

EH2600ETTS-25.001M

[Click part number to visit Part Number Details page](#)

REGULATORY COMPLIANCE (Data Sheet downloaded on Apr 29, 2016)


[Click badges to download compliance docs](#)

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ITEM DESCRIPTION

Quartz Crystal Clock Oscillators XO (SPXO) LVCMOS (CMOS) 3.3Vdc 4 Pad 5.0mm x 7.0mm Ceramic Surface Mount (SMD) 25.001MHz ± 100 ppm -40°C to +85°C

ELECTRICAL SPECIFICATIONS

Nominal Frequency	25.001MHz
Frequency Tolerance/Stability	± 100 ppm Maximum (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°C, Shock, and Vibration)
Aging at 25°C	± 5 ppm/year Maximum
Operating Temperature Range	-40°C to +85°C
Supply Voltage	3.3Vdc $\pm 10\%$
Input Current	35mA Maximum (No Load)
Output Voltage Logic High (Voh)	2.7Vdc Minimum (IOH= -8mA)
Output Voltage Logic Low (Vol)	0.5Vdc Maximum (IOL= +8mA)
Rise/Fall Time	6nSec Maximum (Measured at 20% to 80% of waveform)
Duty Cycle	50 ± 5 (%) (Measured at 50% of waveform)
Load Drive Capability	30pF Maximum
Output Logic Type	CMOS
Pin 1 Connection	Tri-State (High Impedance)
Tri-State Input Voltage (Vih and Vil)	70% of Vdd Minimum to enable output, 20% of Vdd Maximum to disable output, No Connect to enable output.
Absolute Clock Jitter	± 250 pSec Maximum, ± 100 pSec Typical
One Sigma Clock Period Jitter	± 50 pSec Maximum, ± 40 pSec Typical
Start Up Time	10mSec Maximum
Storage Temperature Range	-55°C to +125°C

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

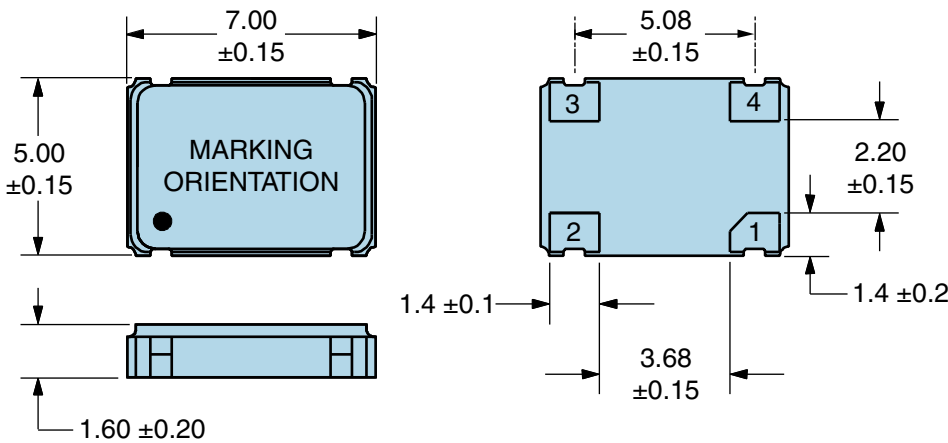
ESD Susceptibility	MIL-STD-883, Method 3015, Class 1, HBM: 1500V
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Flammability	UL94-V0
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	J-STD-020, MSL 1
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Resistance to Solvents	MIL-STD-202, Method 215
Solderability	MIL-STD-883, Method 2003
Temperature Cycling	MIL-STD-883, Method 1010, Condition B
Vibration	MIL-STD-883, Method 2007, Condition A

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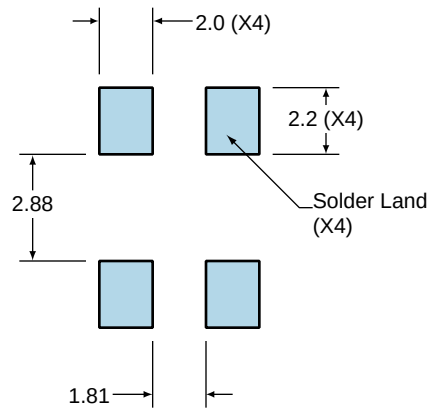
MECHANICAL DIMENSIONS (all dimensions in millimeters)

LINE	MARKING
1	ECLIPTEK
2	25.001M
3	XXXXXX XXXXXX=Ecliptek Manufacturing Identifier



