

# endrich news

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## WEBINARS

- 27. April 2022: Hochpräzise Strommessung auf magnetischer Basis
- 18. Mai 2022: ADAM TECH Pogo Pin / Magnetic Connectors / Modular Connectors
- 13. Juli 2022: Maßgeschneiderte Lösungen rund um das Thema Displays, Touch und Embedded Systeme

Weitere Informationen finden Sie auf der letzten Seite.

## LOW RESISTANCE METAL FOIL CHIP RESISTORS – KRL-SERIES

The popular KRL series by experienced resistor manufacturer Susumu is best known for their special construction which prevents the emergence of hot spots and having most sizes available with long side and short side terminals. Resistors with long side terminals come with a higher power rating comparatively, which presents unique opportunities for downsizing and cost saving.



SIZE	SERIES	RATED POWER *	TERMINAL	VALUE/TOL/TCR
0603	KRL0816	0,30 W	short side	10 mΩ ... 500 mΩ/±1% /±50 ppm/°C
0805	KRL1220	0,50 W	short side	5 mΩ ... 9 mΩ/±2% /±100 ppm/°C 10 mΩ ... 500 mΩ/±1% /±50 ppm/°C
	KRL2012	1,00 W	long side	1 mΩ/±5%/±150 ppm/°C    2 mΩ ±2%/±100 ppm/°C 3 mΩ ... 500 mΩ/±1% /±50 ppm/°C
1206	KRL1632	0,75 W	short side	5 mΩ ... 9 mΩ/±2% /±100 ppm/°C 10 mΩ ... 500 mΩ/±1% /±50 ppm/°C
	KRL3216	1,50 W	long side	1 mΩ/±5%/±150 ppm/°C    2 mΩ ±2%/±100 ppm/°C 3 mΩ ... 500 mΩ/±1% /±50 ppm/°C
2010	KRL2550	1,50 W	short side	5 mΩ ... 9 mΩ/±2% /±100 ppm/°C 10 mΩ ... 500 mΩ/±1% /±50 ppm/°C
	KRL5025	2,00 W	long side	1 mΩ/±5%/±150 ppm/°C 3 mΩ ... 500 mΩ/±1% /±50 ppm/°C
2512	KRL3264	2,00 W	short side	5 mΩ ... 9 mΩ/±2% /±100 ppm/°C 10 mΩ ... 1000 mΩ/±1% /±50 ppm/°C
	KRL6432	3,00 W	long side	1 mΩ/±5%/±150 ppm/°C    2 mΩ ±2%/±100 ppm/°C 3 mΩ ... 500 mΩ/±1% /±50 ppm/°C
3015	KRL7638	4,00 W	long side	1 mΩ/±5%/±150 ppm/°C    2 mΩ ±2%/±100 ppm/°C 3 mΩ ... 500 mΩ/±1% /±50 ppm/°C
3518	KRL9045	5,00 W	long side	1 mΩ/±5%/±150 ppm/°C    2 mΩ ±2%/±100 ppm/°C 3 mΩ ... 500 mΩ/±1% /±50 ppm/°C
4320	KRL50110	5,00 W	short side	5 mΩ ... 9 mΩ/±2% /±100 ppm/°C 10 mΩ ... 1000 mΩ/±1% /±50 ppm/°C
	KRL11050	6,00 W	long side	1 mΩ/±5%/±150 ppm/°C    2 mΩ ±2%/±100 ppm/°C 3 mΩ ... 500 mΩ/±1% /±50 ppm/°C

Operating temp. range: M: -55 °C ... +155 °C / C: -55 °C ... +170 °C

\* rated power: M: 100 °C / C: 120 °C

### FEATURES

- Good TCR, tight tolerance & high power rating
- Automotive qualified
- Low thermal EMF, low PCR, low noise, low ESL
- Unique structure for improved heat dissipation
- E96 values on request possible

### APPLICATIONS

- Cleaning robot
- LED driver
- DC / motor

## ULTRA WIDE INPUT VOLTAGE RAILWAY POWER SUPPLY IN 1/4 BRICK PACKAGE

HAVE A  
LOOK

MORNSUN launched the new 1/4 brick railway power supplies of the UWTH1DxxQB-100WR3 series with the feature of an ultra-wide input voltage range of 12:1 (14-160 VDC). The peripheral design can be effectively simplified to achieve a hold-up time of up to 10ms to comply with EN50155.

