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

TCXO5300S-10MHz-C-V
High Stability Clipped Sine Wave SMD TCXO

Features and Benefits
High stability (up to ±0.28 ppm over -40°C to +85°C)
Low power consumption (3.5 mA max)
Low phase noise at -155 dBc/Hz @ 10KHz
Outstanding first year aging (up to ±1 ppm)

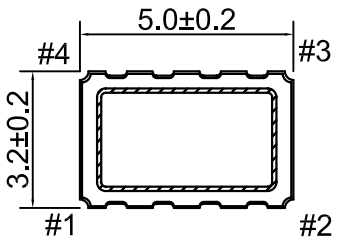
Typical Applications
Microwave Communications
Mobile and Wireless Base Station
Portable devices

Description
TCXO5300S-10MHz-C-V offers high stability, low power consumption and low noise with outstanding first year aging performance all in a compact SMD package.

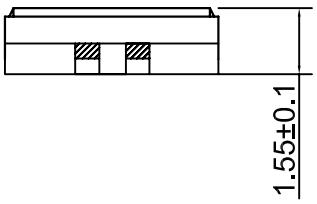
Mechanical Drawing & Pin Connections

Drawing No: MD140026-2

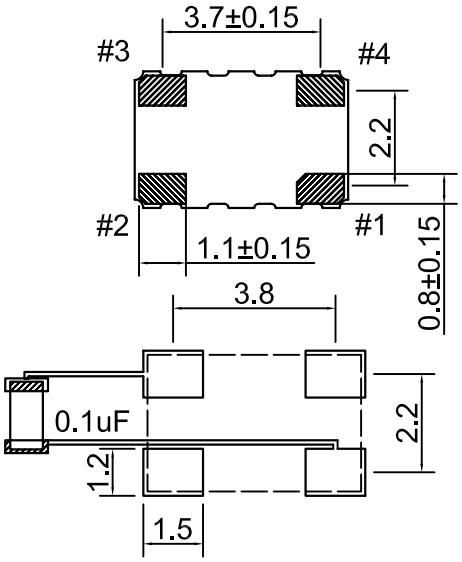
[TOP VIEW]



[SIDE VIEW]



[BOTTOM VIEW]



Recommended soldering pattern

*To ensure optional oscillator performance place a by-pass capacitor of 0.1uF as close to the part as possible between Vdd and GND pads.

PIN FUNCTIONS

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

Unit in mm
1mm = 0.0394 inches

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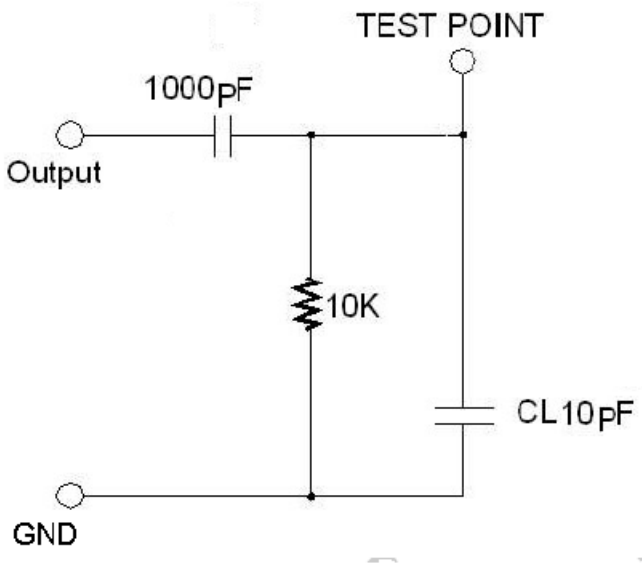
Specifications

