

VCOs from Raltron

Raltron offers a broad range of VCO Products, designed to your specification and budget.

Applications

- Wireless
- Satcom
- Radio
- Navigation
- Instrumentation



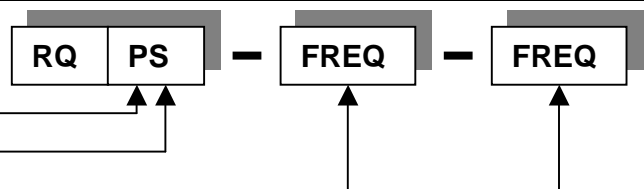
Features

- **Frequency:** up to 3 GHz
- **Resonator Technology:** MicroStrip, Coax, SAW, high-Q Inductor
- **Supply Voltage:** 2.2V to 12V
- **Package Styles:** 6x8 to 20x20 mm²
- **Low Profile:** 2 mm
- **Operating Temperature:** -40°C to +85°C
- **Custom Options available:** contact Raltron

How to order a VCO

[A] CATALOGUE-VCO

1. Select a package. _____
2. Select a specification*. _____
3. Specify frequency range in [MHz]. _____



[B] CUSTOM-VCO

1. Select or specify package and electrical parameters.
2. Submit your target specification and estimated annual usage.
3. Raltron will provide customized specification.

* Please contact Raltron for more details and tighter specifications.

1. FEATURES

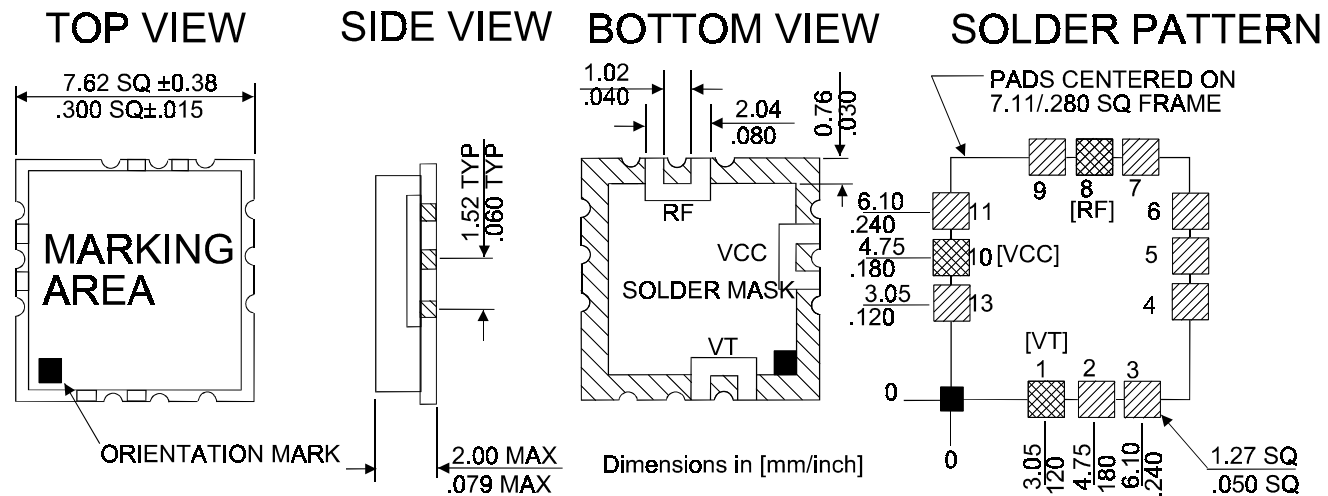
- Frequency Range up to 1 GHz
- Super Compact SMT-Package: 7.6 x 7.6 [mm]
- Low Profile: 2.0 [mm]

2. APPLICATIONS

- Telecommunications
- UHF/VHF-Radio
- WLAN
- Point-to-Point Radio
- PCS
- GPS



3. MECHANICAL SPECIFICATION



4. ELECTRICAL SPECIFICATION

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Frequency Range	available range, contact Raltron	$f_0(V_t)$	45		1000	MHz
Supply Voltage	available range, contact Raltron	V_{cc}	3.0		12.0	V
Supply Current	-	I_{cc}		25		mA
Output Power	over specified frequency range	P_{out}	-3±3		5±3	dBm
Load Impedance	-	Z_{load}		50		Ohms
Tuning Voltage	available range, contact Raltron	V_t	0~2.5		0~25	V
Tuning Sensitivity	over specified V_t -range	df/dV_t			60	MHz/V
Pushing Sensitivity	over specified V_{cc} range	df/dV_{cc}		3		MHz/V
Pulling Sensitivity	14dB load return loss, all phases	df/dZ_{load}		5		MHz
Input Capacitance	input capacitance of tuning port	C_{in}		100		pF
Harmonic Suppression	second harmonic	$a(2f_0)$		-15		dBc
Phase Noise	10kHz offset, 1Hz Bandwidth	$L(df)$		-105		dBc/Hz
Operating Temp.	-	T_{op}	-40		+85	°C

