

(V)TCSW32 Series

TCXO/VC-TCXO, 3.2 x 2.5mm, Clipped sine wave



REACH and RoHS compliant
From ± 0.5 ppm stability over 0°C to 50°C

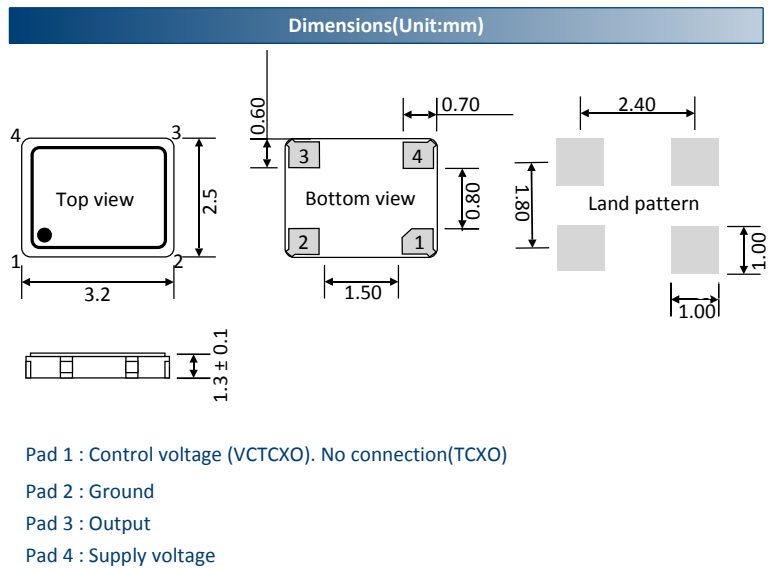


Parameters		Specification		Remarks
Frequency range		F_nom	8.192MHz ~ 40.0MHz	
Supply voltage		Vcc	1.8V, 2.5V, 3.3V, 5.0V	
Initial frequency tolerance		F_tol	$\leq \pm 1.0$ ppm	At +25°C ± 2 °C
Frequency stability	vs Temperature	F_stb	± 0.5 ppm ~ ± 3.0 ppm	Table 1
	vs Load	F_load	± 0.2 ppm max	$\pm 10\%$ load condition change
	vs Voltage	F_Vcc	± 0.2 ppm max	$\pm 5\%$ input voltage change
	vs Aging	F_age	± 1.0 ppm/year max	At +25°C
	vs Reflow		± 1.0 ppm/year max	1 reflow and measured after 24hrs
Operating temperature range (°C)		Topr	0°C ~ +50°C to -40°C ~ +85°C	Table 1
Storage temperature (°C)		Tstg	-55°C ~ +125°C	
Output wave form			Clipped sine wave	
Output voltage level			0.8V p-p min	
Output Load			10K Ω //10pF	
Output format			Require external DC block capacitor	
Current consumption		Icc	10.0~15MHz: 1.5mA, 15.01~26.0MHz: 2.0mA 26.01~40.0MHz: 2.5mA	
Start-up time		T_str	2.0m sec (typ.), 5.0m sec. (Max.)	Reach 90% amplitude at +25°C ± 2 °C
VC-TCXO option only				
Control voltage		Vc	1.8V : 0.9V \pm 0.6V ; 2.5V : 1.4V \pm 1.0V 3.0V : 1.5V \pm 1.0V ; 5.0V : 1.5V \pm 1.0V	
Frequency tuning (ppm)			± 5.0 ppm	
Linearity/Slope polarity			$\pm 10.0\%$ max/Positive slope	Positive voltage for positive frequency shift
Input impedance			1.0M Ω min	
Modulation bandwidth			3.0kHz min	

Note: The device is ESD sensitive and moisture sensitive level (MSL) - 1

Temp. (°C)	Stability in ppm					
	± 0.5	± 1.0	± 1.5	± 2.0	± 2.5	± 3.0
0°C to 50°C	✓	✓	✓	✓	✓	✓
-10°C to 60°C	Enq.	✓	✓	✓	✓	✓
-20°C to 70°C	X	✓	✓	✓	✓	✓
-30°C to 75°C	X	✓	✓	✓	✓	✓
-30°C to 85°C	X	✓	✓	✓	✓	✓
-40°C to 85°C	X	Enq.	✓	✓	✓	✓

Phase noise (13.0MHz example)		dBc/Hz typical
10Hz		-80
100Hz		-115
1kHz		-135
10kHz		-148
100kHz		-148



