

REGULATORY COMPLIANCE



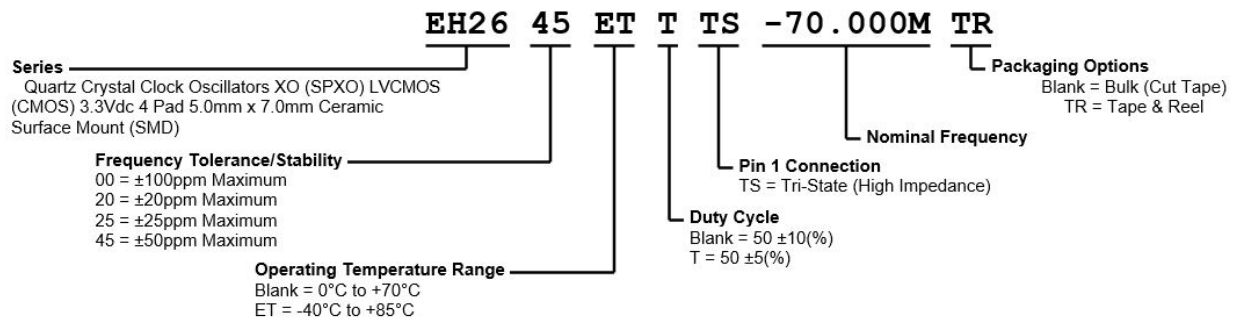
ITEM DESCRIPTION

Quartz Crystal Clock Oscillators XO (SPXO) LVCMOS (CMOS) 3.3Vdc 4 Pad 5.0mm x 7.0mm Ceramic Surface Mount (SMD)