5. NOTES

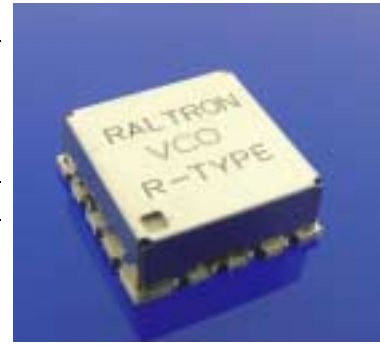
- Package is non-hermetic, substrate-material glass-reinforced laminate and nickel-silver cover.
- It is recommended to provide two bypass-capacitors (ceramic) from V_{cc} to Ground, 1nF parallel 100pF.

1. FEATURES

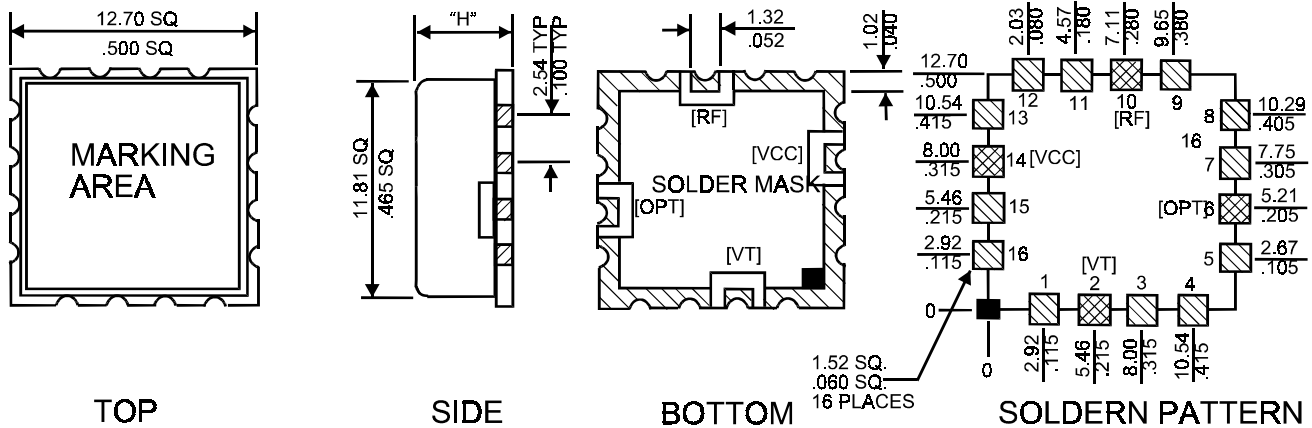
- Frequency Range up to 3 GHz
- Compact SMT-Package: 12.7 x 12.7 x 5.5 [mm]
- Custom Options available

2. APPLICATIONS

- Telecommunications
- Base stations
- Instrumentation
- Point-to-Multipoint Radio
- CATV
- Networks



3. MECHANICAL SPECIFICATION



Notes:

1. Unit of dimension: [mm / inch].
2. Height "H" is 5.50mm / 0.216" max.
3. Outline tolerances (length/width) are $\pm 0.38\text{mm}$ / ± 0.015 "; other tolerances are $\pm 0.15\text{mm}$ / ± 0.005 ".
4. Pad / Functions: [2] Tuning Voltage ; [5] Optional Signal; [10] RF-Output; [14] Supply Voltage.
All other pads are ground.

