

RQRA-0463-0514

ELECTRICAL SPECIFICATIONS

PARAMETER	CONDITION	SYMBOL	VALUE			UNIT
			Min.	Typ.	Max.	
Lower Frequency see 6.2	Vt=0.5 V	fo(Vt)			463	MHz
Upper Frequency see 6.2	Vt=10		514			
Tuning Voltage		Vt	0.5		10	V
Supply Voltage	Tolerance: ± 0.25V	Vcc	4.75	5.0	5.25	V
Supply Current		Icc			30	mA
Output Power	50 Ω Load	Pout	+2.0	+ 5.5	+8.0	dBm
Tuning Sensitivity	Maximum to Minimum Ratio	df/dVt			1.5	-
Tuning Sensitivity	Over 463-514MHz	df/dVt		7.0		MHz/V
Pushing	Over Supply Variation 5V±5%	df/dVcc			200	kHz
Pulling see 6.3	VSWR Load=2:1 at all Phase	df/dZL			200	kHz
Harmonic Suppression	-H2	a(n*fo)			-30	dBc
	-H3				-30	
Non-Harmonic Spurious - Δf ≤ 4.0 kHz - Δf > 4.0 kHz					-60 -100	dBc

PHASE NOISE

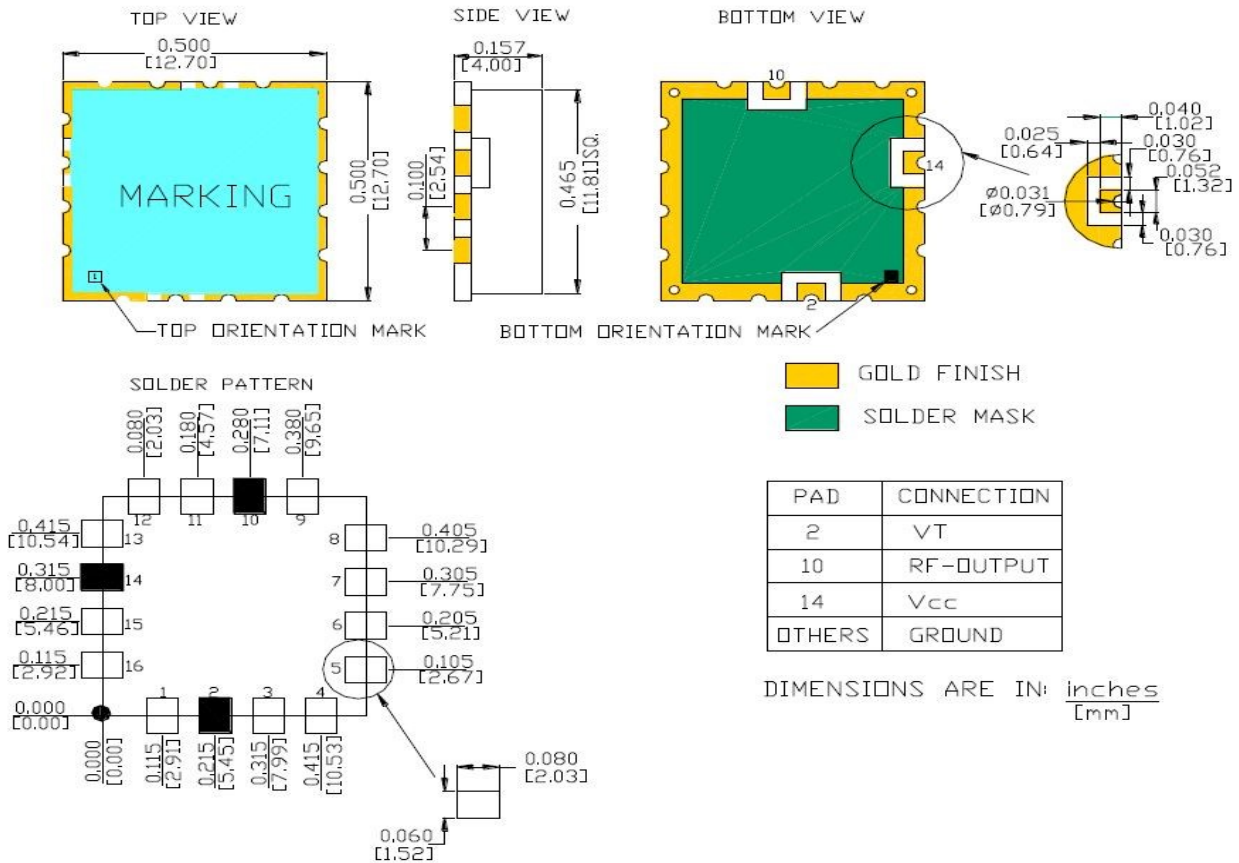
PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
SSB Phase Noise at Offset Frequency Over 0 to 55°C	L(dF)	1.0kHz		-90	-89	dBc/Hz
		12.5kHz		-114	-113	
		25kHz		-125	-120	
		50 kHz		-128	-127	
		100kHz		-140	-138	
		200kHz		-143	-140	
		500kHz		-147	-145	
		1MHz		-150	-145	
>5MHz		-165	-160			