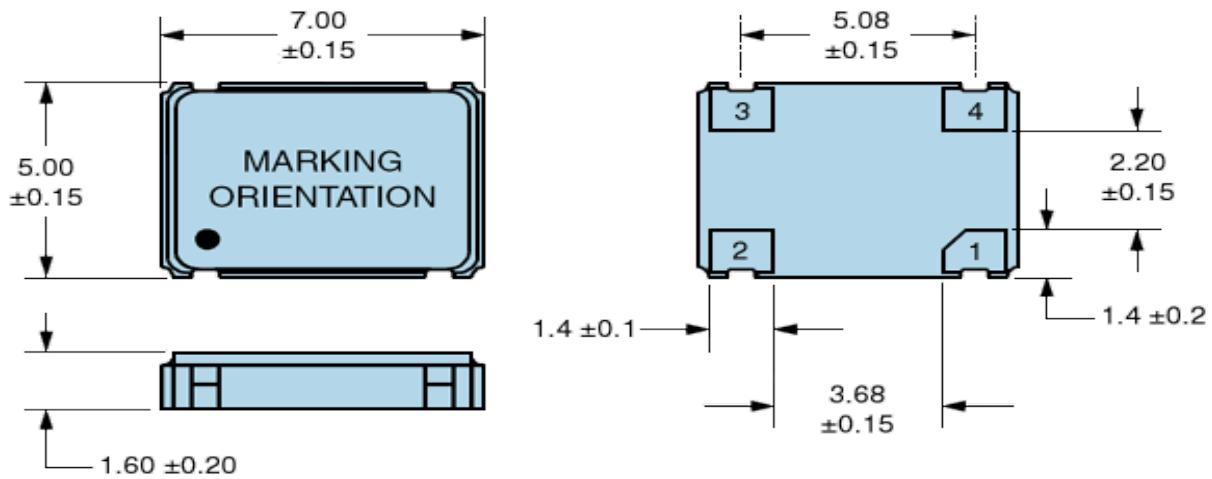
ELECTRICAL SPECIFICATIONS

Nominal Frequency	1MHz to 155.52MHz
Frequency Tolerance/Stability	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 ±100ppm Maximum ±20ppm Maximum ±25ppm Maximum ±50ppm Maximum
Aging at 25°C	±5ppm/year Maximum
Operating Temperature Range	0°C to +70°C -40°C to +85°C
Supply Voltage	3.3Vdc ±10%
Input Current	No Load 35mA Maximum
Output Voltage Logic High (V_{OH})	I _{OH} = -8mA 2.7Vdc Minimum
Output Voltage Logic Low (V_{OL})	I _{OL} = +8mA 0.5Vdc Maximum
Rise/Fall Time	Measured at 20% to 80% of waveform 6nSec Maximum over Nominal Frequency of 1MHz to 70MHz 4nSec Maximum over Nominal Frequency of 70.000001MHz to 155.52MHz
Duty Cycle	Measured at 50% of waveform 50 ±10(%) 50 ±5(%)
Load Drive Capability	30pF Maximum over Nominal Frequency of 1MHz to 70MHz 15pF Maximum over Nominal Frequency of 70.000001MHz to 155.52MHz
Output Logic Type	CMOS
Pin 1 Connection	Tri-State (High Impedance)
Tri-State Input Voltage (V_{IH} and V_{IL})	70% of V _{dd} Minimum to enable output, 20% of V _{dd} Maximum to disable output, No Connect to enable output.
Absolute Clock Jitter	±250pSec Maximum, ±100pSec Typical
One Sigma Clock Period Jitter	±50pSec Maximum, ±40pSec Typical
Start Up Time	10mSec Maximum
Storage Temperature Range	-55°C to +125°C

