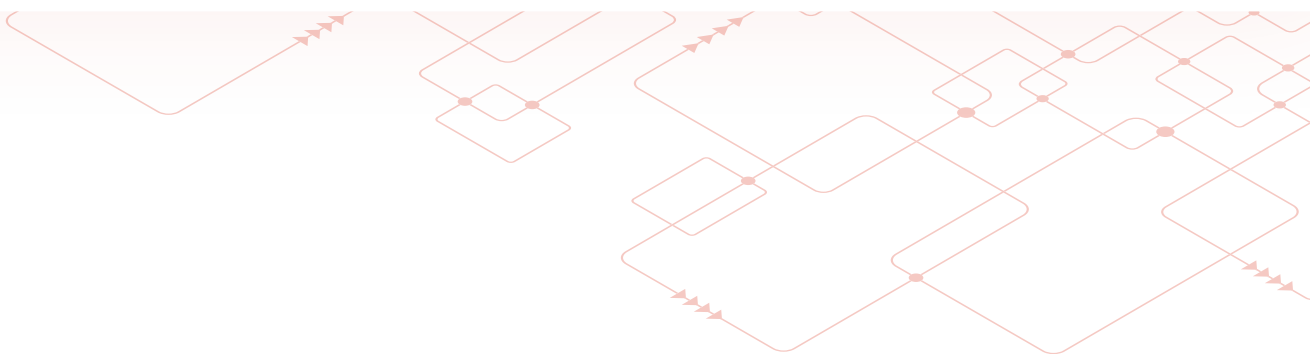
### Buck-Boost for USB PD

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (ABS Max) (V)	I <sub>OUT</sub> (A)	I <sub>Q</sub> (Typ) (mA)	f <sub>SW</sub> (kHz)	Supports USB PD	Battery Short Protection	Frequency Spread Spectrum	Line Drop Compensation	I <sup>2</sup> C Interface	EN Shutdown Discharge	Load Shedding	Wettable Flank QFN Option	Package	Notes
<b>N</b> MPQ4214 (Controller)	5	45	-	-	Selectable	✓	✓	✓	-	✓	-	✓	QFN-27 (5x5)	Sync, FCCM mode, current limit adjusting through IPWM pin	
<b>S</b> MPQ4210 (Controller)	5	45	-	-	Selectable	✓	-	✓	-	✓	-	✓	QFN-27 (5x5)	100W synchronous controller with I <sup>2</sup> C output current monitor function	
<b>S</b> MPQ4230 (Converter)	4	40	6A Peak	0.3	Selectable	✓	✓	✓	✓ (Adj)	✓	✓	✓	QFN-21 (4x5)	Supports 60W buck-boost or 6A peak I <sub>OUT</sub>	

### All-in-One USB-C/A Charging-Only Port Solutions

### Dual USB Type-C & Type-A Charging Port Solutions (Buck with Integrated CLS, Protocol Detection)

Part Number	V <sub>IN</sub> (ABS Max)	V <sub>IN</sub> (Max) (V)	Dual/Single Ports	I <sub>OUT</sub> (A)	I <sub>Q</sub> (Typ) (mA)	f <sub>SW</sub> (kHz)	BC 1.2 DCP	1.2V/1.2V Mode	Divider Mode 3	Type-C DFP (w/o PD)	Type-A Mode	Load Shedding	Frequency Spread Spectrum	Internal USB S-Switch	Line Drop Compensation	USB Discharge	Package	Notes
MPQ4487	6	40	Dual	3 (x2)	1	Selectable	-	-	-	✓	✓	✓	✓	✓	✓	✓	QFN-26 (5x5)	Load shedding vs. temperature
MPQ4488	6	40	Dual	3 (x2)	1	Selectable	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	QFN-26 (5x5)	Selectable V <sub>OUT</sub> : 5.1V/5.17V/5.3V
<b>S</b> MPQ4488T	6	40	Dual	3 (x2)	1	Adjustable	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	QFN-26 (5x5)	135°C load-shedding temp
<b>N</b> MPQ4253	6	40	Dual	3 (x2)	1	Selectable	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	QFN-26 (5x5)	Low I <sub>Q</sub> (Type-A/C)





## USB CHARGERS | AUTOMOTIVE

### All-in-One USB-C/A Charging-Only Port Solutions

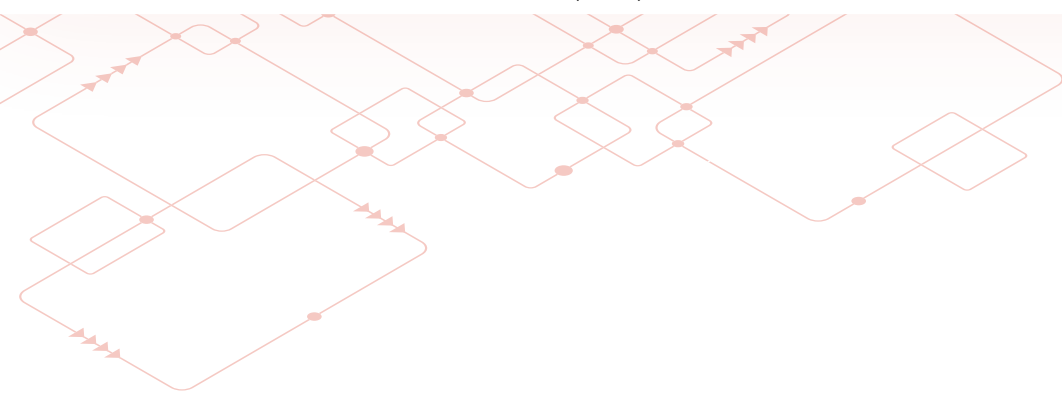
#### Single USB Type-C & Type-A Charging Port Solutions (Buck with Integrated CLS, Protocol Detection)

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (ABS Max)	Dual/Single Ports	I <sub>OUT</sub> (A)	I <sub>a</sub> (Typ) (mA)	f <sub>SW</sub> (kHz)	BC 1.2 DCP	1.2V/1.2V Mode	Divider Mode 3	QC2.0	QC3.0	Type-C DFP (w/o PD)	Type-A Mode	Load Shedding	Battery Short Protection	Low-Dropout Mode	Frequency Spread Spectrum	Internal USB Switch	Line Drop Compensation	EN Shutdown Discharge	USB Discharge	Fault Indication	Wettable Flank QFN Option	Package	Notes
<b>MPQ4475-E</b>	7	40	Single	2.5	1.6	Select	✓	✓	✓	-	-	✓	-	-	✓	✓	✓	✓	✓	✓	✓	-	QFN-25 (4x4)	Programmable line drop compensation	
<b>MPQ4491</b>	7	40	Single	2.5	1.6	Select	✓	✓	✓	-	-	✓	-	-	-	✓	✓	✓	✓	✓	-	-	QFN-25 (4x4)	Auto-detect, cable compensation	
<b>MPQ4481</b>	6	40	Single	3	0.7	Select	✓	✓	✓	-	-	✓	✓	✓	-	✓	✓	✓	-	✓	✓	-	QFN-26 (5x5)	EN and Fault pins support hub	
<b>N</b> <b>MPQ4481-FD</b>	6	40	Single	3	0.7	Select	✓	✓	✓	-	-	✓	✓	✓	-	✓	✓	✓	✓	-	✓	✓	-	QFN-26 (5x5)	EN and Fault pins support hub
<b>S</b> <b>MPQ4490</b>	6	40	Single	3	0.2	Adj	✓	✓	✓	-	-	✓	✓	✓	-	-	✓	✓	-	✓	-	-	QFN-26 (5x5)	Low I <sub>Q</sub> , FCCM	
<b>S</b> <b>MPQ4482</b>	4	40	Single	3	0.8	Select	✓	✓	✓	-	-	✓	✓	✓	✓	-	✓	✓	-	✓	-	✓	QFN-22 (4x4)	3.55A/2.75A USB current limit with FCCM	
<b>S</b> <b>MPQ4482-Q</b>	4	40	Single	3	0.8	Select	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	-	✓	-	✓	QFN-22 (4x4)	Accurate USB current limit with FCCM	

### All-in-One Data Port Products

#### Dual USB Type-C & Type-A Charging Data Ports (Buck with Integrated CLS, USB 2.0 Data Switch, Protocol Detection)

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (ABS Max)	Dual/Single Ports	I <sub>OUT</sub> (A)	I <sub>a</sub> (Typ) (mA)	f <sub>SW</sub> (kHz)	BC 1.2 DCP (Data)	BC 1.2 DCP	1.2V/1.2V Mode	Divider Mode 3	Type-C DFP (w/o PD)	Type-A Mode	Load Shedding	Internal USB Switch	Line Drop Compensation	USB Discharge	Package	Notes
<b>MPQ4485</b>	6	40	Dual	3 (x2)	1	450	✓ (USB2)	✓	✓	✓	✓	✓	✓	✓	✓	✓	QFN-26 (5x5)	Forced CCM operation



## USB CHARGERS | AUTOMOTIVE

### All-in-One Data Port Products

Single USB Type-C & Type-A Charging Data Ports (Buck + Integrated CLS, USB 2.0 Data Switch, Protocol Detection)

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (ABS Max) (V)	Dual/Single Ports	I <sub>OUT</sub> (A)	I <sub>O</sub> (Typ) (mA)	f <sub>SW</sub> (kHz)	BC 1.2 CDP (Data)	BC 1.2 DCP	1.2V/1.2V Mode	Divider Mode 3	Type-C DFP (w/o PD)	Type-A Mode	Load Shedding	Battery Short Protection	Low-Dropout Mode	Frequency Spread Spectrum	Internal USB Switch	Line Drop Compensation	EN Shutdown Discharge	USB Discharge	Wettable Flank QFN Option	Package	Notes
<b>N</b> MPQ4482-C	4	40	Single	3	0.8	Select	✓	✓	✓	✓	✓	✓	✓	-	-	✓	✓	-	✓	✓	QFN-22 (4x4)	Supports CDP mode, USB Type-C 5V @ 3A DFP mode, 3.55A/2.75A USB current limit with FCCM	
<b>S</b> MPQ4483	4.2	40	Single	3	1	Select	✓	✓	-	-	✓	-	✓	✓	-	(Adj CC Limit)	(Adj)	✓	-	✓	QFN-25 (4x5)	Supports BC1.2 DCP and CDP mode, bidirectional USB 2.0 high-speed data switch, low-dropout mode, 3.55A/3.75A CC output current limit	
<b>S</b> MPQ4483-FD	4.2	40	Single	3	1	Adj	✓	✓	-	-	✓	-	✓	✓	✓	(Adj CC Limit)	(Adj)	✓	-	✓	QFN-25 (4x5)		

### USB-C/A Port Controller and Buck Products Buck Only

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (ABS Max) (V)	I <sub>OUT</sub> (A)	I <sub>O</sub> (Typ) (mA)	f <sub>SW</sub> (kHz)	Battery Short Protection	Low-Dropout Mode	Internal USB Switch	Line Drop Compensation	EN Shutdown Discharge	Wettable Flank QFN Option	Package	Notes
<b>N</b> MPQ4480	4.2	40	6	1	Selectable	✓	✓	✓ (Adj CC Limit)	✓	✓	✓	QFN-25 (4x5)	-

### USB-C/A Port Controller and Buck Products USB Type-C & Type-A Charging Port Controllers

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (ABS Max) (V)	Dual/Single Ports	I <sub>OUT</sub> (A)	I <sub>O</sub> (Typ) (mA)	BC 1.2 CDP (Data)	BC 1.2 DCP	1.2V/1.2V Mode	Divider Mode 3	QC2.0/QC3.0	Type-C DFP (w/o PD)	Type-A Mode	Load Shedding	Battery Short Protection	Internal USB Switch	Line Drop Compensation	USB Discharge	Fault Indication	Client Mode	Wettable Flank QFN Option	Package	Notes
<b>N</b> MPQ5029	2.7	24	Single	3	0.155	-	✓	✓	✓	✓	✓	✓	✓	✓	(Adj)	(Adj)	✓	-	-	✓	QFN-14 (2x3)	NTC pin for thermal management, adjustable OVP threshold, input over-voltage shutdown protection
<b>S</b> MPQ5029-C	2.7	24	Single	3	0.175	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	QFN-14 (2x3)	-

## POSITION SENSORS | AUTOMOTIVE

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	Supply Current (mA)	Resolution (Bits)	Output Format	ABZ Resolution (Bits)	PWM Frequency (Hz)	Latency (µs)	Start-Up Time (ms)	Refresh Rate (kHz)	Filter Cutoff Frequency (Hz)	Magnetic Field Detection	Magnetic Field Range (mT)	Wettable Flank QFN Option	Package	Supported Magnet Topology
<b>MAQ430-AEC1</b>	3	3.6	11.7	12	SPI, ABZ, UVW	10	-	10	12	980	390	✓	30 to 150	✓	QFN-16 (3x3)	End-of-shaft, side-shaft
<b>MAQ470-AEC1</b>	3	3.6	11.7	12	SPI, SSI, ABZ, PWM	10	240	10	12	980	390	✓	30 to 150	✓	QFN-16 (3x3)	End-of-shaft, side-shaft

## MOTOR DRIVERS | AUTOMOTIVE

### Half-Bridge Gate Drivers

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	V <sub>SW</sub> (Max) (V)	HS Gate Drive (Max) (V)	# of Channels	Peak Pull-Up Current (A)	Peak Pull-Down Current (A)	Rise Time (ns)	Fall Time (ns)	Turn-Off/On Delay (ns)	Wettable Flank Option	Package	Notes
<b>N</b> MPQ18021-A-AEC1	9	18	100	18	1	2.5	3.5	12	9	5	✓	SOIC-8E	100V
<b>N</b> MPQ18024-AEC1	9	18	100	18	1	4	5.9	15	12	20	✓	SOIC-8E	100V
<b>MPQ1922-AEC1</b>	4	15	100	15	1	-	-	20μs	20μs	20μs	✓	SOIC-8E, QFN-10 (4x4)	Integrated current sense amp 9ns to 15ns rise/fall (2.2nF load)

### Half-Bridge Drivers (Integrated MOSFET)

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (ABS Max) (V)	BST to SW (Max) (V)	# of Channels	R <sub>DS(ON)</sub> (mΩ)	Standby I <sub>D</sub> (Typ)	Peak Output Current (A)	Rise Time (μs)	Fall Time (μs)	Turn-Off/On Delay (μs)	Open-Load Detection	Serial Interface	Wettable Flank Option	Package	Notes
<b>MPQ8039-AEC1</b>	7.5	28	6	1	100	2.5	9	20ns	20ns	70ns	-	-	✓	SOIC-8E	General-purpose, high-frequency half-bridge for audio amplifier, wireless charging, and more
<b>MPQ6523-AEC1</b>	7	40	1	3	1100	6	0.9	20	20	60	✓	✓	✓	QFN-24 (4x4)	Independent half-bridge control, comprehensive protections, daisy-chainable, serial data interface up to 3MHz
<b>MPQ6526-AEC1</b>	7	40	1	6	650	6	0.9	20	20	50	✓	✓	✓	QFN-24 (4x4), QFN-24 (5x5)	Independent half-bridge control, comprehensive protections, daisy-chainable
<b>S</b> <b>MPQ6527-AEC1</b>	5.5	40	1	10	1300	6	0.8	2	-	-	✓	✓	✓	TSSOP-28EP	Independent half-bridge control, comprehensive protections, daisy-chainable, SPI interface up to 5MHz

## LED LIGHTING | AUTOMOTIVE

### Backlight

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	Topology	# of Channels	I <sub>OUT</sub> Per Channel (mA)	f <sub>SW</sub> (kHz)	Dimming Modes	LED Protection	Channel Current Matching (%)	Interface	Package	Notes
<b>MPQ3386-AEC1</b>	4.5	25	Boost	6	30	625 or 1250	PWM, Analog	Open, Short	3%	-	QFN-24 (4x4)	3% current matching accuracy
<b>MPQ3387L-AEC1</b>	3	25	Boost	6	45	500 or 1250	PWM, Analog	Open, Short	3%	-	QFN-24 (4x4)	3% current matching accuracy
<b>N</b> <b>MPQ3367-AEC1</b>	3.5	36	Boost	6	100	200, 400, 1000, 2200	PWM, Analog	Open, Short	2.5%	I <sup>2</sup> C	QFN-24 (4x4), TSSOP-28EP	Spread spectrum, thermal derating, fault pin, rich protection features

### Tell-Tale

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	Topology	# of Channels	I <sub>OUT</sub> Per Channel (mA)	f <sub>SW</sub> (kHz)	Dimming Modes	LED Protection	Channel Current Matching (%)	Interface	Package	Notes
<b>S</b> <b>MPQ3326-AEC1</b>	2.7	18	Linear	16	25	Selectable	PWM, Analog	Open, Short	2%	I <sup>2</sup> C	QFN-24 (4x4), TSSOP-28EP	Independent channel control, daisy-chainable, digital configuration

