



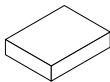
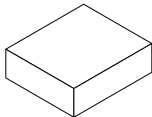
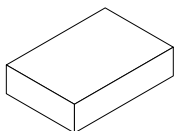


VCO [Voltage Controlled Oscillators]



MARUWA has developed various VCOs, applying the time-tested ceramic technology. The compact high-performance models equipped with a subminiature VCO or LTCC substrate, which are developed to meet the needs for cellular phones, and the high-performance models equipped with our original coaxial resonator permit production of custom-made products that will meet customers' needs.

Lineup of custom-made VCOs

Series	Package dimensions	VCO Type	Principal applications
	Image of actual dimensions		
MVZ	3.2×4.5×1.3mm 	Single	Mobile telephone
	MVF	4.0×5.0×1.5mm 	Single
MVY		4.8×5.5×1.6mm 	Single high-performance (LTCC)
	Single		Mobile telephone, W-LAN
	With enable terminal		CDMA mobile telephone
MVN	6.0×8.0×1.6mm 	Single	Base station, ISM band
		Dual	Mobile telephone compound machine
MVE	7.0×9.0×2.0mm 	Single	Base station
		Dual	Wireless microphone, ISM band
		With modulation	GSM mobile telephone, ISM band
MVU	10.4×11.9×3.8mm 	Single	GSM mobile telephone
		Single high-performance (Dielectric resonator)	Base station, Wireless microphone
MVS	10.4×15.1×3.8mm 	Single	Radio
		Single high-performance (Dielectric resonator)	Radio

RADIO FREQUENCY PRODUCTS

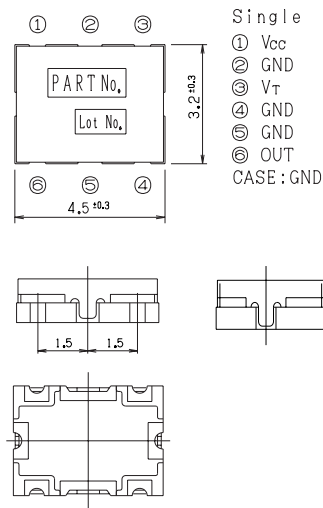
VCO [Voltage Controlled Oscillators]

Lineup of custom-made VCOs

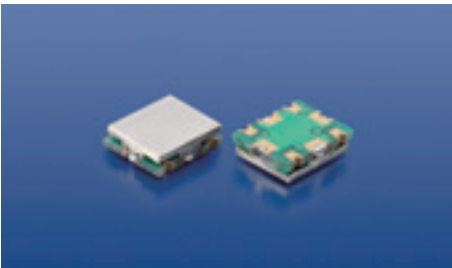
■ MVZ Series (3.2×4.5×1.3mm)



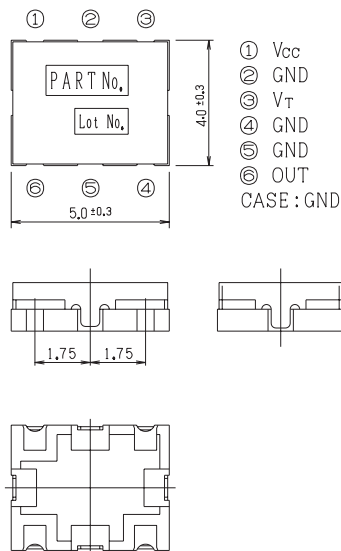
Frequency : 700MHz–2.5GHz
 Features : Ultra-compact package
 Applications : Various mobile telephones



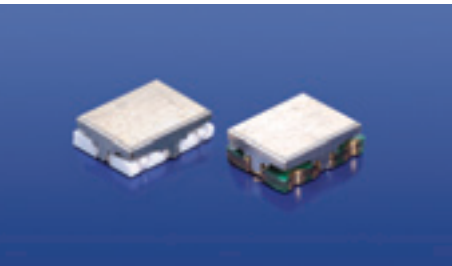
■ MVF Series (4.0×5.0×1.5mm)



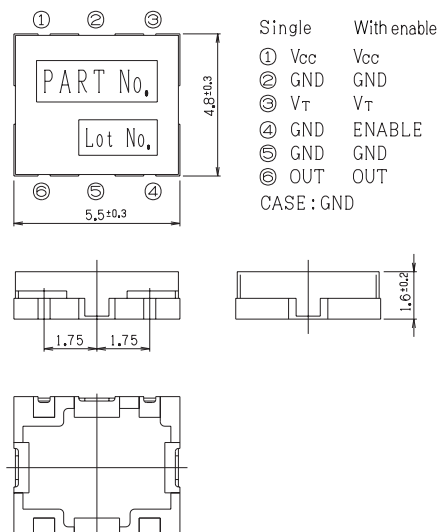
Frequency : 700MHz–4GHz
 Features : Ultra-compact package
 High performance
 Applications : Various mobile telephones



