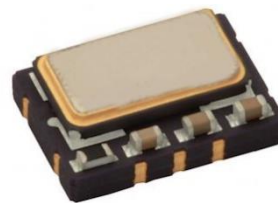


### RSTX Series: Cospas-Sarsat Emergency Beacon TCXO

#### Features

- Compliant with Cospas-Sarsat emergency beacon requirements
- Medium-term stability tests performed on 100% units
- All units are serialized and shipped with individual test data
- Test data is stored for 10 years
- Output types: LVCMOS or Clipped Sine
- Temperature Ranges available: Class I or Class II
- ROHS Compliant



RoHS Compliance

#### ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Nominal Frequency	$f_0$		Standard SARSAT Frequencies <sup>1</sup>			MHz
Supply Voltage	$V_{CC}$		-10%	3.3	+10%	V
Supply Current	I				6	mA
Storage Temperature		Absolute maximum	-40		+85	°C
Operating Temperature	$T_a$	Class I	-40		+55	°C
		Class II	-20		+55	
<b>Frequency Stability</b>						
Initial Frequency Calibration		At $V_{CC}$ and 25°C	-0.5		+0.5	ppm
Reflow Shift <sup>2</sup>			-1		+1	ppm
Temperature		$f_0 = (f_{max} + f_{min})/2$	-0.2		+0.2	ppm
Supply Voltage		$V_{CC} \pm 5\%$ <sup>3</sup>	-0.1		+0.1	ppm
Load Change		$\pm 5\%$ <sup>4</sup>	-0.1		+0.1	ppm
Aging		1 year (first)	-1		+1	ppm
		10 years	-3		+3	
Allan Deviation	ADEV	$\tau = 100$ ms			1e-9	
<b>Medium Term Stability</b>						
Mean Slope <sup>5</sup>	df/dt	Steady state conditions	-0.7		+0.7	ppb/min
		During and 15 minutes after variable temperature	-1.7		+1.7	ppb/min
Residual		Residual from slope	-2		+2	ppb

<sup>1</sup> SARSAT frequencies include: 10.000, 12.688375, 12.688575, 12.688656, 12.688750, 16.367, 20.000 MHz

<sup>2</sup> Measured 60 minutes after reflow

<sup>3</sup> Referenced to frequency at  $V_{CC}$

<sup>4</sup> Referenced to frequency at 15pF

<sup>5</sup> Specified and measured per Cospas-Sarsat specifications T.001 and T.007 (latest releases). Values averaged over 18 measurements in a 15-minute period and following 15-minute warmup.

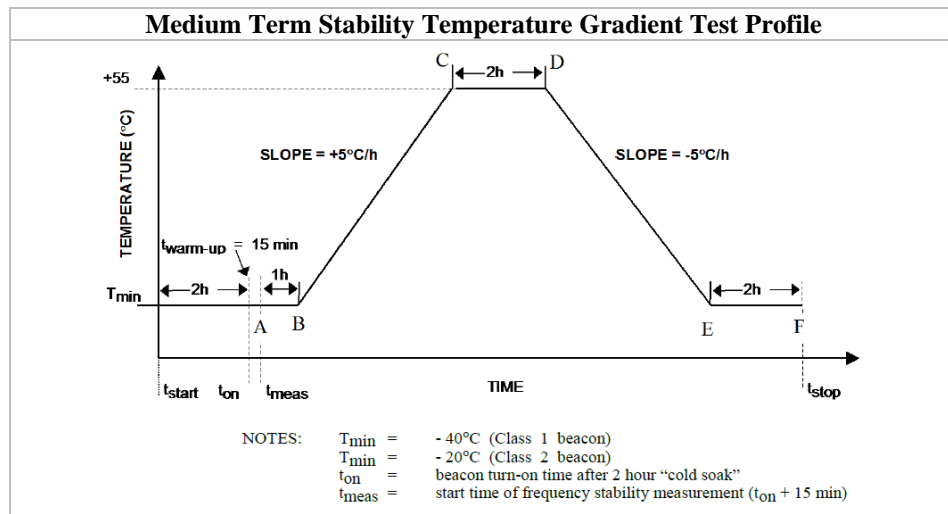
## RSTX Series: Cospas-Sarsat Emergency Beacon TCXO

### PHASE NOISE

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
@100 Hz Offset	$\mathcal{E} (\Delta f)$				-120	dBc/Hz
@1 kHz Offset	$\mathcal{E} (\Delta f)$				-142	dBc/Hz
@10 kHz Offset	$\mathcal{E} (\Delta f)$				-152	dBc/Hz

