

## HCMOS 14 pin DIL

- 14 pin DIL package, hermetically sealed
- Frequency range: 20.0 to 50.0kHz; 32.768kHz
- Supply voltage 3.3 or 5.0 Volts
- Frequency stability from  $\pm 1$ ppm over -30 to +75°C
- RoHS compliant



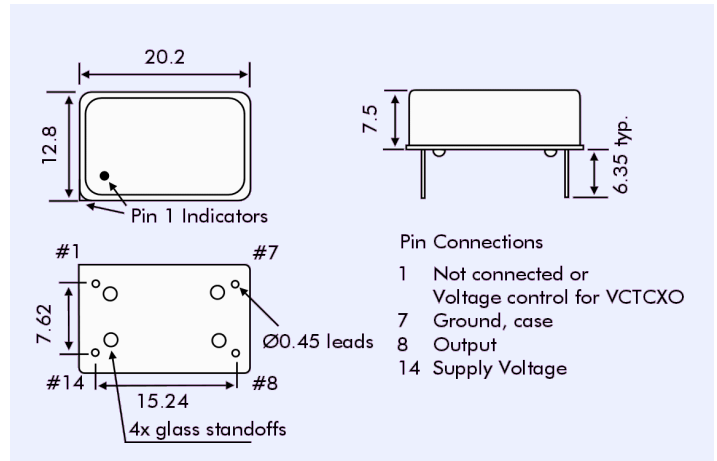
### DESCRIPTION

M14T series TCXOs are packaged in a standard 14 pin DIL hermetically sealed package. With squarewave (HCMOS) output, tolerances are available from  $\pm 1.0$ ppm over -30° to +75°C. The part has a 0.01 $\mu$ F decoupling capacitor built in.

### SPECIFICATION

Product Series Code:	M14T
Frequency Range:	20.0kHz to 50.0kHz
Output Waveform:	Square wave, HCMOS
Initial Calibration Tolerance	
With mechanical trimmer:	$< \pm 1$ ppm at 25° $\pm 2$ °C
Without mech. trimmer:	$< \pm 2$ ppm at 25° $\pm 2$ °C
Standard Frequency:	32.768kHz
Operating Temperature Range:	See table
Frequency Stability	
vs. Ageing:	$\pm 1.0$ ppm max. first year
vs. Voltage Change:	$\pm 0.2$ ppm max. $\pm 5\%$ change
vs. Load Change:	$\pm 0.2$ ppm max. $\pm 10\%$ change
vs. Reflow:	$\pm 1$ ppm max. for one reflow (Measured after 24 hours)
Supply Voltage:	+3.3V or +5.0Volts
Output Logic levels	
Logic High '1':	90% V <sub>DD</sub> minimum
Logic Low '0':	10% V <sub>DD</sub> maximum
Rise/Fall Times:	1~3ns typical
Current Consumption:	8.0mA max. at 32.768kHz 21.0mA max. at 50.0kHz
Duty Cycle:	50 $\pm 5\%$
Start-up Time:	2ms typical, 5ms max.
Output Load:	15pF
Storage Temperature:	-50° to +100°C
RoHS Status:	RoHS Compliant and lead free

### M14T - OUTLINE AND DIMENSIONS



### VM14T VOLTAGE CONTROL SPECIFICATION

Control Voltage:	Standard = +1.5 $\pm 1.0$ Volts for all input voltages. (Contact technical sales if +2.5 $\pm 2.0$ Volts is required.)
Frequency Deviation:	$\pm 6.0$ ppm min.
Slope Polarity:	Positive (increase of control voltage increases output frequency.)
Input Impedance:	1.0M $\Omega$ min.
Modulation Bandwidth:	3.0kHz min. measured at -3dB
Linearity:	10% max.

### FREQUENCY STABILITY vs TEMPERATURE

Frequency Stability (ppm)		$\pm 0.5$	$\pm 1.0$	$\pm 1.5$	$\pm 2.0$	$\pm 2.5$
Temperature Range (°C)	0 ~ +50	✓	✓	✓	✓	✓
	-10 ~ +60	ASK	✓	✓	✓	✓
	-20 ~ +70	x	✓	✓	✓	✓
	-30 ~ +75	x	✓	✓	✓	✓
	-40 ~ +85	x	✓	✓	✓	✓

✓ = available, x = not available, ASK = call Technical Sales

### PART NUMBERING PROCEDURE

