



Features and Benefits

Better than ± 0.5 ppm stability from -40°C to $+85^{\circ}\text{C}$
 3.3V supply; 3.5mA maximum
 Low phase noise: Less than -138dBc/Hz @ 1KHz offset

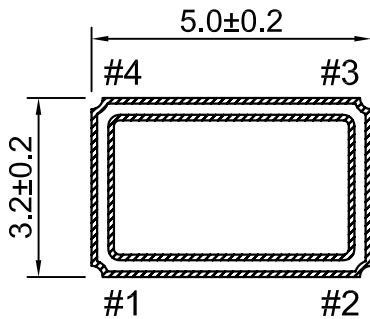
Typical Applications

Mobile Radio
 Communication Equipment

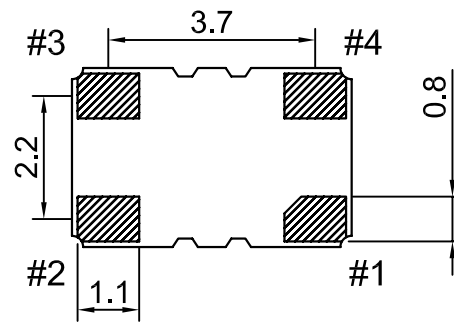
Mechanical Drawing & Pin Connections

Drawing No:MD140051-1

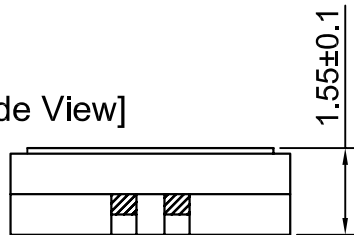
[Top View]



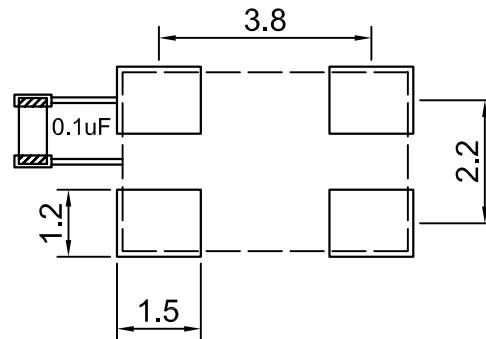
[Bottom View]



[Side View]



Recommended soldering pattern



Pin	Function
#1	Control Voltage
#2	GND
#3	Output
#4	Supply Voltage

Unit : mm
 1mm=0.039inch

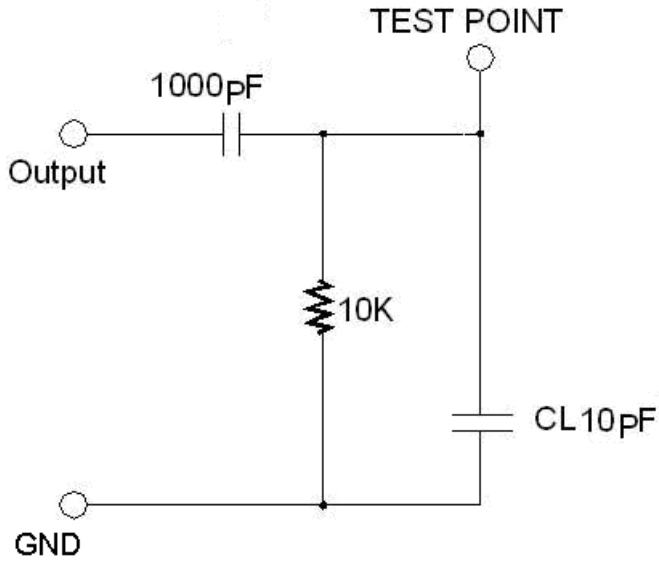


Specifications

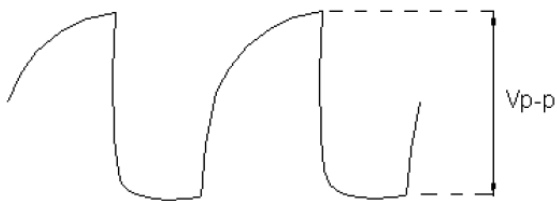
Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Nominal Frequency	F ₀			19.200000		MHz	
RF Output							
Output Wave Form		DC Coupled clipped sine wave	Clipped Sine Wave				
Voltage Level			0.8		2.0	Vp-p	
Load				10 10		Kohm pF	
Start Up Time					2.0	ms	
Power Supply							
Voltage			3.135	3.300	3.465	V	
Current		At maximum supply voltage			3.5	mA	
Control Voltage							
Control Voltage Range			0.5	1.5	2.5	V	
Pulling Range		Referenced to VCON at 1.5V	±5			ppm	
Vcon Input Impedance		Measured between VCON and GND pin	100			kOhm	
Linearity					10	%	
Frequency Stability							
Nominal Frequency Tolerance		Frequency @ +25°C	-2.0		+2.0	ppm	1 hour after 2 times reflow
Over Temperature		-40°C to +85°C	-0.5		+0.5	ppm	Referenced frequency at 25°C
Supply Voltage Change		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		-93		dBc/Hz	At +25°C
		100 Hz offset		-118			
		1 kHz offset		-138			
		10 kHz offset		-152			
		100 kHz offset		-155			
Environmental Conditions							
Parameter	Test Conditions		Reference Std.				
Operating temperature range			-40°C to +85°C				
Storage temperature range			-55°C to +125°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



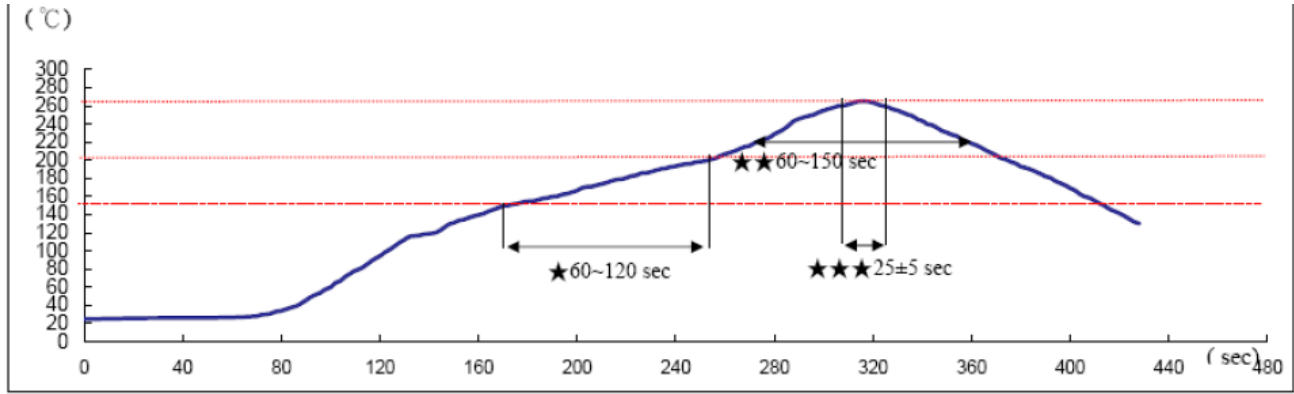
Output Waveform





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 ±5°C, 25±5 sec