TCXO7500S-20MHz-A-V
High Performance SMD TCXO

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

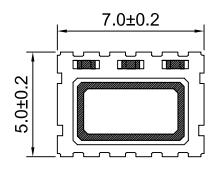
Mechanical Drawing & Pin Connections

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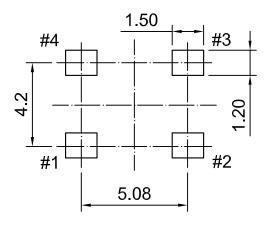
Drawing No:

MD150004-4

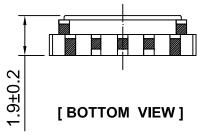
[TOP VIEW]

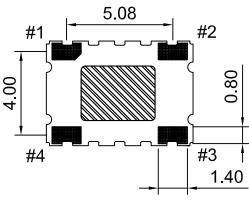


[Solder pattern]



[SIDE VIEW]





PIN	FUNCTION
#1	Vc (EFC)
#2	GND
#3	Output
#4	Vdc +3.3V

Unit in mm 1mm = 0.0394 inches



Dynamic Engineers Inc.

2550 Gray Falls Dr., Suite#128, Houston, TX, 77077 USA TEL: 1-281-870-8822 EMAIL:Sales@DynamicEng.com

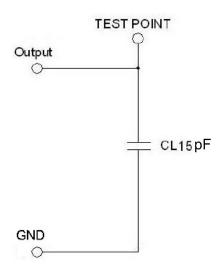
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Specifications

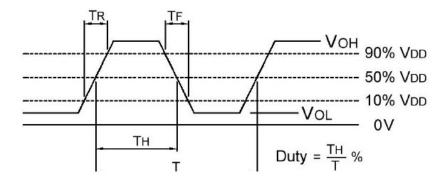
Oscillator	Sym	Condition		Value -		Unit	Note
Specification		_	Min.	Typ.	Max.	N 41 1—	
Nominal Frequency		A+ 125°C		20		MHz	
Nominal Frequency Tolerance		At +25°C, Before IR reflow			±0.5	ppm	
RF Output							
Waveform				CMOS			
Output Voltage Level High			2.97			V	
Output Voltage Level Low					0.33	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		Voltago					
Trequency Stability		From -40°C to 85°C					
		Ref. to the midpoint					
Vs.Temperature		between max, and			±0.28	ppm	
		min. frequency					
		Supply voltage varied			100		
Vs. Supply Voltage		at +/-5% at 25°C			+/-0.2	ppm	
					1	1	
1 All D : 1:		Gate time. Tau=1s.		0.0			
Allan Deviation		Gate time. Tau=1s, 100 samples		0.3		ppb/s	
		Gate time. Tau=1s, 100 samples @25°C		0.3	+/-1.0		
Allan Deviation Aging First year		100 samples		0.3	+/-1.0 -95	ppb/s	
Aging First year		100 samples @25°C		0.3		ppm	
		100 samples @25°C 10Hz 100 Hz		0.3	-95 -120		
Aging First year		100 samples @25°C 10Hz		0.3	-95	ppm	
Aging First year		100 samples @25°C 10Hz 100 Hz 1 KHz		0.3	-95 -120 -140	ppm	
Aging First year Phase noise Environmental Conditions	-40°C to	100 samples @25°C 10Hz 100 Hz 1 KHz 10 KHz		0.3	-95 -120 -140	ppm	
Aging First year Phase noise	-40°C to	100 samples @25°C 10Hz 100 Hz 1 KHz 10 KHz		0.3	-95 -120 -140	ppm	
Aging First year Phase noise Environmental Conditions Storage temperature range Operating temperature range	-40°C to	100 samples @25°C 10Hz 100 Hz 1 KHz 10 KHz	JESD22-		-95 -120 -140 -148	ppm	
Aging First year Phase noise Environmental Conditions Storage temperature range	-40°C to	100 samples @25°C 10Hz 100 Hz 1 KHz 10 KHz 0 85°C		A104 Condit	-95 -120 -140 -148	ppm	
Aging First year Phase noise Environmental Conditions Storage temperature range Operating temperature range Thermal Shock	-40°C to MIL-STI -55°C,	100 samples	ins, withto	A104 Conditotal 200 cycl	-95 -120 -140 -148 tion B	ppm	
Aging First year Phase noise Environmental Conditions Storage temperature range Operating temperature range	-40°C to MIL-STI -55°C, MIL-STI	100 samples @25°C 10Hz 100 Hz 1 KHz 10 KHz 0 85°C 0 85°C 0-883 1010 Condition B; 125°C; soak time is 10 m	ins, withto JESD22-I	A104 Conditotal 200 cycles	-95 -120 -140 -148 tion B	ppm	
Aging First year Phase noise Environmental Conditions Storage temperature range Operating temperature range Thermal Shock	-40°C to MIL-STI -55°C, MIL-STI 1500G,	100 samples @25°C 10Hz 100 Hz 1 KHz 10 KHz 0 85°C 0-883 1010 Condition B; 0 125°C; soak time is 10 m 0-883 2002 Condition B; 0	ins, withto JESD22-l is for 3 tir	A104 Condii otal 200 cyc B104 Condii mes.	-95 -120 -140 -148 tion B les	ppm	

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Test Circuit



Output Waveform

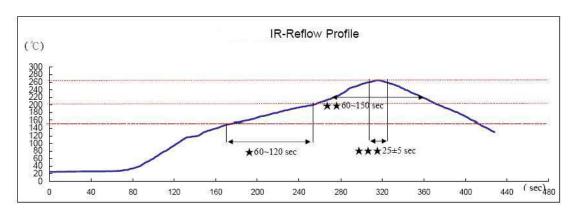


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Recommended IR Reflow Profile



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.