



### Features and Benefits

- Less than  $\pm 1$  ppb stability over  $-10^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$
- Excellent Phase Noise Performance
- Rugged surface mount construction

### Typical Applications

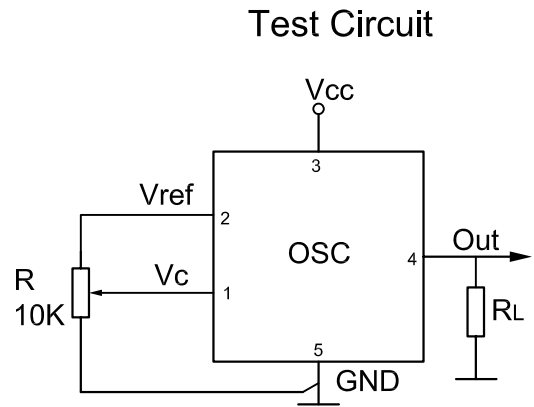
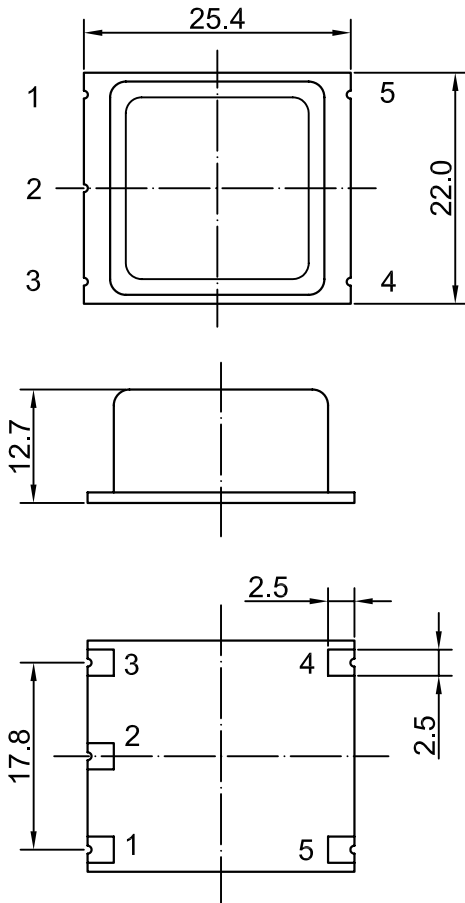
- Stratum 3E Clocking
- Instrumentation clock reference
- Cellular / Mobile Radio Base Station
- SATCOM ground station clock
- Microwave Communications

### Description

Well designed traditional OCXO technology suitable for ultra-stable clock reference applications.

### Mechanical Drawing & Pin Connections

Drawing No: MD1(\$\$, \*-&



Unit in mm  
1mm = 0.0394 inches



### Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Nominal Frequency	$f_0$		10.000000			MHz	
Waveform			HCMOS 2.8V				
H - Voltage	$U_H$		2.4			V	
L - Voltage	$U_L$				0.4	V	
Load	$R_L$		10			kOhm	
	$C_L$				10	pF	
Rise Time	$t_r$	10% -> 90%			10	ns	
Duty Cycle			45	50	55	%	
<b>Power Supply</b>							
Supply Voltage	$V_{CC}$		3.15	3.30	3.45	V	
Warm-up Current		$V_{CC} = 3.3V$	850		1100	mA	
Continuous Current		At +25°C, $V_{CC} = 3.3V$			450	mA	
Warm-up Time	$t_{up}$	$\Delta f/f = 1e-7$ at +25°C			180	sec	
<b>Frequency Control</b>							
Input Resistance	$R_{in}$			11		kΩ	
Voltage Range	$V_C$		0		2.8	V	
Factory Set Control Voltage	$V_{C0}$	Disconnected $V_C$ pin	1.1	1.4	1.7	V	
Slope			Positive				
Frequency Range	$(f_L - f)/f$	$V_C = 0V$			-0.5	ppm	
	$(f - f)/f$	$V_C = V_{C0}$	0				
	$(f_H - f)/f$	$V_C = V_{ref}$	0.5				
Reference Voltage	$V_{ref}$		2.7	2.8	2.9	V	
Out. Resistance of $V_{ref}$				91		Ohm	
<b>Frequency Stability</b>							
Initial Tolerance	$(f - f_0)/f_0$	At +25°C, $V_C = V_{C0}$	-0.1		+0.1	ppm	
Versus Temperature		Ref +25°C			±1	ppb	
Versus Supply Voltage		Ref $V_{CC}$ typ.			±0.5	ppb	
SSB Phase Noise		1 Hz			-100	dBc/Hz	
		10 Hz	-125		-122		
		100 Hz	-145		-142		
		1 kHz			-155		
		10 kHz			-165		
		100 kHz			-168		
Aging	Per day	After 30 days of operation			±1	ppb	
	Per year				±0.1	ppm	

### Maximum Ratings, Environmental, Mechanical Conditions

Parameter	Conditions
Operating Temperature	-10°C to +60°C
Storage Temperature	-60°C to +90°C
Power Voltage	-0.5 to 4.0V
Control Voltage	-1.0 to 6.0V
Humidity	Non-condensing 95%
Mechanical Shock	Per MIL-STD-202, 30G, 11ms
Vibration	Per MIL-STD-202, 5G to 500Hz
Soldering Conditions	Hand solder only – not reflow compatible 260°C 10s (on pins)
Washing Conditions	Washing with water or alcohol based detergent allowed only with final enough drying stage