

RQRA-0600-0660

ELECTRICAL SPECIFICATIONS

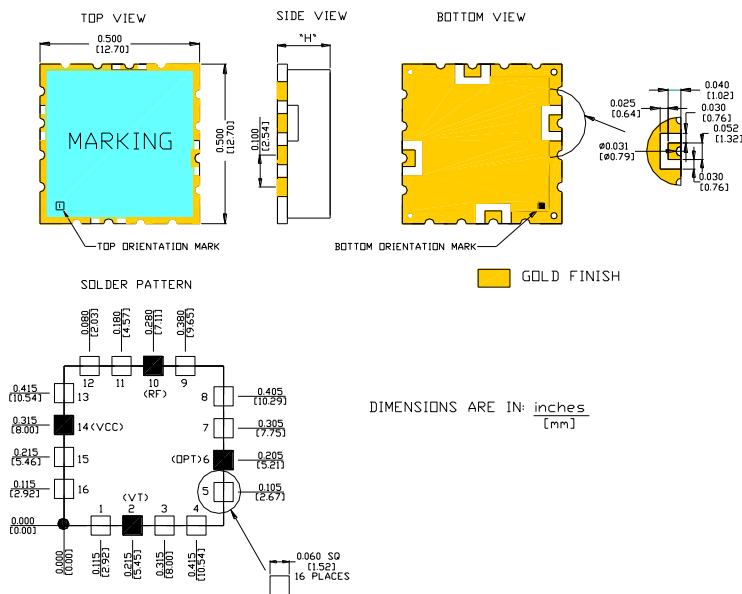
PARAMETER	CONDITION	SYMBOL	VALUE			UNIT
			Min.	Typ.	Max.	
Frequency Range	V _t =0.5 V	fo(V _t)			600	MHz
	V _t =5.0 V		660			
Power Supply Voltage		V _{cc}	4.75	5.0	5.25	V
Tuning Voltage		V _t	0.5		4.5	V
Supply Current	V _{cc} =5.0V ±5%	I _{cc}		15	20	mA
Tuning Sensitivity	V _t =0.5~5V V _{cc} =5.0V ±5% T=25°C	df/dV _t	15		30	MHz/V
Modulation Bandwidth	@-3 dB			60		MHz
Tuning Port Capacitance	V _t =0.5~5V			68		pF
Pushing	V _{cc} =4.75 – 5.25V	df/dV _{cc}		1	2	MHz/V
Pulling ^{1,2}	Return Loss: 12dB	df/dZ _L		1	2	MHz-pk-pk
Operating Temperature		T _a	-35		85	°C
Storage Temperature		T _{stor}	-55		100	°C
Maximum Limits Voltage	V _{cc(abs)}		-0.4		8.0	V
Moisture Sensitivity Level	MSL	JEDEC J-STD-2	1			
Termination; Finish			Glass-reinforced laminate base and nickel-silver cover			
ESD Sensitivity	HBM	Human body model JESD22-A114		3		kV

OUTPUT CHARACTERISTICS

SINE-WAVE	PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
				Min	Typ.	Max	
	Output Power	P _w	Output termination 50Ω V _{cc} =5.0V ±5%	-2	-1	4	dBm
	2nd Harmonic Suppression	h ²			-13	-8	dBc
	3rd Harmonic Suppression	h ³			-20	-10	dBc
	Spurious (Non-Harmonic)	Sp			-90		dBc
	Output Load(Imped)	O _{CL}			50		Ω

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MECHANICAL DIMENSIONS AND PIN FUNCTIONING



$$H = \frac{0.156}{3.96}$$

H Tolerance: ± 0.020 in
 ± 0.51 mm

PIN	SYMBOL	FUNCTION
2	Vt	Control Voltage
10	Rf _{out}	RF Output
14	Vcc	Power Supply
6, Others, Cover	GND	Ground

■ Marking:

