

TX20SE Series

TCXO, 2.0 x 1.6mm, Clipped sine wave



REACH and RoHS compliant
From ± 0.5 ppm stability over -40°C to 85°C
Suitable for UAVs and Drones

Parameters		Specification		Remarks
Frequency range		F_nom	13.0MHz ~ 55.0MHz	Limited frequencies available: 16MHz, 16.368MHz, 16.384MHz, 16.8MHz, 19.2MHz, 20MHz, 26MHz, 27MHz, 30MHz, 32MHz, 38.4MHz, 40MHz
Supply voltage		Vcc	1.8V ± 0.1 V, 2.8V $\pm 5\%$, 3.0V $\pm 5\%$, 3.3V $\pm 5\%$	Supply voltage range: 1.7V to 3.63V
Initial frequency tolerance		F_tol	± 1.5 ppm max	At $+25^{\circ}\text{C}$, after reflow
Frequency stability	vs Temperature	F_stb	± 0.5 ppm max over $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ ± 2.0 ppm max over $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	
	vs Load	F_load	± 0.1 ppm max	$\pm 10\%$ load condition change
	vs Voltage	F_Vcc	± 0.1 ppm max	$\pm 5\%$ input voltage change
	vs Aging	F_age	Table 2	
Current consumption		Icc	Table 1	
Operating temperature range ($^{\circ}\text{C}$)		Topr	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	
Storage temperature ($^{\circ}\text{C}$)		Tstg	$-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$	
Output wave form			Clipped sine wave	
Output voltage level			0.8V p-p (min.)	
Output Load			10K Ω /10pF	DC cut capacitor = 0.01 μF
Start-up time		T_str	1.0ms max	Reach 90% amplitude at $+25^{\circ}\text{C}$

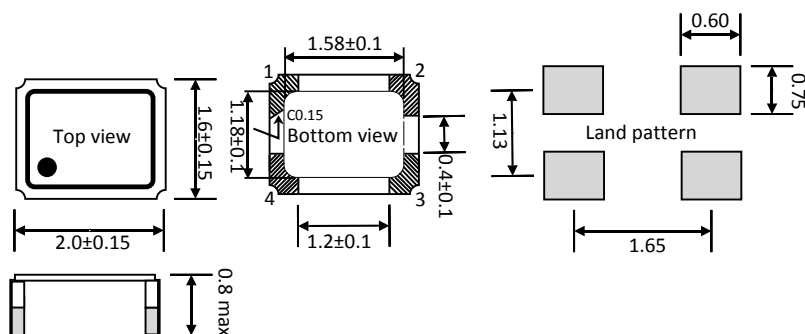
Table 1 Current consumption (mA, max)

Frequency range	Current (mA max)
$13\text{MHz} \leq f_o < 16\text{MHz}$	1.2 mA
$16\text{MHz} \leq f_o \leq 27\text{MHz}$	1.4 mA
$27\text{MHz} < f_o \leq 36\text{MHz}$	1.5 mA
$36\text{MHz} < f_o \leq 40\text{MHz}$	1.8 mA
$40\text{MHz} < f_o \leq 52\text{MHz}$	2.0 mA
$52\text{MHz} < f_o \leq 55\text{MHz}$	2.2 mA

Table 2 Frequency aging, first year, $+25^{\circ}\text{C}$

Frequency range (MHz)	Aging in ppm (max)	
	± 0.5	± 1.5
$13\text{MHz} \leq f_o \leq 20\text{MHz}$	✓	X
$20\text{MHz} < f_o < 26\text{MHz}$	X	✓
$26\text{MHz} \leq f_o \leq 40\text{MHz}$	✓	X
$40\text{MHz} < f_o \leq 55\text{MHz}$	X	✓

Dimensions(Unit:mm)



Pad 1: N.C
Pad 2: GND
Pad 3: Output
Pad 4: Supply voltage

To maintain stable operation, provide 0.01 μF to 0.1 μF by pass capacitor at a location as near as possible to the power source terminal of the crystal product (between Vcc-GND)

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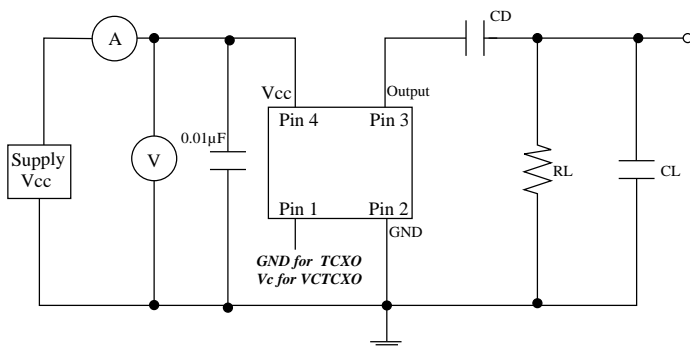
TCXO, 2.0 x 1.6mm, Clipped sine wave



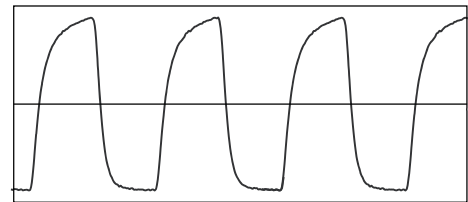
TCXO/VC-TCXO part number generation									
TX20SE	2600	R	O	K	B	X	H	L	-PF
ACT series Code	Frequency (MHz) Ex. 26.00MHz = 2600 8.00MHz = 0800 14.7456MHz = 1474	Temp. stability (±ppm)	Supply voltage (V)	Operating temp. range (°C)	Output wave	Electrical tuning (±ppm)	Duty Cycle (%/%)	Tape & Reel	RoHS Code
TX20SE	Ex. 26.00MHz = 2600 8.00MHz = 0800 14.7456MHz = 1474 < 100MHz First 4 digit of frequency > 100MHz First 5 digit of frequency	0.5 = R 2.0 = N	1.8V~3.3V = O	-40 ~ +85 = K	CSW = B	None = X	45/55 = H	Loose = L 1000 = C	-PF

Note 1: It is important to suffix the above part number with full frequency required to give a completed part number as illustrated below.
Full Example part number: **TX20SE2600ROKBL-PF [26MHz]**, **TX20SE1474ROKBL-PF [14.7456MHz]**

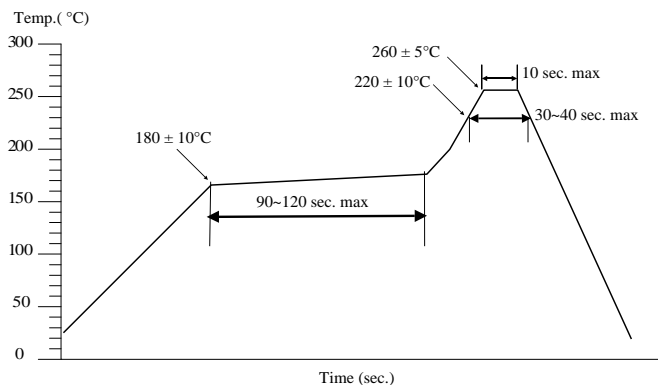
Test circuit



Clipped sine waveform



Solder reflow profile



Drawing control: (Internal use only)
Commodity code: 854370 90 99
Issue number: N1
Date : 01/06/2017
Internal reference: E2

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