



Approved by:
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SPECIFICATION

PN: 7X320000IC01GJM

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Crystal Oscillators

SMD TCXO Module 2.0x1.6 7X Series



FEATURE

- | Temperature Stability: ± 0.5 ppm ~ ± 2.5 ppm.
- | Operating Temperature Range: - 40 ~ 85 °C.
- | Supply Voltage: 1.8 V ~ 3.3 V.
- | Voltage Control Function Available.
- | Applications: GPS, WiMAX, Cellular and Wireless Communications.
- | RoHS Compliant / Pb Free.

ELECTRICAL SPECIFICATIONS

Item	Parameters		Condition	Electrical Specifications				Note
				MIN	TYP	MAX	UNITS	
1	Nominal Frequency			32.000			MHz	
2	Operating Temperature Range			-40		+85	°C	
3	Supply Voltage			3.135	3.3	3.465	V	
4	Current Drain					1.5	mA	
5	Output Level			0.8		2.0	V	¹
6	Output Type			Clipped Sine wave				
7	Output Load	Resistance		9	10	11	kΩ	
8		Capacitance		9	10	11	pF	
9	Frequency Tolerance		After 2 times reflow			± 0.5	ppm	²
10	Frequency Stability	vs. Temperature	Temp: -30 ~ +85 °C			± 1.5	ppm	^{3,4}
11		vs. Load	Load: 10 kΩ // 10 pF $\pm 10\%$			± 0.2	ppm	^{3,4}
12		vs. Supply Voltage	Vcc: 1.8 V $\pm 5\%$			± 0.2	ppm	
13	Storage Temperature			-55		+105	°C	⁵
14	Start-up Time	vs. Frequency	Within ± 1 ppm			2.0	ms	
15		vs. Output Level	To 90% of Vp-p			2.0	ms	
16	Linearity					10	%	
17	Aging					± 1.0	ppm/year	
18	Phase Noise	@ 1Hz offset				-48	dBc/Hz	
19		@ 10Hz offset				-83	dBc/Hz	
20		@ 100 Hz offset				-109	dBc/Hz	
21		@ 1 kHz offset				-130	dBc/Hz	
22		@ 10 kHz offset				-140	dBc/Hz	
23		@ 100 kHz offset				-145	dBc/Hz	

Note 1: Decoupling capacitor is required in external circuit.

Note 2: Refer to nominal frequency

Note 3: Refer to frequency at 25 ± 2 °C

Note 4: Minimum of 1 frequency reading every 2 °C over temperature, based on temperature varied at maximum of 2 °C per minute.

Note 5: Frequency deviation at 25 °C after reciprocal temperature cycle over the operating temperature range

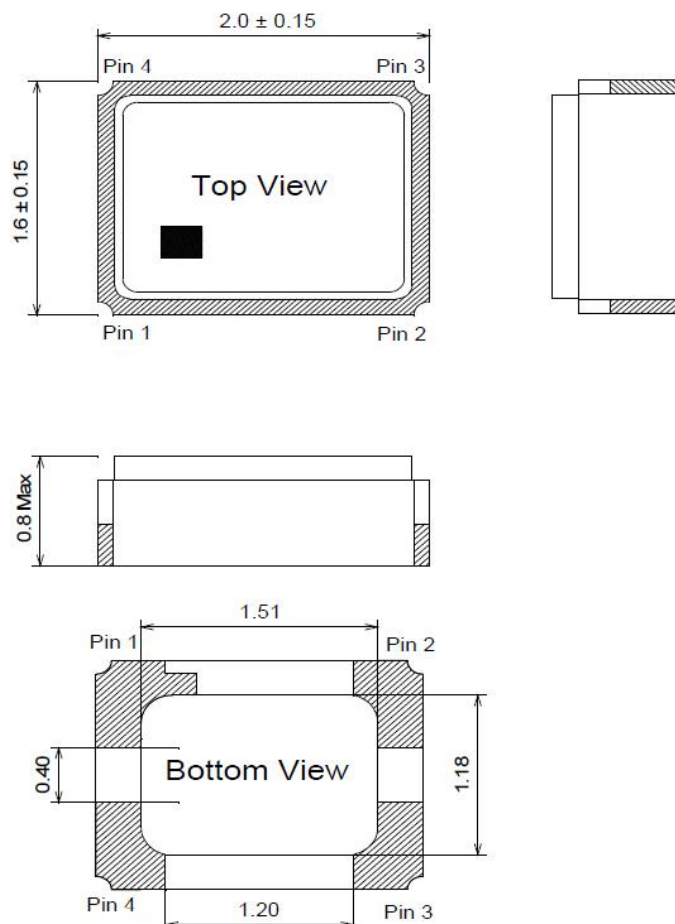
The design, manufacturing process, and specifications of this device are subject to change without notice.

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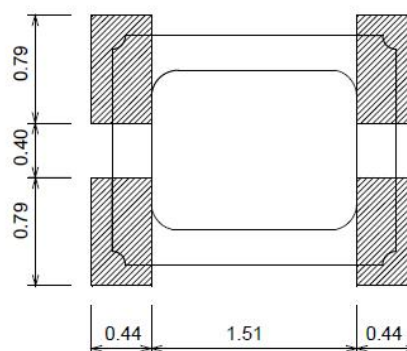
DIMENSIONS (Unit: mm)



