EHF1145ETTTS-40.960M-CC

Lead Free Pb COMPLIANT

EU RoHS 2011/65 + 2015/863 COMPLIANT

China RoHS COMPLIANT

REACH SVHC 163 Jun 15, 2015 COMPLIANT

DRC CONFLICT FREE

ITEM DESCRIPTION

Quartz Crystal Clock Oscillators XO (SPXO) HCMOS/TTL (CMOS) 5.0Vdc 14 Pin DIP Metal Thru-Hole 40.960MHz ±50ppm -40°C to +85°C

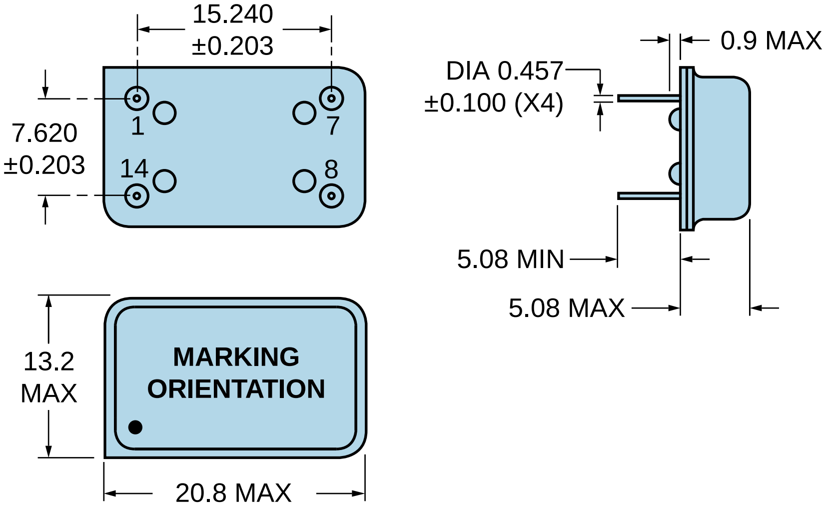
ELECTRICAL SPECIFICATIONS

Nominal Frequency	40.960MHz
Frequency Tolerance/Stability	±50ppm Maximum (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operation Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°C, Shock, and Vibration.)
Aging at 25°C	±5ppm/year Maximum
Operating Temperature Range	-40°C to +85°C
Supply Voltage	5.0Vdc ±10%
Input Current	50mA Maximum (No Load)
Output Voltage Logic High (Voh)	2.4Vdc Minimum with TTL Load, Vdd-0.4Vdc Minimum with HCMOS Load (IOH = -16mA)
Output Voltage Logic Low (Vol)	0.4Vdc Maximum with TTL Load, 0.5Vdc Maximum with HCMOS Load (IOL = +16mA)
Rise/Fall Time	6nSec Maximum (Measured at 0.8Vdc to 2.0Vdc with TTL Load, Measured at 20% to 80% of waveform with HCMOS Load)
Duty Cycle	50 ±5(%) (Measured at 50% of waveform with TTL Load or with HCMOS Load)
Load Drive Capability	10TTL Load or 50pF HCMOS Load Maximum
Output Logic Type	CMOS
Pin 1 Connection	Tri-State (Disabled Output: High Impedance)
Tri-State Input Voltage (Vih and Vil)	+2.2Vdc Minimum to enable output, +0.8Vdc Maximum to disable output (High Impedance), No Connect to enable output.
Absolute Clock Jitter	±250pSec Maximum, ±100pSec Typical
One Sigma Clock Period Jitter	±50pSec Maximum, ±30pSec Typical
Start Up Time	10mSec 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
Lead Integrity	MIL-STD-883, Method 2004
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