Moreover, this series with a radiator can work well at 85 °C operating temperature under full load. It is free to change the input voltage range through its DIY under-voltage regulation function to meet the needs for a different input voltage of different railway systems. This avoids the need to replace the peripheral circuitry when the input voltage changes, which would typically result in the user having to recertify the system.

In addition to ultra-high isolation voltage design, the product meets the certification requirements of EN50155, EN62368, EN45545, AREMA, CSA62368, etc.

By adding the FC-C08D module to the front end of the DC/DC module, the power supply meets the EMC requirements of EN50155.



Back View



Front View

SERIES	POWER (W)	VIN (VDC)	VOUT (VDC)	NO. OF OUTPUTS	ISOLATION	PACKAGE	DIMENSION (mm)
UWTH1D12QB-100W(H/F)R3	100	110 (14-160)	12	1	3000 VAC	DIP	62.00 × 56.00 × 14.50
UWTH1D15QB-100W(H/F)R3	100	110 (14-160)	15	1	3000 VAC	DIP	62.00 × 56.00 × 14.50
UWTH1D24QB-100W(H/F)R3	100	110 (14-160)	24	1	3000 VAC	DIP	62.00 × 56.00 × 14.50
UWTH1D28QB-100W(H/F)R3	100	110 (14-160)	28	1	3000 VAC	DIP	62.00 × 56.00 × 14.50
UWTH1D48QB-100W(H/F)R3	100	110 (14-160)	48	1	3000 VAC	DIP	62.00 × 56.00 × 14.50
UWTH1D54QB-100W(H/F)R3	100	110 (14-160)	54	1	3000 VAC	DIP	62.00 × 56.00 × 14.50

Suffix "F/H" indicates heat sink mounting.

### FEATURES

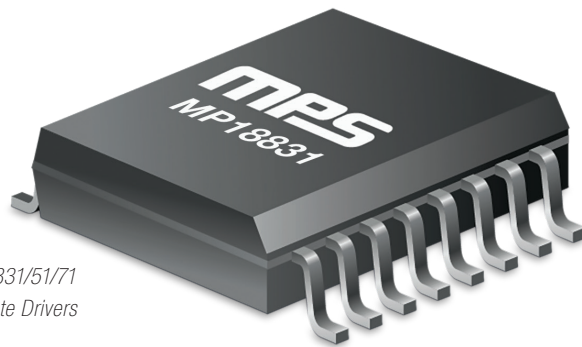
- Ultra-wide input voltage of 14-160 V, suitable for the global mainstream railway systems
- Meets the EN50155 hold-up time of 10 ms with the optimal and cost-effective peripheral
- Programmable input undervoltage adjustment
- High I/O isolation voltage up to 3000 VAC, meets 5000 m altitude requirements
- Input reverse polarity protection
- Operating temperature range -40 °C to +105 °C
- No-load input power as low as 0.6 W
- Meets CSA/EN62368/IEC62368, EN50155, EN45545 standards
- Matching filter, meets the EMC requirements of EN50155, by adding the FC-C08D module

### APPLICATIONS

- Railway systems

# MPS ISOLATED DUAL – CHANNEL GATE DRIVER FAMILY MP18851, 18871 & 18831

MPS has a whole family of isolated solutions that are pin-to-pin compatible with existing solutions on the market. These products are designed to be compliant with both UL1577 and VDE-00884 standards.



MP18831/51/71  
Isolated Dual-Channel Gate Drivers

### FEATURES

- Up to 5 kV<sub>RMS</sub> isolation
- CMTI > 100 V/ns
- 4 A source/4 A sink peak current
- SOIC-16 NB/WB and LGA-13 package
- P2P with the Si823x, UCC2x520 families

SAFETY	NOISE IMMUNITY	LEVEL SHIFT
<p>Protects the human body and low-voltage devices</p>	<p>Isolates analog and power GND</p> <ul style="list-style-type: none"> <li>▪ Avoids cross-conduction from the MOSFET</li> <li>▪ Improves communication quality</li> </ul>	<p>Shifting from 3.3V up to 5V</p>

FAMILY	PARTNUMBER	P2P REPLACEMENT	APPLICATIONS
<b>MP18831/51/71</b>	MP18831-4CGY MP18851-A4CGY MP188 51-A4CGSE MP18831-A4BGLU MP18851-A4BGLU MP18871-A4BGLU	Si823x UCC20520 UCC21520 UCC21521	Server PSUs Telecom PSUs Solar Inverters Energy Storage DCFC Charging Stations AC/DC Conversion Motor Drives

## MPS ISOLATED DUAL – CHANNEL GATE DRIVER FAMILY MP18851, 18871 & 18831

The MP18851, MP18871, MP18831 is an isolated dual-channel gate driver solution with up to 4 A source and sink peak current capacity. The gate driver is designed to drive power switching devices with short propagation delay and pulse-width distortion.