4. ELECTRICAL SPECIFICATION

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Frequency Range	available range, contact Raltron	fo(Vt)	45		3000	MHz
Supply Voltage	available range, contact Raltron	Vcc	3.0		12.0	V
Supply Current	-	Icc		25		mA
Output Power	over specified frequency range	Pout	-3±3		10±3	dBm
Load Impedance	-	Z load		50		Ohms
Tuning Voltage	available range, contact Raltron	Vt	0~2.5		0~25	V
Tuning Sensitivity	over specified Vt-range	df/dVt			60	MHz/V
Pushing Sensitivity	over specified Vcc range	df/dVcc		3		MHz/V
Pulling Sensitivity	14dB load return loss, all phases	df/dZload		5		MHz
Input Capacitance	input capacitance of tuning port	Cin		100		pF
Harmonic Suppression	second harmonic	a(2fo)		-15		dBc
Phase Noise	10kHz offset, 1Hz Bandwidth	L(df)		-105		dBc/Hz
Operating Temp.	-	Top	-40		+85	°C

5. NOTES

- Package is non-hermetic, substrate-material glass-reinforced laminate and nickel-silver cover.
- It is recommended to provide two bypass-capacitors (ceramic) from Vcc to Ground, 1nF parallel 100pF.

1. FEATURES

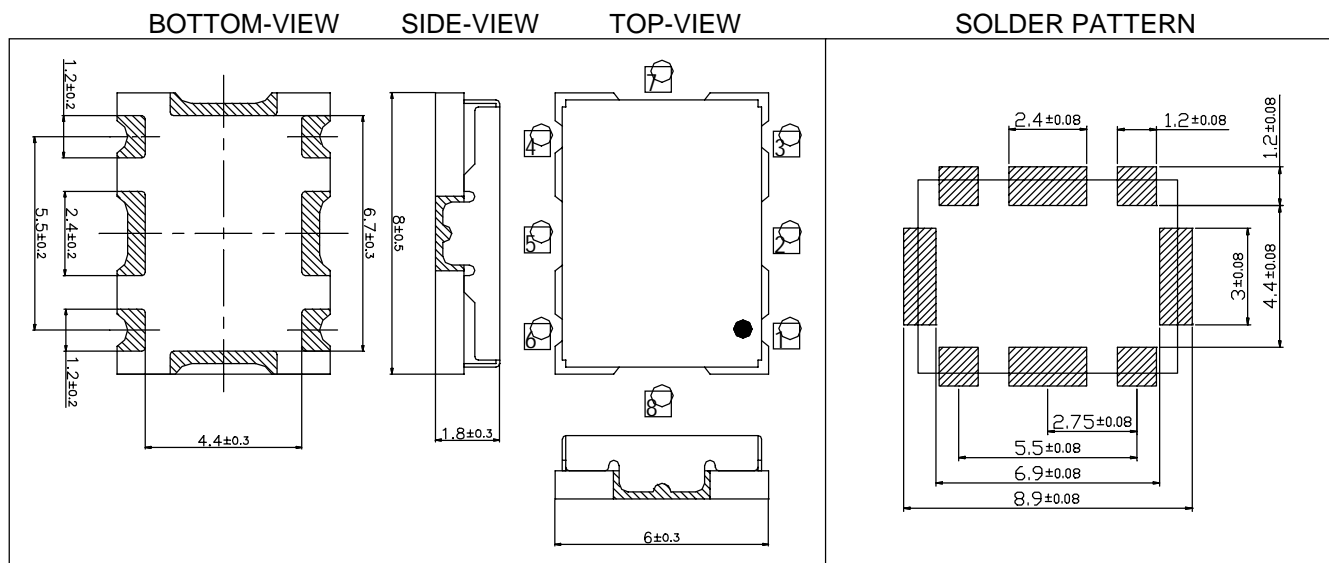
- Frequency Range up to 2.5 GHz
- Super Compact SMT-Package: 8.0 x 6.0 [mm]
- Low Profile: 2.0 [mm]

2. APPLICATIONS

- PCS
- VSAT
- DECT
- CDMA
- GSM
- CATV
- WLAN
- GPRS



3. MECHANICAL SPECIFICATION



Pad/Function: 1=RF, 2=GND, 3=GND, 4=VT, 5=GND, 6=VCC, 7=GND, 8=GND

4. ELECTRICAL SPECIFICATION

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Frequency Range	available range, contact Raltron	fo(Vt)	1000		2500	MHz
Supply Voltage	available range, contact Raltron	Vcc	2.2		12.0	V
Supply Current	-	Icc		12		mA
Output Power	over specified frequency range	Pout	-3±3		0±3	dBm
Load Impedance	-	Z load		50		Ohms
Tuning Voltage	available range, contact Raltron	Vt	0~2.5		0~16	V
Tuning Sensitivity	over specified Vt-range	df/dVt		15		MHz/V
Pushing Sensitivity	over specified Vcc range	df/dVcc		10		MHz/V
Pulling Sensitivity	14dB load return loss, all phases	df/dZload		10		MHz
Input Capacitance	input capacitance of tuning port	Cin		15		pF
Harmonic Suppression	second harmonic	a(2fo)		-15		dBc
Phase Noise	10kHz offset, 1Hz Bandwidth	L(df)		-98		dBc/Hz
Operating Temp.	-	Top	-40		+85	°C

5. NOTES

- Package is non-hermetic, substrate-material glass-reinforced laminate and nickel-silver cover.
- It is recommended to provide two bypass-capacitors (ceramic) from Vcc to Ground, 1nF parallel 100pF.