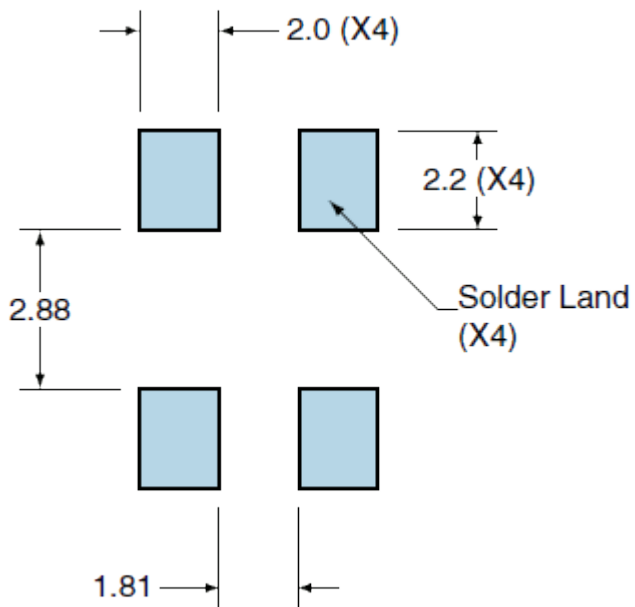
PART NUMBERING GUIDE



MECHANICAL DIMENSIONS



SUGGESTED SOLDER PAD LAYOUT

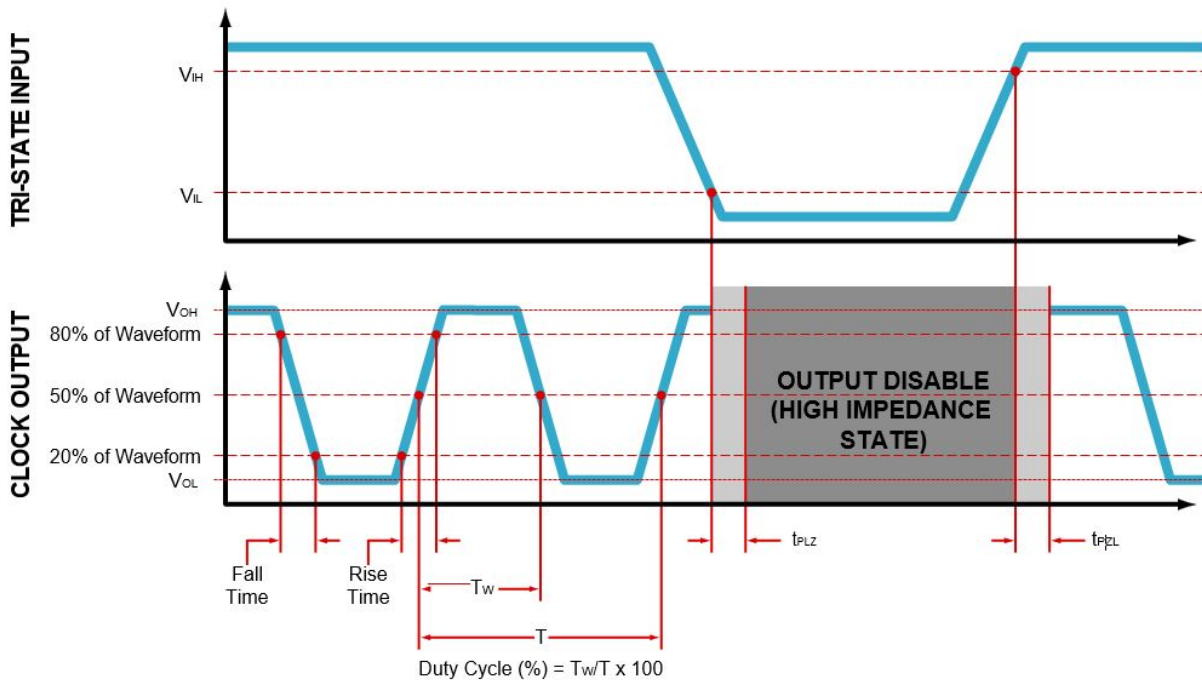


PIN	CONNECTION
1	Tri-State