## LED LIGHTING | AUTOMOTIVE

### Illumination & Signaling LED Drivers

	Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (ABS Max) (V)	LED Power (W)	Topology	Max LEDs in Series	Max Continuous Current (A)	Current Limit (Typ) (A)	R <sub>DS(ON)</sub> (mΩ)	Dimming Modes	f <sub>sw</sub> (kHz)	LED Protection	Spread Spectrum	Multi-Phase	Example Lighting Application	Wettable Flank QFN Option	Package	Notes
	<b>MPQ2489-AEC1</b>	6	55	4	Low-Side Buck	10	1.4	Adj	500	PWM, Analog	200 to 600	Open	-	-	Stop Light, Turning Light	-	QFN-6 (3x3)	-
	<b>MPQ2483A-AEC1</b>	4.5	55	10	Buck, Buck-Boost	10	2.5	3	280	PWM, Analog	250 to 1350	Open, Short	-	-	Daytime Running Light, Fog Light	-	QFN-10 (3x3), SOIC-14	Output short-circuit protection
<b>S</b>	<b>MPQ2484-AEC1</b>	4.5	45	Adj	Buck, Boost, Buck-Boost	20	Cntrl	Adj	-	PWM, Analog	100 to 2200	Open, Short	✓	-	Daytime Running Light, Fog Light	-	TSSOP-28EP	Cycle-by-cycle current limit output over-voltage protection, open LED protection, fault flag output
<b>N</b>	<b>MPQ24833B-AEC1</b>	4.5	55	12	Buck, Buck-Boost	10	3	6	150	PWM, Analog	420	Open	-	-	Daytime Running Light, Fog Light	-	SOIC-8EP	Output short-circuit protection
	<b>MPM6010-AEC1</b>	4	40	12	Buck	2	1.5	4	85/50	PWM	2200	Open, Short	-	-	Rear Light, Puddle Light, Fog Light	✓	QFN-17 (3x5x1.6)	Module with integrated AEC-Q100 2.2μH inductor and BST/VCC capacitors, synchronous operation, output OCP
	<b>MPQ4425A-AEC1</b>	4	40	12	Buck	2	1.5	4	85/50	PWM	2200	Open, Short	-	-	Rear Light, Puddle Light, Fog Light	✓	QFN-13 (2.5x3)	Synchronous operation, output OCP
	<b>MPQ4425B-AEC1</b>	4	40	12	Buck	2	1.5	4	85/50	PWM	400	Open, Short	-	-	Rear Light, Puddle Light, Fog Light	✓	QFN-13 (2.5x3)	Synchronous operation, output OCP
<b>S</b>	<b>MPQ7200-AEC1</b>	4.5	50	20	Buck, Buck-Boost	7	3 Buck/1.2A Buck-Boost	6	40/38	PWM, Analog	2300 Buck, 1150 Buck-Boost	Open, Short	✓	✓	Daytime Running Light, Fog Light, Low Beam, High Beam	✓	QFN-19 (3x4)	Integrated current sense, configurable 1.2A buck-boost or 3A buck, fast transient operation, thermal derating, two-step dimming, external NTC

### Dynamic Lighting And Matrix Dimming

	Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (ABS Max) (V)	Topology	# of Channels	I <sub>OUT</sub> Per Channel (mA)	f <sub>sw</sub> (kHz)	Dimming Modes	LED Protection	Spread Spectrum	Channel Current Matching (%)	Interface	Wettable Flank QFN Option	Package	Notes
<b>N</b>	<b>MPQ7220-AEC1</b>	3.5	42	Boost	6	100	200, 400, 1000, 2200	PWM, Analog	Open, Short	✓	2.5	-	-	QFN-24 (4x4), TSSOP-28EP	External sync SW function disconnects V <sub>OUT</sub> from V <sub>IN</sub> cycle-by-cycle current limiting
<b>S</b>	<b>MPQ7221-AEC1</b>	4	14	Linear	16	80	Selectable	PWM, Analog	Open, Short	-	2	I <sup>2</sup> C	✓	QFN-24 (4x4)	6-bit analog dimming for each channel, 12-bit PWM dimming for each channel, refresh signal output

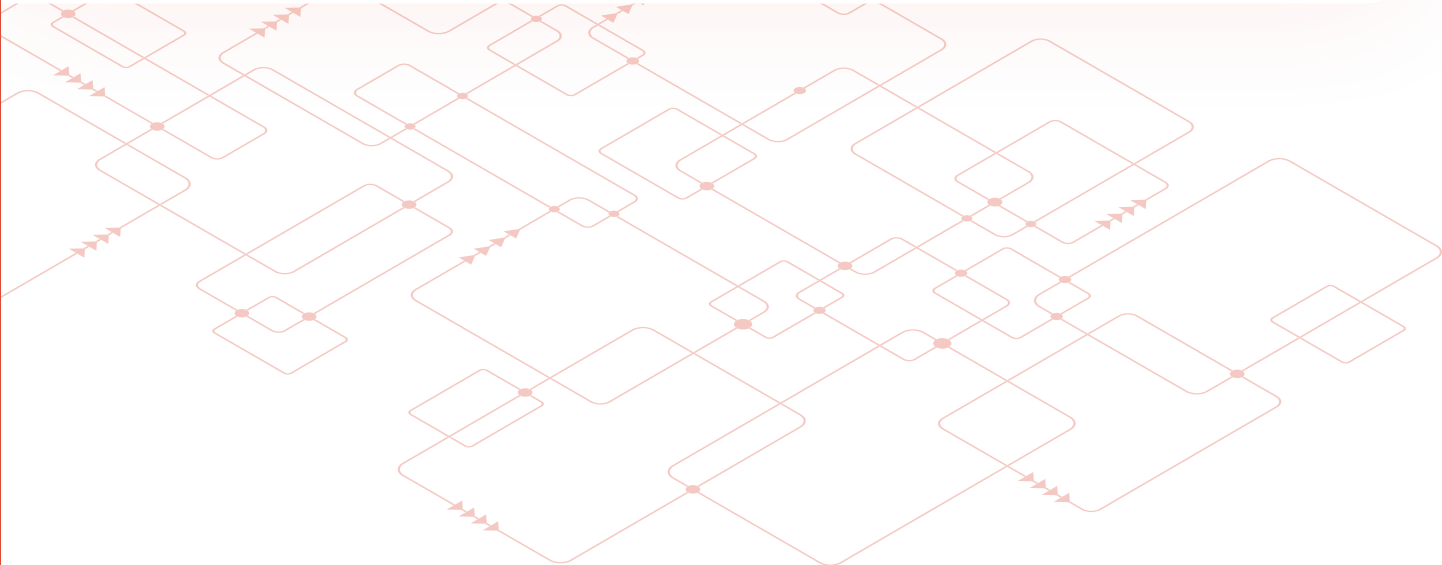
## LINEAR REGULATORS | AUTOMOTIVE

### 5V Secondary LDOs

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>OUT</sub> (mA)	Load Reg (%/mA)	PSRR @ 1kHz (dB)	V <sub>FB</sub> (V)	I <sub>Q</sub> (Typ) (µA)	Enable Pin	Adjustable Option (V)	Fixed Output Versions	Power Good	Package	Notes
<b>MPQ20056-AEC1</b>	2.5	5.5	250	0.0003	63	0.8	10	✓	0.8 to 5	1.8V, 2.5V, 3.3V	-	QFN-8 (2x2), TSOT23-5	-
<b>MPQ8904-AEC1</b>	2.7	6.5	500	0.001	26	0.5	-	✓	0.5 to 5	-	✓	QFN-8 (2x3)	-
<b>MPQ20051-AEC1</b>	2.5	5.5	1000	0.0003	63	0.8	30	✓	0.8 to 5	-	-	QFN-8 (3x3)	-

### 40V Primary LDOs

<b>MPQ2016-AEC1</b>	4	42	30	0.003	50	1.23	12	✓	1.2 to 20	-	-	QFN-8 (2x3)	-
<b>MPQ2013AGJE-C672-AEC1</b>	2.5	40	100	0.005	41	1.215	3.2	✓	1.215 to 15	3.3V, 2.5V, 5V	-	TSOT23-4	-
<b>MPQ2013A-AEC1</b>	2.5	40	150	0.005	41	1.215	3.3	✓	1.215 to 15	QFN-8: 3.3V, 2.5V, 5V, 1.8V QFN-6: 3.3V, 5V	-	QFN-6 (2x2), QFN-8 (3x3)	-
<b>MPQ2019-AEC1</b>	3	40	300	0.04	45	1.25	10	✓	1.2 to 15	3.3V, 5V	✓	SOIC-8EP	-
<b>MPQ2029-AEC1</b>	3	40	450	0.04	45	1.25	10	✓	1.2 to 15	-	✓	SOIC-8EP	-



## EASYPower | AC/DC POWER CONVERSION

## AC Buck

Part Number	Typ. Max. Power (W)	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	Control Method	R <sub>DS(on)</sub> (Ω)	Breakdown Voltage (V)	No-Load Power (mW)	Package	Notes
<b>MP100L</b>	0.5	85AC	305AC	Smart LDO	9.5	700	100	SOIC-8E	Inductorless regulator for low-power applications, up to 0.5W
<b>MP103</b>	1.0	85AC	305AC	Smart LDO	NA	700	100	SOIC-8E	Inductorless controller for low-power applications, up to 1W
<b>MP150</b>	2.0	20	265AC	Non-Isolated	30	500	150	TSOT23-5, SOIC-8	Offline regulator, up to 200mA output current
<b>MP155</b>	3.0	20	265AC	Non-Isolated	20	500	100	TSOT23-5, SOIC-8	Offline regulator, up to 220mA output current
<b>MP157</b>	6.0	20	265AC	Non-Isolated	10	500	100	TSOT23-5, SOIC-8	Offline regulator, up to 360mA output current
<b>MP158</b>	3.0	20	265AC	Non-Isolated	20	500	100	TSOT23-5, SOIC-8	Offline regulator, up to 70mA output current
<b>MP171</b>	2.0	20	305AC	Non-Isolated	20	700	30	TSOT23-5, SOIC-8	Offline regulator, up to 60mA output current
<b>N MP171A</b>	2.0	20	305AC	Non-Isolated	20	700	30	TSOT23-5, SOIC-8	Improved EMI performance from the MP171 (up to 60mA output current)
<b>N MP172A</b>	3.0	20	305AC	Non-Isolated	16	700	30	TSOT23-5, SOIC-8	Improved EMI performance from the MP172 (up to 120mA output current)
<b>N MP173A</b>	4.0	20	305AC	Non-Isolated	14	700	30	TSOT23-5, SOIC-8	Improved EMI performance from the MP173 (up to 280mA output current)
<b>N MP174A</b>	5.0	20	305AC	Non-Isolated	13.5	700	30	TSOT23-5, SOIC-8	Improved EMI performance from the MP174 (up to 400mA output current)
<b>N MP175</b>	10	30	265AC	Non-Isolated	4.5	700	30	SOIC-8, PDIP8-7	Offline regulator, up to 600mA output current
<b>N MP163A</b>	2.0	20	265AC	Non-Isolated	16	700	30	SOIC-8-7B, SOIC-16	Offline regulator with integrated LDO, 210mA current-limited switching regulator
<b>N MP163B</b>	3.0	20	265AC	Non-Isolated	14	700	30	SOIC-8-7B, SOIC-16	Offline regulator with integrated LDO, 420mA current-limited switching regulator
<b>N MP163C</b>	4.0	20	265AC	Non-Isolated	13.5	700	30	SOIC-8-7B, SOIC-16	Offline regulator with integrated LDO, 660mA current-limited switching regulator
<b>N MP161A</b>	2.0	30	265AC	Non-Isolated	17	700	10	SOIC-16	Integrated 240mA current-limited switching regulator, linear regulator, and relay driver
<b>N MP161B</b>	3.0	30	265AC	Non-Isolated	14	700	10	SOIC-16	Integrated 420mA current-limited switching regulator, linear regulator, and relay driver
<b>P MP161C</b>	4.0	30	265AC	Non-Isolated	13.5	700	10	SOIC-16	Integrated 660mA current-limited switching regulator, linear regulator, and relay driver

## FLYBACK | AC/DC POWER CONVERSION

## Secondary-Side Regulation

Part Number	Typ Max Power (W)	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	Type	f <sub>sw</sub> (Max) (kHz)	Control Scheme	Breakdown Voltage (V)	R <sub>DS(on)</sub> (Ω)	Package	Notes
<b>HFC0100</b>	Ext FET	85AC	305AC	Controller	-	Quasiresonant	700	N/A	SOIC-8	Quasiresonant
<b>HFC0300</b>	Ext FET	85AC	305AC	Controller	-	Variable Frequency	700	N/A	SOIC-7	Variable off time
<b>HFC0310</b>	Ext FET	85AC	305AC	Controller	600	Fixed Frequency	-	N/A	SOIC-8	Programmable fixed frequency
<b>HFC0500</b>	Ext FET	85AC	305AC	Controller	65	Fixed Frequency	700	N/A	SOIC8-7A	HV start-up, X capacitor discharge, brown-in/out
<b>HFC0511</b>	Ext FET	85AC	305AC	Controller	130	Fixed Frequency	700	N/A	SOIC8-7A	130kHz fixed frequency, ultra-low no-load power consumption
<b>P HFC0650</b>	Ext FET	85AC	305AC	Controller	1000	Variable Frequency	650	N/A	SOIC8-7A	QRZVS flyback controller for high-efficiency, high-density adapters
<b>HF900</b>	10	85AC	440AC	Regulator	300	Peak Current	900	13	PDIP8-7EP, SOIC14-11	Integrated 900V MOSFET
<b>N HF920</b>	10	85AC	440AC	Regulator	150	Peak Current	900	15	SOIC14-11, SOIC8-7A	Integrated 900V MOSFET
<b>N HF920A</b>	10	85AC	440AC	Regulator	150	Peak Current	900	15	SOIC14-11, SOIC8-7A	HF920 with AC UV protection
<b>S HF920B</b>	10	85AC	440AC	Regulator	150	Peak Current	900	15	SOIC14-11, SOIC8-7A	Improved EMI performance from the HF920
<b>N HF500-7</b>	7	85AC	305AC	Regulator	65	Fixed Frequency	700	12	SOIC8-7B	Integrated 700V MOSFET
<b>N HF500-15</b>	15	85AC	305AC	Regulator	65	Fixed Frequency	700	4.5	SOIC8-7B	Integrated 700V MOSFET
<b>N HF500-30</b>	30	85AC	305AC	Regulator	65	Fixed Frequency	700	1.4	PDIP8-7B	Integrated 700V MOSFET
<b>P HF500A-30</b>	30	85AC	305AC	Regulator	65	Fixed Frequency	700	1.4	PDIP8-7B	Improved EMI performance from the HF500-30
<b>N HF500-40</b>	40	85AC	305AC	Regulator	65	Fixed Frequency	700	0.9	PDIP8-7B	Integrated 700V MOSFET
<b>P HF500A-40</b>	40	85AC	305AC	Regulator	65	Fixed Frequency	700	0.9	PDIP8-7B	Improved EMI performance from the HF500-40

## Primary-Side Regulation

<b>N MP020A-5</b>	7	85AC	305AC	Regulator	75	Variable Frequency	700	10	SOIC8-7A	CV/CC control
<b>MP023</b>	Ext FET	85AC	305AC	Controller	100	Variable Frequency	700	N/A	SOIC8-7A	CV/CC control
<b>MP024-10</b>	10	85AC	305AC	Regulator	100	Variable Frequency	700	4.5	SOIC8-7B	CV/CC control

## All-in-one Flyback with Primary and Secondary Controllers

<b>N MPX2001</b>	Ext FET	85AC	305AC	Controller	85	Variable/CCM	650	N/A	SOICW-20	200V integrated SR controller and capacitive isolation
<b>P MPX2002</b>	Ext FET	85AC	305AC	Controller	85	CCM/QR	650	N/A	SOICW-16	150V integrated SR controller and capacitive isolation



## LLC 600V HALF-BRIDGE DRIVERS | AC/DC POWER CONVERSION

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	Control Scheme	Power (W)	Topology	Capacitive Mode Protection	Adaptive Dead Time Control	Package	Notes
HR1000A	85AC	305AC	Voltage Mode	External FET	LLC Resonant	-	-	SOIC-16	Variable frequency, high-power applications
HR1001A	85AC	305AC	Voltage Mode	External FET	LLC Resonant	✓	✓	SOIC-16	Two-level OCP via frequency shift and auto-restart, other features same as the HR1001B
HR1001B	85AC	305AC	Voltage Mode	External FET	LLC Resonant	✓	✓	SOIC-16	Variable frequency, two-level OCP (1 <sup>st</sup> level auto-restart, 2 <sup>nd</sup> level latch)
HR1001C	85AC	305AC	Voltage Mode	External FET	LLC Resonant	✓	✓	SOIC-16	Improved surge performance compared to the HR1001B
HR1001L	85AC	305AC	Voltage Mode	External FET	LLC Resonant	✓	✓	SOIC-16	Two-level OCP via frequency shift and latch, other features same as the HR1001B