By utilizing MPS proprietary capacitive-based isolation technology, the driver can provide up to 5 kV RMS withstand voltage (per UL1577) with SOIC wide-body package and greater than 100kV/ $\mu$ s commonmode transient immunity (CMTI) rating between the input side and output driver. With the advanced features, the drivers operate high efficiency, high power density, and robustness in a wide variety of power applications.

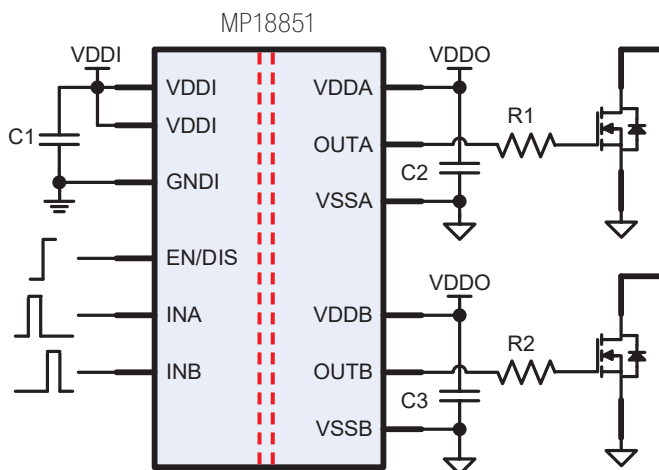
### UL 1577 Certified

- SOIC-16 NB: 3 kV RMS isolation for 60 secs.
- SOIC-16 WB: 5 kV RMS isolation for 60 secs.
- LGA-13: 2.5 kV RMS isolation for 60 secs.