1. FEATURES

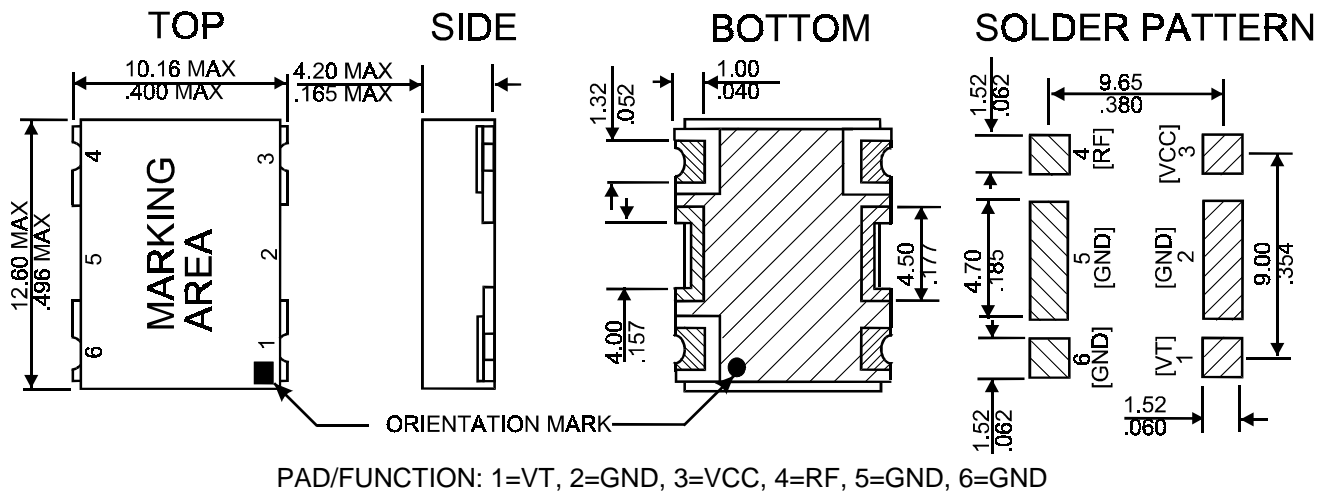
- Frequency Range up to 1.2 GHz
- Compact SMT-Package: 12.6 x 10.2 x 4.2 [mm]

2. APPLICATIONS

- Telecommunications
- Instrumentation
- Base stations
- Point-to-Multipoint Radio
- CATV
- WLAN
- GPRS



3. MECHANICAL SPECIFICATION



4. ELECTRICAL SPECIFICATION

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Frequency Range	available range, contact Raltron	fo(Vt)	45		1000	MHz
Supply Voltage	available range, contact Raltron	Vcc	3.0		12.0	V
Supply Current	-	Icc		25		mA
Output Power	over specified frequency range	Pout	-3±3		5±3	dBm
Load Impedance	-	Z load		50		Ohms
Tuning Voltage	available range, contact Raltron	Vt	0~2.5		0~25	V
Tuning Sensitivity	over specified Vt-range	df/dVt			60	MHz/V
Pushing Sensitivity	over specified Vcc range	df/dVcc		3		MHz/V
Pulling Sensitivity	14dB load return loss, all phases	df/dZload		5		MHz
Input Capacitance	input capacitance of tuning port	Cin		100		pF
Harmonic Suppression	second harmonic	a(2fo)		-15		dBc
Phase Noise	10kHz offset, 1Hz Bandwidth	L(df)		-105		dBc/Hz
Operating Temp.	-	Top	-40		+85	°C

5. NOTES

- Package is non-hermetic, substrate-material glass-reinforced laminate and nickel-silver cover.
- Tolerances are ±0.38/±.015 for package outline dimensions.
- It is recommended to provide two bypass-capacitors (ceramic) from Vcc to Ground, 1nF parallel 100pF