## PFC + LLC COMBO CONTROLLERS | AC/DC POWER CONVERSION

Part Number	LLC Control Scheme	PFC Control Scheme	No-Load Power Consumption (mW)	Programming Ability	Topology	High-Voltage Start-Up	Package	Notes
<b>N</b> HR1203	Voltage Mode	Digital CCM/DCM Multi-mode	<150	I <sup>2</sup> C/GUI	PFC + LLC	✓	TSSOP-28, SOIC-28	Digital PFC + analog LLC with graphic user interface, replaces the HR1200
<b>N</b> HR1204	Voltage Mode	Digital CCM/DCM Multi-mode	<150	I <sup>2</sup> C/GUI	PFC + LLC	-	TSSOP-28, SOIC-28	Digital PFC + analog LLC with graphic user interface, replaces the HR1201
<b>N</b> HR1210	Digital Current Mode	Digital CCM/DCM Multi-mode	<100	UART/GUI	PFC + LLC	✓	TSSOP-20, SOIC-20	High-performance fully digital PFC + LLC controller
<b>S</b> HR1211	Digital Current Mode	Digital CCM/DCM Multi-mode	<100	UART/GUI	PFC + LLC	✓	TSSOP-20, SOIC-20	High-performance fully digital PFC + LLC controller

## PFCS | AC/DC POWER CONVERSION

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>O, MAX</sub> / I <sub>OC, MAX</sub> (mA)	I <sub>LOAD, SRC</sub> / I <sub>LOAD, SINK</sub> (mA)	Control Scheme	Topology	Package	Notes
MP44010	85AC	305AC	0.65/2.5	-350/600	Boundary Mode	Boost/Buck-Boost	SOIC-8	Boundary-mode PFC controller, general purpose
MP44011	85AC	305AC	0.65/2.5	-350/600	Boundary Mode	Boost/Buck-Boost	SOIC-8	Boundary-mode PFC controller with harmonic injection function (reduced capacitor value and inductor size compared to the MP44010)
MP44014	85AC	305AC	3.2/4.5	-750/800	Boundary Mode	Boost/Buck-Boost	SOIC-8	Boundary-mode PFC controller
MP44014A	85AC	305AC	3.2/4.5	-750/800	Boundary Mode	Boost/Buck-Boost	SOIC-8	Boundary-mode PFC controller with adjusted open-loop protection
<b>N</b> MP44018A	85AC	305AC	0.2/1.5	-600/1000	CrM/DCM Multi-Mode	Boost	SOIC-8	CrM/DCM multi-mode boost PFC controller with enhanced light-load efficiency
<b>N</b> MP4078	85AC	305AC	0.4/5	35V/0.27Ω Source-Driven	DCM	Flyback/Buck-Boost/Buck	SOIC-8	Primary-side control and PFC controller for constant voltage power

## SYNCHRONOUS RECTIFIERS | AC/DC POWER CONVERSION

## Flyback Topology (Fast Turn-Off, Intelligent)

Part Number	Type	V <sub>DD</sub> (Min) (V)	V <sub>DD</sub> (Max) (V)	f <sub>SW</sub> (Max) (kHz)	Drain Rating (V)	Regulation Voltage (mV)	Total I <sub>R</sub> (500m) (mA)	Package	Notes
MP6902	Controller	6	27	400	180	70	Ext FET	SOIC-8	Light-load management
MP6906	Controller	4.2	35	400	180	30	Ext FET	SOIC-8, TSOT23-6	VCC down to 4.5V, light-load management, turn-off blanking and SYNC feature
MP6907	Controller	4.2	35	400	180	50	Ext FET	SOIC-8, TSOT23-6	VCC down to 4.5V, light-load management, turn-off blanking and SYNC feature, better efficiency than the MP6902
MP6908	Controller	4	13	400	180	40	Ext FET	TSOT23-6	Fast turn-off intelligent rectifier, slew rate detection, self-biased (no need for auxiliary winding)
<b>N</b> MP6908A	Controller	4	13	600	180	40	Ext FET	TSOT23-6	Very high-frequency, fast turn-off intelligent rectifier, slew rate detection, self-biased (no need for auxiliary winding)
<b>N</b> MP6909	Controller	4	13	400	180	40	Ext FET	TSOT23-6	Fast turn-off intelligent rectifier, slew rate detection
MP6960	Controller	8	24	400	180	70	Ext FET	SOIC-8	Integrated CC/CV controller
<b>N</b> MP6910A	Ideal diode	8	24	250	100	NA	15	SOIC-8	MP6902-based ideal diode
<b>N</b> MP6910B	Ideal diode	8	24	250	100	NA	13	SOIC-8	MP6902-based ideal diode
<b>N</b> MP6919	Ideal diode	4	13	400	180	NA	15	SOIC-8	MP6908-based ideal diode
<b>N</b> MP9989	Ideal diode	4	13	400	180	NA	10	SOIC-8, QFN-8 (4x5)	MP6908-based ideal diode
<b>P</b> MP9989A	Ideal diode	4	13	600	180	NA	15	SOIC-8, QFN-8 (4x5)	MP6908A-based ideal diode
<b>N</b> MP6953	Ideal diode	8	24	250	100	NA	17	SOIC-8	12V, 2.5A, new ideal diode
<b>N</b> MP6954	Ideal diode	8	24	250	100	NA	14	SOIC-8	12V, 3A, new ideal diode
<b>N</b> MP6972	Ideal diode	4.5	13	-	100	NA	14	SOIC-8	12V, 2.5A, new ideal diode with slew rate detection
<b>N</b> MP6973	Ideal diode	4.5	13	-	100	NA	14	SOIC-8	12V, 3A, new ideal diode with slew rate detection

## LLC Topology (Fast Turn-Off, Intelligent)

Part Number	Type	f <sub>SW</sub> (Max) (kHz)	Drain Rating (V)	Regulation Voltage (mV)	Single/Dual	Package	Notes
MP6903	Controller	300	180	70	Single	SOIC-8E	High-noise immunity, light-load management
MP6922	Controller	300	180	70	Dual	SOIC-8E, SOIC-14	V <sub>FWD</sub> 70mV for LLC
MP6922A	Controller	300	180	30	Dual	SOIC-8E, SOIC-14	High-efficiency, V <sub>FWD</sub> 30mV for LLC, light-load management
MP6922L	Controller	300	180	70	Dual	SOIC-8	V <sub>FWD</sub> 70mV for LLC, shorten LL mode entry t <sub>ON</sub> threshold, disable light-load entry when no gate pulse compared to the MP6922
MP6923	Controller	300	180	15	Dual	SOIC-14	High-power optimized
<b>N</b> MP6925	Controller	500	180	45	Dual	SOIC-8	Enhanced light-load performance, compatible with the MP6924A
<b>N</b> MP6925A	Controller	500	180	45	Dual	SOIC-8	Enhanced light-load performance, compatible with the MP6924
<b>N</b> MP6928A	Controller	500	200	35	Dual	SOIC-8	LL mode configuration to avoid ripple in light-load steady state

## AC/DC ISOLATED | LED LIGHTING

## Controllers

	Part Number	V <sub>in</sub> (Min) (V)	V <sub>in</sub> (Max) (V)	Power (W)	Topology	Package	Notes
	MP4026	85AC	305AC	External FET	Flyback	SOT23-6	Primary-side control, active PFC
	MP4027	85AC	305AC	External FET	Flyback	SOT23-8	Primary-side control, PFC, NTC, PWM dimming
	MP4031	85AC	305AC	External FET	Flyback	SOIC-8	TRIAC and analog dimmable, deep dimming, primary-side control, active PFC
	MP4033	85AC	305AC	External FET	Flyback	SOIC-8, MSOP-10, SOIC-14	Enhanced TRIAC-dimmable, primary-side control, active PFC
N	MP4057A	85AC	305AC	External FET	Buck-Boost	MSOP-10, SOIC-14	Single-chip/single-stage solution for smart LED/wireless modules
N	MP4059	85AC	305AC	External FET	Buck-Boost	SOIC-8	3% analog dimming
	MP4060	85AC	305AC	External FET	Buck-Boost	SOIC-8, MSOP-10, SOIC-14	Improved trailing-edge dimmer performance at high line over the MP4056
S	MP4078	85AC	305AC	External FET	Flyback/Buck-Boost/ Buck	SOIC-8	Primary-side control and PFC controller for constant voltage power
	HR1001A	85AC	305AC	External FET	LLC Resonant	SOIC-16	Resonant half-bridge, variable frequency, high-power application, auto-restart at over-current for street lighting applications
	HR1001B	85AC	305AC	External FET	LLC Resonant	SOIC-16	Resonant half-bridge, variable frequency, high-power application, two-level OCP
	HR1001C	85AC	305AC	External FET	LLC Resonant	SOIC-16	Enhanced LLC controller with adaptive dead-time control, OCP, auto-restart, latch, enhanced surge
	HR1001L	85AC	305AC	External FET	LLC Resonant	SOIC-16	Enhanced LLC controller with adaptive dead-time control, OCP, latch
	MP44010	85AC	305AC	External FET	PFC Boost/Buck-Boost	SOIC-8, DIP-8	Offline PFC, boundary conduction, ultra-low start-up current (15µA)
	MP44011	85AC	305AC	External FET	PFC Boost/Buck-Boost	SOIC-8	Offline PFC, boundary conduction, harmonic injection function (reduced capacitor value and inductor size from the MP44010)
	MP44014	85AC	305AC	External FET	PFC Boost/Buck-Boost	SOIC-8	Offline PFC, boundary conduction
	MP44014A	85AC	305AC	External FET	PFC Boost/Buck-Boost	SOIC-8	Boundary-mode PFC controller with adjusted open-loop protection
S	MP44018A	85AC	305AC	External FET	PFC Boost/Buck-Boost	SOIC-8	CrM/DCM multi-mode boost PFC controller with enhanced light-load efficiency

## Regulators

	MP4032-1	85AC	132AC	7	Flyback	SOIC8-7A	Integrated 500V FET, TRIAC dimmable, deep dimming, primary-side control, active PFC
	MP4034	85AC	305AC	7	Flyback	SOIC-8, MSOP-10, SOIC-14	Integrated 700V FET, primary-side control, no dimming or PFC

## PROTECTION | LED LIGHTING

Part Number	Control Method	Package	Notes
MP4690	Shunt	SOD-123	Smart bypass for LED Protection, 6V threshold voltage protects 1 LED

## AC/DC NON-ISOLATED | LED LIGHTING

## Controllers

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	Power (W)	Configuration	Package	Notes
MP4001	85AC	305AC	External FET	Low-Side Buck	SOIC-8	Offline LED controller, integrated high-voltage LDO, analog and PWM dimming
MP4054	85AC	305AC	External FET	Buck-Boost	SOT23-8	Offline LED controller, active PFC
MP4054A	85AC	305AC	External FET	Buck-Boost	SOT23-8	Offline LED controller, active PFC, NTC, PWM dimming
MP4056	85AC	305AC	External FET	Buck-Boost	SOIC-8, MSOP-10, SOIC-14	TRIAC dimmable, offline LED controller, active PFC

## Regulators

MP4050A	85AC	265AC	8	Buck	SOIC-8, SOT23-5	Integrated 500V FET, offline driver, enhanced thermal, no PFC or dimming
MP4068	85AC	305AC (Recommend Low-Line Only)	10	Buck/Buck-Boost	SOIC8-7A, SOIC-8EP	Integrated 500V FET, PFC driver with TRIAC dimming
MP4088	85AC (Recommend High-Line Only)	305AC	8.5	Buck/Buck-Boost	SOIC8-7A, SOIC-8EP, TSOT23-5	Integrated 500V FET, PFC driver with TRIAC dimming

## DC/DC LIGHTING | LED LIGHTING

## Regulators

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	Configuration	I <sub>OUT</sub> (A)	Max Efficiency (%)	Typ Frequency	Package	Notes
MP3412	0.8	4.4	Boost	1.1	96	1MHz	TSOT23-6	Synchronous boost, no dimming
MP2480	5	36	Buck	3	95	2MHz	SOIC-8E	Hysteretic control, PWM dimming
MP2481	4.5	36	Buck/Buck-Boost	1.2	95	1.4MHz	MSOP-8E	Analog and PWM dimming
MP24892	6	45	Low-Side Buck	1	95	600kHz	TSOT23-5	Hysteretic control, analog and PWM dimming, lower cost version of the MP2489
MP24893	6	36	Low-Side Buck	1	95	600kHz	QFN-6 (3x3), TSOT23-5	Hysteretic control, analog and PWM dimming, lower cost version of the MP2489
MP2483	4.5	55	Buck/Buck-Boost	2.5	95	1.35MHz	QFN-10 (3x3), SOIC-14	Analog and PWM dimming, consumer-grade
MP24183	4.5	55	Buck/Buck-Boost	1	95	1.35MHz	QFN-10 (3x3)	Analog and PWM dimming
MP2488	4.5	55	Buck	2	97.5	200kHz	QFN-10 (3x3), SOIC-8E	PWM dimming
MP2487	4.5	55	Buck	1	97.5	200kHz	SOIC-8E	PWM dimming
<b>N</b> MP24833A	4.5	55	Buck/Boost/ Buck-Boost	3	90	210kHz	SOIC-8E	Analog and PWM dimming
MP24895	6	36	Low-Side Buck	1	95	600kHz	TSOT23-5, QFN-6	Hysteretic control, PWM and analog dimming
MP24895A	6	36	Low-Side Buck	-	-	-	MSOP-8EP	The MP24895 in an MSOP-8EP package, PWM and analog dimming
MP4688	4.5	80	Buck	1	95	2MHz	SOIC-8, SOIC-8E	Hysteretic control, PWM dimming
MP4689A	4.5	100	Buck	1	95	1MHz	SOIC-8EP	Hysteresis current-mode control, dedicated PWM dimming control input

## DC/DC LIGHTING | LED LIGHTING

## Regulators

	Part Number	$V_{in}$ (Min) (V)	$V_{in}$ (Max) (V)	Configuration	$I_{out}$ (A)	Max Efficiency (%)	Typ Frequency	Package	Notes
N	MP2410	4.2	24	Buck	2	97	1MHz	TSOT23-6, TSOT23-8	Synchronous buck, analog dimming only
N	MP2410A	4.2	24	Buck	2	97	1MHz	TSOT23-6, TSOT23-8	Synchronous buck, analog and PWM dimming
N	MP2410B	4.2	24	Buck	2	97	1MHz	TSOT23-6, TSOT23-8	Synchronous buck, analog and PWM dimming, supports battery charger
N	MP2489	6	60	Low-Side Buck	1	95	600kHz	QFN-6 (3x3), TSOT23-5, SOIC-8E	Hysteretic control

## Controllers

	Part Number	$V_{in}$ (Min) (V)	$V_{in}$ (Max) (V)	Power (W)	Configuration	Max Efficiency (%)	Package	Notes
	MP4012	8	55	Ext FET	Buck/Boost/Buck-Boost/SEPIC	-	SOIC-16	HV9912 pin comp, for backlight (i.e. $V_{out} > 200V$ ) and lighting (high-output power)
	MP24894	6	60	Ext FET	Low-Side Buck	95	TSOT-6	Buck controller, hysteresis control

## PHOTO FLASH | LED LIGHTING

	Part Number	Charge Type	$V_{in}$ (Min) (V)	$V_{in}$ (Max) (V)	$V_{sw}$ (Max) (V)	$I_{out}$ (Max) (A)	$I_{out}$ (Min) (A)	Package	Notes
	MP3331	WLED	2.7	5.5	6	2	-	WLCSP (1.7x1.7)	Single-channel boost driver for smartphone camera flash
	MP3361	Xenon Flash	2.5	6	60	1.2	1.0 (Typ)	MSOP-10	Highly integrated, IGBT driver
	MP3360	Xenon Flash	2.5	6	60	1.7	0.4	QFN-10 (2x2)	Programmable peak current, highly integrated, IGBT driver for mobile phones
	MP3356	Xenon Flash	2.8	6	50	1.7	1.5	QFN-10 (2x2)	Highly integrated, IGBT driver for DSC
	MP3351	Xenon Flash	3	6	60	2	0.3	QFN-16 (3x3)	Integrated photo flash charger with IGBT driver
	MP3352	Xenon Flash	3	6	60	2.5	0.3	QFN-16 (3x3)	Integrated photo flash charger with IGBT driver and quench