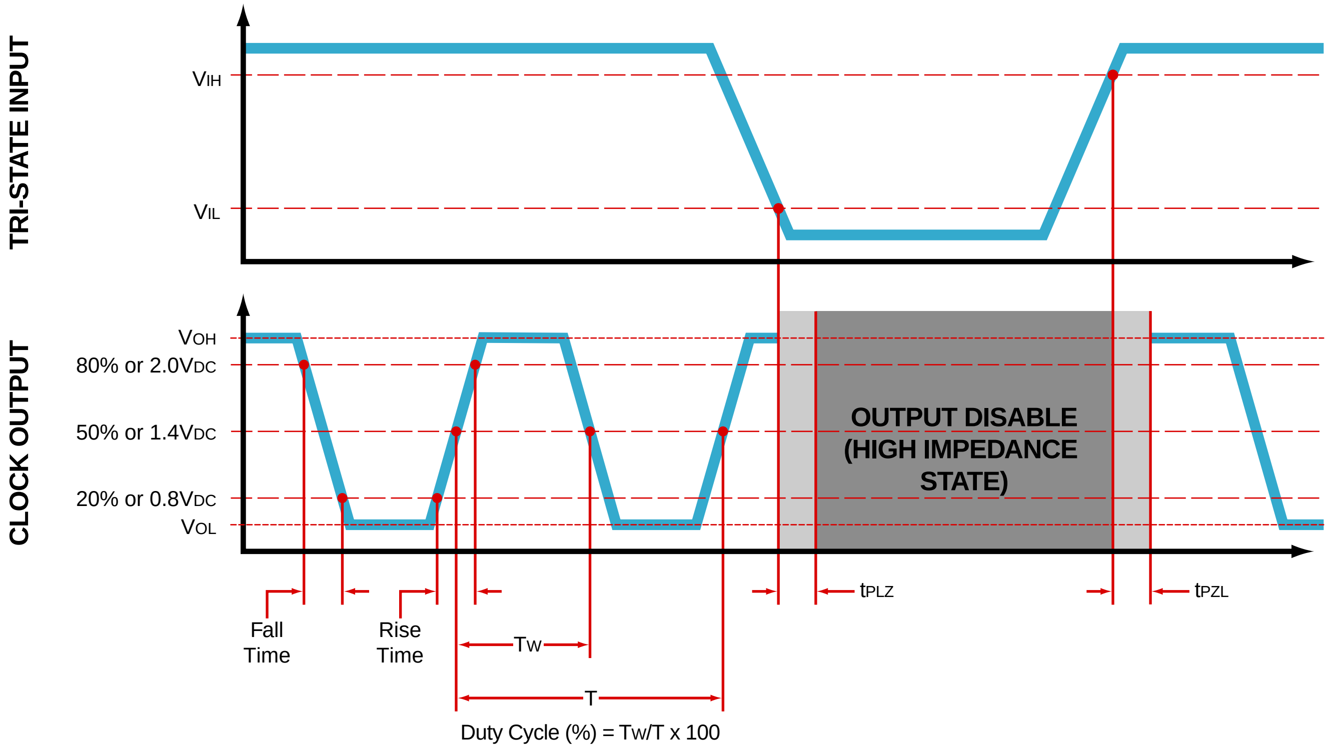
MECHANICAL DIMENSIONS (all dimensions in millimeters)



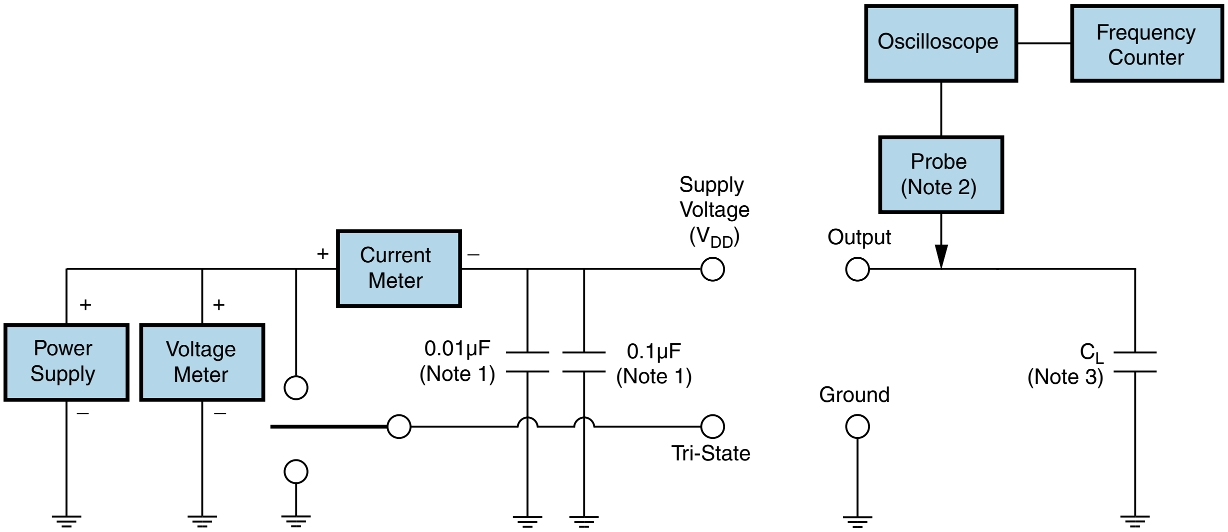
PIN	CONNECTION
1	Tri-State (High Impedance)
7	Ground/Case Ground
8	Output
14	Supply Voltage

