



Features and Benefits

- Less than 1ppm stability
- Customized Output of 22MHz, specially designed for GNSS applications
- Less than 1.5mA max. DC current
- 150dBc/Hz @ 10KHz typ.

Typical Applications

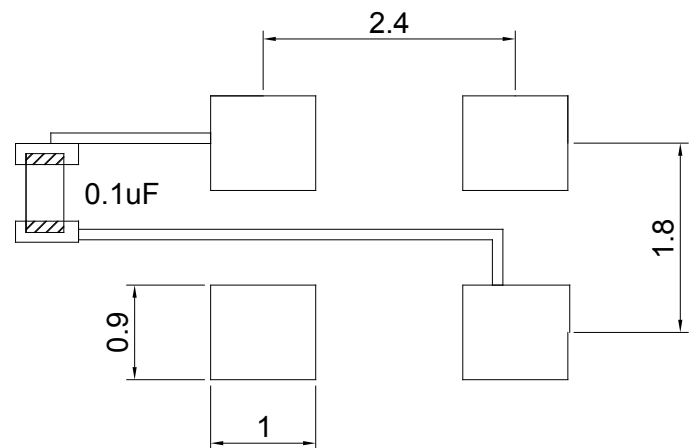
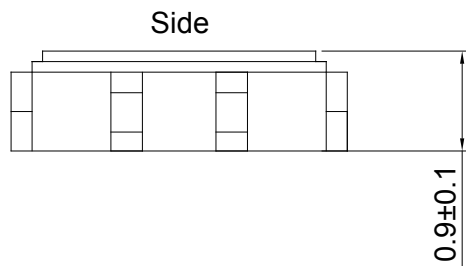
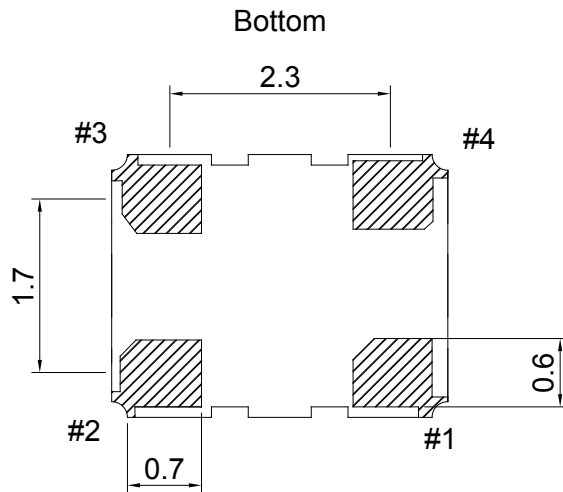
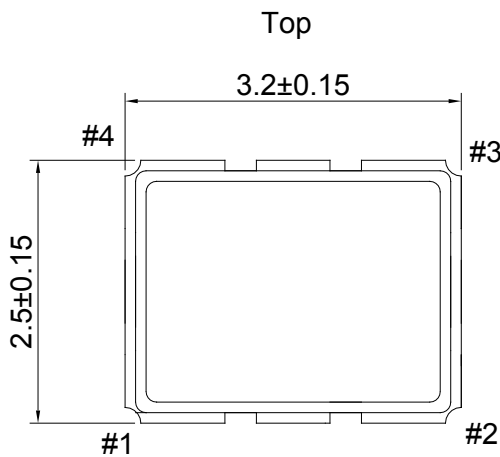
- SATCOM
- Mobile Radio

Description

Specially designed 22MHz output for SATCOM clock reference applications.