2	Ground
3	Output
4	Supply Voltage

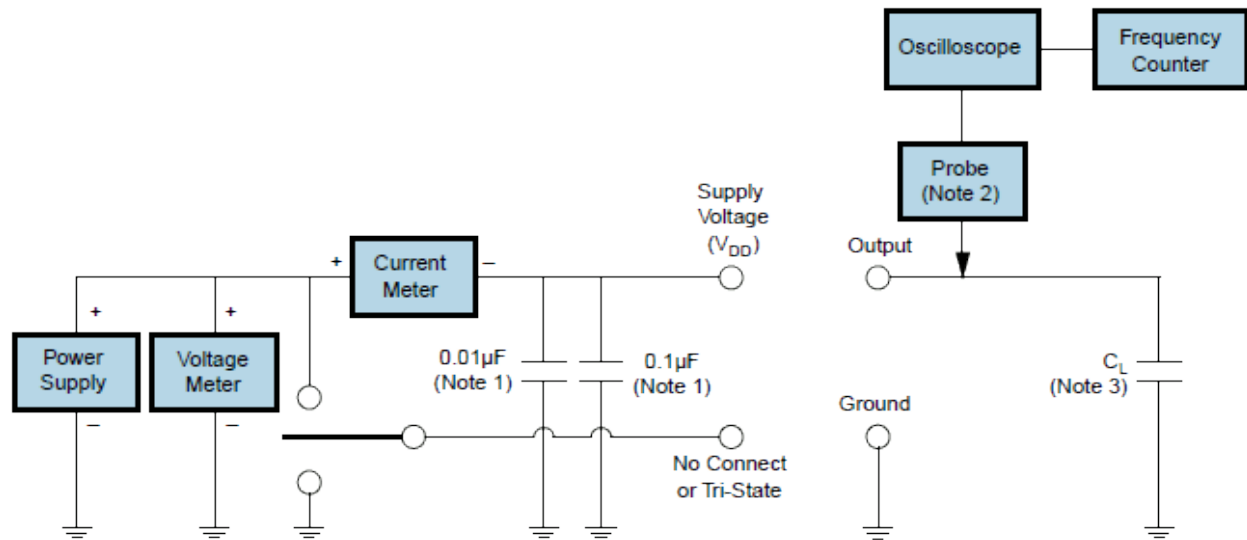
All Tolerances are ± 0.1

All Dimensions in Millimeters

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.

