

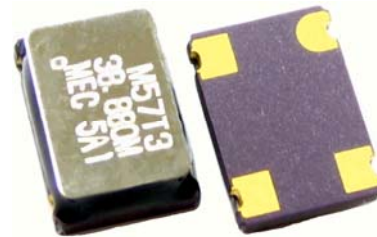
Voltage Controlled Temperature Compensated Crystal Oscillators VCTCXO, VM57T series, HCMOS Output, 32.768 KHz



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Features:

- ◆ 5x7x2.5 mm ceramic SMD VCTCXOs with HCMOS square wave output
- ◆ 0.01 uF decoupling capacitor built-in
- ◆ RoHS compliant



RoHS Compliant Product
by Mercury

General Specifications (at +25°C and specified input voltage)

Product Series		VM57T				
Frequency		32.768 KHz				
Output Wave Form		Square wave. Wave form code is "T"				
Initial Calibration Tolerance ⁽¹⁾		±3 ppm at +25°C and Vcon = +1.5 V D.C.				
Frequency Stability (ppm)		± 1 ppm	± 1.5 ppm	± 2.0 ppm	± 2.5 ppm	√: Available □: Call us ✕: Not available
Temperature Range	-10 to +60°C	√	√	√	√	
	-20 to +70°C	√	√	√	√	
Standard →	-30 to +75°C	√	√	√	√	
	-40 to +85°C	✕	√	√	√	
Frequency Stability vs Aging vs Voltage Change vs Load Change vs reflow		±1.0 ppm max. first year at +25°C ±0.3 ppm max. for a ±5% input voltage change ±0.3 ppm max. for a ±10% loading condition change ±1 ppm max. 1 reflow and measured 24 hours afterwards				
Supply Voltage (V_{DD})		+2.8 V (voltage code is "28")	+3.0 V (voltage code is "3")	+3.3 V (voltage code is "33")	+5.0 V (voltage code is "5")	
Output Voltage Level V_{dd}=3.0V	Logic "1"	2.7 V min.				
	Logic "0"	0.3 V max.				
Rise Time and Fall Time		3 nano. sec. typ. 20% ↔ 80% of waveform				
Duty Cycle (Symmetry)		50%±10% measured at 50% V _{DD}				
Start-up Time		2 m. sec. typ.				
Current Consumption		3.5 mA typ. at + 3.3V / 7 mA typ. at +5.0V				
E.F.C. Electronic Frequency Tuning. Frequency Deviation Range by Vcon on pad No. 1		±5 ~ ±12 ppm with Vcon = +1.5 V±1.0 V. Note: +2.8V, +3.0V, +3.3V and +5.0V units all have Vcon = +1.5 V±1.0 V.				
Slope Polarity		Positive: Increasing control voltage (Vcon) increases output frequency.				
Linearity		10 % max.				
Output Load		15 pF				
SSB Phase Noise at +25°C	Offset	10 Hz	100 Hz	1 kHz	10 kHz	100 kHz
	typical	-65 dBc/Hz	-100 dBc/Hz	-130 dBc/Hz	-150 dBc/Hz	-150 dBc/Hz
Output Format		AC block, DC coupled				
Storage Temperature		-50°C to +100°C				

⁽¹⁾: Frequency stability over temperature will be from this measured initial frequency.

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Taiwan: TEL (886)-2-2406-2779, FAX (886)-2-2496-0769, e-mail: sales-tw@mercury-crystal.com
 U.S.A.: TEL (1)-909-466-0427, FAX (1)-909-466-0762, e-mail: sales-us@mercury-crystal.com

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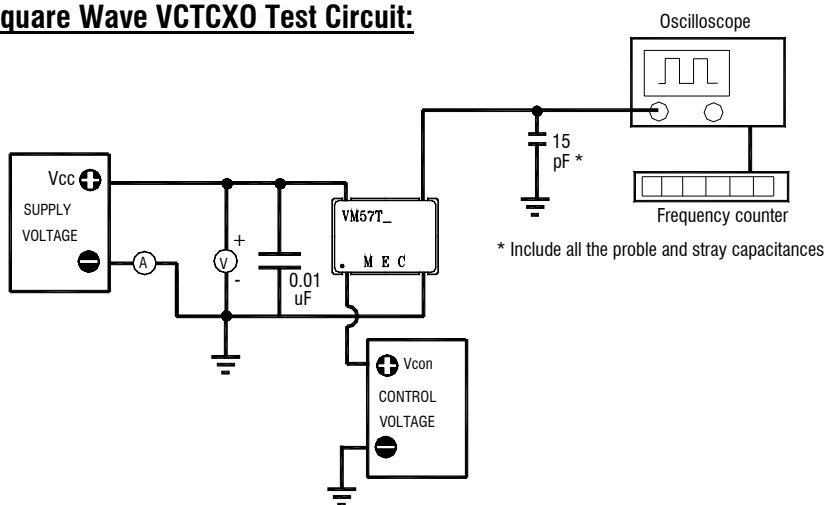


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Part Number Format and Example:

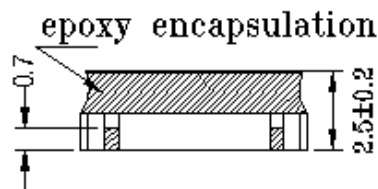
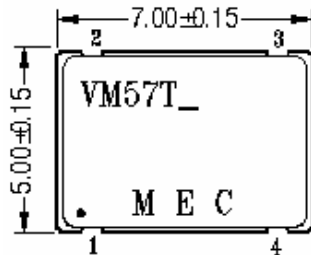
Part number example:		VM57T3-32.768K-2.5/-30+75					☞ = Please specify	
	☞		☞		☞		☞	
VM57T	3	—	32.768	—	2.5	/	-30+75	
①	②		③		④		⑤	
①: Product Series		②: Voltage code; Use "28" for +2.8 V; use "3" for +3.0 V; use "33" for +3.3 V; use "5" for +5.0 V		③: Frequency in KHz		④: Frequency stability		⑤: Operating Temperature range in °C

HCMOS Square Wave VCTCXO Test Circuit:

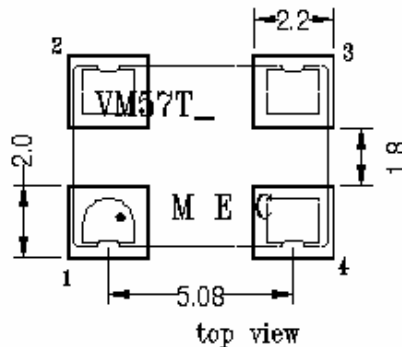
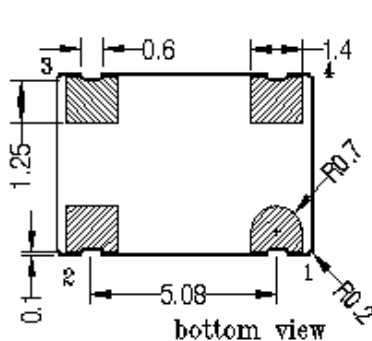


Package Dimensions and Suggested Land Pattern:

Unit: mm



Pad No.	Connection
1	Voltage control
2	Ground
3	Output
4	Supply voltage



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