ES52C1E10N-12.800M

Click part number to visit Part Number Details page

Ecliptek

REGULATORY COMPLIANCE (Data Sheet downloaded on Apr 22, 2018)

Lead Free COMPLIANT | EU RoHS 2011/65 COMPLIANT | China RoHS COMPLIANT | REACH 144 SVHC COMPLIANT

Click badges to download compliance docs

Regulatory Compliance standards are subject to updates by governing bodies. Click the badges to download the latest compliance docs for this part number directly from Ecliptek.

DRC CONFLICT FREE

ITEM DESCRIPTION

Temperature Compensated Quartz Crystal Clock Oscillators TCXO TC(VC)XO Clipped Sinewave 3.3Vdc 10 Pad 5.0mm x 7.0mm Ceramic Surface Mount (SMD) 12.800MHz ±1.0ppm Maximum -40°C to +85°C

ELECTRICAL SPECIFICATIONS

Nominal Frequency	12.800MHz
Frequency Tolerance	±1.0ppm Maximum (at 25°C ±2°C, Vdd=3.3Vdc)
Frequency Stability	±1.0ppm Maximum (Inclusive of Operating Temperature Range, at Vdd = 3.3Vdc)
Frequency Stability vs. Supply Voltage	±0.2ppm Maximum (Vdd ±5%)
Frequency Stability vs. Load	±0.2ppm Maximum (±1kOhm//±1pF)
Frequency Stability vs. Aging	±1ppm/Year Maximum (at 25°C)
Operating Temperature Range	-40°C to +85°C
Supply Voltage	3.3Vdc ±5%
Input Current	1.5mA Maximum
Output Voltage	0.8Vp-p Clipped Sinewave Minimum
Load Drive Capability	10kOhms//10pF
Output Logic Type	Clipped Sinewave
Control Voltage	None (No Connect on Pin 1)
Phase Noise	-80dBc/Hz at 10Hz offset, -115dBc/Hz at 100Hz offset, -135dBc/Hz at 1kHz offset, -148dBc/Hz at 10kHz offset, -148dBc/Hz at 100kHz offset (All Values are Typical)
Start Up Time	5mSec Maximum
Storage Temperature Range	-55°C to +125°C

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Fine Leak Test	MIL-STD-883, Method 1014 Condition A
Gross Leak Test	MIL-STD-883, Method 1014 Condition C
Mechanical Shock	MIL-STD-202, Method 213 Condition C
Resistance to Soldering Heat	MIL-STD-202, Method 210
Resistance to Solvents	MIL-STD-202, Method 215
Solderability	MIL-STD-883, Method 2003
Temperature Cycling	MIL-STD-883, Method 1010
Vibration	MIL-STD-883, Method 2007 Condition A

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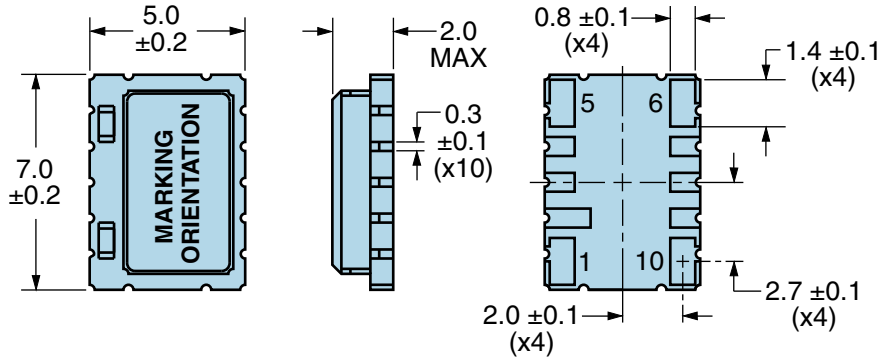
MECHANICAL DIMENSIONS (all dimensions in millimeters)

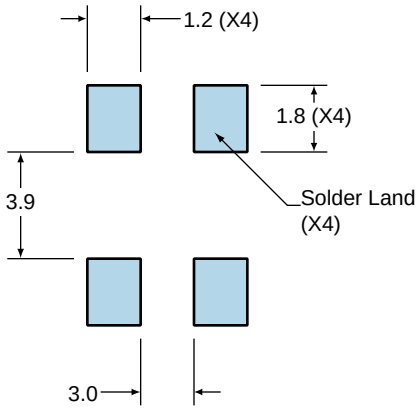


PIN	CONNECTION
1	No Connect
2	Do Not Connect
3	Do Not Connect
4	Do Not Connect
5	Case/Ground
6	Output
7	Do Not Connect
8	Do Not Connect
9	Do Not Connect
10	Supply Voltage