## SINGLE-CELL SWITCHING CHARGERS | BATTERY MANAGEMENT

Part Number	Operating $V_{IN}$ (Min) (V)	Operating $V_{IN}$ (Max) (V)	Absolute $V_{IN}$ (Max) (V)	Charge Current (Max) (A)	Battery Charge Voltage (V)	OTG Current (Max) (A)	$f_{SW}$ (kHz)	Control Interface	NVDC Power Path	Battery Type	Package	Notes
MP2611	3.95	6	7.5	2	4.2	-	1500	Standalone	-	Li-Ion, Li-Polymer	QFN-14 (3x4)	Dual inputs, NTC battery temp monitor
MP2615B	4.5	18	23	2	3.99/ 4.03	-	760	Standalone	-	Li-Ion, Li-Polymer	QFN-16 (3x3)	NTC battery temp monitor
<b>N</b> MP2615C	3.95	18	23	2	4.1/8.4	-	760	Standalone	-	Li-Ion, Li-Polymer	QFN-16 (3x3)	NTC battery temp monitor, 25m $\Omega$ $R_{SNS}$
MP2625B	4	10	20	2	4.2	-	1600	Standalone	✓	Li-Ion, Li-Polymer	QFN-20 (3x4)	NTC battery temp monitor
MP2626	4.2	6.5	20	2	4.2/ 4.35	1.5	1200/ 600	Standalone	-	Li-Ion, Li-Polymer	QFN-24 (4x4)	NTC battery temp monitor
MP2617A	4	10	20	3	4.35	-	1600	Standalone	✓	Li-Ion, Li-Polymer	QFN-20 (3x4)	NTC battery temp monitor
MP2617B	4	10	20	3	4.2	-	1600	Standalone	✓	Li-Ion, Li-Polymer	QFN-20 (3x4)	NTC battery temp monitor
MP2617H	4	14	20	3	4.2	-	1600	Standalone	✓	Li-Ion, Li-Polymer	QFN-20 (3x4)	NTC battery temp monitor
<b>N</b> MP2695	4	11	16	3.6	3.6 to 4.45	-	720/ 1200	I <sup>2</sup> C	-	Li-Ion, Li-Polymer	QFN-21 (3x3)	JEITA battery NTC monitor, OTP programmable charging parameters, battery current monitor
MP2624	3.6	7	20	4.5	3.48 to 4.425	1.3	1700	I <sup>2</sup> C	✓	Li-Ion, Li-Polymer	QFN-22 (3x4)	JEITA battery NTC monitor, BC1.2 detection, shipping mode, OTG OCP hiccup function
MP2624A	3.6	7	20	4.5	3.48 to 4.425	1.3	1700	I <sup>2</sup> C	✓	Li-Ion, Li-Polymer	QFN-22 (3x4)	JEITA battery NTC monitor, BC1.2 detection, shipping mode, OTG OCP latch function
<b>N</b> MP2629	3.7	5.5	22	4.5	3.4 to 4.67	3	750/ 1500	I <sup>2</sup> C/ Standalone	✓	Li-Ion, Li-Polymer	QFN-26 (3.5x3.5)	JEITA battery NTC monitor, OTP programmable charging parameters, ADC
<b>N</b> MP2639B	3.6	16	20	5	4.35	3	1300	Standalone	-	Li-Ion, Li-Polymer	QFN-26 (4x4)	JEITA battery NTC monitor, LED fuel gauge, battery current monitor
<b>N</b> MP2723	3.7	5.5	22	3	3.4 to 4.67	1.5	1000/ 1350	I <sup>2</sup> C/ Standalone	✓	Li-Ion, Li-Polymer	QFN-26 (3.5x3.5)	JEITA battery NTC monitor, OTP programmable charging parameters, ADC
<b>N</b> MP2731	3.7	16	22	4.5	3.4 to 4.67	3	1000/ 1500	I <sup>2</sup> C/ Standalone	✓	Li-Ion, Li-Polymer	QFN-26 (3.5x3.5)	JEITA battery NTC monitor, OTP programmable charging parameters, ADC

## LINEAR CHARGERS | BATTERY MANAGEMENT

Part Number	Operating $V_{IN}$ (Min) (V)	Operating $V_{IN}$ (Max) (V)	Absolute $V_{IN}$ (Max) (V)	Charge Current (Max) (mA)	Battery Charge Voltage (V)	Power Path	Control Interface	Battery Type	Package	Notes
MPQ5480	4	6	7	7.8 to 127	4.10	✓	Standalone	Li-Ion, Li-Polymer	WLCSP-16 (1.7x1.7)	Integrated charger with 5V/100mA DC/DC, synchronous regulator
MP2603	2.8	5.25	25	50 to 150	4.20	-	Standalone	Li-Ion, Li-Polymer	TSOT23-5	Charging indication
MP2660	4	5.85	13	8 to 500	3.6 to 4.5	✓	I <sup>2</sup> C	Li-Ion, Li-Polymer/ LiFePO4	WCSP-9 (1.55x1.55)	Shipping mode, integrated battery pack protection, OTP programmable charging parameters, NTC battery temp monitor
MP2661	4	5.85	13	8 to 500	3.6 to 4.565	✓	I <sup>2</sup> C	Li-Ion, Li-Polymer/ LiFePO4	WCSP-9 (1.55x1.55)	Shipping mode, integrated battery pack protection, OTP programmable charging parameters, NTC battery temp monitor



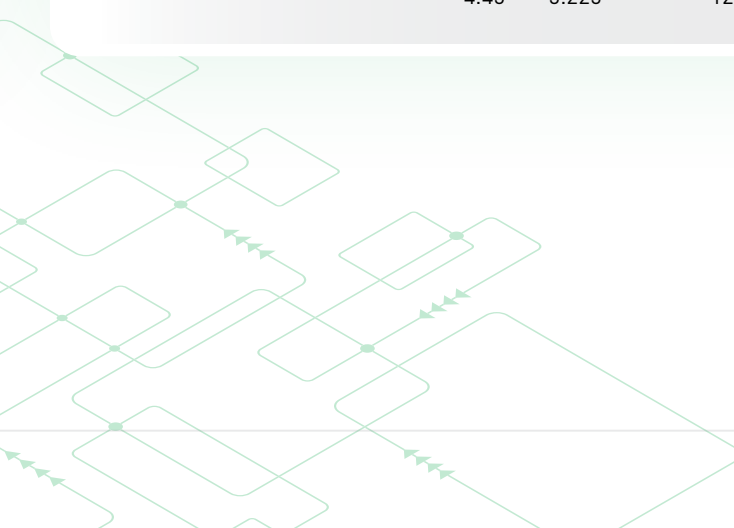
	Part Number	Operating $V_{IN}$ (Min) (V)		Operating $V_{IN}$ (Max) (V)	Absolute $V_{IN}$ (Max) (V)	Charge Current (Max) (mA)	Battery Charge Voltage (V)	Power Path	Control Interface	Battery Type	Package	Notes
N	MP2662	3.83	5.85	21	8 to 456	3.6 to 4.5	✓	I <sup>2</sup> C	Li-Ion, Li-Polymer/LiFePO <sub>4</sub>	WCSP-9 (1.75x1.75)	Shipping mode, integrated battery pack protection, 1µA battery leakage current, low $R_{DS(ON)}$ , OTP programmable charging parameters, NTC battery temp monitor	
	MP2663	4.35	5.5	13	8 to 500	3.6 to 4.5	✓	I <sup>2</sup> C	Li-Ion, Li-Polymer/LiFePO <sub>4</sub>	WCSP-9 (1.55x1.55)	Shipping mode, integrated battery pack protection, OTP programmable charging parameters, NTC battery temp monitor	
	MP2664	4	5.85	13	8 to 500	3.6 to 4.5	✓	I <sup>2</sup> C	Li-Ion, Li-Polymer/LiFePO <sub>4</sub>	QFN-10 (2x2)	Shipping mode, integrated battery pack protection, OTP programmable charging parameters, NTC battery temp monitor	
	MP2602	3.2	5.8	28	85 to 1000	4.20	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	NTC battery temp monitor, adapter present and charging indication, programmable termination current	
	MP26028	3.2	6.8	20	85 to 1000	4.20	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Adapter present and charging indication, programmable termination current	
	MP26029	3.9	6.25 or 10.6	13	30 to 1000	3.6 to 4.4	-	Standalone	Li-Ion, Li-Polymer	SOT563, SOIC-8E, QFN-10 (3x3)	NTC battery temp monitor, OTP programmable charging parameters, die temperature regulation, P2P with the MP2602	
	MP2604	3.2	6.7	28	85 to 1000	4.2	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Adapter present and charging indication, programmable termination current, NTC battery temp monitor	
	MP2605	2.5	6.7	28	200 to 1000	4.20	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Adapter present and charging indication, NTC battery temp monitor	
	MP26053	2.5	6.7	28	200 to 1000	4.20	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Adapter present and charging indication, NTC battery temp monitor	
	MP26056	2.5	6.8	28	200 to 1000	4.20	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Dual-mode USB and AC adapter current limits, adapter present and charging indication, programmable termination current	
	MP26057	3.5	6.8	28	200 to 1000	4.20	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Adapter present and charging indication, programmable termination current, NTC battery temp monitor	
	MP26058	2.8	6.7	28	200 to 1000	4.20	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Adapter present and charging indication, programmable termination current, NTC battery temp monitor	
	MP2606	3.2	6.8	28	85 to 1000	4.20	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Adapter present and charging indication, programmable termination current	
	MP26060	3.2	6.8	24	85 to 1000	4.15	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Adapter present and charging indication, programmable termination current	
	MP2607	4.51	6.27	13	300 to 1500	4.20	✓	Standalone	Li-Ion, Li-Polymer	QFN-14 (3x4)	Power-path management, dual-mode USB and AC adapter current limits, low $R_{DS(ON)}$ , adapter present and charging indication, NTC battery temp monitor	
	MP2608	4.25	5.8	28	100 to 1000	4.20	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Dual inputs, fault and charging indication, programmable termination current	
	MP26121	2.5	6.7	28	200 to 1000	4.20	-	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Adapter present and charging indication, NTC battery temp monitor	
	MP2631	2.5	6.7	28	200 to 1000	4.20	✓	Standalone	Li-Ion, Li-Polymer	QFN-10 (3x3)	Integrated 10mA LDO, adapter present and charging indication	
N	MP2667	4	5.85	13	26 to 1049	3.6 to 4.545	✓	I <sup>2</sup> C	Li-Ion, Li-Polymer/LiFePO <sub>4</sub>	WLCSP-16 (1.7x1.7)	Shipping mode, integrated battery pack protection, OTP programmable charging parameters, NTC battery temp monitor	
S	MP2665	3.83	5.85	21	16 to 896	3.6 to 4.545	✓	I <sup>2</sup> C	Li-Ion, Li-Polymer/LiFePO <sub>4</sub>	QFN-12 (2.5x3.0)	Shipping mode, integrated battery pack protection, 1µA battery leakage current, low $R_{DS(ON)}$ , OTP programmable charging parameters, NTC battery temp monitor	



## MULTI-CELL SWITCHING CHARGERS | BATTERY MANAGEMENT

Part Number	Operating $V_{IN}$ (Min) (V)	Operating $V_{IN}$ (Max) (V)	Absolute $V_{IN}$ (Max) (V)	Charge Current (Max) (A)	Battery Charge Voltage (V)	$f_{SW}$ (kHz)	Topology	# of Series Cells	Control Interface	Battery Type	Package	Notes
<b>MP2610</b>	5	24	26	2	4.2/8.4	1100	Non-Sync Buck	1, 2	Standalone	Li-Ion, Li-Polymer	QFN-16 (4x4)	NTC battery temp monitor
<b>MP26101</b>	5	24	26	2	4.1/8.2	1100	Non-Sync Buck	1, 2	Standalone	Li-Ion, Li-Polymer	QFN-16 (4x4)	NTC battery temp monitor
<b>MP26123</b>	9	24	26	2	8.4/12.6	600	Non-Sync Buck	2, 3	Standalone	Li-Ion, Li-Polymer	QFN-16 (4x4)	NTC battery temp monitor
<b>MP26124</b>	18	24	28	2	16.8	600	Non-Sync Buck	4	Standalone	Li-Ion, Li-Polymer	QFN-16 (4x4)	NTC battery temp monitor
<b>MP2615</b>	3.95	18	23	2	4.1/8.4	760	Sync Buck	1, 2	Standalone	Li-Ion, Li-Polymer	QFN-16 (3x3)	NTC battery temp monitor
<b>MP2615A</b>	3.95	18	23	2	4.2/8.7	760	Sync Buck	1, 2	Standalone	Li-Ion, Li-Polymer	QFN-16 (3x3)	NTC battery temp monitor
<b>N MP2615C</b>	3.95	18	23	2	4.1/8.4	760	Sync Buck	1, 2	Standalone	Li-Ion, Li-Polymer	QFN-16 (3x3)	NTC battery temp monitor, 25mΩ $R_{SNS}$
<b>MP2619</b>	3.4	24	26	2	8.4/12.6	600	Non-Sync Buck	2, 3	Standalone	Li-Ion, Li-Polymer	QFN-28 (4x5)	Power-path management, NTC battery temp monitor
<b>MP2623</b>	3.5	24	26	2	3.6/7.2	1100	Non-Sync Buck	1, 2	Standalone	LiFePO4	QFN-16 (4x4)	NTC battery temp monitor
<b>N MP2672</b>	3.65	5.75	14	2	8.4	600/1200	Sync Boost	2	I <sup>2</sup> C/ Standalone	Li-Ion, Li-Polymer	QFN-18 (2x3)	NVDC power-path management, JEITA battery NTC monitor, OTP programmable charging parameters, integrated cell balancing
<b>MP2639A</b>	3.9	5.5	20	2.5	8.4	1300	Sync Boost	2	Standalone	Li-Ion, Li-Polymer	QFN-26 (4x4)	JEITA battery NTC monitor, LED fuel gauge, battery current monitor, integrated cell balancing, USB OTG
<b>N MP2639C</b>	3.9	5.5	20	2.5	8.4	1300	Sync Boost	2	Standalone	Li-Ion, Li-Polymer	QFN-26 (4x4)	USB OTG, integrated cell-balancing, USB-compatible, JEITA battery NTC monitor, thermal regulation, $V_{IN}$ regulation, LED fuel gauge
<b>N MP2659</b>	3.9	36	40	3	10.8 to 26.1	350/680	Sync Buck	3, 4, 5, 6	Standalone	Li-Ion, Li-Polymer/ LiFePO4	QFN-19 (3x3)	Battery NTC monitor, OTP programmable charging parameters, integrated power FETs
<b>N MP2759</b>	3.9	36	40	3	3.6 to 26.4	1000/1350	Sync Buck	1, 2, 3, 4, 5, 6	Standalone	Li-Ion, Li-Polymer/ LiFePO4	QFN-19 (3x3)	Battery NTC monitor, OTP programmable charging parameters, integrated power FETs
<b>N MP2672A</b>	3.65	5.75	14	2	8.4	1000/1500	Sync Boost	2	I <sup>2</sup> C/ Standalone	Li-Ion, Li-Polymer	QFN-18 (2x3)	NVDC power-path management, JEITA battery NTC monitor, OTP programmable charging parameters, integrated cell balancing

Part Number	Operating $V_{IN}$ (Min) (V)	Operating $V_{IN}$ (Max) (V)	Absolute $V_{IN}$ (Max) (V)	Charge Current (Max) (A)	Battery Charge Voltage (V)	OTG Voltage (V)	OTG Current (Max) (A)	$f_{SW}$ (kHz)	Control Interface	Battery Type	Package	Notes
<b>MP2633A</b>	4.2	6.5	20	1.5	4.2/ 3.6	4.2 to 6	1.5	1200/ 600	Standalone	Li-Ion, Li-Polymer/ LiFePO4	QFN-24 (4x4)	Power-path management, NTC battery temp monitor, adjustable boost output voltage
<b>MP2635A</b>	4.2	6.5	20	2	4.2/ 3.6	4.2 to 5.6	1.5	1200/ 600	Standalone	Li-Ion, Li-Polymer/ LiFePO4	QFN-24 (4x4)	Power-path management, NTC battery temp monitor, adjustable boost output voltage
<b>MP2635B</b>	4.2	6.5	20	2	4.2/ 4.35	4.2 to 5.6	1.5	1200/ 600	Standalone	Li-Ion, Li-Polymer	QFN-24 (4x4)	Power-path management, NTC battery temp monitor, adjustable boost output voltage
<b>MP2637</b>	4.5	6.5	20	2.5	4.2/ 4.35	4.2 to 6	2.4	600	Standalone	Li-Ion, Li-Polymer	QFN-24 (4x4)	Power-path management, NTC battery temp monitor, adjustable boost output voltage
<b>MP2637A</b>	4.5	6.5	20	2.5	4.055/ 4.2	4.2 to 6	2.4	620	Standalone	Li-Ion Li-Polymer	QFN-24 (4x4)	Power-path management, NTC battery temp monitor, adjustable boost output voltage
<b>MP2639A</b>	4.05	5.75	20	2.5	8.4	4.5 to 5.5	5	1300	Standalone	Li-Ion Li-Polymer	QFN-26 (4x4)	JEITA battery NTC monitor, LED fuel gauge, battery current monitor, integrated cell balancing, adjustable buck output voltage
<b>N MP2639C</b>	3.9	5.75	20	2.5	8.4	4.5 to 5.5	5	1300	Standalone	Li-Ion Li-Polymer	QFN-26 (4x4)	USB OTG, integrated cell balancing, USB-compatible, JEITA battery NTC monitor, thermal regulation, $V_{IN}$ regulation, LED fuel gauge
<b>MP2690</b>	3.6	5.8	14	2.5	4.2/ 4.35/ 4.45	5.1	2.1	600	Standalone	Li-Ion Li-Polymer	QFN-26 (4x4)	Power-path management, BC1.2 detection, LED fuel gauge, NTC battery temp monitor, all-in-one autonomous mode
<b>MP2632B</b>	3.6	5.8	20	3	4.2/ 4.35/ 4.45	5.1	3	600	Standalone	Li-Ion Li-Polymer	QFN-26 (4x4)	Power-path management, BC1.2 detection, LED fuel gauge, NTC battery temp monitor, all-in-one autonomous mode
<b>MP2636</b>	4.5	6.5	16	3	4.2/ 4.3/ 4.35	4.2 to 6	3	600	Standalone	Li-Ion Li-Polymer	QFN-30 (4x4)	Power-path management, NTC battery temp monitor, adjustable boost output voltage, battery current monitor
<b>N MP2696A</b>	4	11	16	3.6	3.6 to 4.45	5.05 to 5.225	3.6	700/ 1200	I <sup>2</sup> C	Li-Ion Li-Polymer	QFN-21 (3x3)	JEITA battery NTC monitor, power-path management, OTP programmable charging parameters, battery current monitor, programmable boost output voltage
<b>MP2639B</b>	4.5	16	20	5	4.35	5 to 15	3	1300	Standalone	Li-Ion Li-Polymer	QFN-26 (4x4)	JEITA battery NTC monitor, LED fuel gauge, battery current monitor, adjustable boost output voltage
<b>MP2659</b>	4.2	36	40	3	10.8 to 26.4	700/ 350	Sync Buck	3, 4, 5, 6	Standalone	Li-Ion Li-Polymer	QFN-19 (3x3)	Battery NTC monitor, OTP programmable charging parameters, integrated power FETs
<b>S MP2696B</b>	4	11	16	3.6	3.6 to 4.45	5.05 to 5.225	3.6	700/ 1200	I <sup>2</sup> C	Li-Ion Li-Polymer	QFN-21 (3x3)	JEITA battery NTC monitor, power-path management, OTP programmable charging parameters, battery current monitor, programmable boost $V_{OUT}$

