M6053 & M6054 Series

3.2 x 5.0 mm, 3.0 V, Clipped Sine Wave or HCMOS, TCXO/VCTCXO

Features:

- Tight Stability Performance
  - ±0.5 ppm over -40 °C to +85 °C range
  - ±0.2 ppm over 0 °C to +70 °C range
- Standard 4 Pad Configuration

Applications:

- Telecommunications such as SONET / SDH / DWDM / FEC / SERDES / OC-3 thru OC-192
- Wireless base stations / WLAN / Gigabit Ethernet
- Avionic flight controls and military communications

Ordering Information

M6053	2	G	S	N	00.0000 MHz

Product Series
M6053 = TCXO
M6054 = VCTCXO

Temperature Range
1: 0 °C to +70 °C **H:** -30 °C to +85 °C
2: -40 °C to +85 °C

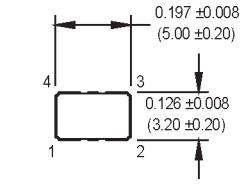
Stability
H: ±2.5 ppm **J:** ±1.0 ppm **G:** ±0.5 ppm
M: ±0.2 ppm

Output Waveform
S: Clipped Sine Wave **C:** HCMOS

Package/Lead Configurations
N: 4 Pad Leadless Ceramic

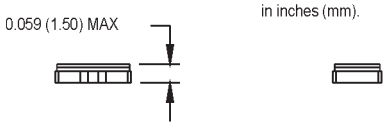
Frequency (customer specified)

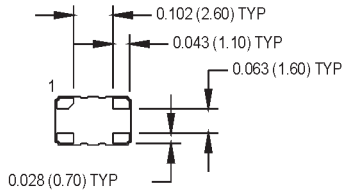
M6053Sxxx & M6054Sxxx - Custom datasheets.



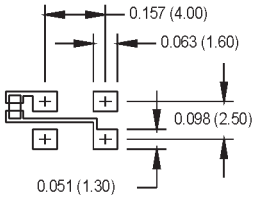
ACTUAL SIZE

All dimensions in inches (mm).





SUGGESTED SOLDER PAD LAYOUT



Pin Connections

Pin	Function
1	N/C or Control Voltage
2	Ground/Case
3	Output
4	$+V_{DD}$

	Parameter	Symbol	Min	Typ	Max	Units	Conditions
Electrical Specifications	Frequency Range	F_R	10.0		52.0	MHz	
	Frequency Tolerance	ΔF/F	-1.0		+1.0	ppm	@ +25 °C, initial
		ΔF/F	-1.5		+1.5	ppm	@ +25 °C, after two reflow soldering profiles
	Frequency Stability	$\Delta F_T/F$	(See Ordering Information)			ppm	Over Operating Temperature
	Frequency vs Supply Voltage	$\Delta F_{VDD}/F$	-0.2		+0.2	ppm	For ±10% voltage change
	Frequency vs Load	$\Delta F_{LOAD}/F$	-0.2		+0.2	ppm	For ±10% load change
	Aging		-1.0		+1.0	ppm	per year @ +40 °C
	Operating Temperature	(See Ordering Information)					
	Input Voltage	V_{DD}	2.85	3	3.15	V	
	Input Current	I_{DD}			2	mA	
	Output Type	Clipped Sine Wave or HCMOS					
	Output Load	10 kΩ || 10 pF					
	Output Level		0.8			V_{pk-pk}	
	Control Voltage	V_{CT}	0.5	1.5	2.5	V	M6054 only.
	Frequency Tuning		±5		±12	ppm	M6054 only. V_{CT} = +1.5 V
	Phase Noise (Typical)			-85		dBc/Hz	@ 10 Hz
				-110		dBc/Hz	@ 100 Hz
				-135		dBc/Hz	@ 1 kHz
				-150		dBc/Hz	@ 10 kHz
Environmental	Mechanical Shock	Per MIL-STD-202, Method 213 (2000 g, 0.3 ms duration, ½ sine wave)					
	Vibration	Per MIL-STD-202, Method 201 & 204 (10 g from 20 Hz to 2000 Hz)					
	Hermeticity	Per MIL-STD-202, Method 112 ($1x10^{-8}$ atm.cc/s of helium) (Crystal unit only)					
	Storage Temperature	-55 °C to +105 °C					
	Solderability	Per EIAJ-STD-002					
	Max Soldering Conditions	See Solder Profile, Figure 1					
	Package	4-pad 3.2 X 5.0 X 1.5 mm leadless ceramic. RoHS compliant.					

MtronPTI Lead Free Solder Profile