LINE	MARKING
1	**ECLIPTEK**
2	**40.960M**
3	**XXXXX** *XXXXX=Ecliptek Manufacturing Identifier*

OUTPUT WAVEFORM & TIMING DIAGRAM



Test Circuit for CMOS Output

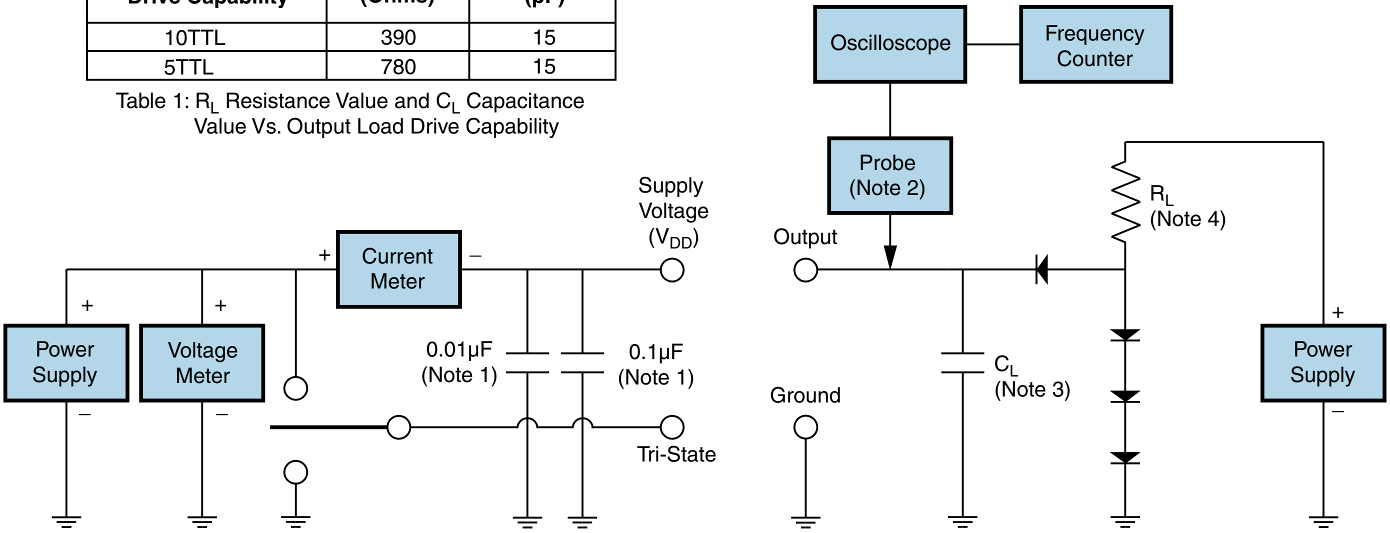


Note 1: An external 0.01µF ceramic bypass capacitor in parallel with a 0.1µF high frequency ceramic bypass capacitor close (less than 2mm) to the package ground and supply voltage pin is required.
Note 2: A low capacitance (<12pF), 10X attenuation factor, high impedance (>10Mohms), and high bandwidth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