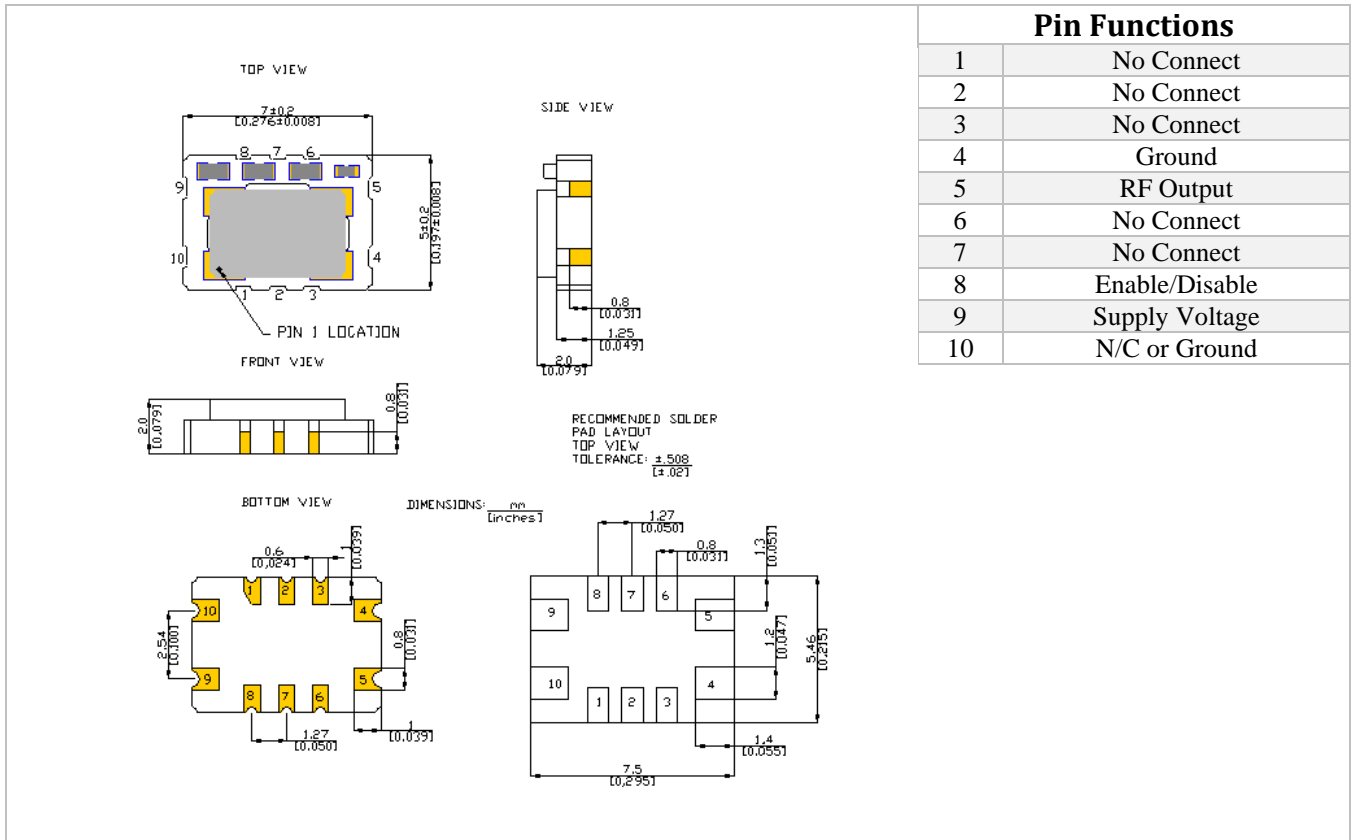
### OUTPUT CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
<b>LVC MOS</b>						
Output Levels	VOH/VOL	V <sub>CC</sub> , Load = 15pF		0.9V <sub>CC</sub> /0.1V <sub>CC</sub>		V
Duty Cycle	DC	Load = 15pF	45		55	%
Rise/Fall Time	t <sub>r</sub> /t <sub>f</sub>	10% ~ 90% V <sub>out</sub>			5	ns
Enable / Disable	E/D	load = 15pF	0.8V <sub>CC</sub>		0.2V <sub>CC</sub>	V
<b>Clipped Sine</b>						
Output Load Resistance				10		k $\Omega$
Output Load Capacitance				10		pF
Output Voltage			1			V pk-pk



### RSTX Series: Cospas-Sarsat Emergency Beacon TCXO

#### MECHANICAL DIMENSIONS AND PIN FUNCTIONING

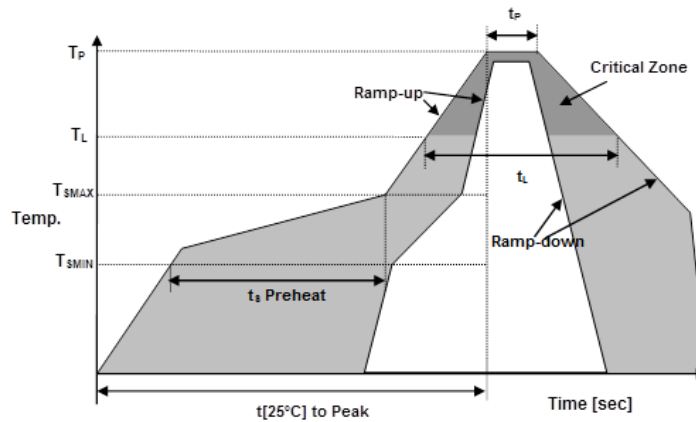


#### Environmental

Vibration	Vibration Test per IEC 60068-2-6
Shock	Mechanical Shock per IEC 60068-2-27

### RSTX Series: Cospas-Sarsat Emergency Beacon TCXO

#### REFLOW PROFILE



Reflow profile IPC/JEDEC J-STD-020 REV. C

Temperature Min Preheat	$T_{SMIN}$	150°C
Temperature Max Preheat	$T_{SMAX}$	200°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 sec.
Time $t[25^\circ\text{C}]$ to Peak Temperature	$t[25^\circ\text{C}]$ to Peak	480 sec.
Time	$t_L$	60-150 sec.

#### PART NUMBERING SYSTEM

TYPE	OUTPUT TYPE	SERIES	REV	-	OPERATING TEMP RANGE (°C)	-	STABILITY (PPM)	-	FREQUENCY (MHz)	-	SUPPLY VOLTAGE (V)
RSTX	0: Clipped Sine 2: HCMOS	57	A	-	HW: -20~+55 DW: -40~+55	-	0.2: ±0.2	-	See SARSAT Frequencies	-	3.3: 3.3

Example: RSTX057A-HW-0.2-12.688375-3.3

SARSAT TCXORSTX Series, Clipped Sinewave output, 5 x 7 mm, Operating Temperature Range -20~+55°C, Stability ±0.2 ppm, 12.688375 MHz, 3.3V

May 2024