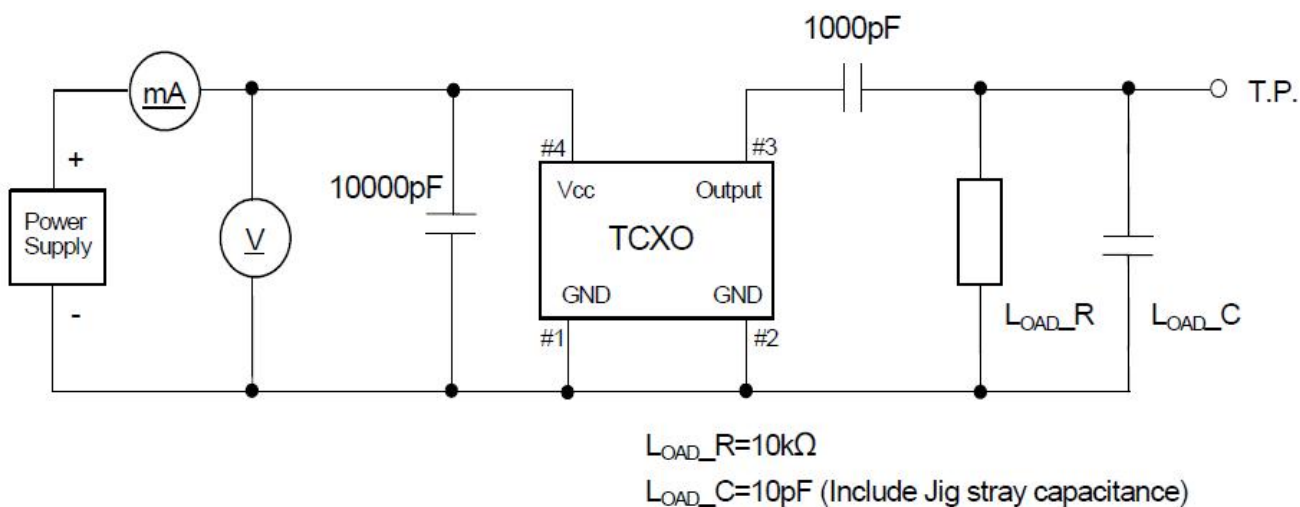
Pin Connection

Name	Connection
Pin 1	GND or NC
Pin 2	GND
Pin 3	OUTPUT
Pin 4	VCC

Recommended Land Pattern



Measurement Circuit

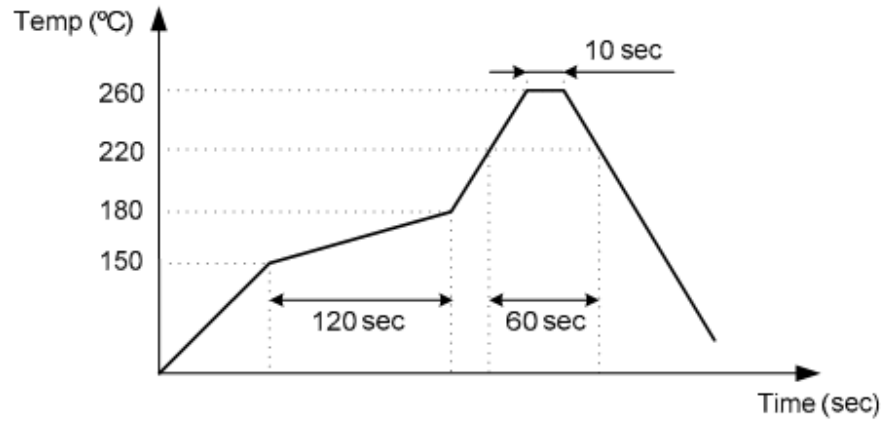


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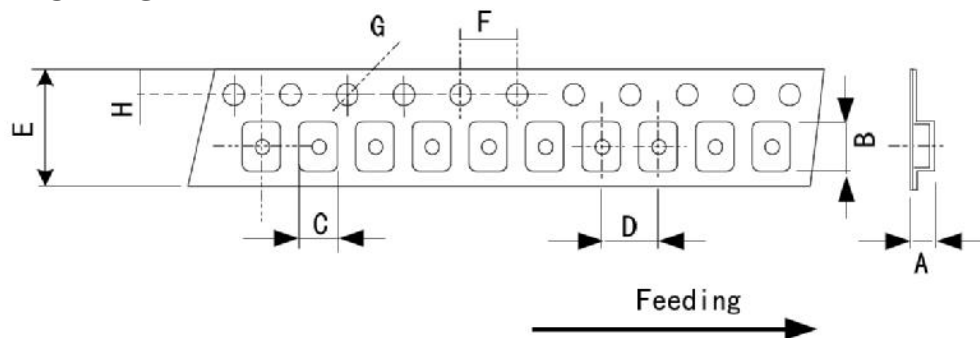


Reflow Profile

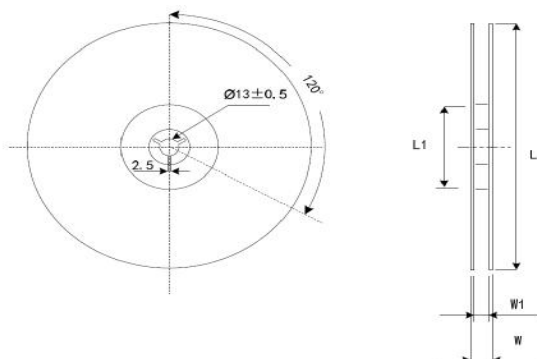


Note : Total Time: 200 sec. Max., Solder Melting Point: 220°C

PACKING



DIMENSIONS	A	B	C	D	E	F	G	H	(UNIT:mm)
	0.90 ±0.10	2.30 ±0.10	1.90 ±0.10	4.00 ±0.10	8.00 ±0.20	4.00 ±0.10	1.55 ±0.05	1.75 ±0.10	



DIMENSIONS	L	L1	W	W1	Standard Reel Quantity is 3,000 pcs per reel (UNIT:mm)
	178 ±1.00	60.2 ±0.50	11.5 ±0.2	8 +1/-0	

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