■ MVY Series (4.8×5.5×1.6mm)

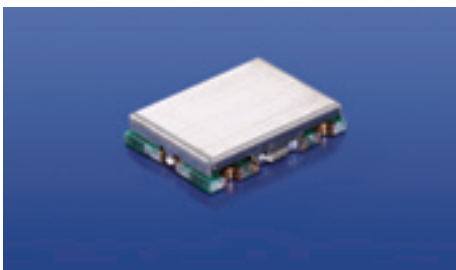


Frequency : 700MHz–5GHz
 Features : Compact package
 High performance (LTCC substrate)
 Low price
 Applications : Various mobile telephones
 W-LAN

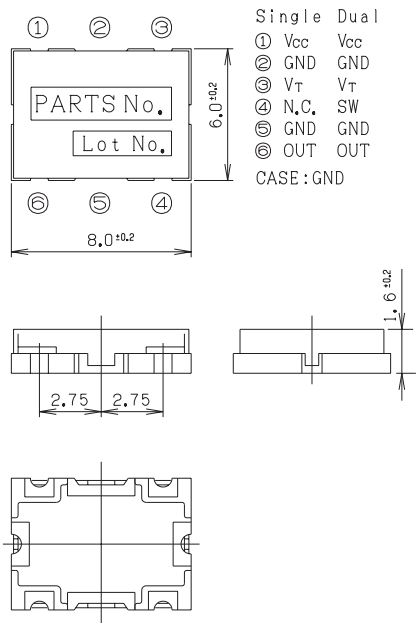


VCO [Voltage Controlled Oscillators]

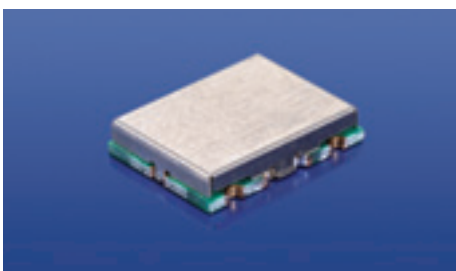
■ MVN Series (6.0×8.0×1.6mm)



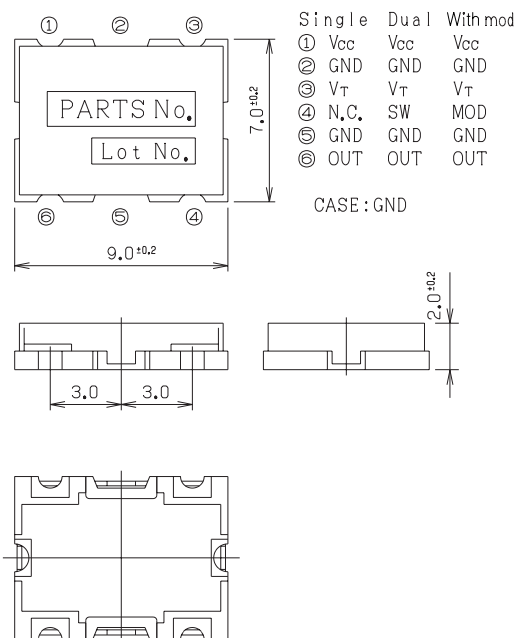
- Frequency : 700MHz–3GHz
- Features : Compact high-performance
Dual band is available
- Applications : Various mobile telephone compound equipment
Base station
ISM band



■ MVE Series (7.0×9.0×2.0mm)



- Frequency : 200MHz–1.9GHz
- Features : Analog modulation possible
Dual band is available
- Applications : Wireless microphone
ISM band
Base station



RADIO FREQUENCY PRODUCTS

VCO [Voltage Controlled Oscillators]

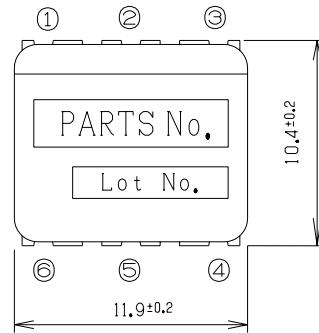
Lineup of custom-made VCOs

■MVU Series (DRType / MSLType)