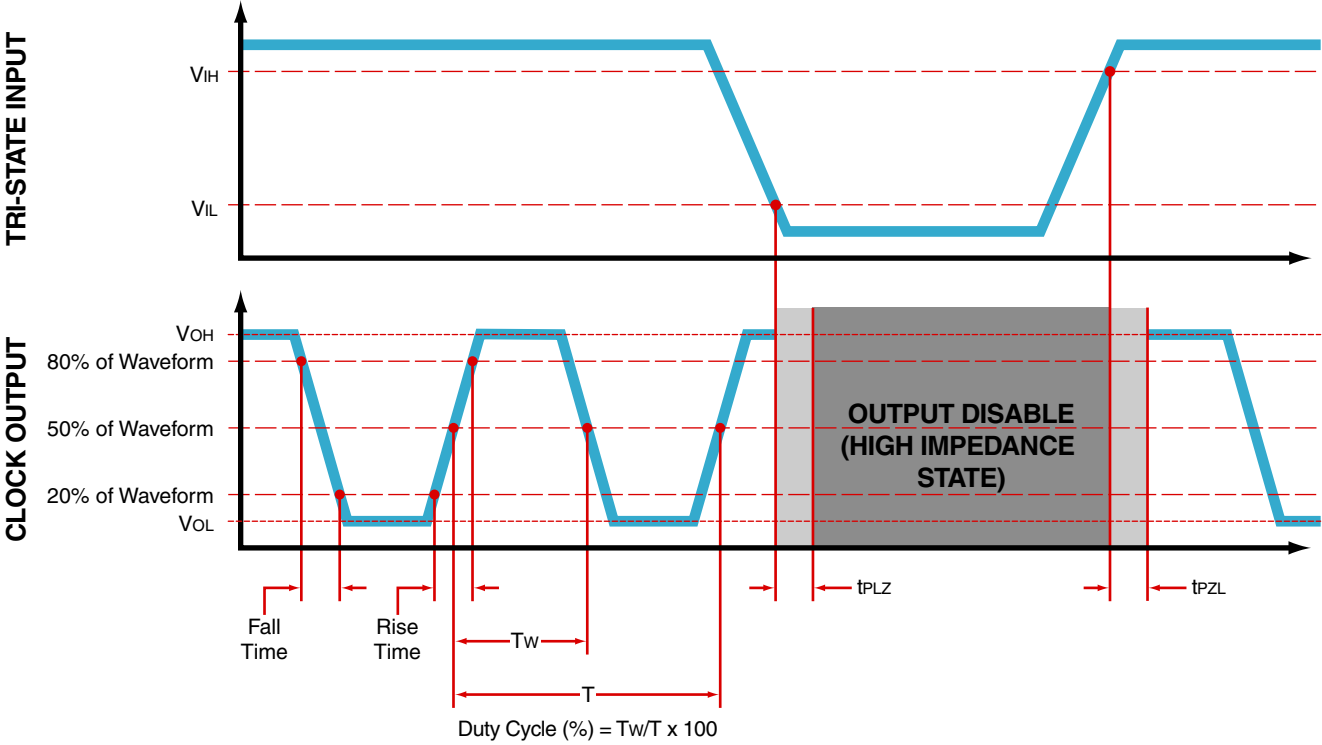
Suggested Solder Pad Layout

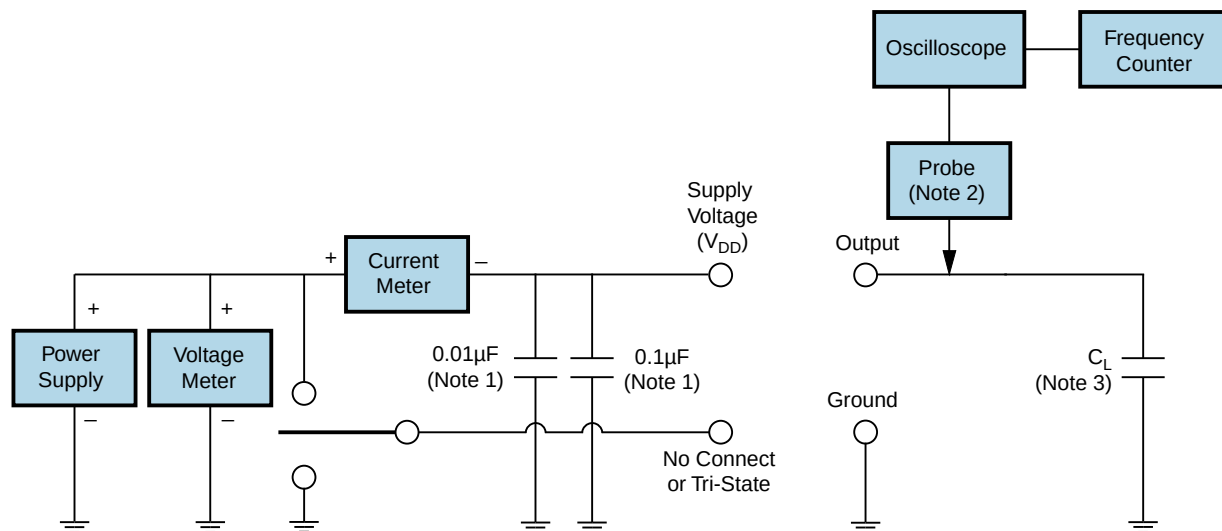
All Dimensions in Millimeters



All Tolerances are ±0.1

OUTPUT WAVEFORM & TIMING DIAGRAM



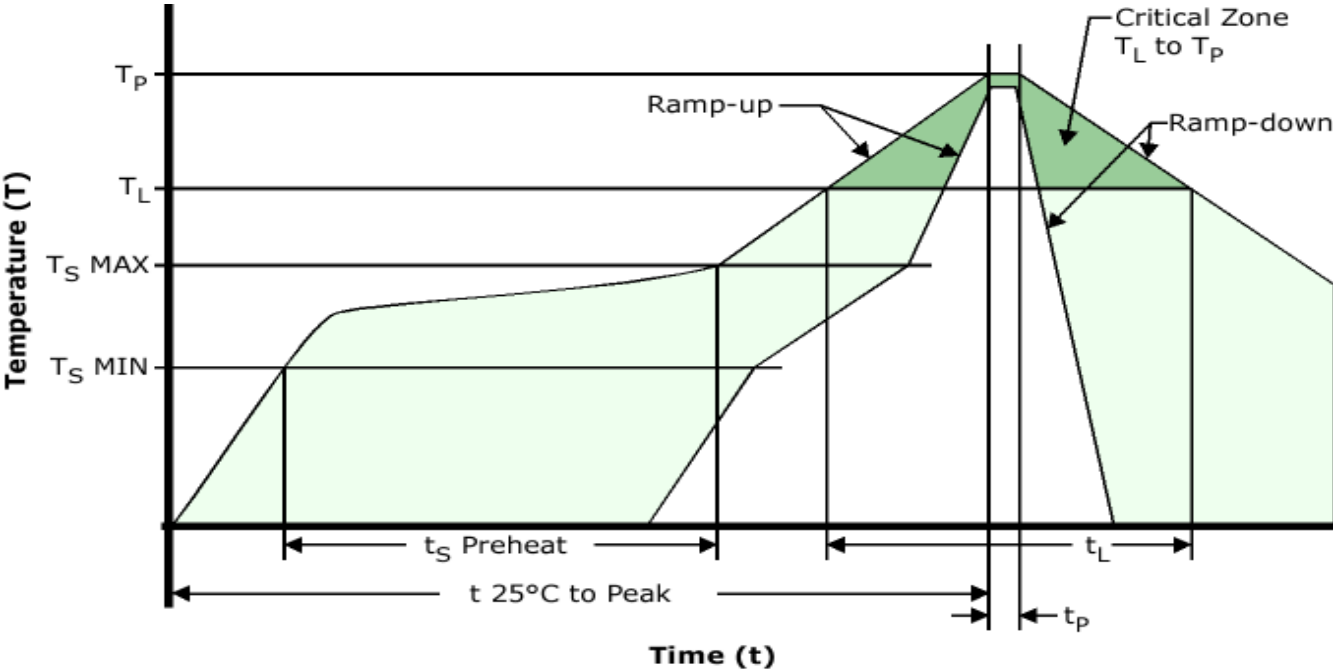
Test Circuit for CMOS Output

Note 1: An external 0.1µF low frequency tantalum bypass capacitor in parallel with a 0.01µF high frequency ceramic bypass capacitor close to the package ground and V_{DD} pin is required.

Note 2: A low capacitance (<12pF), 10X attenuation factor, high impedance (>10Mohms), and high bandwidth (>300MHz) passive probe is recommended.

