

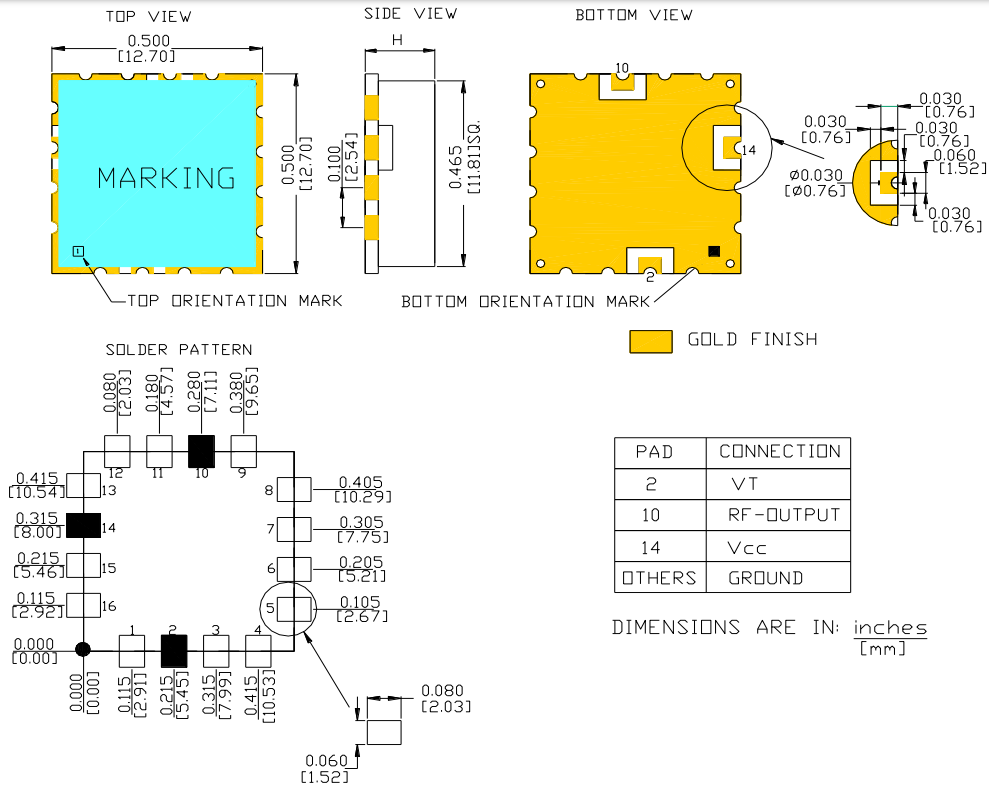
ELECTRICAL SPECIFICATIONS

PARAMETER	CONDITION	SYMBOL	VALUE			UNIT
			Min.	Typ.	Max.	
Frequency Range	Vt=0.5 V	fo(Vt)			4130	MHz
	Vt=5.0		4730			
Power Supply Voltage		Vcc	4.75	5.0	5.25	V
Tuning Voltage		Vt	0.2		7.0	V
Supply Current	Vcc=5.0V ±5%	Icc		28		mA
Tuning Sensitivity	Vt=0.5~5V Vcc=5.0V ±5% T=25°C	df/dVt		150		MHz/V
Modulation Bandwidth	@3 dB			5000		kHz
Tuning Port Capacitance	Vt=0.5~5V			20		pF
Pushing	Vcc=4.75 – 5.25V	df/dVcc		5	8	MHz/V
Pulling ^{1,2}	Return Loss: 12dB	df/dZL		3	5	MHz-pk-pk
Frequency Drift with Temperature	@-40°C			25		MHz
	@+85°C			25		MHz
Operating Temperature Range		Ta	-40		85	°C
Storage Temperature Range		Tstor	-55		125	°C
Maximum Limits Voltage	Vcc(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	Pw	Output termination 50Ω Vcc=5.0V ±5%	-3		+3	dBm
	Harmonic Suppression	h ²			-15	-10	dBc
	Output Power		Vt=0 and 5V	-3			dB
	Output Load	OCL			50		Ω

MECHANICAL DIMENSIONS AND PIN FUNCTIONING



$$H = \frac{0.220}{5.6}$$

$$H \text{ Tolerance: } \pm 0.020 \text{ in} \\ \pm 0.51 \text{ mm}$$

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

■ Marking:

RQRA
 4130-4730
 1 Date code

PHASE NOISE

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min	Typ	Max	
SSB Phase noise	$\Sigma(\Delta f)$	$\Delta f=1\text{kHz}$		-60	-55	dBc
		$\Delta f=10\text{kHz}$		-88	-83	
		$\Delta f=100\text{kHz}$		-108	-103	
		$\Delta f=1\text{ MHz}$		-128	-123	

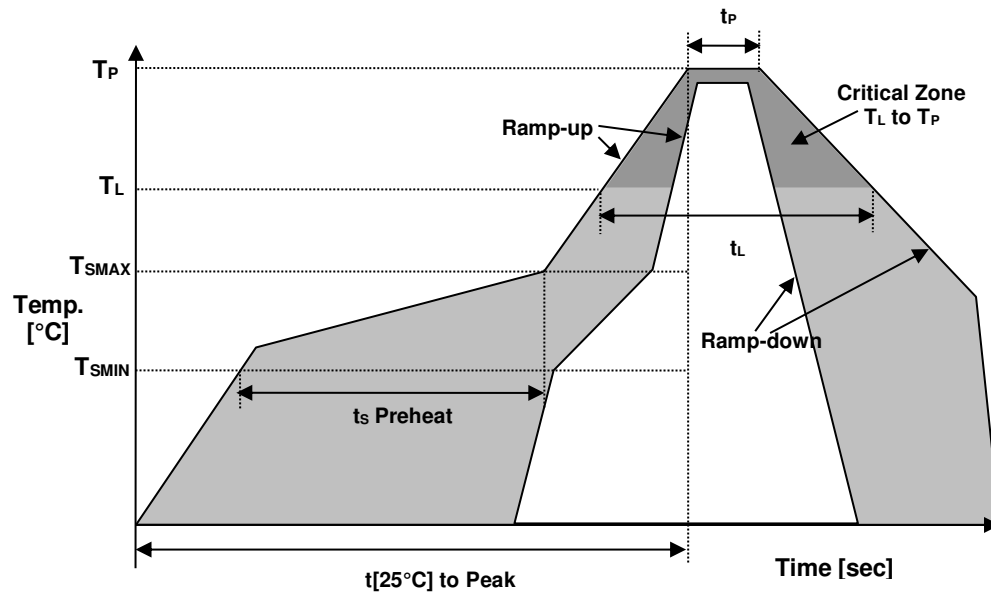
COMMON SPECIFICATIONS

- 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

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	11/25/2019
Created by, date:	CP	11/25/2019
Revision: A		