Mechanical Drawing & Pin Connections

Drawing No:MD160011-1



Pin	Funtion
Pin 1	GND/NC
Pin 2	GND
Pin 3	OUTPUT
Pin 4	VDD

Unit : mm
1mm=0.0394inch

Recommended soldering pattern

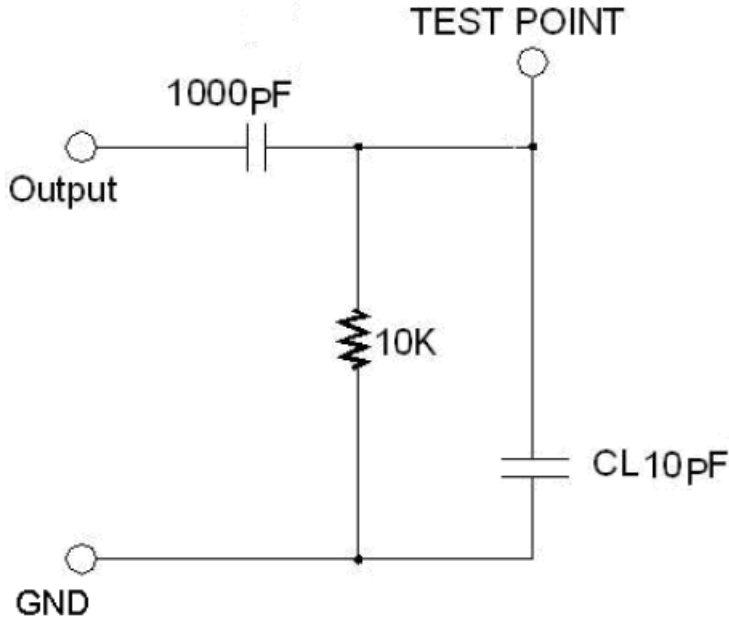


Specifications

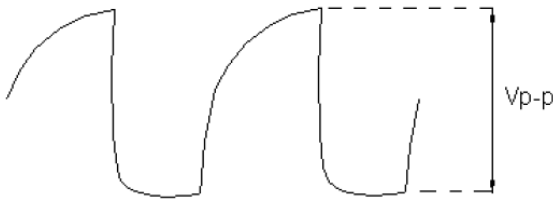
Oscillator Specification	Condition	Value			Unit	Note
		Min.	Typ.	Max.		
Nominal Frequency			22.000000		MHz	
Oscillator Output						
Output Waveform	DC Coupled clipped sine wave	Clipped Sine Wave				
Voltage Level		0.8		2.0	Vp-p	
Load			10 10		Kohm pF	
Start Up Time				2.0	ms	
Power Supply						
Voltage		3.135	3.300	3.465	V	
Current	At maximum supply voltage			1.5	mA	
Frequency Stability						
Nominal Frequency Tolerance	Frequency @ +25°C	-2.0		+2.0	ppm	1 hour after 2 times reflow
Over Temperature	Referenced to the frequency at 25°C	-1.0		+1.0	ppm	
Temperature Range	The operating temperature range over which the frequency stability is measured	-40		+85	°C	
Supply Voltage Stability	Supply voltage varied ±5% at 25°C	-0.2		+0.2	ppm	
Load Sensitivity	±10% load change	-0.2		+0.2	ppm	
Aging	1 st year at 25°C	-1.0		+1.0	ppm	
Phase Noise						
Phase noise	10 Hz offset		-90		dBc/Hz	
	100 Hz offset		-115			
	1 kHz offset		-135			
	10 kHz offset		-150			
	100 kHz offset		-152			
Environmental Conditions						
Parameter	Test Conditions		Reference Std.			
Operating temperature range			-40°C to +85°C			
Storage temperature range			-40°C to +85°C			
Vibration Test	10-2000Hz, 1.52mm, 20G, each axis for 4 hours		MIL-STD-883 2007 Condition A JESD22-B103 Condition 1			
Thermal Shock	-55°C, 125°C; soak time is 10 mins, with total 200 cycles		MIL-STD-883-1010 Condition B JESD22-A104 Condition B			
Mechanical Shock	1500G, half-sine, 0.5ms, each axis for 3 times		MIL-STD-883-2002 Condition B JESD22-B104 Condition B			



Test Circuit

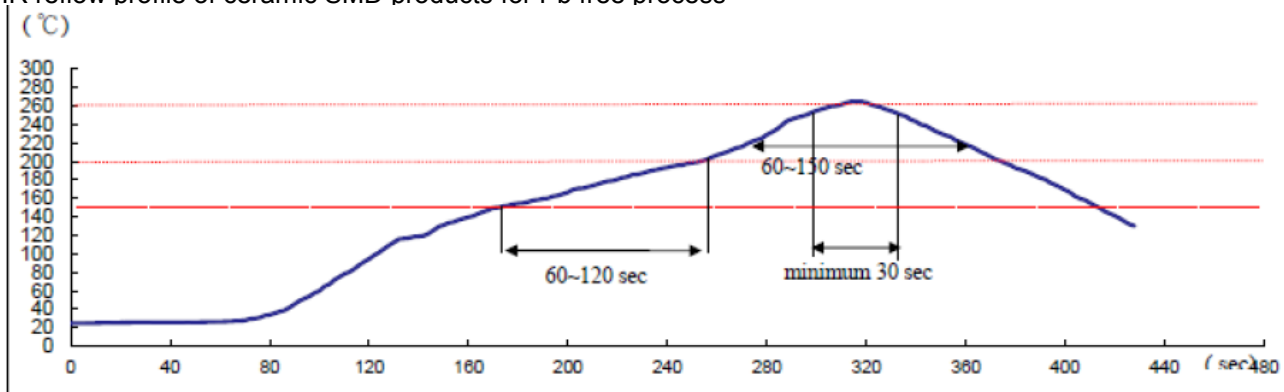


Output Waveform



Recommended IR Reflow Profile

IR reflow profile of ceramic SMD products for Pb free process



Reference Standard: JEDEC-STD020

Test Conditions: Pre-heating: 150°C to 200°C, 60~120secs

Heating: 217°C, 60~150secs

Peak temperature at least: 260°C, the time above 255°C, minimum 30 sec