Test Circuit for TTL Output

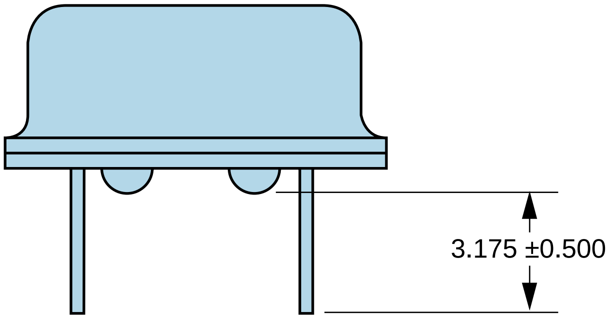
Output Load Drive Capability	R_L Value (Ohms)	C_L Value (pF)
10TTL	390	15
5TTL	780	15

Table 1: R_L Resistance Value and C_L Capacitance Value Vs. Output Load Drive Capability



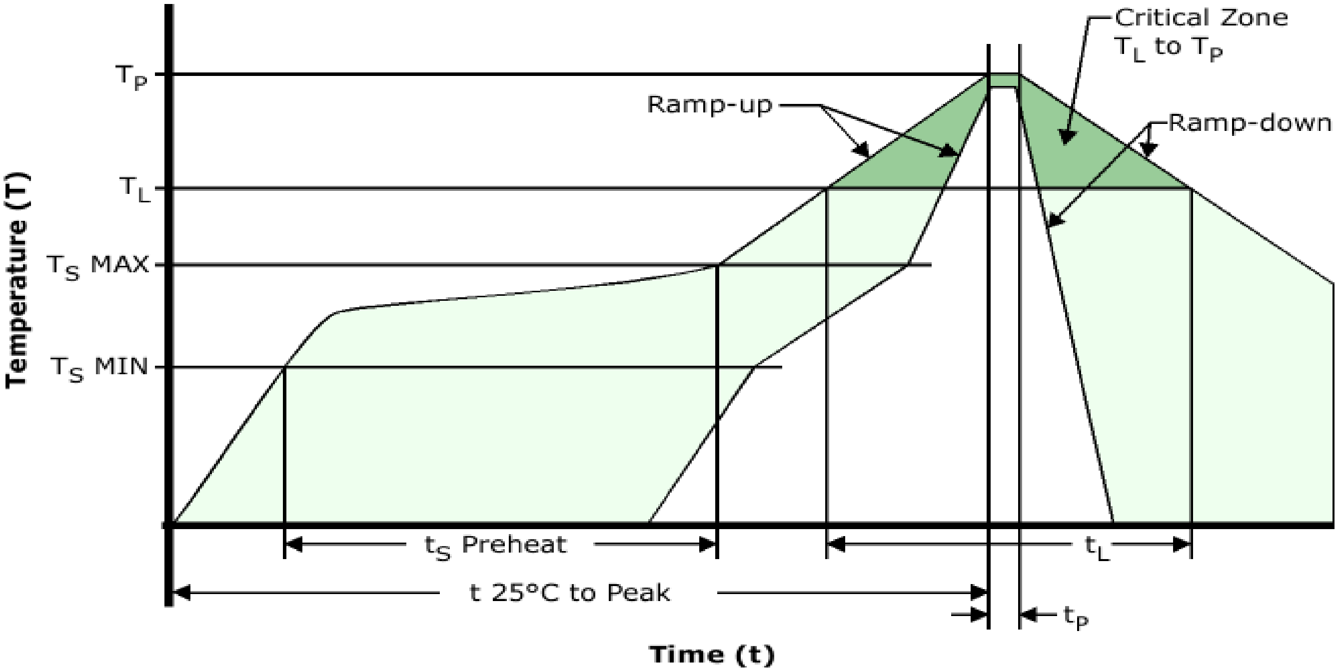
Note 1: An external 0.01µF ceramic bypass capacitor in parallel with a 0.1µF high frequency ceramic bypass capacitor close (less than 2mm) to the package ground and supply voltage pin is required.
Note 2: A low capacitance (<12pF), 10X attenuation factor, high impedance (>10Mohms), and high bandwidth (>300MHz) passive probe is recommended.
Note 3: Capacitance value C_L includes sum of all probe and fixture capacitance.
Note 4: Resistance value R_L is shown in Table 1. See applicable specification sheet for 'Load Drive Capability'.
Note 5: All diodes are MMBD7000, MMBD914, or equivalent.