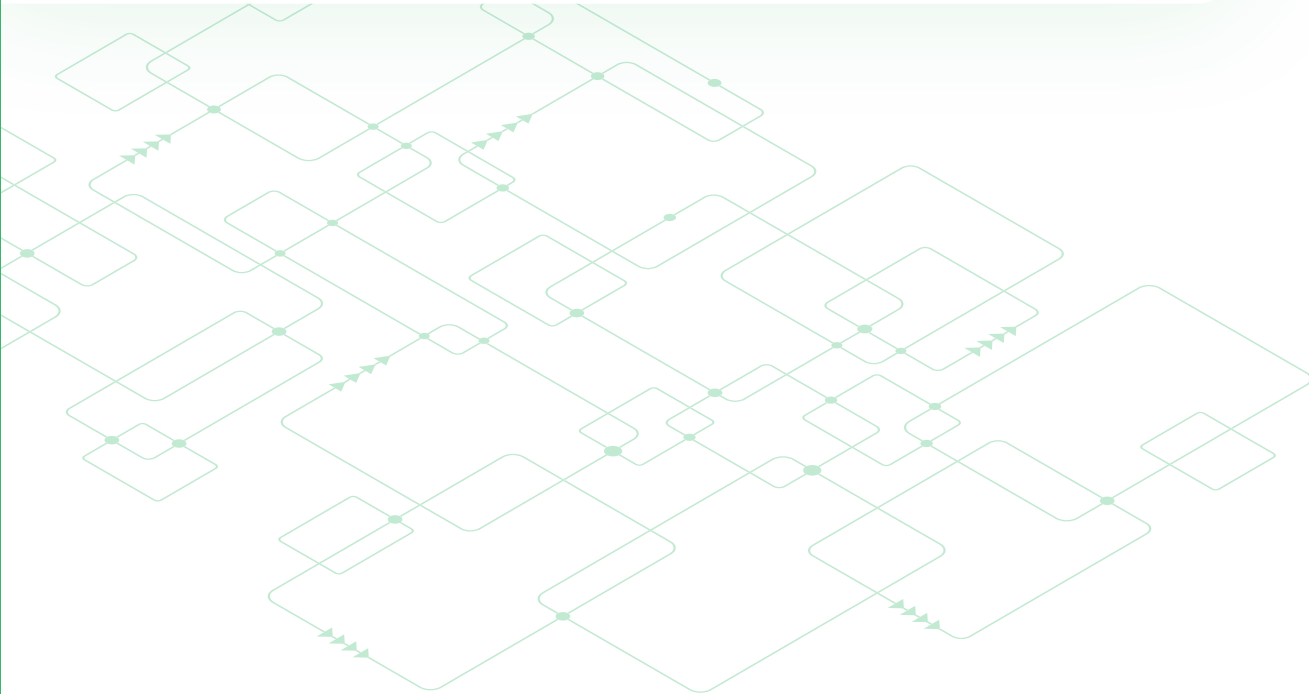


## CRADLE CHARGERS | BATTERY MANAGEMENT

Part Number	Operating $V_{IN}$ (Min) (V)	Operating $V_{IN}$ (Max) (V)	Absolute $V_{IN}$ (Max) (V)	Charge Current (Max) (A)	Charge Status	Charge Type	Battery Charge Voltage (V)	Package	Notes
<b>MP26075</b>	2.5	6.1	28	1	✓	CV/CC Linear	4.05 to 4.2	QFN-10 (3x3)	Pre-charge function, thermal foldback, voltage control function for flyback controller
<b>MP26085</b>	7	20	22	20	-	CV/CC Controller	Programmable	SOT23-8	CC/CV controller with 1.223V voltage reference
<b>MP2681</b>	4.9	30	36	4	✓	CV/CC Controller	4.15 to 20.75	SOIC-16	Full protection and indication, one-chip solution for power tool applications
<b>MP2681B</b>	4.9	30	36	5	✓	CV/CC Controller	4.158 to 20.79	SOIC-16	Full protection and indication, one-chip solution for power tool applications

## PROTECTION | BATTERY MANAGEMENT

Part Number	Operating $V_{IN}$ (Min) (V)	Operating $V_{IN}$ (Max) (V)	Absolute $V_{IN}$ (Max) (V)	Charge Type	Package	Notes
<b>MP2670</b>	3	5.55	30	Battery Protection	QFN-10 (3x3)	Li-ion battery charger, protection circuit
<b>MP2671</b>	2.7	5.65	30	Battery Protection	QFN-12 (3x4)	Li-ion battery charger, protection circuit



# WHITE LED DRIVERS | DISPLAY BACKLIGHTING POWER

## Inductors & Charge Pumps

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	V <sub>OUT</sub> (Max) (V)	# of Channels	Current Limit (Typ) (A)	V <sub>FB</sub> (V)	f <sub>SW</sub> (kHz)	Open LED Protection	Type	Package	Notes
MP1517	2.6	25	25	1	4	0.7	1100	✓	Boost	QFN-16 (4x4)	UVLO, external comp
MP1518	2.5	6	25	1	0.35	0.104	1300	-	Boost	QFN-8 (2x2), TSOT23-6	-
MP1519	2.5	5.5	10	4	-	-	1300	-	Charge Pump	QFN-16 (3x3)	Common cathode
MP1528	2.7	36	36	1	0.95	0.4	Variable	✓	Boost	MSOP-8, QFN-6 (3x3), QFN-8 (2x3)	Drives up to 9 series white LED drivers
MP1529	2.7	5.5	25	3	1.2	-	1200	✓	Boost	QFN-16 (4x4)	Integrated flash
<b>N</b> MP23701	4.2	24	-	1	-	0.1	1500	✓	Buck	UTQFN-8 (1.5x2.5)	2A, 1.5MHz, synchronous, step-down LED driver
MP24830-C470	Offline	Offline	External FET	1	External FET	0.2	50 to 365	✓	Buck-Boost	SOIC-14, QFN-14	Power leverage in 2.5 power stages, low BOM cost and high efficiency
MP3021	2.7	5.5	4	4	-	-	1250	-	Charge Pump	QFN-16 (3x3)	Single-wire brightness control, common anode
MP3202	2.5	6	25	1	1.3	0.104	1300	✓	Boost	QFN-8 (2x2), TSOT23-5	UVLO, low EMI, thermal shutdown
MP3204	2.5	6	21	1	0.35	0.104	1300	✓	Boost	TSOT23-6	UVLO, low EMI, thermal shutdown
MP3205	2.5	6	21	1	0.35	0.104	1300	-	Boost	TSOT23-5	MP3204 without 0V pin
MP3301	2.5	6	36	1	1	-	1300	✓	Boost	TSOT23-5	Up to 10 series LED
MP3302	2.5	6	36	1	1.3	0.2	1300	✓	Boost	QFN-8 (2x3), TSOT23-5	UVLO, low EMI, thermal shutdown
MP3304A MP3304B MP3304C	3	6	36 24 18	1	1.33	0.2	2200	✓	Boost	QFN-8 (2x3)	High efficiency, true PWM dimming
MP3305	3	6	36	1	1.33	0.2	2200	✓	Boost	QFN-8 (2x3)	High efficiency, true PWM dimming, adjustable OVP threshold
MP3306	3	12	30	1	1.8	0.2	700	✓	Boost	QFN-12 (2x2)	Synchronous boost, integrated disconnect FET
MP3307	2.7	5.5	35	1	1.6 (Min)	0.2	300 to 2200, Prog	✓	Boost	TSOT23-8	Up to 2.2MHz for automotive infotainment LCD
MP3308	3	6	36	1	1.3	0.2	2200	✓	Boost	QFN-14 (3x4)	Supporting CABG dimming
MP3309	2.7	5.5	35	1	1.5	0.2	300 to 2200, Prog	✓	Boost	QFN-10 (1.4x1.8)	Synchronous boost
MP3309A	2.7	5.5	35	1	1.5	0.2	300 to 2200, Prog	✓	Boost	QFN-10 (3x3)	Synchronous boost
MP3309C	2.7	5.5	35	1	1.5	0.2	300 to 2200, Prog	✓	Boost	QFN-10 (1.4x1.8)	Synchronous boost, I <sup>2</sup> C interface
MP3309L	2.7	5.5	24	1	1.6	0.2	300 to 2200, Prog	✓	Boost	QFN-10 (1.4x1.8)	Synchronous boost
MP3310	4.5	25	50	1	1.3	0.5	1200, Prog	✓	Boost	QFN-10 (3x3)	-
MP3312	2.7	5.5	36	2	1.8	0.24	1200	✓	Boost	WLCSP-9 (1.3x1.3)	-
MP3313	2.7	5.5	38	3	1.5	-	250/500/1000	✓	Boost	WLCSP-12	Linear/exponential dimming, analog dimming, 100mA LED current in flash mode, I <sup>2</sup> C

## WHITE LED DRIVERS | DISPLAY BACKLIGHTING POWER

### Inductors & Charge Pumps

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	V <sub>OUT</sub> (Max) (V)	# of Channels	Current Limit (Typ) (A)	V <sub>FB</sub> (V)	f <sub>sw</sub> (kHz)	Open LED Protection	Type	Package	Notes
<b>MP3318</b>	2.7	5.5	38	3	1.5	-	250/500/1000	✓	Boost	WLCSP-12	Linear/exponential dimming, 50mA LED current in flash mode, I <sup>2</sup> C
<b>S</b> <b>MP3326</b>	4	16	-	16	-	-	-	✓	LED Driver with Current Source	QFN4-24 (4x4)	10 programmable addresses, programmable LED current slew rate, phase shift
<b>S</b> <b>MP3362</b>	3	36	36	1	4	0.2	200 to 2200 Prog	✓	Boost	FCTSOT23-8	Low R <sub>DS(ON)</sub> , soft start operation
<b>S</b> <b>MP3363</b>	1.8	36	36	1	1	0.2	200 to 2200 Prog	✓	Boost	FCTSOT23-8	Low R <sub>DS(ON)</sub> , soft start operation
<b>MP3366</b>	3	25	50	6	2.5	0.5	600	✓	Boost	WLCSP-18 (1.3x2.5)	Smart dimming, tablet PC
<b>N</b> <b>MP3367</b>	3.5	36	45	6	3	0.4	200 to 2200	✓	Boost/SEPIC	QFN4-24 (4x4), TSSOP-28EP	I <sup>2</sup> C interface, 15000:1 dimming ratio, prog. LED short threshold, prog. OVP threshold
<b>N</b> <b>MP3370</b>	3.5	36	38	1	3	-	350 to 450	✓	Boost	SOIC-8E	LED driver with current source
<b>S</b> <b>MP3371</b>	3	30	50	8	1.8/2.5	-	350/500/650/800/950/1200	✓	Boost	QFN4-24 (4x4)	I <sup>2</sup> C interface, linear smooth dimming, multiple dimming operation mode
<b>MP3373</b>	9	40	External FET	8	External FET	0.2	100 to 1000	✓	Boost	SOIC-28, TSSOP-28	Phase-shift inductor short protection, cost-effective, replaces the MP3393 in new designs
<b>MP3376</b>	3	30	36	8	2.5	-	350 to 2400	✓	Boost	QFN-24 (4x4)	Max 50mA/string, I <sup>2</sup> C interface
<b>MP3376A</b>	3	30	37.5	8	2.5	-	350 to 2400	✓	Boost	QFN-24 (4x4)	Max 50mA/string, I <sup>2</sup> C interface
<b>S</b> <b>MP3377</b>	3	30	36	8	1.8/2.5	-	350/500/650/800/950/1200/1800/2400	✓	Boost	CSP-25 (2.6x2.6)	4 I <sup>2</sup> C addresses, linear smooth dimming, multiple dimming operation mode
<b>MP3378</b>	5	24	55	4	-	-	300 to 500	✓	Boost	SOIC-28, TSSOP-28EP	Integrated boost controller, DC/DC buck converter
<b>MP3384L</b>	3	25	50	4	1.3	0.6	1250 or 625	✓	Boost	QFN-16 (3x3)	-
<b>MP3385</b>	4.5	33	External FET	4	External FET	0.6	100 to 900	✓	Boost	QFN-20	I <sup>2</sup> C digital interface, ABS 80V LED feedback voltage rating, max 300mA/channel
<b>MP3387A</b>	3	26	50	6	2.5	-	500 to 1250	✓	Boost	TQFN-24 (4x4)	Max 80mA/string, combined analog and PWM dimming
<b>MP3387L</b>	3	25	50	6	2.5	0.6	500 to 1250	✓	Boost	TQFN-24 (4x4)	Smart dimming
<b>MP3388S</b>	4.5	25	50	8	2	0.6	625 or 1250	✓	Boost	QFN-24 (4x4), SOIC-28	PWM/DC input burst PWM dimming
<b>MP3389</b>	5	28	External FET	12	External FET	0.6	100 to 500	✓	Boost	TSSOP-28EP, SOIC-28	External MOSFET, PWM or DC input burst, PWM dimming
<b>MP3391</b>	9	35	External FET	8	External FET	0.45	150 to 500	✓	Boost	SOIC-28, TSSOP-28EP	80mA/channel for 18" to 24" LCD panels/TVs
<b>MP3394S</b>	5	28	55	4	External FET	0.3	150 to 500	✓	Boost	TSSOP-16EP, SOIC-16	Replaces the MP3394
<b>MP3398A</b>	5	28	External FET	4	External FET	0.6	100 to 500	✓	Boost	TSSOP-16EP, SOIC-16, SOIC-20	Inductor short protection, separate ADIM pin
<b>MP3398D</b>	5	28	55	4	External FET	-	100 to 500	✓	Boost	SOIC-16, SOIC-20	Max 350mA/channel, analog and PWM dimming