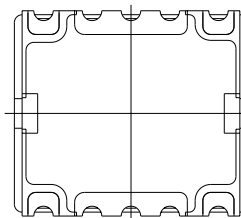
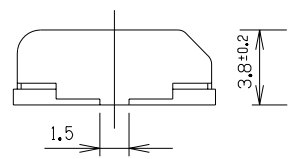
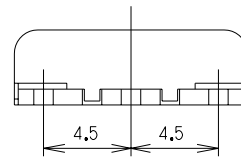


- Frequency : 400MHz–2.5GHz
- Features : Use of coaxial resonator is available
High-peformance (dielectric resonator)
Analog modulation is available
- Applications : Base station
Wireless microphone

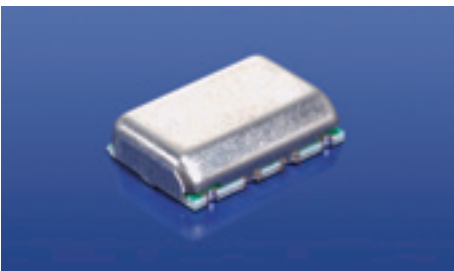
(10.4×11.9×3.8mm)



Single	With mod
① Vcc	① Vcc
② GND	② GND
③ V _T	③ V _T
④ N.C.	④ MOD
⑤ GND	⑤ GND
⑥ OUT	⑥ OUT
CASE : GND	

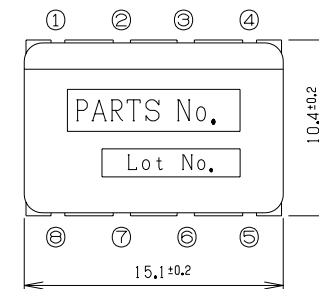


■MVS Series (DRType / MSLType)

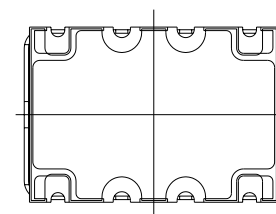
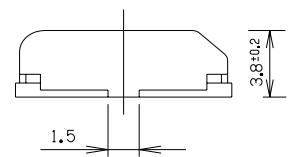
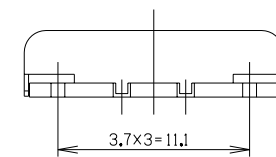


- Frequency : 50MHz–800MHz
- Features : Use of coaxial resonator is available
High-peformance (dielectric resonator)
Analog modulation is available
- Applications : Various radios

(10.4×15.1×3.8mm)



Single	With mod
① N.C.	① MOD
② GND	② GND
③ GND	③ GND
④ OUT	④ OUT
⑤ Vcc	⑤ Vcc
⑥ GND	⑥ GND
⑦ GND	⑦ GND
⑧ V _T	⑧ V _T
CASE : GND	

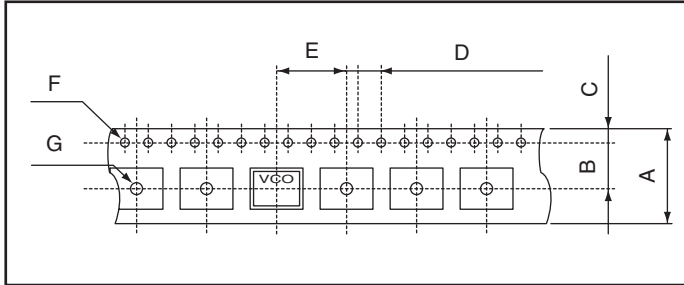


VCO [Voltage Controlled Oscillators]