LINE	MARKING
1	**E12.800** *E=Ecliptek*
2	**XXXXX** *XXXXX=Ecliptek Manufacturing Identifier*

Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are ±0.1

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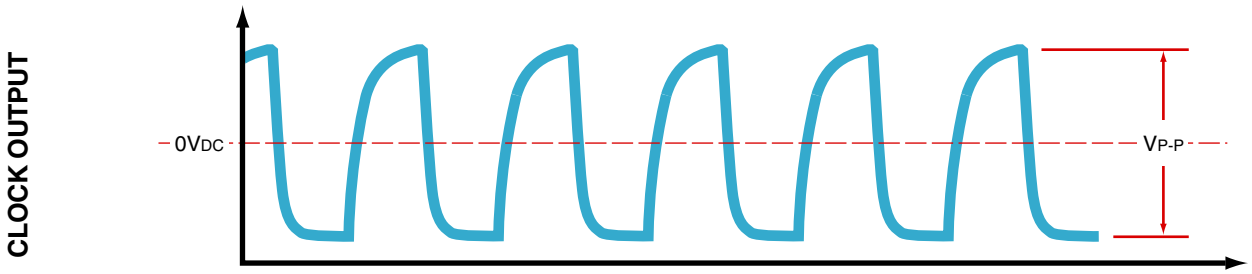
OUTPUT WAVEFORM



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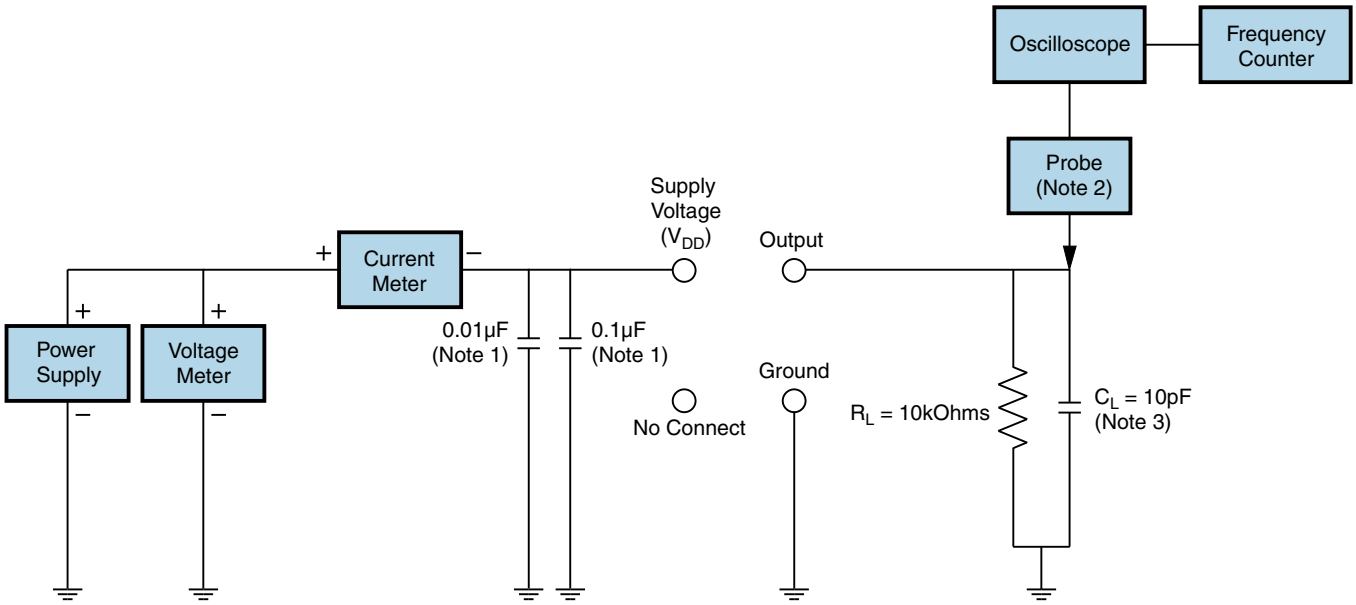
Test Circuit for No Connect Option



Note 1: An external 0.01µF bypass capacitor in parallel with a 0.1µF high frequency ceramic bypass capacitor close (less than 2mm) to the package ground and supply voltage pin is required.
Note 2: A low input capacitance (<12pF), 10X attenuation factor, high impedance (>10Mohms), and high bandwidth (>300MHz) passive probe is recommended.
Note 3: Capacitance value C_L includes sum of all probe and fixture capacitance.