Value Added Option - Cut Leads



All dimensions are in millimeters

Recommended Solder Reflow Methods



High Temperature Solder Bath (Wave Solder)

T_S MAX to T_L (Ramp-up Rate)	3°C/Second Maximum
Preheat **- Temperature Minimum (T_S MIN)** **- Temperature Typical (T_S TYP)** **- Temperature Maximum (T_S MAX)** **- Time (t_S MIN)**	 150°C 175°C 200°C 60 - 180 Seconds
Ramp-up Rate (T_L to T_P)	3°C/Second Maximum
Time Maintained Above: **- Temperature (T_L)** **- Time (t_L)**	 217°C 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 back of PCB board and device leads only. Do not use this method for product with the Gull Wing option.

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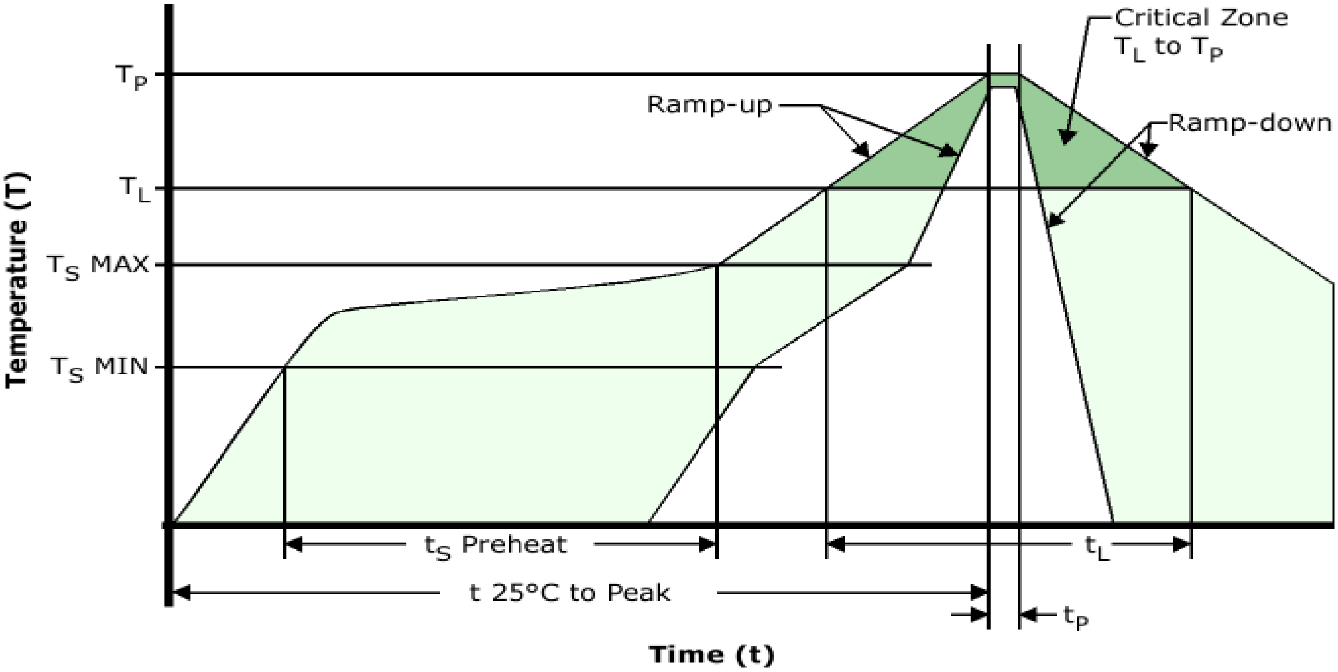
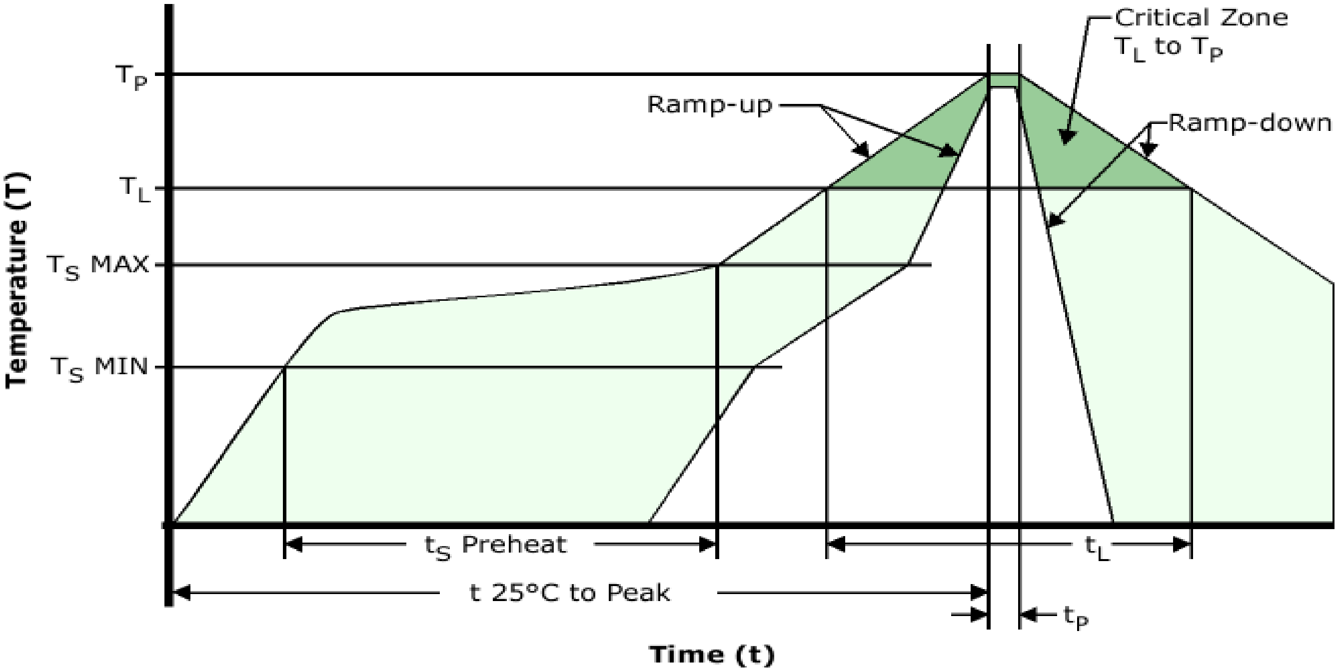
Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 185°C

