

EP2600ETPD-40.000M [↗](#)

Lead Free  COMPLIANT	EU RoHS 2011/65 + 2015/863 COMPLIANT	ChinaRoHS  COMPLIANT	REACH SVHC 163 Jun 15, 2015 COMPLIANT
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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) 40.000MHz \pm 100ppm -40°C to +85°C

ELECTRICAL SPECIFICATIONS

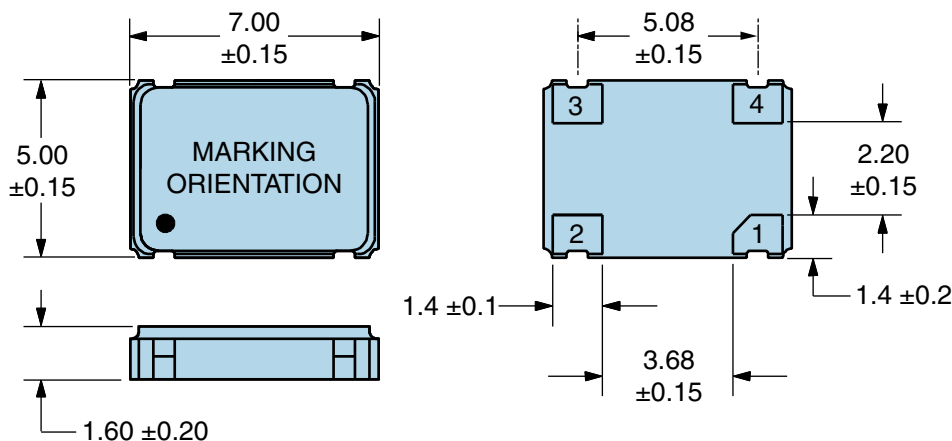
Nominal Frequency	40.000MHz
Frequency Tolerance/Stability	\pm 100ppm Maximum (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°C, Shock, and Vibration)
Aging at 25°C	\pm 5ppm/year Maximum
Operating Temperature Range	-40°C to +85°C
Supply Voltage	3.3Vdc \pm 10%
Input Current	28mA Maximum (Unloaded)
Output Voltage Logic High (Voh)	Vdd-0.4Vdc Minimum (IOH= -8mA)
Output Voltage Logic Low (Vol)	0.4Vdc Maximum (IOL= +8mA)
Rise/Fall Time	4nSec Maximum (Measured at 20% to 80% of waveform)
Duty Cycle	50 \pm 10(%) (Measured at 50% of waveform)
Load Drive Capability	30pF Maximum
Output Logic Type	CMOS
Pin 1 Connection	Power Down (Disable Output: Logic Low)
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.
Standby Current	20 μ A Maximum (Pin 1 = Ground)
Absolute Clock Jitter	\pm 125pSec Maximum, \pm 75pSec Typical
One Sigma Clock Period Jitter	\pm 40pSec Maximum
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)

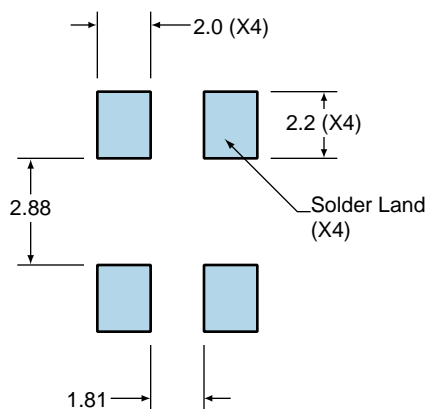


PIN	CONNECTION
1	Power Down (Logic Low)
2	Ground/Case Ground
3	Output
4	Supply Voltage

LINE	MARKING
1	ECLIPTEK
2	40.000M
3	XXXXX XXXXX=Ecliptek Manufacturing Identifier