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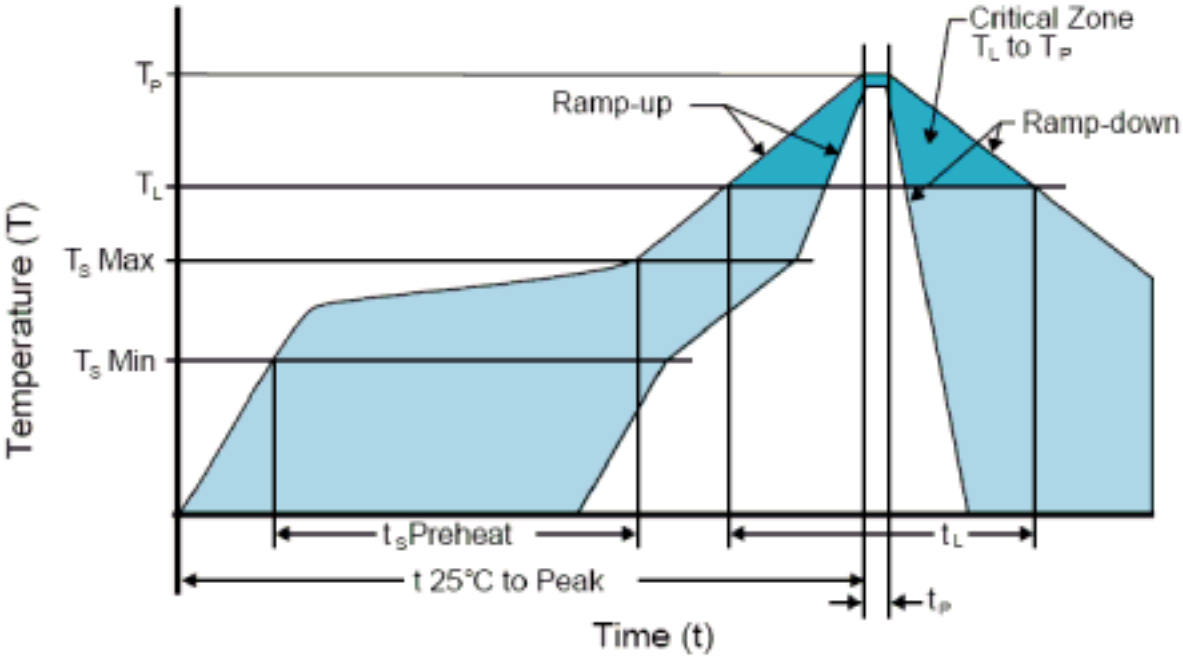
Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 220°C

T_S MAX to T_L (Ramp-up Rate)	5°C/Second Maximum
Preheat	
- Temperature Minimum (T_S MIN)	N/A
- Temperature Typical (T_S TYP)	150°C
- Temperature Maximum (T_S MAX)	N/A
- Time (t_S MIN)	60 - 120 Seconds
Ramp-up Rate (T_L to T_P)	5°C/Second Maximum
Time Maintained Above:	
- Temperature (T_L)	150°C
- Time (t_L)	200 Seconds Maximum
Peak Temperature (T_P)	220°C Maximum
Target Peak Temperature (T_P Target)	220°C Maximum 1 Time / 215°C Maximum 1 Time
Time within 5°C of actual peak (t_p)	15 Seconds Maximum 1 Time / 80 Seconds Maximum 1 Time
Ramp-down Rate	5°C/Second Maximum
Time 25°C to Peak Temperature (t)	N/A
Moisture Sensitivity Level	Level 1
Additional Notes	Temperatures listed are applied to body of device.

Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum. (Temperatures listed are applied to body of device.)

High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum. (Temperatures listed are applied to body of device.)

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