## WHITE LED DRIVERS | DISPLAY BACKLIGHTING POWER

### Inductors & Charge Pumps

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	V <sub>OUT</sub> (Max) (V)	# of Channels	Current Limit (Typ) (A)	V <sub>FB</sub> (V)	f <sub>SW</sub> (kHz)	Open LED Protection	Type	Package	Notes
MP3398L	4.5	28	External FET	4	External FET	0.6	100 to 500	✓	Boost	SOIC-16	Lower V <sub>IN</sub> (min) than the MP3398A
MP3412	0.8	4.4	5	1	1.1	0.2	1000	✓	Boost	TSOT23-6	High efficiency
MP4013B	8	26	External FET	1	External FET	0.6	100 to 600	✓	Boost	SOIC-16	More features and better protection, replaces the MP4012 and MP4013 in new designs
MP4601	4.5	75	75	1	2.5	0.2	200 to 2000	✓	Buck-Boost	TSSOP-16EP, SOIC-16	Novel power-leverage technology, regulates LED string up to 350V
MP4653	Offline	Offline	External FET	1	External FET	0.2	20 to 250	✓	LLC	SOIC-20	LIPS CC/CV mode low BOM cost, high efficiency
MP4655	Offline	Offline	External FET	1	External FET	0.2	40 to 130	✓	LLC	SOIC-28	Single-stage LED driver and system voltage regulator
<b>S</b> MP4657	4	16	80	4	-	1.2	20 to 350	✓	Pre-Flyback	SOIC-16	Pure single-stage, flyback LED driver and system voltage controller
MP4700	Offline	Offline	External FET	1	External FET	0.3	Up to 160	Ext Comp	Buck	SOIC-8E	BCM zero-current and valley voltage switching >97% efficiency, low BOM, low-power stress
MP9361	2.8	5	5	1	-	-	1350	✓	Reg Charge Pump	TSOT23-6	Internal soft start
<b>S</b> MPQ3326	4	16	-	16	-	-	-	✓	LED Driver with Current Source	QFN4-24 (4x4)	10 programmable addresses, programmable LED current slew rate, phase shift, AEC-Q100
<b>S</b> MPQ3362	3	36	36	1	4	0.2	200 to 2200 Prog	✓	Boost	FCTSOT23-8	4A current limit, low R <sub>DS(ON)</sub> , soft start operation, AEC-Q100
<b>N</b> MPQ3367	3.5	36	45	6	3	0.4	200 to 2200	✓	Boost/SEPIC	QFN4-24 (4x4), TSSOP-28EP	150mA/ch, I <sup>2</sup> C interface, high dimming ratio, prog. LED short threshold, prog. OVP threshold
<b>S</b> MPQ3369	3.5	36	45	6	3	0.4	200 to 2200	✓	Boost/SEPIC	QFN4-24 (4x4), TSSOP-28EP	100mA/ch, I <sup>2</sup> C interface, high dimming ratio, prog. LED short threshold, prog. OVP threshold
MPQ3386	4.5	25	50	6	2.5	0.6	1250	✓	Boost	QFN-24 (4x4)	White LED driver, industrial and AEC-Q100 qualified
MPQ9361	2.8	5	5	1	-	-	1350	-	Reg Charge Pump	TSOT23-6	Internal soft start, industrial grade

## LED PHOTO FLASH DRIVERS | DISPLAY BACKLIGHTING POWER

### Photo Flash

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	V <sub>OUT</sub> (Max) (V)	# of Channels	I <sub>OUT</sub> (Max) (A)	f <sub>SW</sub> (kHz)	Type	Package	Notes
MP3214	2.7	5.5	-	1	0.5	1.35	Charge Pump	QFN-16 (3x3)	Charge pump
MP3331	2.7	5.5	-	1	2	1/2/3/4	Boost	WLCSP-9 (1.7x1.7)	2A boost, I <sup>2</sup> C, sync rectification output disconnect
MP3332	2.7	5.5	5	2	3	1/2/3/4	Boost	WLCSP-16 (1.7x1.7)	3A boost, I <sup>2</sup> C, sync rectification output disconnect
<b>N</b> MP3336A	2.7	5.5	5.2	2	4	1/2/3/4	Boost	WLCSP-20 (1.6x2.0)	Flash LED driver with 2A/ch, I <sup>2</sup> C interface

## ANALOG INPUT | CLASS-D AUDIO

## Mono

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	P <sub>OUT</sub> (W)	Efficiency (%)	THD+N (%)	PSRR (dB)	Package	Notes
<b>MP1720</b>	2.5	5.5	2.7	90	0.11 @ 1W	60	QFN-10 (3x3), MSOP-10E	BTL, low EMI, high efficiency, flexible switching frequency setting
<b>MP7731</b>	9.5	18	30	90	0.10 @ 1W	60	TSSOP-20F	Exposed pad
<b>MPQ7731</b>	9.5	18	30	90	0.10 @ 1W	60	TSSOP-20F	Exposed pad, industrial grade
<b>MP7741</b>	9.5	36	10	94	0.02 @ 1W	58	QFN-10 (3x3)	Single-ended, fully integrated audio amplifier
<b>MP7740</b>	9.5	36	15	90	0.018 @ 1W	60	SOIC-8	Single-ended amplifier
<b>MP7747</b>	9.5	36	20	91	0.02 @ 1W	59	QFN-10 (3x3)	Single-ended, fully integrated audio amplifier

## Stereo

<b>MP7722</b>	9.5	24	20 (2x)	93	0.06 @ 1W	60	TSSOP-20F	Single-ended audio amplifier, exposed pad
<b>MP7742</b>	9.5	28	15 (2x)	90	0.018 @ 1W	60	TSSOP-20F	Single-ended, fully integrated audio amplifier, P2P with the MP7722, exposed pad
<b>MP7745</b>	9.5	26	20 (2x)	93	0.06 @ 1W	59	TSSOP-20F	
<b>MP7748S</b>	9.5	36	30 (2x)	94	0.02 @ 1W	59	TSSOP-28EP	2 x 30W SE or 1 x 60W BTL audio amplifier
<b>MP7751</b>	5	26	20 (2x)	92	0.06 @ 1W	60	TSSOP-28EP	5V to 26V <sub>DD</sub> , 2 x 20W BTL audio amplifier
<b>MP7752</b>	5	18	15 (2x)	90	0.06 @ 1W	60	TSSOP-28EP	5V to 18V <sub>DD</sub> , 2 x 15W filterless BTL audio amplifier
<b>MP7770</b>	9.5	36	45 (2x)	95	0.03 @ 1W	60	TSSOP-28F	2 x 45W SE or 1 x 90W BTL audio amplifier, 8.5A peak, exposed pad



# BRUSHED DC SOLENOID DRIVERS | MOTOR DRIVERS

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	# of Half-Bridges	I <sub>OUT</sub> (Max) (A)	Control Interface	Package	Notes
<b>MP6507</b>	2.7	15	4	0.7	PWM	TSSOP-16EP, QFN-16 (3x3), QFN-16 (4x4)	Bipolar stepper
<b>MP6508</b>	2.7	18	4	1.2	PWM	TSSOP-16EP, QFN-16 (4x4)	Bipolar stepper
<b>MP6513</b>	2.5	21	2	0.8	PWM	TSOT23-6	Half-bridge
<b>MP6513L</b>	2.5	5.5	2	0.6	PWM	TSOT23-6	Half-bridge
<b>MP6514</b>	2.5	14	2	0.6	PWM	UTQFN-8 (2x2)	Half-bridge, separate HS/LS control
<b>MP6515</b>	5.4	35	2	2.8	PWM	QFN-20 (3x4), TSSOP-16EP	Half-bridge
<b>MP6516</b>	5.4	35	2	2.8	PWM	TSSOP-16EP	Half-bridge, separate HS/LS control
<b>MP6519</b>	2.5	28	2	5	PWM	QFN-19 (3x3)	Half-bridge current regulator
<b>N MP6523</b>	7	28	3	0.9	SPI	QFN-24 (4x4)	Half-bridge, serial input control
<b>N MP6526</b>	7	28	6	0.9	SPI	SOIC-28, QFN-24 (4x4), QFN-24 (5x5)	Half-bridge, serial input control
<b>N MP6550</b>	1.8	22	2	2	PWM	QFN-12 (2x2)	Half-bridge
<b>S MP6610</b>	4	55	1	3	PWM	TSOT23-8, SOIC-8	Half-bridge power driver, IN/EN control inputs
<b>S MP6610A</b>	4	55	1	3	PWM	TSOT23-8	Half-bridge power driver, HS/LS control inputs
<b>S MP6619</b>	2.5	32	2	5	PWM	QFN-19 (3x3)	Half-bridge
<b>MP8040</b>	7.5	24	1	9	PWM	SOIC-8EP	Half-bridge driver
<b>MP8042</b>	7.5	24	2	5	PWM	TSSOP-20EF	Full-bridge driver
<b>MP8044</b>	7.5	22	2	5	PWM	TSSOP-20F	Full-bridge driver
<b>MP8046</b>	7.5	28	2	5	PWM	TSSOP-20F	Full-bridge driver
<b>MP8049S</b>	5	26	4	5.5	PWM	QFN-40 (5x5)	Dual full-bridge driver
<b>S MPQ6519</b>	2.5	32	2	5	PWM	QFN-19 (3x3)	Half-bridge current regulator
<b>MPQ6523</b>	7	28	3	0.9	SPI	QFN-24 (4x4)	Half-bridge driver for automotive HVAC
<b>N MPQ6524</b>	7	28	4	0.9	PWM	QFN-24 (4x4)	Half-bridge, serial input control
<b>MPQ6526</b>	7	28	6	0.9	SPI	QFN-24 (4x4), QFN-24 (5x5)	Half-bridge driver for automotive HVAC
<b>S MPQ6527</b>	5.5	40	10	0.8	SPI	TSSOP-28EP	Half-bridge
<b>S MPQ6610</b>	4	55	1	3	PWM	TSOT23-8, SOIC-8	Half-bridge power driver
<b>S MPQ6626</b>	5.5	40	6	0.8	SPI	TSSOP-28EP	Half-bridge
<b>S MPQ6628</b>	5.5	40	8	0.8	SPI	TSSOP-28EP	Half-bridge



## BRUSHLESS DC PRE-DRIVERS | MOTOR DRIVERS

	Part Number	Supply Voltage (Min) (V)	Supply Voltage (Max) (V)	V <sub>sw</sub> (Max) (V)	# of Half-Bridges	I <sub>SWK</sub> /I <sub>SOURCE</sub> (A)	Hall Input	Package	Notes
	MP1921A	9	18	100	1	2.5/1.5	-	SOIC-8EP, QFN-8 (3x3), QFN-9 (3x3), QFN-10 (4x4)	Half-bridge gate driver
N	MP1921B	9	18	100	1	2.5/1.5	-	QFN-10 (3x3)	Half-bridge gate driver
S	MP1922	4	15	100	1	4/3	-	QFN-22 (4x5)	Half-bridge pre-driver
	MP1924A	8	15	100	1	4.5/3	-	QFN-10 (4x4), SOIC-8	Half-bridge gate driver
N	MP1925	8	15	100	1	4.5/3	-	QFN-8 (4x4)	Half-bridge gate driver
	MP6528	5	60	-	2	1/0.8	-	QFN-28 (4x4)	Half-bridge pre-driver
	MP6530	5	60	60	3	1/0.8	-	QFN-28 (4x4), TSSOP-28EP	Three-phase BLDC pre-driver
	MP6532	5	60	60	3	1/0.8	✓	QFN-28 (4x4), TSSOP-28EP	Three-phase BLDC pre-driver, commutation logic
	MP6534	5	55	55	3	1/0.8	-	QFN-41 (5x5)	Three-phase BLDC pre-driver, commutation logic, buck regulator
	MP6535	5	55	55	3	1/0.8	✓	QFN-40 (5x5)	Three-phase BLDC pre-driver, buck regulator
	MP6537	8	100	-	3	1/0.8	-	QFN-28 (4x5)	Three-phase BLDC pre-driver, PWM and enable inputs
	MP6538	8	100	-	3	1/0.8	✓	QFN-28 (4x5)	Three-phase BLDC pre-driver, Hall commutation logic
	MP6539	8	100	-	3	1/0.8	-	QFN-28 (4x5), TSSOP-28EP	Three-phase BLDC pre-driver, HS/LS inputs
N	MP6539B	8	100	-	3	1/0.8	-	QFN-28 (4x5), TSSOP-28EP	Three-phase BLDC pre-driver
	MP6570	3	3,6	5	-	-	-	QFN-32 (4x4)	BLDC FOC controller
S	MPQ1922	4	15	100	1	4/3	-	QFN-22 (4x5)	Half-bridge pre-driver
N	MPQ6531	5	60	65	3	1/0.8	-	QFN-28 (4x5)	Half-bridge motor driver
S	MPQ6533	6	40	-	3	1/0.8	-	QFN-32 (5x5)	Three-channel automotive pre-driver

## STEPPER | MOTOR DRIVERS

	Part Number	V <sub>in</sub> (Min) (V)	V <sub>in</sub> (Max) (V)	I <sub>out</sub> (Max) (A)	Step Mode	Control Interface	Package	Notes
	MP6500	4.5	35	2.5	1, 1/2, 1/4, 1/8	Indexer	QFN-24 (5x5), TSSOP-28	Bipolar stepper, micro-stepping, internal current sense
	MP6500A	4.5	35	2.5	1, 1/2, 1/4, 1/8	Indexer	TSSOP-28EP	Bipolar stepper, micro-stepping, internal current sense
	MP6501A	8.5	35	2.5	1, 1/2, 1/4, 1/8	Indexer	TSSOP28EP	Bipolar stepper, micro-stepping
	MP6504	8	32	2	1, 1/2, 1/4, 1/8	Indexer	QFN-28 (4x5)	Bipolar stepper, micro-stepping
	MP6507	2.7	15	0.7	1, 1/2	Parallel	TSSOP-16EP, QFN-16 (3x3), QFN-16 (4x4), TSSOP-16	Bipolar stepper
	MP6508	2.7	18	1.2	1, 1/2	Parallel	TSSOP-16EP, QFN-16 (4x4)	Bipolar stepper
	MP6509	2.7	18	1.2	1, 1/2	Parallel	TSSOP-20EP	Bipolar stepper, current attenuation

## STEPPER | MOTOR DRIVERS

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	I <sub>OUT</sub> (Max) (A)	Step Mode	Control Interface	Package	Notes
MP6518	8.5	35	1.5	1, 1/2, 1/4, 1/8	Indexer	TSSOP-28EP	Bipolar stepper, micro-stepping
MP6600	4.5	35	1.5	1, 1/2, 1/4, 1/8	Indexer	QFN-24 (4x4)	Bipolar stepper, micro-stepping, internal current sense
<b>N</b> MP6601	4.5	35	2.5	1, 1/2, 1/4	Indexer	QFN-24 (5x5), TSSOP-28EP	Stepper motor driver

## INTEGRATED BLDC | MOTOR DRIVERS

Part Number	V <sub>IN</sub> (Min) (V)	V <sub>IN</sub> (Max) (V)	# of Half-Bridges	I <sub>OUT</sub> (Max) (A)	Hall Input	Package	Notes
MP6505	4.5	16	2	0.4	✓	QFN-16 (3x3), TSSOP-16EP	Single-phase brushless DC fan driver
MP6510	4.5	16	2	1.2	✓	SOIC-8EP, QFN-8 (3x3), QFN-9 (3x3)	Single-phase brushless DC fan driver
MP6517	3.3	18	2	1.2	✓	TSOT23-6, TSOT23-6-SL	Programmable single-phase, BLDC fan driver, integrated Hall
MP6517A	3.3	16	2	2	✓	TSOT23-6, TSOT23-6-SL	Programmable single-phase, BLDC fan driver, integrated Hall
MP6536	5	26	3	5.5	-	QFN-16 (5x5)	Three-channel half-bridge driver
<b>N</b> MP6540	5.5	35	3	3	-	QFN-26 (5x5)	Three-phase power stage, PWM and enable inputs
<b>N</b> MP6540A	5.5	35	3	3	-	QFN-26 (5x5)	Three-phase power stage, HS/LS inputs
<b>S</b> MP6540H	7	55	3	5	-	QFN-26 (5x5)	Three-phase power stage, PWM/ENBL inputs
<b>S</b> MP6540H-A	7	55	3	5	-	QFN-26 (5x5)	Three-phase power stage, HS/LS inputs
<b>S</b> MP6541	4.75	45	3	8	-	QFN-26 (6x6)	Three-phase power stage, PWM/ENBL inputs
<b>S</b> MP6541A	4.75	45	3	8	-	QFN-26 (6x6)	Three-phase power stage, HS/LS inputs
<b>S</b> MP6542	4.5	35	3	11	-	QFN-26 (6x6)	Three-phase power stage, PWM/ENBL inputs
<b>S</b> MP6542A	4.5	35	3	11	-	QFN-26 (6x6)	Three-phase power stage, HS/LS inputs
<b>S</b> MP6543	3	12	3	2	-	QFN-24 (3x4)	Three-phase power stage
<b>S</b> MP6543H	3	22	3	2	-	QFN-24 (3x4)	Three-phase power stage
<b>S</b> MP6616	3.3	18	2	2	✓	QFN-10 (2x3)	Single-phase BLDC driver for closed-loop applications
<b>S</b> MP6630	2	5.5	3	0.5	✓	TQFN-8 (2x3)	Three-phase fan driver for notebooks
<b>S</b> MP6650	3.3	18	2	2	✓	TSOT23-6-L, TSOT23-6-R, TSOT23-6-SL, TSOT23-6-RSL	Single-phase, BLDC fan driver with integrated Hall
<b>S</b> MP6651	3.3	18	2	2	✓	QFN-10 (2x3)	Single-phase BLDC driver for open-loop applications
<b>S</b> MPQ6541	4.75	45	3	8	-	QFN-26 (6x6)	Three-phase power stage, PWM/ENBL inputs
<b>S</b> MPQ6541A	4.75	45	3	8	-	QFN-26 (6x6)	Three-phase power stage, HS/LS inputs

