

RQRA-1900-2500

ELECTRICAL SPECIFICATIONS

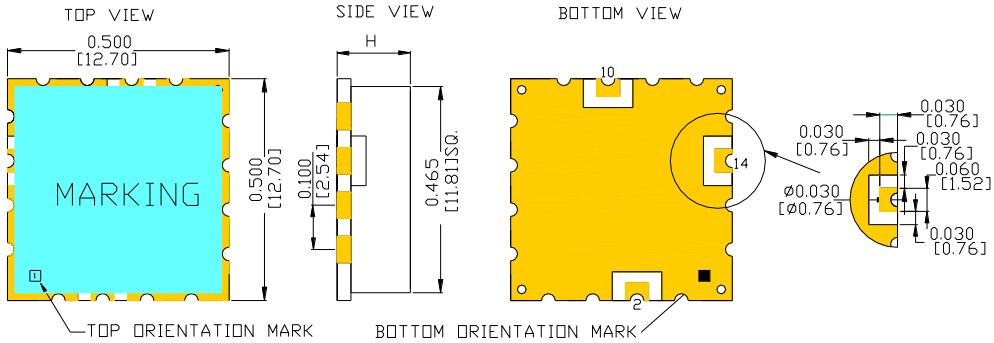
PARAMETER	CONDITION	SYMBOL	VALUE			UNIT
			Min.	Typ.	Max.	
Frequency Range	Vt= 0 V	fo(Vt)	2500		1900	MHz
	Vt=15 V					
Power Supply Voltage		Vcc		10		V
Tuning Voltage		Vt	0		15	V
Supply Current	Vcc=10 V	Icc		29	33	mA
Tuning Sensitivity	1900MHz < Fo <2500MHz	Kvco		45		MHz/V
Tuning Port Capacitance					47	
Modulation Bandwidth	@-3 dB	Mbw		1000		KHz
Pushing	Vcc±5%	df/dVcc		1.0	2.0	MHz/V
Pulling	@12dBr, All phases	df/dZL		2.0	4.0	MHz/p-p
Operating Temperature		Ta	-40		+85	°C
Storage Temperature		Tstor	-55		+125	°C
Frequency Drift with Temperature	@ -40 °C			14	20	MHz
	@ +85 °C			14	20	
Maximum Limits Voltages	Vcc (pin 14)		-0.4		+11	V
	Vt- (pin 2)		-0.3		+16	
	Rf out (pin 10)		-25		+25	
Moisture Sensitivity Level	MSL	JEDEC J-STD-2	1			
Termination Finish			Rogers PCB, Electroless Nickel Cover/Immersion Gold			
ESD Sensitivity	HBM	Human body model JESD22-A114		3		kV

OUTPUT CHARACTERISTICS

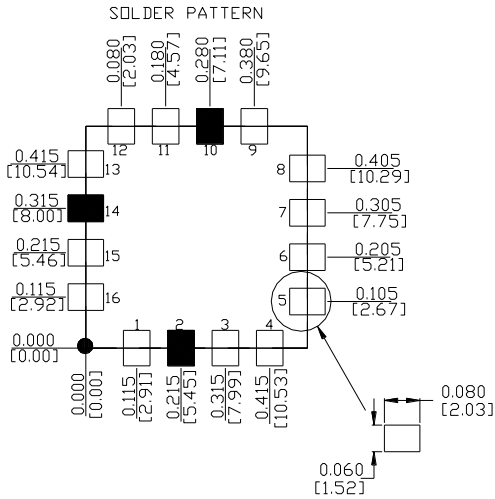
SINE-WAVE	PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
				Min	Typ.	Max	
	Output Power	Pw	1900MHz < Fo < 2500MHz, 50 ohms load	-3.0	0	3.0	dBm
	2nd Harmonic Suppression	F _{x2}			-15	-10	dBc
	3rd Harmonic Suppression	F _{x3}			-20	-10	dBc
	Spurious (Non-Harmonic)	Sp				-80	dBc
	Output Load	O _{CL}			50		Ω

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MECHANICAL DIMENSIONS AND PIN FUNCTIONING



GOLD FINISH



PAD	CONNECTION
2	VT
10	RF-OUTPUT
14	Vcc
OTHERS	GROUND

DIMENSIONS ARE IN: $\frac{\text{inches}}{[\text{mm}]}$

H Dimension = $\frac{0.236\text{in}}{6.0\text{mm}}$ Max.

Tolerance: $\frac{\pm 0.010\text{in}}{\pm 0.25\text{mm}}$

■ Marking:

RQRA
1900-2500
1 Date code

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PHASE NOISE

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min	Typ	Max	
Phase noise (1Hz BW)	$\Sigma(\Delta f)$	$\Delta f=1.0\text{kHz}$		-76	-71	dBc/Hz
		$\Delta f=10\text{kHz}$		-102	-97	
		$\Delta f=100\text{kHz}$		-122	-117	
		$\Delta f=1.0\text{MHz}$		-142	-137	

COMMON SPECIFICATIONS

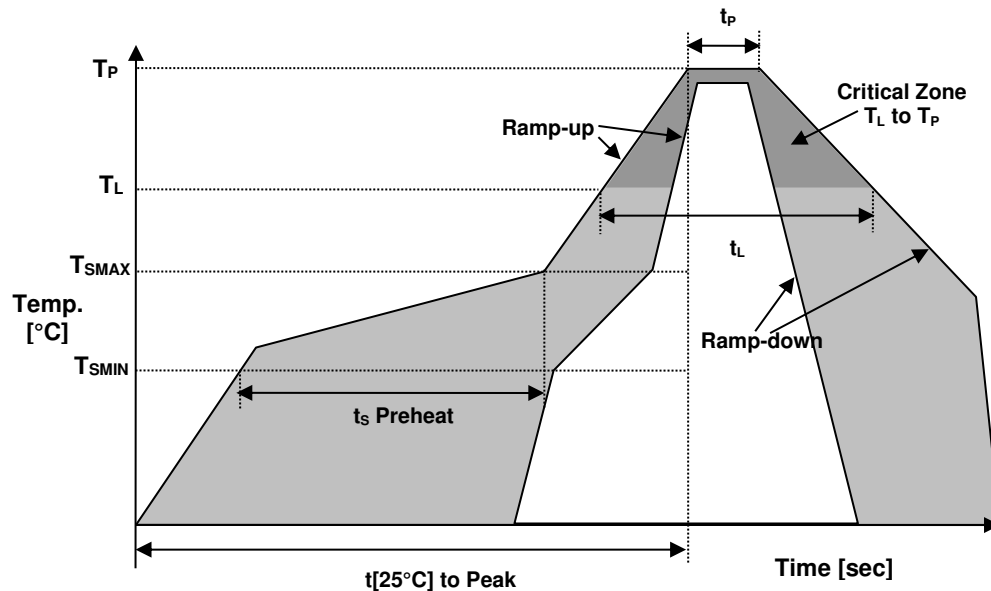
- 1.1 -Load impedance is 50 Ohms.
- 1.2 -Shorted line.
- 1.3- Package outline tolerances are typ. $\pm 0.30\text{mm}$ / ± 0.012 inch if not stated differently on the drawing.
- 1.4 -It is recommended to provide two bypass-capacitors (ceramic), from Vcc to Gnd, $1\text{nF} \parallel 100\text{pF}$.
- 1.5- 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 11/21/2017

Created by, date: MH 11/21/2017

Revision: A