T_S MAX to T_L (Ramp-up Rate)	5°C/Second Maximum
Preheat **- Temperature Minimum (T_S MIN)** **- Temperature Typical (T_S TYP)** **- Temperature Maximum (T_S MAX)** **- Time (t_S MIN)**	 N/A 150°C N/A 60 - 120 Seconds
Ramp-up Rate (T_L to T_P)	5°C/Second Maximum
Time Maintained Above: **- Temperature (T_L)** **- Time (t_L)**	 150°C 200 Seconds Maximum
Peak Temperature (T_P)	185°C Maximum
Target Peak Temperature (T_P Target)	185°C Maximum 2 Times
Time within 5°C of actual peak (t_p)	10 Seconds Maximum 2 Times
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. Use this method only for product with the Gull Wing option.

Recommended Solder Reflow Methods



Low Temperature Solder Bath (Wave Solder)

T_S MAX to T_L (Ramp-up Rate)	5°C/Second Maximum
Preheat **- Temperature Minimum (T_S MIN)** **- Temperature Typical (T_S TYP)** **- Temperature Maximum (T_S MAX)** **- Time (t_S MIN)**	 N/A 150°C N/A 30 - 60 Seconds
Ramp-up Rate (T_L to T_P)	5°C/Second Maximum
Time Maintained Above: **- Temperature (T_L)** **- Time (t_L)**	 150°C 200 Seconds Maximum
Peak Temperature (T_P)	245°C Maximum
Target Peak Temperature (T_P Target)	245°C Maximum 1 Time / 235°C Maximum 2 Times
Time within 5°C of actual peak (t_p)	5 Seconds Maximum 1 Time / 15 Seconds Maximum 2 Times
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 back of PCB board and device leads only. Do not use this method for product with the Gull Wing option.

Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum. (Temperatures listed are applied to device leads only. This method can be utilized with both Gull Wing and Non-Gull Wing devices.)

High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum. (Temperatures listed are applied to device leads only. This method can be utilized with both Gull Wing and Non-Gull Wing devices.)

Mouser Electronics

Authorized Distributor

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Ecliptek:

- EHF1145ETTTS-40.960M-CC

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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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