### Packages:



### Dual-Channel Isolated Driver



### APPLICATIONS

- Charging stations
- Energy storage
- AC/DC conversion
- Solar optimization

## GD32L233XX ARM® CORTEX®-M23 32-BIT MCU

**HAVE A  
LOOK**

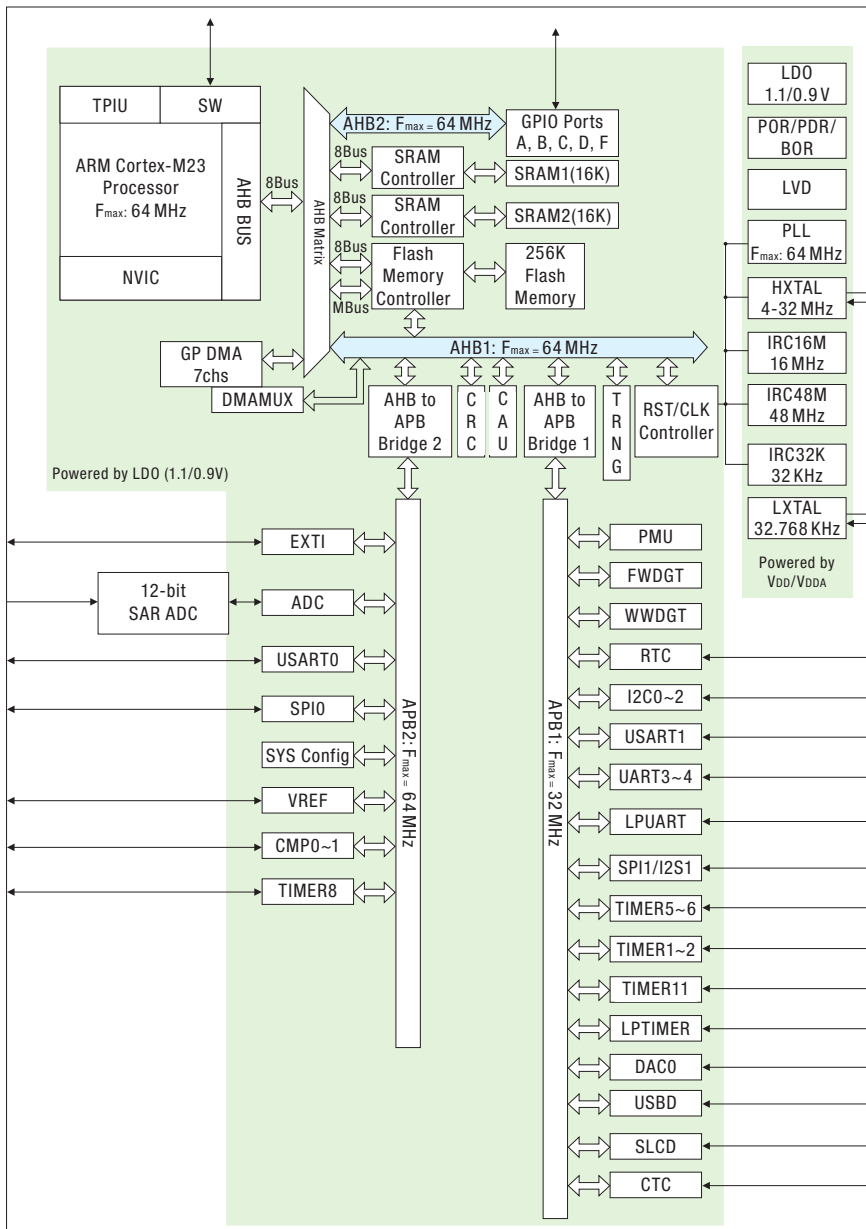


GD32L233xx Arm® Cortex®-M23  
32-bit MCU

The GD32L233xx device belongs to the value line of GD32 MCU family. It is a new 32-bit general-purpose microcontroller based on the ARM® Cortex®-M23 core.

	Performance	Arm® Cortex®-M 32-bit MCUs				RISC-V 32-bit MCUs
		Cortex®-M23	Cortex®-M3	Cortex®-M4	Cortex®-M33	RISC-V
GD32 MCU FAMILY	High Performance		GD32F205 120 MHz, 3 M Flash, 256 K RAM GD32F207 120 MHz, 3 M Flash, 256 K RAM	GD32F450 200 MHz, 3 M Flash, 512 K RAM GD32F470 240 MHz, 3 M Flash, 768 K RAM GD32F407 168 MHz, 3 M Flash, 192 K RAM GD32F427 200 MHz, 3 M Flash, 256 K RAM GD32F405 168 MHz, 3 M Flash, 192 K RAM GD32F425 200 MHz, 3 M Flash, 256 K RAM GD32F403 168 MHz, 3 M Flash, 128 K RAM	GD32E505 180 MHz, 512 K/128 K GD32E507 180 MHz, 512 K/128 K GD32E503 180 MHz, 512 K/128 K GD32E508 180 MHz, 512 K/128 K GD32W515 180 MHz, 2 M/448 K	
	Mainstream	GD32L233 64 MHz, 256 K Flash, 32 K RAM	GD32F105 108 MHz, 1 M Flash, 96 K RAM GD32F107 108 MHz, 1 M Flash, 96 K RAM GD32F103 108 MHz, 3 M Flash, 96 K RAM GD32F101 56 MHz, 3 M Flash, 80 K RAM	GD32F305 120 MHz, 1 M Flash, 96 K RAM GD32E103 120 MHz, 128 K Flash, 32 K RAM GD32F303 120 MHz, 3 M Flash, 96 K RAM GD32C103 120 MHz, 128 K Flash, 32 K RAM GD32F307 120 MHz, 1 M Flash, 96 K RAM	GD32E501 100 MHz, 512 K/32 K	GD32VF103 108 MHz, 128 K Flash, 32 K RAM
	Entry-Level	GD32E232 72 MHz, 64 K Flash, 8 K RAM GD32E230 72 MHz, 64 K Flash, 8 K RAM	GD32F130 48 MHz, 64 K Flash, 8 K RAM GD32F150 72 MHz, 64 K Flash, 8 K RAM	GD32F330 84 MHz, 128 K Flash, 16 K RAM GD32F350 108 MHz, 128 K Flash, 16 K RAM GD32F310 72 MHz, 64 K Flash, 8 K RAM		
	Specific			GD32FFPR 168 MHz, 1 M Flash, 128 K RAM	GD32EPRT 168 MHz, 384 K/96 K+4 M	

# GD32L233XX ARM® CORTEX®-M23 32-BIT MCU



## FEATURES

- ARM® Cortex®-M23 32-bit processor core
- Operating at up to 64 MHz frequency
- Up to 256 KB embedded flash memory
- Up to 32 KB SRAM memory
- Operating voltage 1.71 to 3.63 V
- Up to four general 16-bit timers, two basic timers, and a 32-bit low power timer
- Up to two SPIs, three I2Cs, two USARTs, two UARTs, an I2S, and an LPUART
- One 12-bit ADC
- Two comparators

