

**Type TW high precision smd TCXO
(10 ~ 40)MHz, (3.3 ~ 5.0)Vd.c. supply
(5.0 x 3.2)mm, height 1.65mm
temp. tolerance from ±0.05ppm
CMOS and clipped sine output**

A miniature, low profile smd, voltage controlled TCXO, low ageing and low power consumption with tri-state output option.

Supplied on tape and reel; 1000/ 3000 pieces per reel, RoHS compliant.

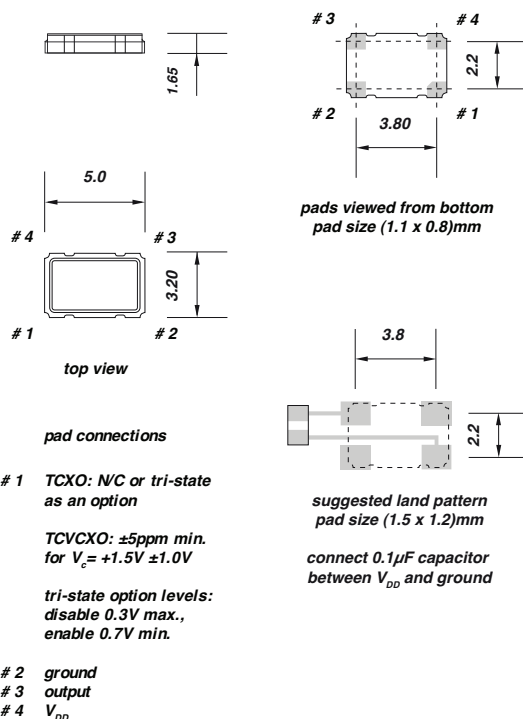
Frequency stability -vs- temperature:

TEMP. RANGE	TOLERANCE				
(0 +55)°C	±0.05ppm	±0.10ppm	±0.20ppm	±0.28ppm	±0.5ppm
(-10 +60)°C	±0.05ppm	±0.10ppm	±0.20ppm	±0.28ppm	±0.5ppm
(-10 +70)°C	±0.05ppm	±0.10ppm	±0.20ppm	±0.28ppm	±0.5ppm
(-40 +85)°C				±0.28ppm	±0.5ppm

Electrical specification:

	5.0Vd.c.		3.3Vd.c.		Units
	min.	max.	min.	max.	
supply voltage $V_{DD} \pm 5\%$	4.75	5.25	2.97	3.63	Vd.c.
frequency range	(10 ~ 40)MHz				MHz
standard frequencies	10.0, 12.80, 19.20, 20.0, 26.0				MHz
standard frequency tolerance	±2.0 at +25 °C one hour after reflow				ppm
frequency stability vs supply ±5%	-	±0.2	-	±0.2	ppm
frequency stability vs load ±10%	-	±0.2	-	±0.2	ppm
frequency stability vs ageing	-	±1.0	-	±1.0	ppm per year
supply current clipped sine wave	-	3.5	-	3.5	mA
supply current: (10 ~ 40)MHz CMOS	-	6.0	-	6.0	mA
output level clipped sine wave	0.8	-	0.8	-	Vp-p
output level CMOS output high logic 1; 45/55%	90% V_{DD}	-	90% V_{DD}	-	V
output level CMOS output low logic 0; 45/55%	-	10% V_{DD}	-	10% V_{DD}	V
load	10K Ω /10pF sine wave		15pF CMOS		
V_c voltage control range	0.5	2.5	0.5	2.5	V
pulling range (VCTCXO option)	±5	±10	±5	±10	ppm
V_c input impedance (VCTCXO option)	100	-	100	-	K Ω
phase noise @12.80MHz +100Hz	-125		-125		dBc/Hz
phase noise @12.80MHz +1kHz	-145		-145		dBc/Hz
phase noise @12.80MHz +10kHz	-150		-150		dBc/Hz
start up time	-	2	-	2	milli sec
tri-state option disable	-	0.3 V_{DD} max.	-	0.3 V_{DD} max.	V
tri-state option enable	0.7 V_{DD} min.	-	0.7 V_{DD} min.	-	V
storage temperature range	(-55 +125)°C				°C

Dimensions(mm)



Ordering information

EXAMPLE	<i>type TW smd VCTCXO, 19.20MHz, +3.3Vd.c., ±0.5ppm(-10 +70)°C, pulling range ±5ppm, CMOS output 15pF</i>
TFC PART NUMBER	TW 19.20M E A A J J
TW	<i>type: TW = TCXO/ VCTCXO</i>
19.20M	<i>frequency: 19.20MHz, frequency range (10 ~ 40)MHz</i>
E	<i>supply voltage: E = +3.3Vd.c.</i>
A	<i>product type: A = VCTCXO, ±5ppm pulling range</i>
A	<i>frequency stability: A = ±0.5ppm</i>
J	<i>temperature range: J = (-10 +70)°C</i>
J	<i>output: J = CMOS 15pF</i>
OPTIONS	
product type	<i>T: TCXO, A: VCTCXO ±5ppm pulling range, B: VCTCXO ±8ppm pulling range, C: VCTCXO ±10ppm pulling range</i>
supply voltage	<i>E: +3.3Vd.c., C: +5Vd.c.</i>
frequency stability	<i>Q: ±0.05ppm, M: ±0.10ppm, R: ±0.20ppm, K: ±0.28ppm, A: ±0.5ppm</i>
temperature range	<i>W: (0 +55)°C, I: (-10 +60)°C, J: (-10 +70)°, C: (-20 +70)°, L: (-40 +85)°C</i>
output	<i>J: CMOS 15pF, S: clipped sine wave 10kΩ/10pF</i>