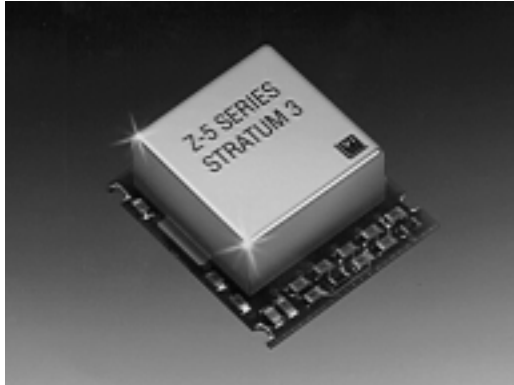


Temperature Compensated Crystal Oscillators (TCXO's)

TC-210 (Z5 Series)



Description:

Vectron International has introduced a series of surface mount, Temperature Compensated Crystal Oscillators (TCXO's) available in frequencies from 0.5 to 160 MHz.

Features:

- Stratum 3 option
- Frequency from 0.5 to 160 MHz
- Aging to <3.5 ppm for ten years
- 3.3 Vdc or 5 Vdc operation
- All outputs available (TTL, HCMOS, PECL, Sine)

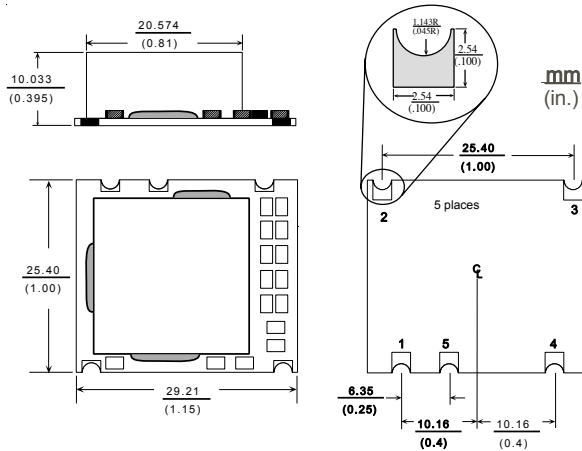
Performance Characteristics

Performance	Characteristics										
Standard Frequencies:	10, 12.8, 16.384, 19.44, 20, 38.88, 40, 77.76, 155.52 MHz										
Package Size:	29.21 x 25.40 x 10.03 mm (1.15" x 1.00" x 0.395")										
Supply Voltage:	3.3 Vdc $\pm 5\%$ or 5 Vdc $\pm 5\%$ (other options are available upon request)										
Current:	Current draw will vary greatly depending on frequency and output type. Typical current draw will be about 15 mA and depending on output type may be less than 2 mA. Please consult the factory about your exact current requirements.										
Output Type:	<table border="0"> <tr> <td>HCMOS/ACMOS</td> <td>0.5 to 160 MHz</td> </tr> <tr> <td>10 TTL</td> <td>0.5 to 160 MHz</td> </tr> <tr> <td>Complementary PECL</td> <td>10 to 160 MHz</td> </tr> <tr> <td>0 dBm / 50 ohm</td> <td>5.0 to 100 MHz</td> </tr> </table>	HCMOS/ACMOS	0.5 to 160 MHz	10 TTL	0.5 to 160 MHz	Complementary PECL	10 to 160 MHz	0 dBm / 50 ohm	5.0 to 100 MHz		
HCMOS/ACMOS	0.5 to 160 MHz										
10 TTL	0.5 to 160 MHz										
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0 dBm / 50 ohm	5.0 to 100 MHz										
Temperature Stability:	<p> B-307 - $\pm 0.3 \times 10^{-7}$ over 0°C to +50°C B-ST3*- Stratum 3 over 0°C to +50°C C-ST3*- Stratum 3 over 0°C to +70°C C-507 - $\pm 5.0 \times 10^{-7}$ over 0°C to +70°C F-106 - $\pm 1.0 \times 10^{-6}$ over -40°C to +85°C NOTE: Tighter stabilities and wider temperature ranges are available, please consult the factory. </p> <p> *STRATUM 3 per GR-1244-CORE Table 3-1 Total Stability: $< \pm 4.6 \times 10^{-6}$ for all causes and 10 years Vs Holdover: $< \pm 3.7 \times 10^{-7}$ for all causes and 24 hours </p>										
Aging (typical):	<3.5 ppm for ten years @ +70°C										
Phase Noise (Typical): 10 MHz, + 3.3 Vdc, A-output	<table border="0"> <tr> <td>Offset</td> <td>Phase Noise</td> </tr> <tr> <td>100 Hz</td> <td>-115 dBc/Hz</td> </tr> <tr> <td>1 kHz</td> <td>-145 dBc/Hz</td> </tr> <tr> <td>10 kHz</td> <td>-150 dBc/Hz</td> </tr> <tr> <td>100 kHz</td> <td>-155 dBc/Hz</td> </tr> </table> <p>For HCMOS/ACMOS/TTL & PECL outputs with frequencies above 35 MHz a low phase noise PLL multiplier may be used. Please inform the factory of your phase noise requirements.</p>	Offset	Phase Noise	100 Hz	-115 dBc/Hz	1 kHz	-145 dBc/Hz	10 kHz	-150 dBc/Hz	100 kHz	-155 dBc/Hz
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100 Hz	-115 dBc/Hz										
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100 kHz	-155 dBc/Hz										
Frequency vs. Supply:	< ± 0.1 ppm for a $\pm 5\%$ change in supply voltage										
Electrical Frequency Adjust:	± 5 ppm minimum via external voltage, 0 to Vdd, positive slope										

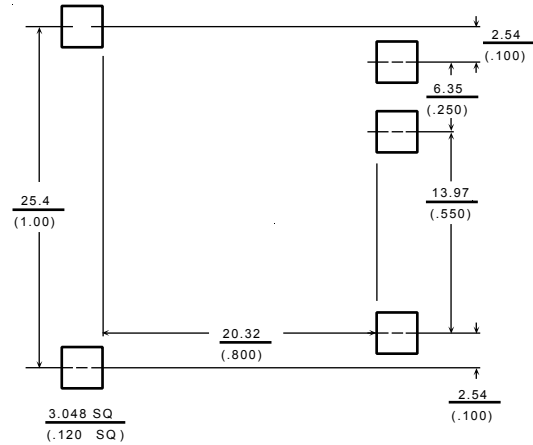
Temperature Compensation Crystal Oscillators (TCXO's)

TC-210 (Z5 Series)

Outline Drawing



Pad Layout



TCXO

Pin Out

Pin	Function
1	Output
2	Supply
3	Gnd
4	Freq. Adjust
5	Gnd (output A, B, G) Comp. output (PECL)

Output Levels

Output Option	A	B	F
Output	HCMOS/ACMOS	10 TTL	Comp. PECL
Voh min..	0.8 (Vdd)	+2.4 Vdc	Vcc - 1.04 Vdc
Vol max.	+0.5 Vdc	+0.5 Vdc	Vcc -1.60 Vdc
Load (typical)	100 k ohm // 10 pF	10 TTL	50 ohms to Vcc -2V
Symmetry	50/50 ±10%	50/50 ±10%	50/50 ±10%
Rise/Fall Time	5 ns max.	10 ns max.	3 ns max.

Logic

Sine

Output Option	G
Output	Sinewave
Level	0 dBm to +6 dBm
Load	50 ohm
Harmonics/subs	-20 dBc max.
Other Spurious	-60 dBc max.

Ordering Information