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COMMON SPECIFICATION

- 6.1 Load impedance is 50 Ohms if not stated differently in (4.) "Extended Specification".
- 6.2 The frequency range is defined between the (max) lower frequency and (min) upper frequency.
- 6.3 Pulling is measured with 12dB return loss, all phases.
- 6.4 Package outline tolerances are typ. $\pm 0.38\text{mm}/\pm 0.015\text{inch}$ if not stated differently on the drawing.
- 6.5 Product consists of glass-reinforced laminate base and nickel-silver cover.
- 6.6 It is recommended to provide two bypass-capacitors (ceramic), from Vcc to Gnd, 1nF || 100pF.
- 6.7 Solder temperature (peak) is 230°C for 10s or 260°C for 5s.
- 6.8 Operating temperature range is -30°C~+85°C if not stated differently in (4.) "Extended Spec".

MECHANICAL DIMENSIONS AND PIN FUNCTIONING



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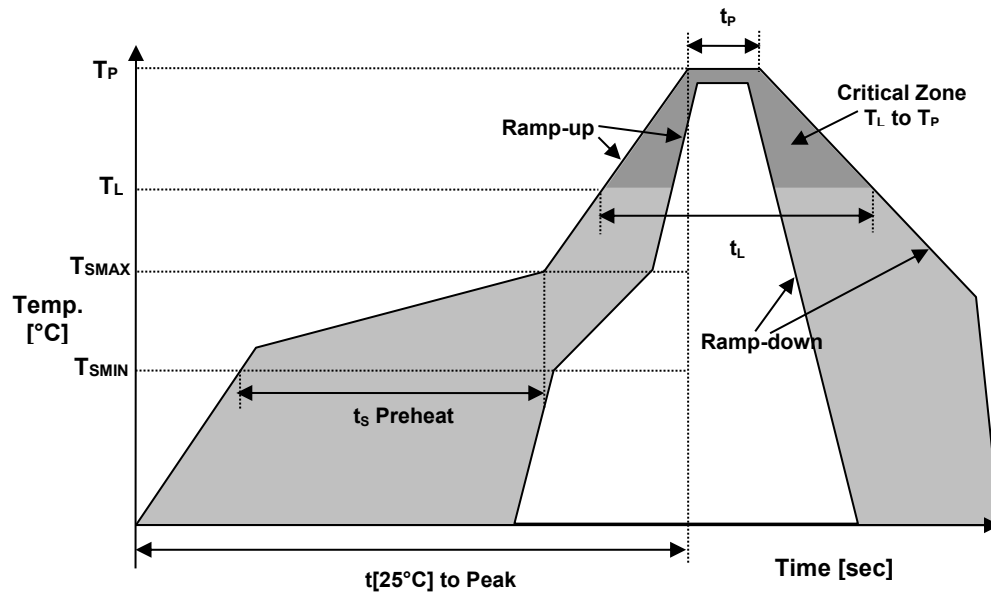
■ Marking:



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



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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°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	t _L	60-150 sec.

APPROVALS		
Eng. approval, date:	IM	01/23//2019
Created by, date:	AR	01/21//2019
Revision:	A	



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