RQRA
 0600-0660
1 Date code

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PHASE NOISE

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min	Typ	Max	
SSB Phase noise	$\Sigma(\Delta f)$	$\Delta f=1.0\text{kHz}$		-90		dBc
		$\Delta f=10\text{kHz}$		-112		
		$\Delta f=100\text{kHz}$		-133		
		$\Delta f=1000\text{kHz}$		-151		

COMMON SPECIFICATIONS

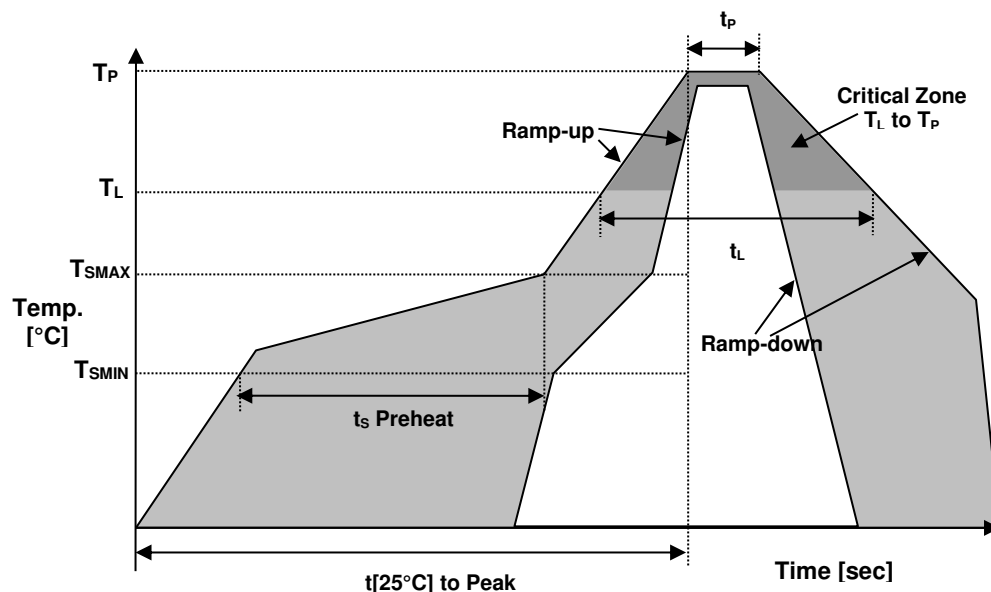
- 1.1 -Load impedance is 50 Ohms.
- 1.2 -Pulling is measured with 12dB return loss, all phases.
- 1.3- Package outline tolerances are typ. $\pm 0.30\text{mm}$ / ± 0.012 inch if not stated differently on the drawing.
- 1.4 -It is recommended to provide two bypass-capacitors (ceramic), from Vcc to Gnd, $1\text{nF} \parallel 100\text{pF}$.
- 1.5- Solder temperature (peak) is 260°C for 10-20s.

Environmental Compliance

PARAMETER	CONDITIONS
Mechanical Shock	MIL-STD-883, Method 2002
Mechanical Vibration	MIL-STD-883, Method 2007
Solderability	MIL-STD-883, Method 2003
Resistance to Solvents	MIL-STD-883, Method 2016

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REFLOW PROFILE



Recommended Solder Reflow Profile			
Temperature Min Preheat	T_{SMIN}		150°C
Temperature Max Preheat	T_{SMAX}		175°C
Time (T_{SMIN} to T_{SMAX})	t_s		60-180 sec.
Temperature	T_L		217°C
Peak Temperature	T_P		260°C
Ramp-up rate	R_{UP}		3°C/sec max.
Ramp-down rate	R_{DOWN}		6°C/sec max.
Time within 5°C of Peak Temperature	t_p		10-20 sec max.
Time $t[25^\circ\text{C}]$ to Peak Temperature	$t[25^\circ\text{C}]$ to Peak		480 sec.
Time	t_L		60-150 sec.

APPROVALS		
Eng. approval, date:	IM	9/7/2018
Created by, date:	MP	9/7/2018
Revision: A		