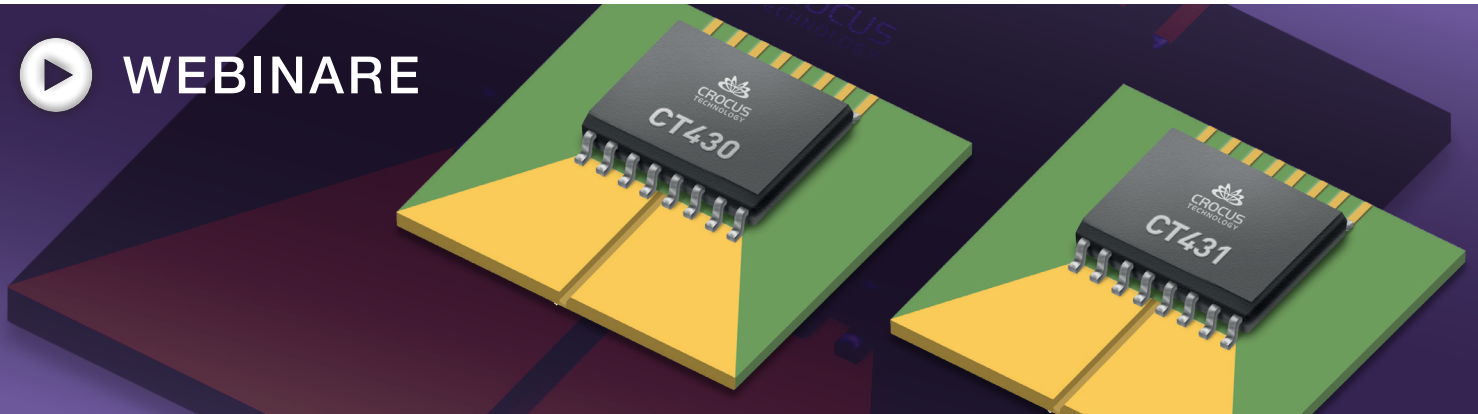
## APPLICATIONS

- Industrial control
- IoT
- Motor drives
- User interface
- Power monitor and alarm systems
- Consumer and handheld equipment
- Gaming and GPS
- E-bike

The CortexM23 processor is an energy-efficient processor with a very low gate count. It is intended to be used for microcontroller and deeply embedded applications that require an area-optimized processor. The processor delivers high energy efficiency through a small but powerful instruction set and extensively optimized design, providing high-end processing hardware including a single-cycle multiplier and a 17-cycle divider.

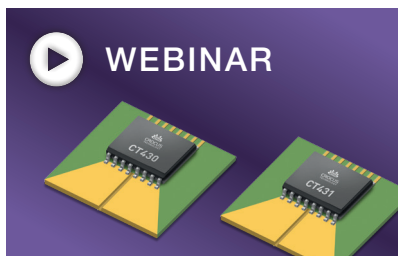
## KOMMENDE WEBINARE BEI ENDRICH

### ▶ WEBINARE



Spannende Themen warten in Kürze auf Sie! In unseren Webinaren präsentieren wir Ihnen neue Produkte bis hin zu maßgeschneiderten Lösungen für Ihre individuellen Anforderungen!

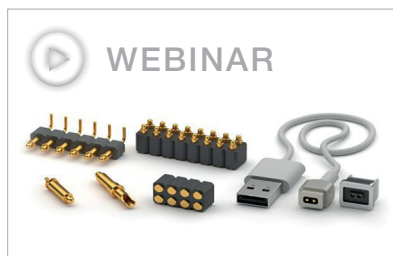
Sie haben nun die Möglichkeit, kostenlos an folgenden Webinaren teilzunehmen:



#### Hochpräzise Strommessung auf magnetischer Basis

27. April 2022  
10:00 Uhr – 11:00 Uhr

**JETZT ANMELDEN**



#### ADAM TECH Pogo Pin / Magnetic Connectors / Modular Connectors

18. Mai 2022  
10:00 Uhr – 11:00 Uhr

**JETZT ANMELDEN**



#### Maßgeschneiderte Lösungen rund um das Thema Displays, Touch und Embedded Systeme

13. Juli 2022  
10:00 Uhr – 11:00 Uhr

**JETZT ANMELDEN**

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