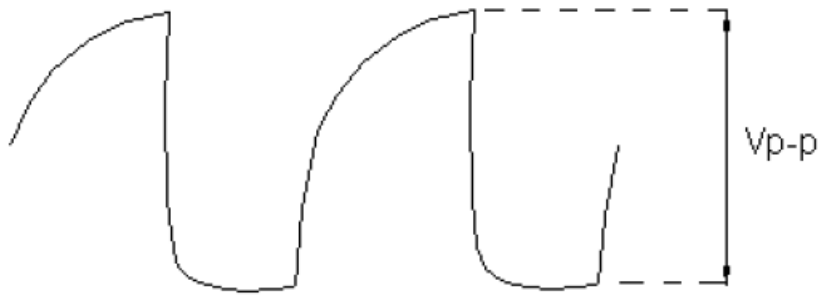
Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Nominal Frequency	F_{nom}			10.000000		MHz	
RF Output							
Output Waveform		DC Coupled		Clipped Sine Wave			
Output Voltage Level			0.8		2.0	Vp-p	
Output Load				10 10		KΩ pF	
Start Time					2.0	ms	
Power Supply							
Supply Voltage	V_S		3.135	3.300	3.465	V	
Current Consumption		At maximum supply voltage			3.5	mA	
Control Voltage							
Control Voltage Range			0.5	1.5	2.5	V	
Pulling Range		Reference to VCON at 1.5V	±5.0			ppm	
Vcon Input Impedance		Measured between VCON and GND pin	100			kΩ	
Linearity					10	%	
Frequency Stability							
Frequency Tolerance at +25°C		1 hour after 2 times reflow	-2.0		+2.0	ppm	
Vs. Operating Temperature Range (-40°C to +85°C)		Referenced to the midpoint between minimum and maximum frequency value	-0.28		+0.28	ppm	
Vs Supply Voltage Variation		Supply voltage varied ±5% at +25°C	-0.2		+0.2	ppm	
Vs Load Sensitivity		±10% load change	-0.2		+0.2	ppm	
Aging		First year at +25°C	-1.0		+1.0	ppm	
Phase Noise at +25°C		10 Hz offset		-100		dBc/Hz	
		100 Hz offset		-125			
		1 KHz offset		-145			
		10 KHz offset		-155			
		100 KHz offset		-158			

Environmental Conditions		
Parameter	Test Condition	Reference Standard
Operating temperature range	-40°C to +85	
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

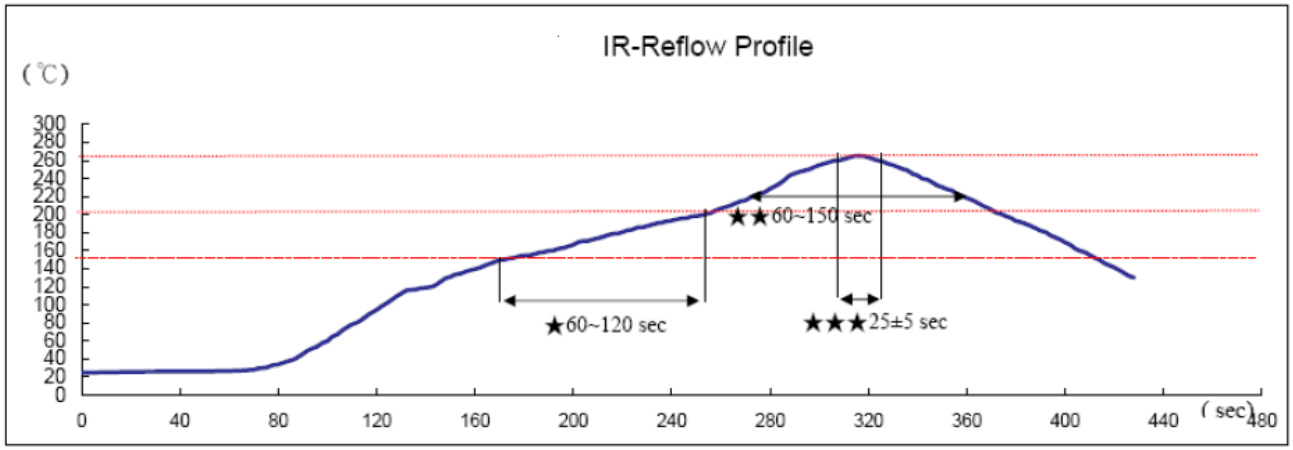


Output Waveform



Recommended IR Reflow Profile

IR reflow profile of ceramic SMD products for Pb free process



Reference Standard: JEDEC-STD 020
Test conditions:
Pre-heating: +150°C to +200°C, 60~120 sec
Heating: 217°C, 60~150 sec
Peak temperature: 260±5°C, 25 ±5 sec