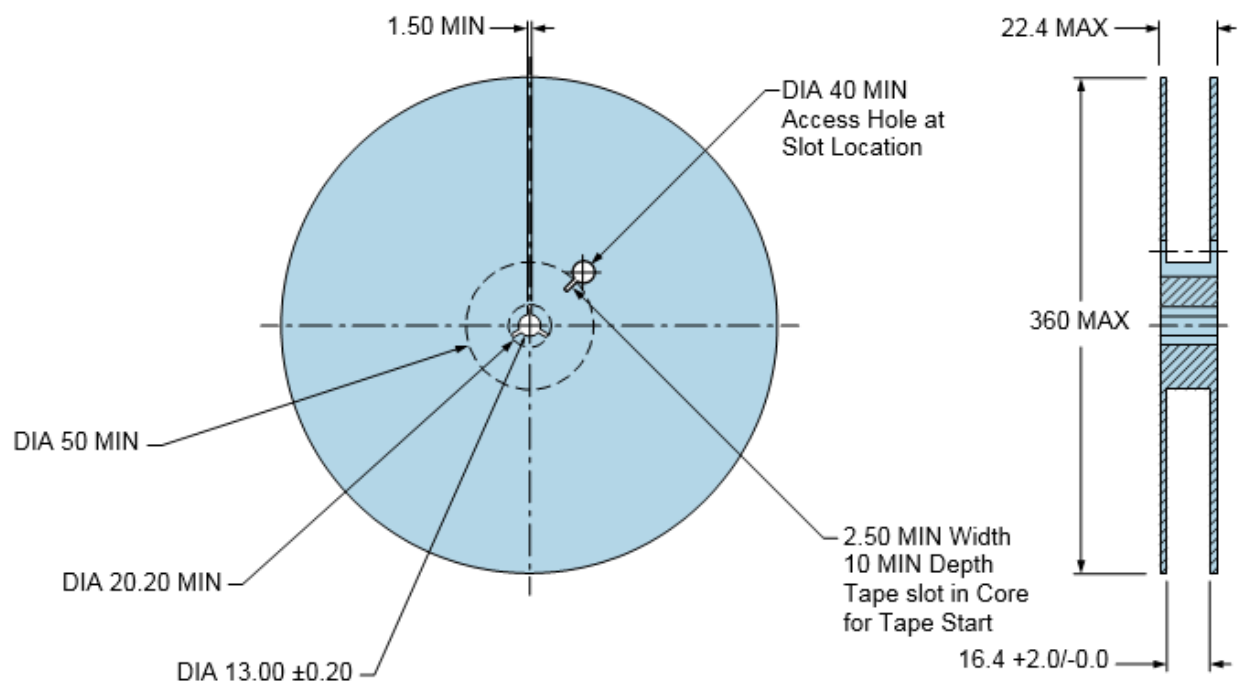
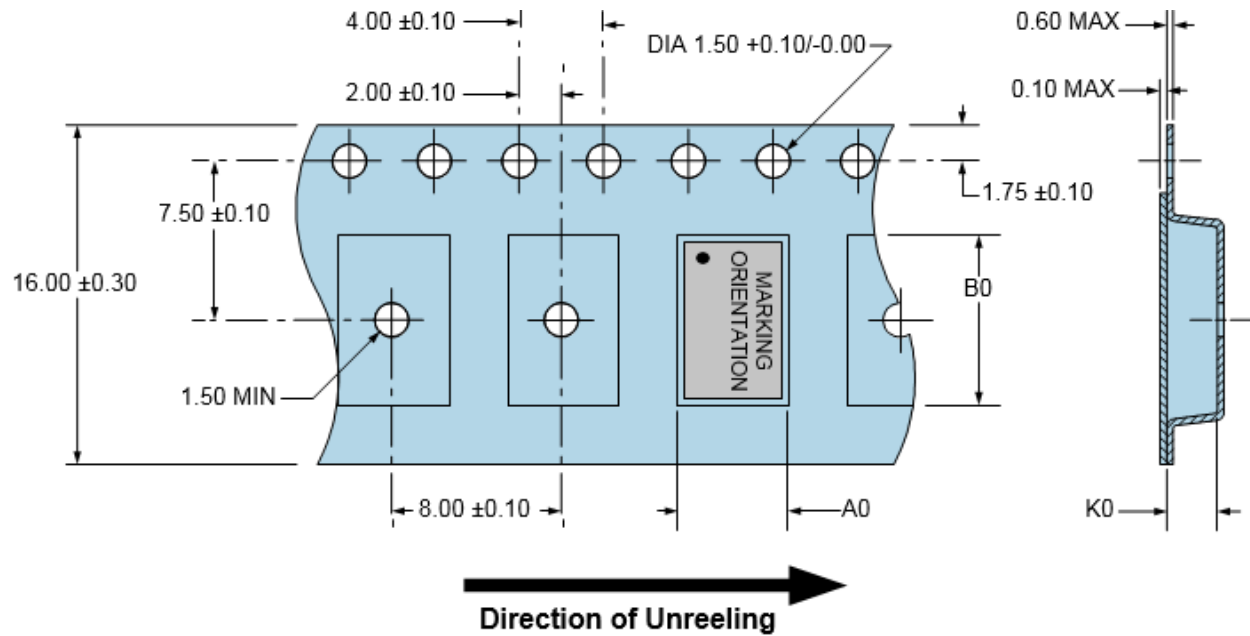
Note 3: Capacitance value C_L includes sum of all probe and fixture capacitance.