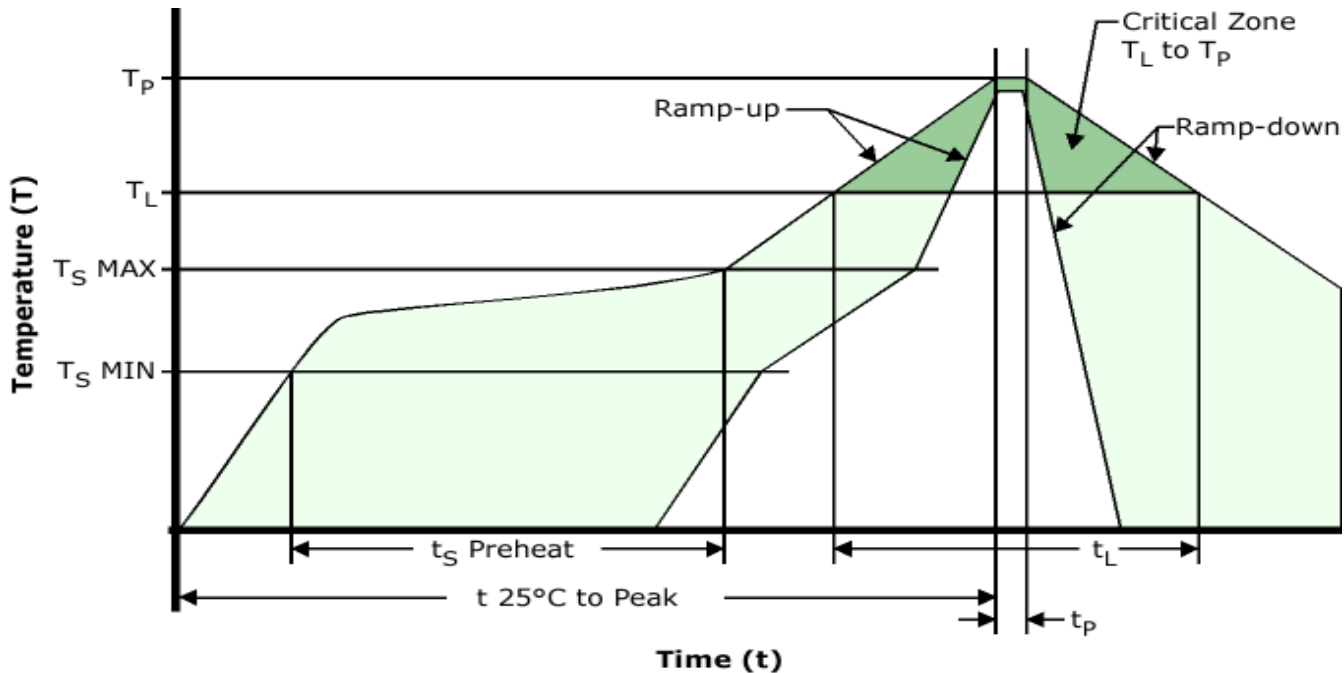
Note 3: Capacitance value C_L includes sum of all probe and fixture capacitance.

Recommended Solder Reflow Methods



High Temperature Infrared/Convection

Ts MAX to T _L (Ramp-up Rate)	3°C/Second Maximum
Preheat	
- Temperature Minimum (T _s MIN)	150°C
- Temperature Typical (T _s TYP)	175°C
- Temperature Maximum (T _s MAX)	200°C
- Time (t _s MIN)	60 - 180 Seconds
Ramp-up Rate (T _L to T _P)	3°C/Second Maximum
Time Maintained Above:	
- Temperature (T _L)	217°C
- Time (t _L)	60 - 150 Seconds
Peak Temperature (T _P)	260°C Maximum for 10 Seconds Maximum
Target Peak Temperature (T _P Target)	250°C +0/-5°C
Time within 5°C of actual peak (t _P)	20 - 40 Seconds
Ramp-down Rate	6°C/Second Maximum
Time 25°C to Peak Temperature (t)	8 Minutes Maximum
Moisture Sensitivity Level	Level 1
Additional Notes	Temperatures shown are applied to body of device.

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Recommended Solder Reflow Methods**Low Temperature Infrared/Convection 240°C**

Ts MAX to Tl (Ramp-up Rate)	5°C/Second Maximum
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Preheat

- Temperature Minimum (Ts MIN)	N/A
- Temperature Typical (Ts TYP)	150°C
- Temperature Maximum (Ts MAX)	N/A
- Time (ts MIN)	60 - 120 Seconds

Ramp-up Rate (Tl to Tp)	5°C/Second Maximum
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Time Maintained Above:

- Temperature (Tl)	150°C
- Time (tl)	200 Seconds Maximum

Peak Temperature (Tp)	240°C Maximum
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Target Peak Temperature (Tp Target)	240°C Maximum 2 Times / 230°C Maximum 1 Time
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Time within 5°C of actual peak (tp)	10 Seconds Maximum 2 Times / 80 Seconds Maximum 1 Time
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Ramp-down Rate	5°C/Second Maximum
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Time 25°C to Peak Temperature (t)	N/A
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Moisture Sensitivity Level	Level 1
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Additional Notes	Temperatures shown are applied to body of device.
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Low Temperature Manual Soldering

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

High Temperature Manual Soldering

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