## MAGALPHA SERIES | POSITION SENSORS

Part Number	Resolution	Interface	Supply Voltage (V)	Supply Current (mA)	Sensing Range	Bandwidth (Hz)	Latency at Constant Speed (µs)	Temperature Range (°C)	Package	Notes
<b>MA102</b>	12-bit	SPI, UVW	3 to 3.6	12	30mT + (No Upper Limit)	390	8	-40 to +125	QFN-16 (3x3)	Motor commutation angle sensor, UVW multi-pole pair emulation
<b>MA302</b>	12-bit	SPI, UVW, ABZ	3 to 3.6	12	30mT + (No Upper Limit)	390	8	-40 to +125	QFN-16 (3x3)	Contactless angle sensor, ABZ & UVW incremental outputs
<b>MA310</b>	12-bit	SPI, UVW, ABZ	3 to 3.6	12	15mT + (No Upper Limit)	93	8	-40 to +125	QFN-16 (3x3)	Contactless angle sensor, ABZ & UVW incremental outputs
<b>N MA330</b>	10-bit to 14-bit	SPI, UVW, ABZ	3 to 3.6	12	30mT + (No Upper Limit)	23 to 6000	8	-40 to +125	QFN-16 (3x3)	Contactless angle sensor, ABZ & UVW incremental outputs
<b>MA702</b>	12-bit	SPI, SSI, PWM, ABZ	3 to 3.6	12	30mT + (No Upper Limit)	390	8	-40 to +125	QFN-16 (3x3)	Contactless angle sensor, ABZ incremental & PWM outputs
<b>MA704</b>	10-bit	SPI, SSI, PWM, ABZ	3 to 3.6	12	30mT + (No Upper Limit)	3000	8	-40 to +125	QFN-16 (3x3)	Contactless angle sensor, ABZ incremental & PWM outputs
<b>MA710</b>	12-bit	SPI, SSI, PWM, ABZ	3 to 3.6	12	15mT + (No Upper Limit)	93	8	-40 to +125	QFN-16 (3x3)	Contactless angle sensor, ABZ incremental & PWM outputs
<b>MA730</b>	14-bit	SPI, SSI, PWM, ABZ	3 to 3.6	12	40mT + (No Upper Limit)	23	8	-40 to +125	QFN-16 (3x3)	Contactless angle sensor, ABZ incremental & PWM outputs
<b>N MA732</b>	10-bit to 14-bit	SPI, SSI, PWM, ABZ	3 to 3.6	12	30mT + (No Upper Limit)	23 to 6000	8	-40 to +125	QFN-16 (3x3)	Contactless angle sensor, ABZ incremental & PWM outputs
<b>MA800</b>	8-bit	SPI, SSI	3 to 3.6	12	30mT + (No Upper Limit)	93	2000	-40 to +125	QFN-16 (3x3)	Contactless angle sensor, push-button function
<b>MA820</b>	8-bit	SPI, ABZ	3 to 3.6	12	30mT + (No Upper Limit)	93	2000	-40 to +125	QFN-16 (3x3)	Contactless angle sensor, ABZ output, push-button function
<b>MA850</b>	8-bit	SPI, PWM	3 to 3.6	12	30mT + (No Upper Limit)	93	2000	-40 to +125	QFN-16 (3x3)	Contactless angle sensor, PWM output, push-button function
<b>S MA780</b>	10-bit to 12-bit	SPI	3 to 3.6	0.001 to 10	30mT + (No Upper Limit)	5 to 16000	4 to 16000	-40 to +125	QFN-16 (3x3)	Contactless low-power angle sensor
<b>S MA782</b>	10-bit to 12-bit	SPI	3 to 3.6	0.001 to 10	30mT + (No Upper Limit)	5 to 16000	4 to 16000	-40 to +125	QFN-16 (2x2)	Contactless low-power angle sensor

## CURRENT SENSORS

Part Number	Current Range (A)	V <sub>CC</sub> (V)	Accuracy (from 25°C to 125°C)	Temperature Range (°C)	Bandwidth (kHz)	Isolation Voltage (V)	Primary Conductor Resistance (mΩ)	Package	Notes
<b>S MCS1800</b>	±12.5, ±25	3.3	3%	-40 to +125	100	200	1.2	SOIC-8	Coreless, analog output, immune to external magnetic fields
<b>S MCS1801</b>	±12.5, ±25	5	3%	-40 to +125	100	200	1.2	SOIC-8	Coreless, analog output, immune to external magnetic fields
<b>S MCS1802</b>	±5, ±10, ±20, ±30, ±40, ±50	3.3	±2.5%	-40 to +125	100	2400	0.9	SOIC-8	Coreless, analog output, immune to external magnetic fields
<b>S MCS1803</b>	±5, ±10, ±20, ±30, ±40, ±50	5	±2.5%	-40 to +125	100	2400	0.9	SOIC-8	Coreless, analog output, immune to external magnetic fields

## ANALOG SWITCHES | PRECISION ANALOG

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	# of Channels	$t_{ON}$ (ns)	$t_{OFF}$ (ns)	$R_{DS(ON)}$ (Max) ( $\Omega$ )	Package	Notes
<b>MP2735</b>	1.65	5.5	2	29	23	0.45	QFN-10 (1.4x1.8)	Low-voltage, dual SPDT
<b>MP2736</b>	1.65	5.5	2	29	23	0.45	QFN-10 (1.4x1.8)	Low-voltage, dual SPDT, EN function

## OPERATIONAL AMPLIFIERS | PRECISION ANALOG

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	GBW (kHz)	$I_{O1}$ (Typ) ( $\mu$ A)	PSRR (dB)	Slew Rate (V/ $\mu$ s)	Offset Voltage (mV)	Package	Notes
<b>MP8102</b>	1.8	5.5	200	7.5	80	0.1	1	TSOT23-5	Ultra-low power, 600kHz
<b>MP8101</b>	1.8	5.5	400	11	80	0.2	1	TSOT23-5	Ultra-low power, 400kHz
<b>MP8103</b>	1.8	5.5	200	14	80	0.1	1	MSOP-8	Dual ultra-low power, 600kHz
<b>MP8104</b>	1.8	5.5	400	11	80	0.2	1	TSOT23-5	Ultra-low power, 400kHz, industry-standard pin out
<b>MP8130</b>	2.7	36	100	10	80	0.1	1	TSOT23-5	Ultra-low power, 200kHz, high-voltage
<b>MP8110</b>	2.5	40	12	0.05	0.5	-	-	SOIC-8, MSOP-8	High-side current sense

## VOLTAGE REFERENCE | PRECISION ANALOG

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	$V_{OUT}$ (V)	Initial Accuracy (%)	Operating Current (mA)	$Z_{OUT}$ ( $\Omega$ )	Package	Notes
<b>MP8201</b>	1.2	12	1.2 to 10	0.5	60 $\mu$ A to 20mA	1	SOT-23	Precision adjustable, shunt voltage regulator, 1.0V shunt reference
<b>MP8200</b>	1	12	1	1	100 $\mu$ A to 10mA	0.5	SOT-23	1.0V precision shunt reference

## USB/LOAD SWITCHES

### USB/LOAD SWITCHES, USB PORT CONTROLLERS, E-FUSES

#### Single-Channel

Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	Continuous Current (Max) (A)	Short-Circuit Current (Max) (A)	Enable Logic	Fault Flags	Output Discharge	Package	Notes
<b>MP62055</b>	2.7	5.5	0.5	1.1	Active High	Over-Current, Active High	-	TSOT23-5	Small package, P2P with the TPS2051B
<b>MP5075L</b>	3	5.5	1	7	Active High	-	✓	SOT-563 (1.6x1.6)	OCP, thermal protection, small package
<b>MP62550</b> <b>MP62551</b>	2.5	5.5	1.5	1.7	Active Low Active High	Over-Current, Active Low	-	TQFN-6 (2x2), TSOT23-6	Precision-adjustable, current-limited power distribution switch, 88mΩ/100mΩ @ 100mA, 1.5μA max shutdown current
<b>MP5073</b>	0.5	5.5	2	2	Active High	-	✓	QFN-12 (2x2)	Programmable current limit, power good, slew rate control
<b>MP5083</b>	0.5	5.5	2	Prog	Active High	-	✓	QFN-12 (2x2)	5% current monitoring (from 0.6A to full load), power good, slew rate control
<b>MP5075</b>	3	5.5	2.4	7	Active High	-	✓	SOT-563 (1.6x1.6)	OCP, thermal protection, small package
<b>MP5077</b>	0.5	5.5	7	7	Active High	-	✓	TQFN-12 (2x2)	Programmable current limit, slew rate control, fast-off protection
<b>MP5087</b>	0.5	5.5	7	7	Active High	-	✓	TQFN-12 (2x2)	5% current monitoring (from 1.5A to full load), power good, slew rate control, fast-off protection, UL certified
<b>MP5087A</b>	0.5	5.5	7	7	Active High	-	✓	TQFN-12 (2x2)	Programmable current limit, slew rate control, fast-off protection, UL certified
<b>MP5086</b>	2.3	5.5	7	7	Active High Active Low	-	✓	TQFN-12 (2x2)	5% current monitoring (from 1.5 to full load), NTC comparator, open-drain OTP indicator

#### Dual-Channel

<b>MP5095</b>	0.5	5.5	2.3 (x2)	5	Active High	-	✓	TSOT23-8	Dual-channel, low $I_{DQ}$ , 30mΩ Low $R_{DS(ON)}$ , reverse-block connection
<b>MP5090</b>	0.5	5.5	3/2	5	Active High	-	✓	TQFN-8 (1.5x2), CSP (1.05x1.6)	Dual-channel, low $I_{DQ}$ , 30mΩ Low $R_{DS(ON)}$ , reverse-block connection, small package
<b>MP5092</b>	0.5	5.5	7.5 (x2)	7	Active High	-	✓	TQFN-18 (2x3)	Dual-channel, programmable current limit, slew rate control, fast-off protection

#### USB Port Controllers

<b>MP5034</b>	3.6	14		6	Active High	-	-	TSOT23-8	USB charging port controller integrating QC 3.0 protocol
<b>MP5030C</b>	-	14	3	6	-	-	-	QFN-10 (1.5x2)	USB charging port controller with current limit switch, supports CDP, DCP, and QC 3.0 modes
<b>MP5032</b>	3.6	14	3	6	Active High	-	-	TSOT23-8	QC 3.0 controller, integrated current-limit switch
<b>N</b> <b>MP5030D</b>	-	14	3	6	Active High	-	-	QFN-10 (1.5x2)	USB charging port controller, load detection, supports CDP and DCP mode



## E-FUSES (ELECTRONIC FUSES, INTEGRATED HOT-SWAP SWITCHES)

### USB/LOAD SWITCHES, USB PORT CONTROLLERS, E-FUSES

	Part Number	$V_{IN}$ (Min) (V)	$V_{IN}$ (Max) (V)	Continuous Current (Max) (A)	Short-Circuit Current (Max) (A)	Fault Flags	Output Discharge	Package	Notes
N	MP5094	5/12	16/24	3/4	8	-	-	TSOT23-8	Dual-channel, over-voltage clamp, OCP hiccup
	MP5013A	3	5.5	4.2	Prog	Short-Circuit, Over-Current, Under-Voltage, Over-Voltage, Thermal Shutdown	-	TSOT23-8	5V, $36m\Omega R_{DS(ON)}$ , programmable current limit, slew rate control, 5A/2.8A trip/hold current
	MP5014A	10	13.8	5	Prog	Short-Circuit, Over-Current, Under-Voltage, Over-Voltage, Thermal Shutdown	-	TSOT23-8	12V, $36m\Omega R_{DS(ON)}$ , programmable current limit, over-voltage clamp, slew rate control
	MP5016	2.7	15	5	8	Thermal Fault = Tri-State	✓	QFN-10 (1.5x2)	Reverse-current blocking, over-voltage clamp, auto-retry
N	MP5016-L	2.7	22	5	8	-	✓	QFN-10 (1.5x2)	Latch-off OCP, over-voltage clamp, reverse blocking
	MP5016H	2.7	22	5	8	Short-Circuit, Over-Current, Under-Voltage, Over-Voltage, Thermal Shutdown	✓	QFN-10 (1.5x2)	UL certified, over-voltage clamp, reverse-current blocking, auto-retry
	MP5018	4.5	5.5	5	Prog	Thermal Fault = Tri-State	-	QFN-12 (2x3)	Reverse-current blocking, $45m\Omega R_{DS(ON)}$ , programmable current limit, OTP latch-off
	MP5017	3	5.5	5	Prog	-	✓	QFN-12 (2x3)	Current-limit switch, over-voltage clamp, reverse block, OTP auto-retry
N	MP5036	2.9	14	5	8	-	✓	TSOT23-6	Fixed 15V over-voltage clamp, programmable current limit, fast output OVP response
N	MP5036A	2.9	5.5	5	8	-	✓	TSOT23-6	Fixed 5.75V over-voltage clamp, programmable current limit, fast output OVP response
	MP5021B	4.8	16	10	25	Current Limit, Thermal Shutdown, Damaged MOSFET Detection	✓	QFN-22 (3x5)	$16V, 7m\Omega R_{DS(ON)}$ , hot-swap protection, current monitoring
	MP5022A	8	16	12	36	Current Limit, Thermal Shutdown, Damaged MOSFET Detection	✓	QFN-22 (3x5)	$16V, 3m\Omega R_{DS(ON)}$ , hot-swap protection, current monitoring, controlled $R_{ON}$ mode
	MP5022C	4.5	16	15	36	Current Limit, Thermal Shutdown, Damaged MOSFET Detection	-	QFN-22 (3x5)	$16V, 3m\Omega R_{DS(ON)}$ , hot-swap protection, current monitoring
	MP5023	4	16	50	110	Current Limit, Thermal Shutdown, Damaged MOSFET Detection	✓	QFN-24 (4x5)	$1.1m\Omega$ , hot-swap protection, PMBus interface, current monitoring
	MP5061	4.5	28	15	25	Current Limit, Thermal Shutdown, Under-Voltage, Damaged MOSFET Detection	✓	QFN-22 (3x5)	Enable blanking time set and 36V input transient before $V_{OUT}$ start-up, current monitoring
N	MP5921	4	16	50	120	GOK Fault Flag, Current Limit, Thermal Shutdown and Damaged MOSFET Detection	-	QFN-28 (4x5)	$16V, 1m\Omega R_{DS(ON)}$ , hot-swap Intelli-Phase™ solution, current monitoring, fault reporting output

## HIGH-VOLTAGE ANALOG SWITCHES | ULTRASOUND MUX

### Serial Shift Register Control

Part Number	Channels	$V_{SIG}$ (Max) (V)	$R_{SWITCH}$ ( $\Omega$ )	Output Bleed Resistor	Switch Configuration	Bandwidth (MHz)	Package	Notes
MP4816A	16	$\pm 90$	12.5	✓	SPST	80	TQFP-48 (7x7)	16-bit
MP4816	16	$\pm 90$	12.5	-	SPST	80	TQFP-48 (7x7)	16-bit
MP4832A	32	$\pm 90$	14.0	✓	SPST	80	QFN-72 (10x10)	32-bit with bank switching
MP4833A	32	$\pm 90$	12.5	✓	SPST	80	BGA-80 (7x7)	32-bit
MP4864A	64	$\pm 90$	14.0	✓	SPST	80	BGA-144 (10x10)	64-bit



