



Features and Benefits

- Less than +/- 0.28ppm over operating temperature
- 140dBc/Hz @ 1 KHz offset typical
- Less than 6mA max.
- +/- 5ppm electronic frequency adjust

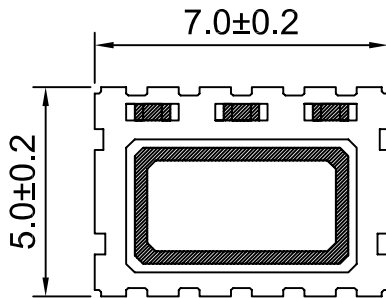
Typical Applications

Optimized clock reference design for Beidou SATCOM

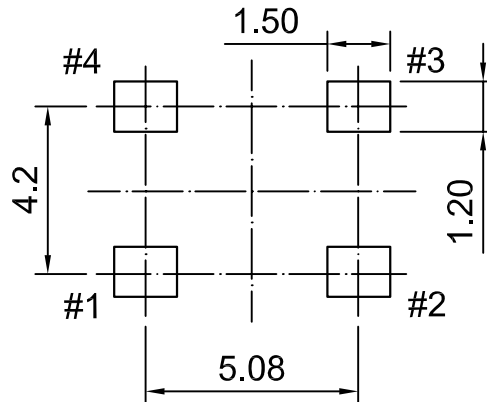
Mechanical Drawing & Pin Connections

Drawing No: MD150004-4

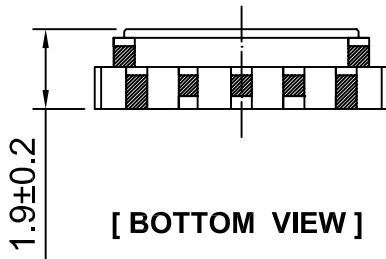
[TOP VIEW]



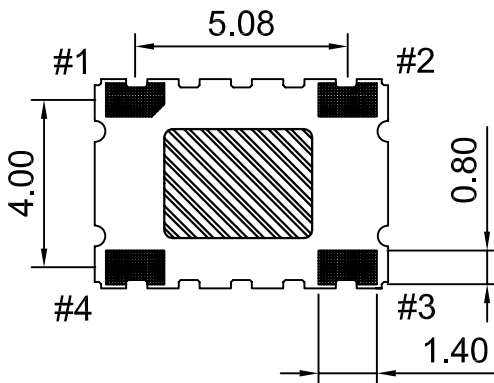
[Solder pattern]



[SIDE VIEW]



[BOTTOM VIEW]