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TCXO part number generation											
TC32	2600	M	B	X	N	B	N	X	Z	L	-PF
ACT series Code	Frequency (MHz) Ex. 26.00MHz	Temp. stability (±ppm)	Supply voltage (V)	Operating temp. range (°C)	Frequency tuning (±ppm)	Output wave	Mechanical tuning (±ppm)	Polarity	Duty Cycle	Tape & Reel	RoHS Code
TC32	26MHz = 2600 8MHz = 0800 < 100MHz First 4 digit of frequency > 100MHz First 5 digit of frequency	0.5 = R 1.0 = P 1.5 = O 2.0 = N 2.5 = M 3.0 = L	1.8V = D 2.5V = C 3.3V = B 5.0V = A	0 ~ 50 = D -10 ~ +60 = F -20 ~ +70 = B -30 ~ +75 = W -30 ~ +85 = X -40 ~ +85 = K	None = N	CSW = B	None = X	None = X	Not Specified = Z	Loose = L 1000 = C 3000 = D	-PF
<p>Note: 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 : TC322600MBXNBXXZL-PF [26MHz], TC321474MBXNBXXZL-PF [14.7456MHz]</p>											

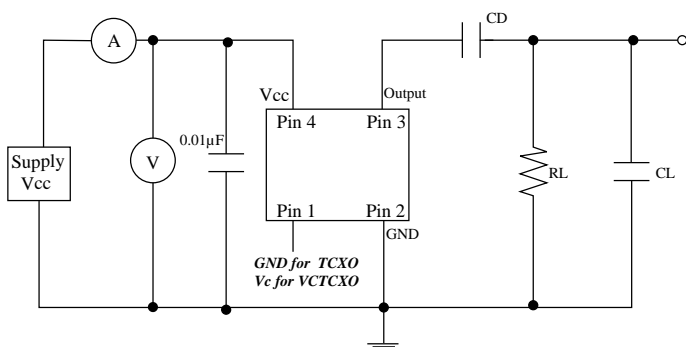
VC-TCXO part number generation													
VTC32	1474	M	B	X	N	B	X	D	P	E	Z	L	-PF
ACT series Code	Frequency (MHz) Ex. 14.7456MHz	Temp. stability (±ppm)	Supply voltage (V)	Operating temp. range (°C)	Frequency tuning (±ppm)	Output wave Form	Mechanical tuning (±ppm)	Electrical tuning (±ppm)	Polarity	Linearity	Duty Cycle	Tape & Reel	RoHS code
VTC32	26MHz = 2600 8MHz = 0800 < 100MHz First 4 digit of frequency > 100MHz First 5 digit of frequency	0.5 = R 1.0 = P 1.5 = O 2.0 = N 2.5 = M 3.0 = L	1.8V = D 2.5V = C 3.3V = B 5.0V = A	0 ~ 50 = D -10 ~ +60 = F -20 ~ +70 = B -30 ~ +75 = W -30 ~ +85 = X -40 ~ +85 = K	Voltage control only = E	CSW = B	None = X	±5.0 = D	Positive = P	±10% = E	Not Specified = Z	Loose = L 1000 = C 3000 = D	-PF
<p>Note: 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 : VTC321474MBXBXDPEZL-PF (14.7456MHz)</p>													

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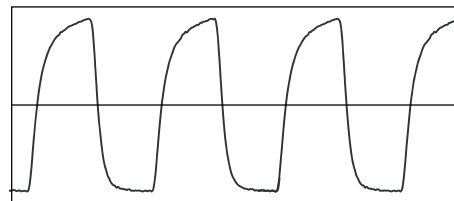
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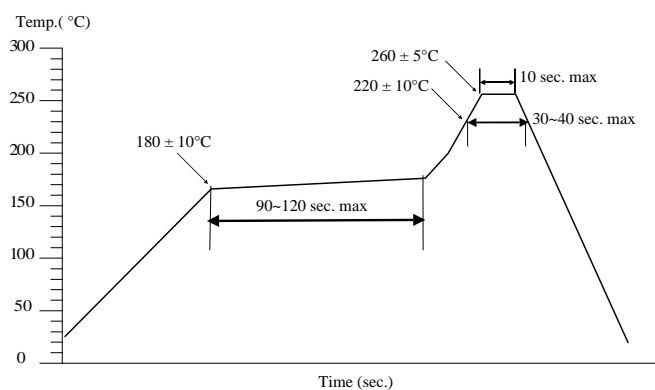
Test circuit



Clipped sine waveform



Solder reflow profile



Drawing control: (Internal use only)
Commodity code: 854370 90 99
Issue number : 1
Date : 01/02/2017
Internal reference : M6