## SEMI-SHIELDED | INDUCTORS

Part Number	L (µH)	R <sub>DC</sub> (Typ) (mΩ)	I <sub>R</sub> (40K Rise) (A)	I <sub>SAT</sub> (30% Drop) (A)	Operating Temp (Max) (°C)	Size	A Dimension (L) (mm)	B Dimension (W) (mm)	C Dimension (H) (mm)	Construction	Notes
<b>N</b> MPL-SE2512-R47	0.47	27	4.5	6.5	125	2512	2.5	2	1.2	SMD	Low profile, external epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE2512-R68	0.68	33	3.8	4.3	125	2512	2.5	2	1.2	SMD	Low profile, external epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE2512-1R0	1.0	45	3.35	4.2	125	2512	2.5	2	1.2	SMD	Low profile, external epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE2512-1R5	1.5	62	2.9	3.2	125	2512	2.5	2	1.2	SMD	Low profile, external epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE2512-2R2	2.2	92	2.5	2.7	125	2512	2.5	2	1.2	SMD	Low profile, external epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE2512-3R3	3.3	158	1.8	2.4	125	2512	2.5	2	1.2	SMD	Low profile, external epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE2512-4R7	4.7	205	1.6	1.9	125	2512	2.5	2	1.2	SMD	Low profile, external epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE2512-100	10	400	1.1	1.3	125	2512	2.5	2	1.2	SMD	Low profile, external epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE2512-150	15	620	0.85	0.9	125	2512	2.5	2	1.2	SMD	Low profile, external epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE2512-220	22	1000	0.7	0.8	125	2512	2.5	2	1.2	SMD	Low profile, external epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE4030-1R0	1.0	12.5	6.3	7.5	125	4030	4	4	3	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE4030-2R2	2.2	30	3.9	5.5	125	4030	4	4	3	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE4030-3R3	3.3	39.8	3.45	4.1	125	4030	4	4	3	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE4030-4R7	4.7	63	2.6	3.7	125	4030	4	4	3	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE4030-6R8	6.8	83	2.4	3.3	125	4030	4	4	3	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE4030-100	10	97	2.2	2.4	125	4030	4	4	3	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE4030-150	15	185	1.6	1.95	125	4030	4	4	3	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE4030-220	22	219	1.5	1.65	125	4030	4	4	3	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE5040-R47	0.47	7.3	8.0	16	125	5040	4.9	4.9	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE5040-1R0	1.0	9.4	7.6	10.5	125	5040	4.9	4.9	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE5040-1R5	1.5	14	6.2	9.3	125	5040	4.9	4.9	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE5040-2R2	2.2	16	5.4	7.9	125	5040	4.9	4.9	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE5040-3R3	3.3	22	5.2	6.4	125	5040	4.9	4.9	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE5040-4R7	4.7	33	4.3	5	125	5040	4.9	4.9	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE5040-6R8	6.8	45	3.5	4.6	125	5040	4.9	4.9	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE5040-100	10	56	3.2	3.6	125	5040	4.9	4.9	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE5040-150	15	83	2.5	2.9	125	5040	4.9	4.9	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE5040-220	22	124	2.1	2.4	125	5040	4.9	4.9	4	SMD	External epoxy resin for better magnetic characteristics

## SEMI-SHIELDED | INDUCTORS

Part Number	L ( $\mu$ H)	R <sub>DC</sub> (Typ) (m $\Omega$ )	I <sub>R</sub> (40K Rise) (A)	I <sub>SAT</sub> (30% Drop) (A)	Operating Temp (Max) (°C)	Size	A Dimension (L) (mm)	B Dimension (W) (mm)	C Dimension (H) (mm)	Construction	Notes
<b>N</b> MPL-SE6040-1R5	1.5	11.5	6.8	8.9	125	6040	6	6	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE6040-2R2	2.2	14.5	6.3	7.2	125	6040	6	6	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE6040-3R3	3.3	19.5	5.6	5.6	125	6040	6	6	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE6040-4R7	4.7	23	5.2	5	125	6040	6	6	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE6040-6R8	6.8	33	4.4	4.1	125	6040	6	6	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE6040-8R2	8.2	39	4.0	3.6	125	6040	6	6	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE6040-100	10	41	3.8	3.4	125	6040	6	6	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE6040-150	15	70	2.8	2.7	125	6040	6	6	4	SMD	External epoxy resin for better magnetic characteristics
<b>N</b> MPL-SE6040-220	22	97	2.35	2.25	125	6040	6	6	4	SMD	External epoxy resin for better magnetic characteristics

## MOLDED INDUCTORS | INDUCTORS

Part Number	L ( $\mu$ H)	R <sub>DC</sub> (Typ) (m $\Omega$ )	I <sub>R</sub> (40K Rise) (A)	I <sub>SAT</sub> (30% Drop) (A)	Operating Temp (Max) (°C)	Size	A Dimension (L) (mm)	B Dimension (W) (mm)	C Dimension (H) (mm)	Construction	Notes
<b>N</b> MPL-AT2010-R47	0.47	27	4.4	5.7	125	2010	2	1.6	1	SMD	Low profile
<b>N</b> MPL-AT2010-R68	0.68	41	3.5	4.9	125	2010	2	1.6	1	SMD	Low profile
<b>N</b> MPL-AT2010-1R0	1	50	3.2	4.2	125	2010	2	1.6	1	SMD	Low profile
<b>N</b> MPL-AT2010-1R5	1.5	97	2.4	3.2	125	2010	2	1.6	1	SMD	Low profile
<b>N</b> MPL-AT2010-2R2	2.2	137	2.2	2.7	125	2010	2	1.6	1	SMD	Low profile
<b>N</b> MPL-AT2010-4R7	4.7	215	1.5	1.9	125	2010	2	1.6	1	SMD	Low profile
<b>N</b> MPL-AT2512-R33	0.33	13.5	6.4	8.5	125	2512	2.5	2	1.2	SMD	Low profile
<b>N</b> MPL-AT2512-R47	0.47	19	5.5	6.4	125	2512	2.5	2	1.2	SMD	Low profile
<b>N</b> MPL-AT2512-R68	0.68	26	4.7	6	125	2512	2.5	2	1.2	SMD	Low profile
<b>N</b> MPL-AT2512-1R0	1.0	35	4.0	5.2	125	2512	2.5	2	1.2	SMD	Low profile
<b>N</b> MPL-AT2512-1R5	1.5	56	3.2	4.2	125	2512	2.5	2	1.2	SMD	Low profile
<b>N</b> MPL-AT2514-2R2	2.2	70	2.6	3.4	125	2514	2.5	2	1.4	SMD	Low profile
<b>N</b> MPL-AT2512-3R3	3.3	121	2	2.7	125	2512	2.5	2	1.2	SMD	Low profile
<b>N</b> MPL-AT2514-4R7	4.7	180	1.7	2.4	125	2514	2.5	2	1.4	SMD	Low profile
<b>N</b> MPL-AT2512-6R8	6.8	280	1.4	2.2	125	2512	2.5	2	1.2	SMD	Low profile
<b>N</b> MPL-AT2512-100	10	355	1.2	1.7	125	2512	2.5	2	1.2	SMD	Low profile

## MOLDED INDUCTORS | INDUCTORS

	Part Number	L (µH)	R <sub>DC</sub> (Typ) (mΩ)	I <sub>R</sub> (40K Rise) (A)	I <sub>SAT</sub> (30% Drop) (A)	Operating Temp (Max) (°C)	Size	A Dimension (L) (mm)	B Dimension (W) (mm)	C Dimension (H) (mm)	Construction	Notes
N	MPL-AY3020-R47	0.47	19.5	6.3	9	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY3020-R68	0.68	26	5.15	8.6	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY3020-R82	0.82	28	4.7	8	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY3020-1R0	1.0	30	4.3	6.2	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY3020-1R5	1.5	35	3.4	5.9	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY3020-2R2	2.2	64	3.0	5.3	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY3020-3R3	3.3	121	2.5	3.7	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY3020-4R7	4.7	173	2.0	3.1	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY3020-5R6	5.6	209	1.8	2.8	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY3020-6R8	6.8	250	1.65	2.6	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY3020-8R2	8.2	345	1.4	1.95	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY3020-100	10	370	1.3	1.75	125	3020	3.5	3.2	1.8	SMD	-
N	MPL-AY4020-5R6	5.6	97	2.45	2.6	155	4020	4.45	4.1	1.8	SMD	High temperature capabilities
N	MPL-AY4020-6R8	6.8	129	2.2	2.4	155	4020	4.45	4.1	1.8	SMD	High temperature capabilities
N	MPL-AY4020-8R2	8.2	136	2.1	2.1	155	4020	4.45	4.1	1.8	SMD	High temperature capabilities
N	MPL-AY4020-100	10	163	1.9	2	155	4020	4.45	4.1	1.8	SMD	High temperature capabilities
N	MPL-AY1050-R47	0.47	1.25	25	41	155	1050	11	10	4.8	SMD	High temperature capabilities
N	MPL-AY1050-R68	0.68	1.75	23	36	155	1050	11	10	4.8	SMD	High temperature capabilities
N	MPL-AY1050-1R0	1.0	2.6	19	33	155	1050	11	10	4.8	SMD	High temperature capabilities
N	MPL-AY1050-1R5	1.5	3.4	17	26.5	155	1050	11	10	4.8	SMD	High temperature capabilities
N	MPL-AY1050-2R2	2.2	4.9	15	19.5	155	1050	11	10	4.8	SMD	High temperature capabilities
N	MPL-AY1050-3R3	3.3	8	12.5	17	155	1050	11	10	4.8	SMD	High temperature capabilities
N	MPL-AY1050-4R7	4.7	9.5	11.5	15	155	1050	11	10	4.8	SMD	High temperature capabilities
N	MPL-AY1050-5R6	5.6	13	9.8	14	155	1050	11	10	4.8	SMD	High temperature capabilities
N	MPL-AY1050-6R8	6.8	15	9	13	155	1050	11	10	4.8	SMD	High temperature capabilities
N	MPL-AY1050-100	10	19	7.8	12	155	1050	11	10	4.8	SMD	High temperature capabilities
N	MPL-AY1265-R47	0.47	0.89	33	64	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N	MPL-AY1265-R56	0.56	1.1	31	58	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N	MPL-AY1265-R68	0.68	1.25	29	51	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N	MPL-AY1265-R82	0.82	1.3	27	46	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities

Part Number	L (µH)	R <sub>DC</sub> (Typ) (mΩ)	I <sub>R</sub> (40K Rise) (A)	I <sub>SKT</sub> (30% Drop) (A)	Operating Temp (Max) (°C)	Size	A Dimension (L) (mm)	B Dimension (W) (mm)	C Dimension (H) (mm)	Construction	Notes
N MPL-AY1265-1R0	1.0	1.5	25.5	43	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-1R2	1.2	1.8	24	37	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-1R5	1.5	2.3	22	34	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-1R8	1.8	3.3	20	29	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-2R2	2.2	3.7	17	26.5	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-3R3	3.3	5.5	16	25	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-4R7	4.7	7.0	14	23	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-5R6	5.6	8.6	13	20	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-6R8	6.8	9.9	12	19.5	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-8R2	8.2	12.5	11.5	18	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-100	10	13.3	10.7	16	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-150	15	21.8	8.5	12	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AY1265-220	22	31.4	7	9	155	1265	13.5	12.6	6.2	SMD	High temperature capabilities
N MPL-AL4020-R47	0.47	6.2	9.2	12.5	155	4020	4.1	4.1	1.9	SMD	High temperature capabilities, low resistance
N MPL-AL4020-R68	0.68	7.5	8.7	11	155	4020	4.1	4.1	1.9	SMD	High temperature capabilities, low resistance
N MPL-AL4020-R82	0.82	9.0	8.4	9.5	155	4020	4.1	4.1	1.9	SMD	High temperature capabilities, low resistance
N MPL-AL4020-1R0	1.0	10.1	7.9	8.6	155	4020	4.1	4.1	1.9	SMD	High temperature capabilities, low resistance
N MPL-AL4020-1R2	1.2	12.2	7.4	7.5	155	4020	4.1	4.1	1.9	SMD	High temperature capabilities, low resistance
N MPL-AL4020-1R5	1.5	14.5	6.4	7.1	155	4020	4.1	4.1	1.9	SMD	High temperature capabilities, low resistance
N MPL-AL4020-2R2	2.2	21.5	5.5	6.2	155	4020	4.1	4.1	1.9	SMD	High temperature capabilities, low resistance
N MPL-AL4020-3R3	3.3	34.5	4.4	5.2	155	4020	4.1	4.1	1.9	SMD	High temperature capabilities, low resistance
N MPL-AL4020-4R7	4.7	52.2	3.65	4.2	155	4020	4.1	4.1	1.9	SMD	High temperature capabilities, low resistance
N MPL-AL5030-R47	0.47	3.78	13.6	26.5	155	5030	5.5	5.3	2.9	SMD	High temperature capabilities, low resistance
N MPL-AL5030-R56	0.56	3.92	13.2	22	155	5030	5.5	5.3	2.9	SMD	High temperature capabilities, low resistance
N MPL-AL5030-R82	0.82	5.0	12.8	18	155	5030	5.5	5.3	2.9	SMD	High temperature capabilities, low resistance
N MPL-AL5030-1R0	1.0	6.5	11.2	16	155	5030	5.5	5.3	2.9	SMD	High temperature capabilities, low resistance
N MPL-AL5030-1R2	1.2	8.0	10.0	14	155	5030	5.5	5.3	2.9	SMD	High temperature capabilities, low resistance
N MPL-AL5030-1R5	1.5	9.7	9.0	12.5	155	5030	5.5	5.3	2.9	SMD	High temperature capabilities, low resistance
N MPL-AL5030-1R8	1.8	10.5	8.8	12	155	5030	5.5	5.3	2.9	SMD	High temperature capabilities, low resistance
N MPL-AL5030-2R2	2.2	12.3	8.2	11	155	5030	5.5	5.3	2.9	SMD	High temperature capabilities, low resistance

## MOLDED INDUCTORS | INDUCTORS

	Part Number	L (µH)	R <sub>DC</sub> (Typ) (mΩ)	I <sub>R</sub> (40K Rise) (A)	I <sub>SAT</sub> (30% Drop) (A)	Operating Temp (Max) (°C)	Size	A Dimension (L) (mm)	B Dimension (W) (mm)	C Dimension (H) (mm)	Construction	Notes
N	MPL-AL5030-3R3	3.3	21	6.0	10	155	5030	5.5	5.3	2.9	SMD	High temperature capabilities, low resistance
N	MPL-AL5030-4R7	4.7	33	5.3	8	155	5030	5.5	5.3	2.9	SMD	High temperature capabilities, low resistance
N	MPL-AL5050-5R6	5.6	20	6.8	8	155	5050	5.5	5.3	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL5050-6R8	6.8	25	6.1	7.6	155	5050	5.5	5.3	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL5050-8R2	8.2	28	5.8	7.2	155	5050	5.5	5.3	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL5050-100	10	37	4.8	5.5	155	5050	5.5	5.3	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6050-R82	0.82	3.9	16.9	24	155	6050	6.6	6.4	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6050-1R0	1.0	4.3	16.2	21	155	6050	6.6	6.4	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6050-1R2	1.2	5.3	14.6	20	155	6050	6.6	6.4	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6050-1R5	1.5	6	13.3	18	155	6050	6.6	6.4	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6050-2R2	2.2	8.3	12.0	15	155	6050	6.6	6.4	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6050-3R3	3.3	11.5	10.1	12	155	6050	6.6	6.4	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6050-4R7	4.7	16.5	7.5	11	155	6050	6.6	6.4	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6050-5R6	5.6	19	7	10	155	6050	6.6	6.4	4.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6060-4R7	4.7	12	10	9	155	6060	6.6	6.4	5.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6060-5R6	5.6	13	9.4	8.6	155	6060	6.6	6.4	5.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6060-6R8	6.8	16	8.5	8	155	6060	6.6	6.4	5.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6060-8R2	8.2	19	8.0	7	155	6060	6.6	6.4	5.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6060-100	10	24	6.9	6.6	155	6060	6.6	6.4	5.8	SMD	High temperature capabilities, low resistance
N	MPL-AL6060-150	15	35	5.8	5.5	155	6060	6.6	6.4	5.8	SMD	High temperature capabilities, low resistance

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# PART NUMBERING NOMENCLATURE

## EXAMPLE

MP1234GQV-Z

①

②

③

④

⑤

① MP

### Prefix

MP###

MP####

MP#####

MPQ####

HF####

NB###

...see more at  
**MonolithicPower.com**

② 1234

### Part Number

③ G

### Temperature Grade (T<sub>A</sub>)

**C** 0°C to +70°C

**D** -40°C to +85°C

**E** -20°C to +85°C

**G** -40°C to +125°C

**H** -40°C to +125°C

**K** -55°C to +125°C

-----> Temperature Internal to Datasheet; (T<sub>J</sub>) Standard

④ QV

### Package (mm) and Features

**C** WLCSP

**D** QFN (2x3)

**E** SC70

**F** TSSOP w/ Exposed Pad

**FP** QFP

**G** QFN (2x2)

**H** MSOP w/ Exposed Pad

**J** TSOT23 (0.9 Height)

**K** MSOP

**L** QFN (3x4)

**M** TSSOP

**N** SOIC w/ Exposed Pad

**P** PDIP (300 Mil)

**Q** QFN (3x3)

**QD** QFN (1x1.5)

**QF** QFN (1.2x1.6)

**QG** QFN (1.4x1.8)

**QH** QFN (1.5x2)

**QJ** QFN (5x6)

**QK** QFN (6x6)

**QM** QFN (6x7)

**QN** QFN (7x7)

**QP** QFN (7x8)

**QQ** QFN (8x8)

**QV** QFN (3x5)

**QW** QFN (4x6)

**QX** QFN (6x10)

**QY** QFN (5x8)

**R** QFN (4x4)

**S** SOIC

**SD** SOD123

**T** SOT23 (1.1 Height)

**U** QFN (5x5)

**V** QFN (4x5)

**W** SOIC-WB w/ Exposed Pad

**X** Sorted Wafer

**XN** Unsorted Wafer

**Y** TO220

**ZF** TO263

**C** C-Spec

**E** Enhanced

**R** Reserve Lead Bend or Top Exposed Pad

**S** Customer Specific

**T** Thin Package

**U** Ultra-Thin Package

...more package and feature details can be found at  
**MonolithicPower.com**

⑤ -Z

### Tape & Reel



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