Suggested Solder Pad Layout

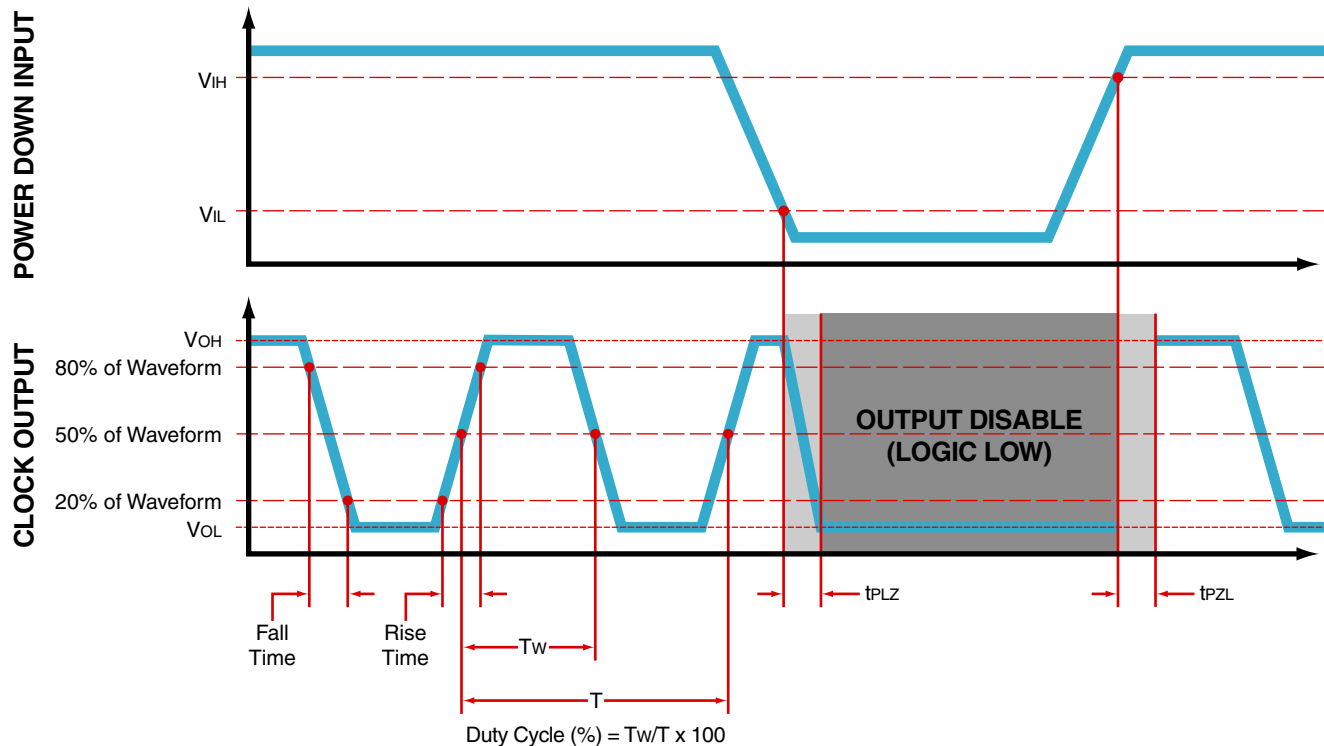
All Dimensions in Millimeters



All Tolerances are ±0.1

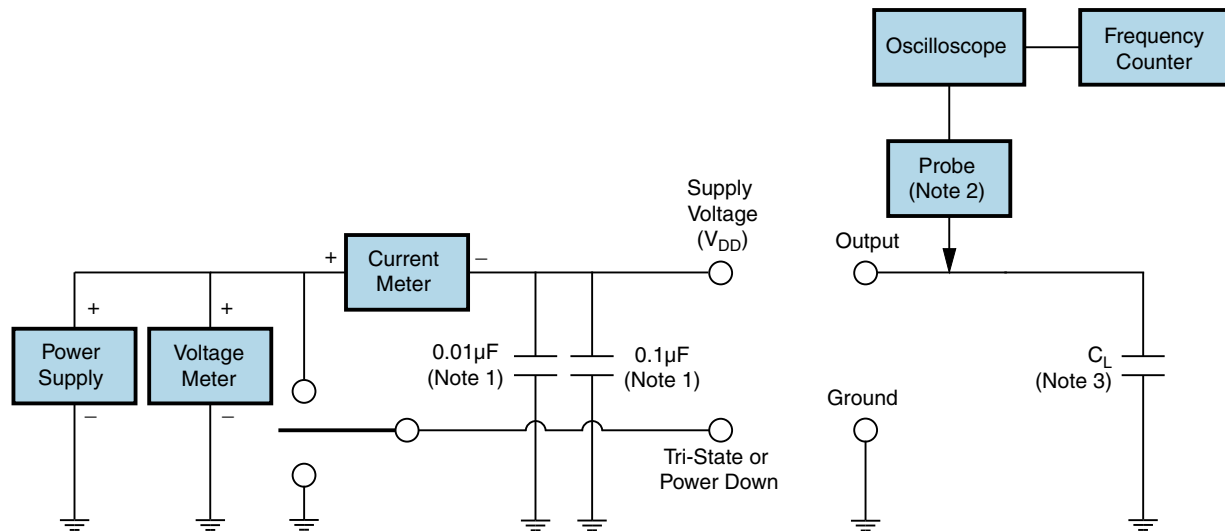
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OUTPUT WAVEFORM & TIMING DIAGRAM