PIN	FUNCTION
#1	V _c (EFC)
#2	GND
#3	Output
#4	V _{dc} +3.3V

Unit in mm
1mm = 0.0394 inches

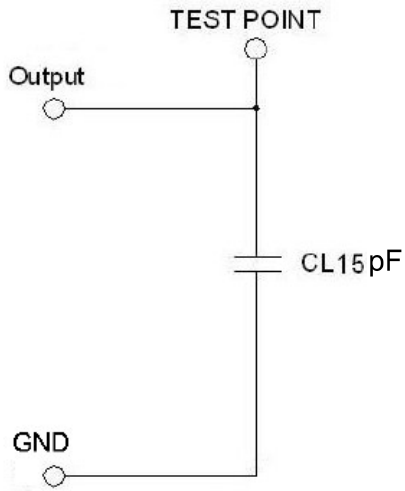


Specifications

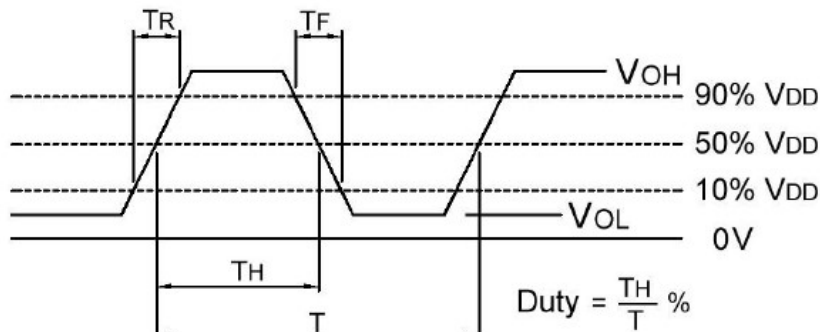
Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Nominal Frequency			20			MHz	
Nominal Frequency Tolerance		At +25°C, Before IR reflow			±0.5	ppm	
RF Output							
Waveform			CMOS				
Output Voltage Level High			2.97			V	
Output Voltage Level Low					0.33	V	
Output Load Capacitance		Operating range			15	pF	
Duty Cycle		Measured at 50% VDD trigger level	45	50	55	%	
Rise and Fall Times		CMOS logic output at 10% to 90%			6.0	ns	
Start Time					2.0	ms	
Frequency control							
Control Voltage Range	Vcon		0.5	1.5	2.5	V	
Linearity					10	%	
Pulling Range		Ref. to VCON at 1.5V			±5	ppm	
Power Supply							
Supply Voltage	V _{cc}		2.97	3.3	3.63	V	
Supply Current		At max. supply voltage			6.0	mA	
Frequency Stability							
Vs.Temperature		From -40°C to 85°C Ref. to the midpoint between max. and min. frequency			±0.28	ppm	
Vs. Supply Voltage		Supply voltage varied at +/-5% at 25°C			+/-0.2	ppm	
Allan Deviation		Gate time. Tau=1s, 100 samples		0.3		ppb/s	
Aging	First year	@25°C			+/-1.0	ppm	
Phase noise		10Hz			-95	dBc/Hz	
		100 Hz			-120		
		1 KHz			-140		
		10 KHz			-148		
Environmental Conditions							
Storage temperature range	-40°C to 85°C						
Operating temperature range	-40°C to 85°C						
Thermal Shock	MIL-STD-883 1010 Condition B; JESD22-A104 Condition B -55°C, 125°C; soak time is 10 mins, withtotal 200 cycles						
Mechanical Shock	MIL-STD-883 2002 Condition B; JESD22-B104 Condition B 1500G, half-sine, 0.5ms, each axis for 3 times.						
Vibration	MIL-STD-883 2007 Condition A; JESD22-B103 Condition 1 10~2000Hz, 1.52mm, 20G, each axis for 4hrs						



Test Circuit

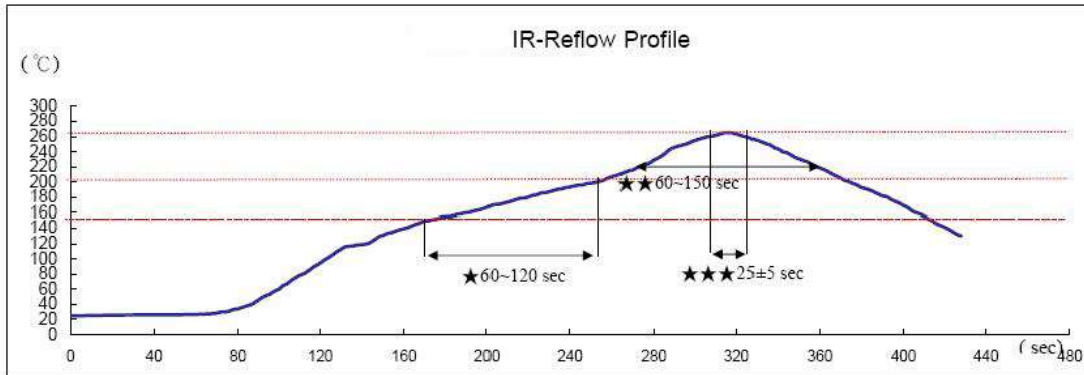


Output Waveform





Recommended IR Reflow Profile



Reference Standard: JEDEC-STD 020

Test conditions: ★Pre-heating : 150°C to 200°C, 60~120secs.

★★Heating : 217°C, 60~150sec.

★★★Peak temperature : 260±5°C, 25±5sec.