Temperature Compensated Crystal Oscillators [TCXO " M " and VCTCXO " VM "] CMOS Output

TCXO	VCTCXO	MHz range	CMOS	SMD	15pF	2.5 V	3.0 V	3.3 V	5.0 V	Min.	Max.
ML _ T	VML _ T									40 MHz	156 MHz

Features

- Hjgh frequency range : [40.0 MHz ~ 156.0 MHz]
- Frequency stability as tight as ± 0.5 ppm over 0°C to 50°C
  Frequency stability as tight as ± 1.0 ppm over -40°C to 85°C

RoHS Compliance

General specifications of all available packages , at Ta=+25°C , CL=15pF

Output Wave Form		Square wave [LVCMOS] . Wave form code is " T "					
Type		ML572T , VML572T			ML43T , VML43T		
Package (Size)		(7.0 x 5.0 x 2.6 mm)			(11.4 x 9.6 x 3.1 mm)		
Frequency Range		40.0 ~ 156.0 MHz			40.0 ~ 156.0 MHz		
Input Voltage Range	Standard	+2.5 V (code is " 25 ")	+3.0 V (code is " 3 ")		+3.3 V (code is " 33 ")	+5.0 V (code is " 5 ")	
Initial Calibration Tolerance		Models with mechanical trimmer : < ± 1.0 ppm. +25°C ± 2°C. Models without mechanical trimmer : ± 2.0 ppm at +25°C ± 2°C.					
Frequency Stability (ppm)		± 0.5 ppm	± 1.0 ppm	± 1.5 ppm	± 2.0 ppm	± 2.5 ppm	± 3.0 ppm
Frequency Stability vs Temperature (examples)	0°C to 50°C	○	○	○	○	○	○
	-10°C to 60°C	△	○	○	○	○	○
	-20°C to 70°C	X	○	○	○	○	○
	-30°C to 75°C	X	○	○	○	○	○
	-30°C to 85°C	X	○	○	○	○	○
○ : available △ : contact us X : not available							
Frequency Stability	vs Aging	± 1.0 ppm max., per year at 25°C .					
	vs Voltage Change	± 0.3 ppm max. , for a ± 5% input voltage change .					
	vs Load Change	± 0.3 ppm max. , for a ± 10% load condition change .					
	vs Reflow (SMD type)	± 1.0 ppm max., 1 reflow and measured 24 hours afterwards .					
Output Voltage Level (peak to peak)		T T L / CMOS					
Output Logic Levels		Logic High " 1 " : 90% of V_{DD} min.			Logic High " 0 " : 10% of V_{DD} min.		
Mechanical Frequency Tuning	Standard	± 3.0ppm (min.) tuning					
		Note: VM57 has no mechanical trimmer built-in.					
	Option	No mechanical trimmer built-in (for aqueous washing cycles).					
		To order please add " 1 " after the regular model prefix . Example: M381T.					
Current Consumption (Over operating temperature range)		77.760 MHz			155.520 MHz		
		32 mA (max.)			50 mA (max.)		
Electrical Frequency Tuning (EFC) by external control voltage	Control Voltage Center	Standard: +1.5 V ± 1.0 V for all input voltages.					
	Frequency Deviation Range	± 5.0 ppm. (min.) with Vcon = +1.5 V±1.0 V					
	Slope Polarity (Transfer Function)	Positive slope. Positive voltage for positive frequency shift.					
		Input Impedance : 50M Ω min.	Modulation Bandwidth : 20 KHz min.		Linearity : ± 10 % max.		
Rise Time and fall time		10.0 n sec. max.. ; 20% ↔ 80% of the wave form.					
Duty Cycle		Standard: 50 % ± 10 % ; Option: 50 % ± 5 % ; Measured at 50% V_{DD}.					
Start-Up Time.		5.0 m sec. (typ.) , 10.0 m sec. (max.) (reach 90% amplitude and at+25°C ± 2°C)					
Output Load		15 pF					
SSB Phase Noise at 25°C , 15pF	Offset / dBc / Hz [typical]	10 Hz	100 Hz	1 KHz	10 KHz	100 KHz	
	M572T33 - 77.760	-74 dBc / Hz	-99 dBc / Hz	-98 dBc / Hz	-95dBc / Hz	-90 dBc / Hz	
	M572T33 - 155.520	-68 dBc / Hz	-96 dBc / Hz	-100 dBc / Hz	-99 dBc / Hz	-90 dBc / Hz	
Storage Temperature		-40°C to +85°C or -55°C to +125°C (package dependent)					