Packing form details

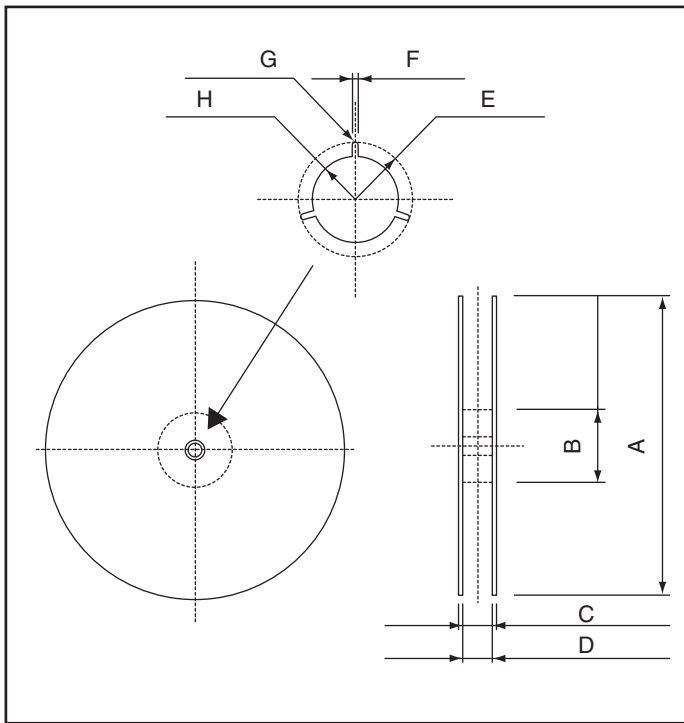
■ Package forms

● Taping Dimension



Series	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)
MVZ	12	5.5	1.75	4	8	1.5	1.5
MVF	12	5.5	1.75	4	8	1.5	1.5
MVY	12	5.5	1.75	4	8	1.5	1.5
MVN	16	7.5	1.75	4	12	1.5	1.6
MVE	16	7.5	1.75	4	12	1.5	1.6
MVU	24	11.5	1.75	4	12	1.5	2
MVS	24	11.5	1.75	4	16	1.5	2

● Reel Dimensions

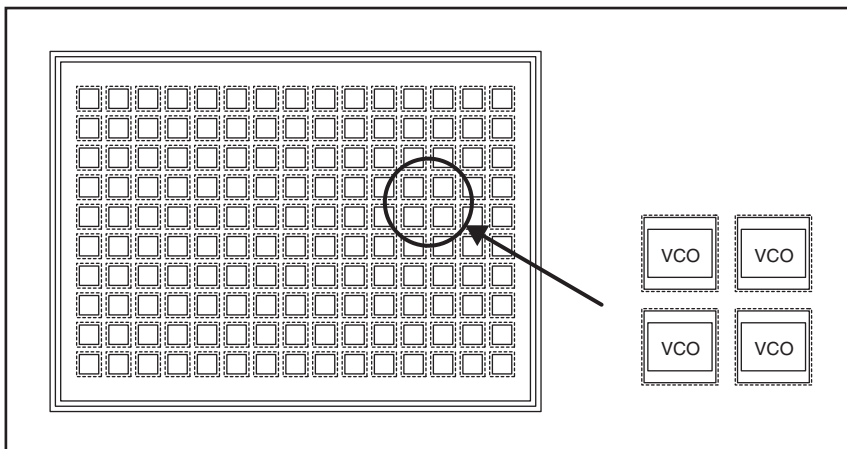


Series	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)	H(mm)
MVZ	330	80	2	12.4	21	2	1	13
MVF	330	80	2	12.4	21	2	1	13
MVY	330	80	2	12.4	21	2	1	13
MVN	330	80	2	17.5	21	2	1	13
MVE	330	80	2	17.5	21	2	1	13
MVU	330	80	2	25.5	21	2	1	13
MVS	330	80	2	25.5	21	2	1	13

■ Reel quantity

Series	Quantity(pcs.)
MVZ	2000
MVF	2000
MVY	2000
MVN	2000
MVE	2000
MVU	1000
MVS	500

● Palette



■ Palette quantity

Series	Quantity(pcs.)
MVE	220
MVU	150
MVS	150

VCO [Voltage Controlled Oscillators]

Request for custom-made VCO

Fill in the following request for custom-made VCO and send the sheet to us.
We will make custom-made VCOs according to your specifications.

To _____ Sales Office of MARUWA CO., LTD.

Be sure to confirm the back cover of the catalog, and fax to the nearest sales office.

Request for custom-made VCO

- Use Cellular phone Wireless LAN Base station ISM band Wireless microphone
 Others (_____)
- Desired Series MVZ MVF MVY MVN MVE
 MVU MVS No specification
- Frequency range (_____ MHz ~ _____ MHz)
- Control voltage Standard _____ 0.5 V ~ _____ Vcc - 0.5 V
 Specification (_____ V ~ _____ V)
- Control voltage sensitivity Specification (_____ ± _____ MHz/V)
 No specification
- Supply voltage 5.0±0.25V 3.0±0.15V No specification
 Specification (_____ ± _____ V)
- Consumption current 10mA max No specification
 Specification (_____ mA max)
- Output level Standard _____ 0±3 dBm
 Specification (_____ ± _____ dBm)
- C/N Specification (_____ dBc/Hz _____ offset)
 No specification

■ Other request

Contact address	Name of Company	Name of person in charge
	Division	Title
	TEL	Mail-adress

Make a copy of this sheet.