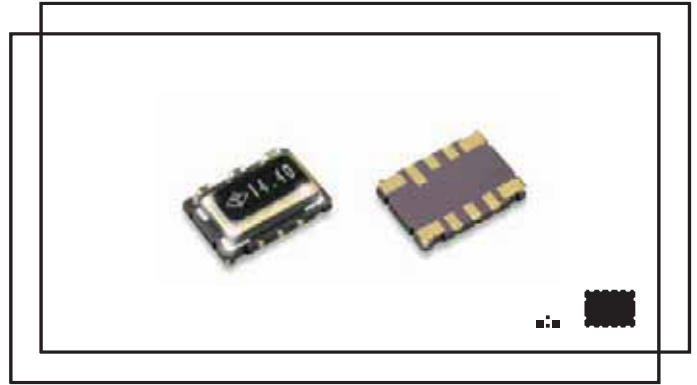


Type TC Stratum 3 TC-VCXO (10.0 ~ 52.0)MHz

- # very low power
- # ±4.6ppm including 20 years ageing
- # (7 x 5)mm footprint
- # +3.3Vd.c., +5.0Vd.c. supply
- # RoHS compliant



Electrical specification

Case style	type TC: (7 x 5)mm, height 2.0mm			
Frequency range	(10.0 ~ 52.0)MHz			
Standard frequencies	12.80MHz, 19.44MHz, 38.88MHz			
Stability	±0.28ppm over temperature range ±4.6ppm including 20 years ageing			
Pulling/ trim range	TC-VCXO: ±5ppm, ±8ppm, TCXO: fixed frequency			
Supply voltage V_{cc}	+3.3Vd.c., +5.0Vd.c.			
Supply current max.	Frequency	CMOS o/p	Clipped sine wave o/p	
	(10 ~ 18)MHz	5mA	4mA	
	(18 ~ 30)MHz	6mA	5mA	
	(32 ~ 52)MHz	10mA	6mA	
Phase noise	10MHz	32.0MHz	38.88MHz	
	f ₀ +100Hz	-120dBc/Hz	-112dBc/Hz	-108dBc/Hz
	f ₀ +1kHz	-142dBc/Hz	-134dBc/Hz	-130dBc/Hz
	f ₀ +10kHz	-150dBc/Hz	-150dBc/Hz	-148dBc/Hz
Operating temperature	(-20 +70)°C ~ (-40 +85)°C			
Storage temperature	(-55 +125)°C			
Output	0.8Vp/p: clipped sine wave 10k/10pF, CMOS 15pF			
Symmetry	CMOS: (45 ~ 55)%			

Environmental test conditions (on request)

Mechanical shock	1500g, half sine wave, 0.5ms, 3 directions	MIL STD 883D 2002.3, condition A
Thermal shock	(-55 ~ +125)°C, 20 cycles	MIL STD 883D 1011.9, condition B
Vibration	(10 ~ 2000)Hz, 1.25mm, sine wave, 20g, each of three planes, duration 4 hours	MIL STD 883D 2005.2, condition B
Solderability	+245°C ±5°C, 5 seconds ±0.5 seconds	MIL STD 883D 2003.7
Fine leak	Mass spectrometer leak rate less than 2 ¹⁰⁻⁸ atm.cc/sec. helium	MIL STD 883D 1014.9, condition A
Gross leak	Leak test in de-ionised water, vacuum 70cm/Hg	
Humidity	85% relative humidity, +85°C, 500 hours	JIS-C 7022 B-5, condition C

Type TC Stratum 3 TC-VCXO

Ordering information

Example type TC TC-VCXO, 12.80MHz, +3.3Vd.c., $\pm 4.6\text{ppm}(-40 +85)^\circ\text{C}$, CMOS 15pF o/p

TFC PART NUMBER TC 12.80M E T T L J

'TC' type number: TC = TC-VCXO type TC

'12.80M' frequency: 12.80M = 12.80MHz, frequency range from (10.0 ~ 52.0)MHz

'E' supply voltage: E = +3.3Vd.c.

'T' trim range, pin #1: T = TCXO no trim range

'T' frequency stability: T = $\pm 4.6\text{ppm}$ including 20 years ageing

'L' temperature range: L = (-40 +85) $^\circ\text{C}$

'J' output: J = CMOS 15pF

Supply voltage C: +5Vd.c.,
E: +3.3Vd.c.

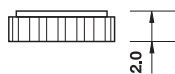
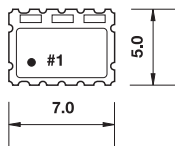
Trim range, pin #1, $V_t (+1.5 \pm 1.0)\text{Vd.c.}$ A: $\pm 5.0\text{ppm}$ VCXO voltage trim
B: $\pm 8.0\text{ppm}$ VCXO voltage trim
T: fixed frequency TCXO, no voltage trim

Frequency stability TC-VCXO: $\pm 0.28\text{ppm}$ over temperature range
TCXO: $\pm 4.6\text{ppm}$ including 20 years ageing

Temperature range C: (-20 +70) $^\circ\text{C}$, L: (-40 +85) $^\circ\text{C}$

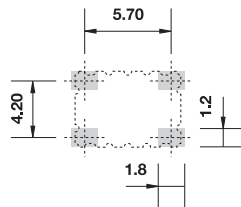
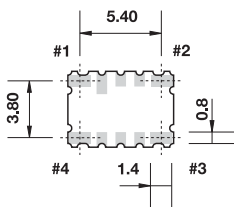
Output logic and symmetry J: CMOS 15pF(45 ~ 55)%, S: clipped sine wave 10K//10pF

Dimensions(mm) shown twice full size



Suggested land pattern

Pads are gold, 2.5 μ min., over nickel, suitable for vapour phase or reflow soldering, preheat +150 $^\circ\text{C}$ for 2 minutes, peak temperature +250 $^\circ\text{C}$ for 30 seconds max.



Pads viewed from bottom

#1 vcxo: trim, tcxo: n/c
#2 ground
#3 output
#4 Vcc