TAPE & REEL DIMENSIONS

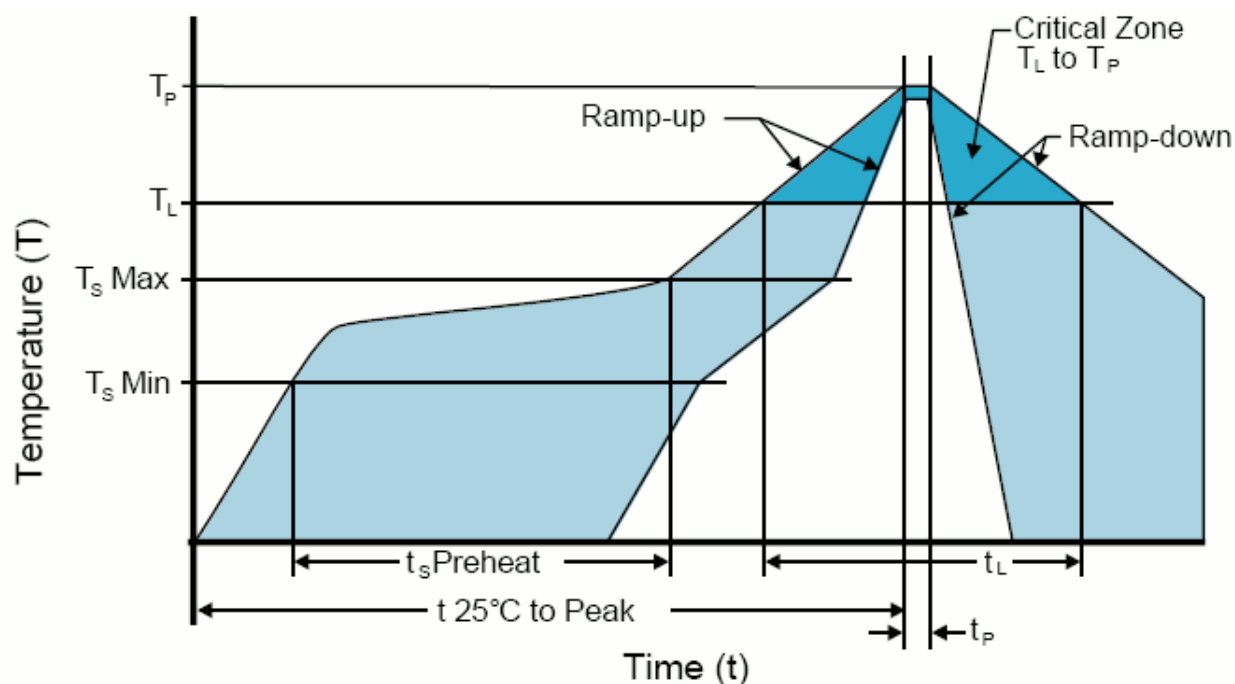
Quantity per Reel: 1,000 Units

All Dimensions in Millimeters

Compliant to EIA-481



RECOMMENDED SOLDER REFLOW METHOD



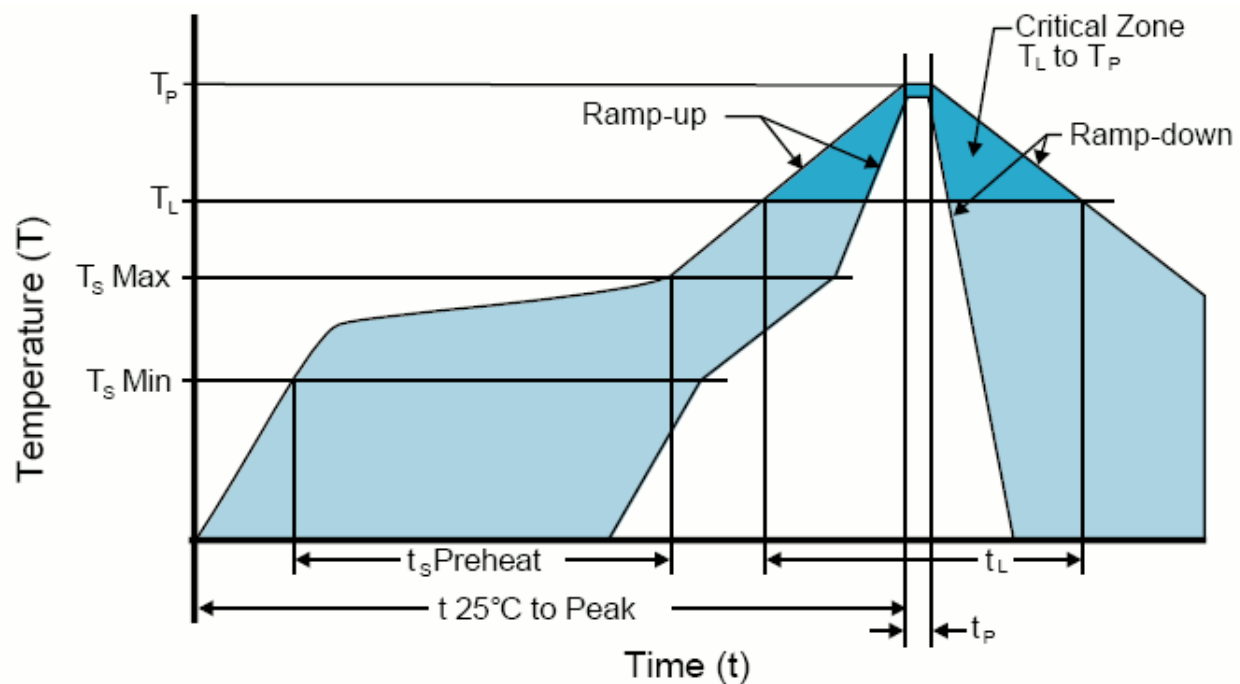
HIGH TEMPERATURE INFRARED/CONVECTION

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.

High Temperature Manual Soldering

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

RECOMMENDED SOLDER REFLOW METHOD

LOW TEMPERATURE INFRARED/CONVECTION 240°C

TS MAX to TL (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 (TL to TP)	5°C/Second Maximum
Time Maintained Above:	
- Temperature (T_L)	150°C
- Time (t_L)	200Seconds Maximum
Peak Temperature (TP)	240°C
Target Peak Temperature(TP Target)	240°C Maximum 2 Times/230°C Maximum 1Time
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.)

Mouser Electronics

Authorized Distributor

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[EH2645ETTTTS-95.8464M](#)