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Test Circuit for CMOS Output



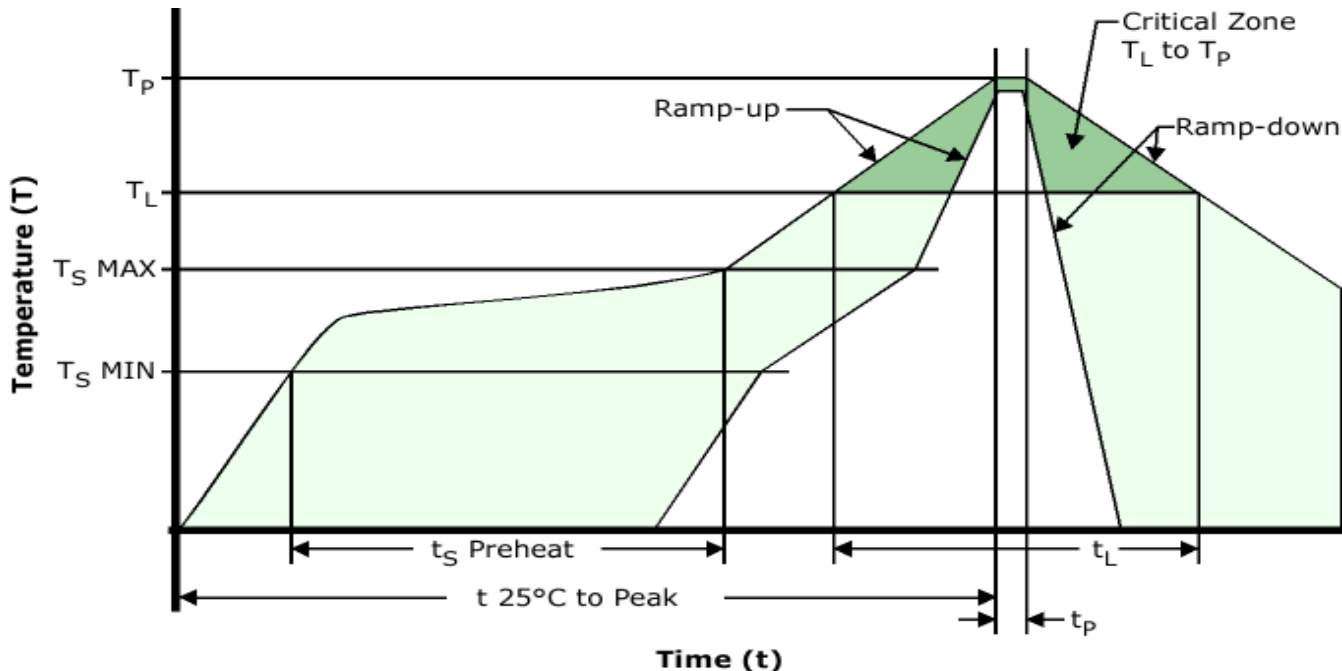
Note 1: An external $0.01\mu\text{F}$ ceramic bypass capacitor in parallel with a $0.1\mu\text{F}$ high frequency ceramic bypass capacitor close (less than 2mm) to the package ground and supply voltage pin is required.

Note 2: A low input capacitance ($<12\text{pF}$), 10X Attenuation Factor, High Impedance ($>10\text{Mohms}$), and High bandwidth ($>300\text{MHz}$) passive probe is recommended.

Note 3: Capacitance value C_L includes sum of all probe and fixture capacitance. See applicable specification sheet for 'Load Drive Capability'.

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Recommended Solder Reflow Methods



High Temperature Infrared/Convection

Ts MAX to TL (Ramp-up Rate) 3°C/Second Maximum

Preheat

- Temperature Minimum (Ts MIN) 150°C
 - Temperature Typical (Ts TYP) 175°C
 - Temperature Maximum (Ts MAX) 200°C
 - Time (ts MIN) 60 - 180 Seconds

Ramp-up Rate (TL to TP) 3°C/Second Maximum

Time Maintained Above:

- Temperature (TL) 217°C
 - Time (tL) 60 - 150 Seconds

Peak Temperature (TP) 260°C Maximum for 10 Seconds Maximum

Target Peak Temperature (TP Target) 250°C +0/-5°C

Time within 5°C of actual peak (tp) 20 - 40 Seconds

Ramp-down Rate 6°C/Second Maximum

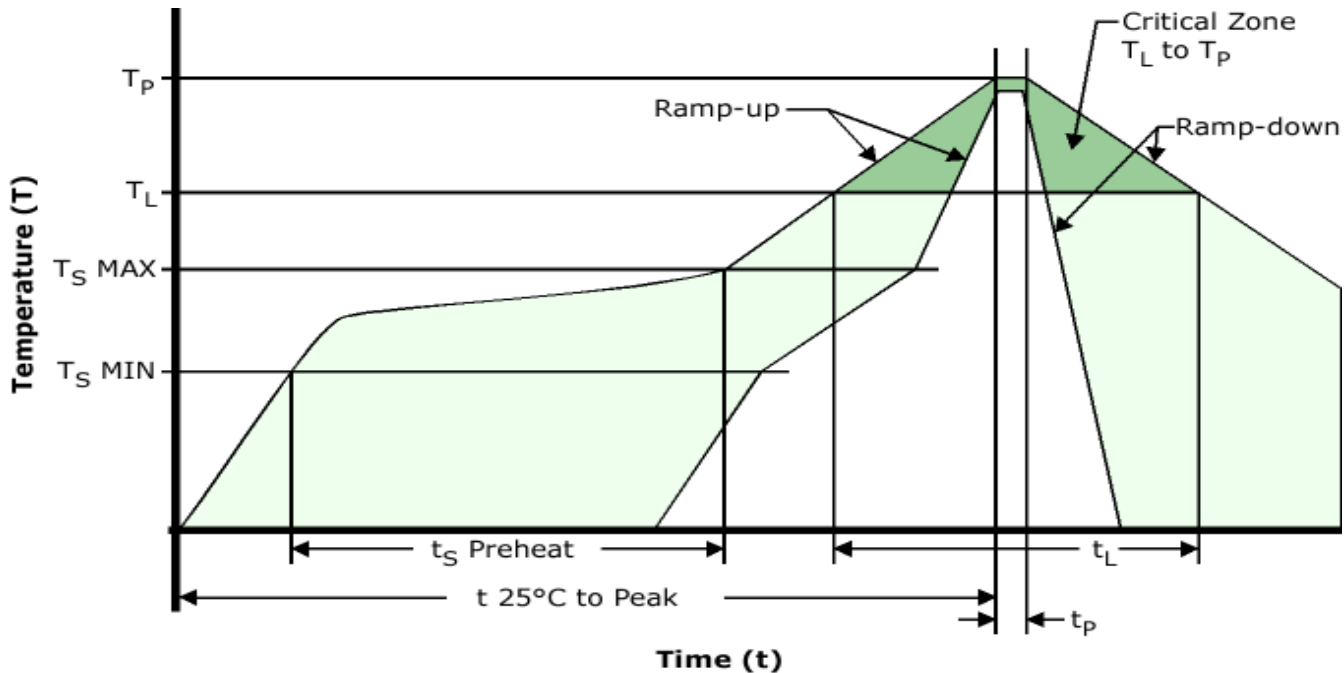
Time 25°C to Peak Temperature (t) 8 Minutes Maximum

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
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
Time Maintained Above:	
- Temperature (TL)	150°C
- Time (tL)	200 Seconds Maximum
Peak Temperature (TP)	240°C Maximum
Target Peak Temperature (TP Target)	240°C Maximum 2 Times / 230°C Maximum 1 Time
Time within 5°C of actual peak (tp)	10 Seconds Maximum 2 Times / 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 shown are applied to body of device.

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.)

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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