

REGULATORY COMPLIANCE



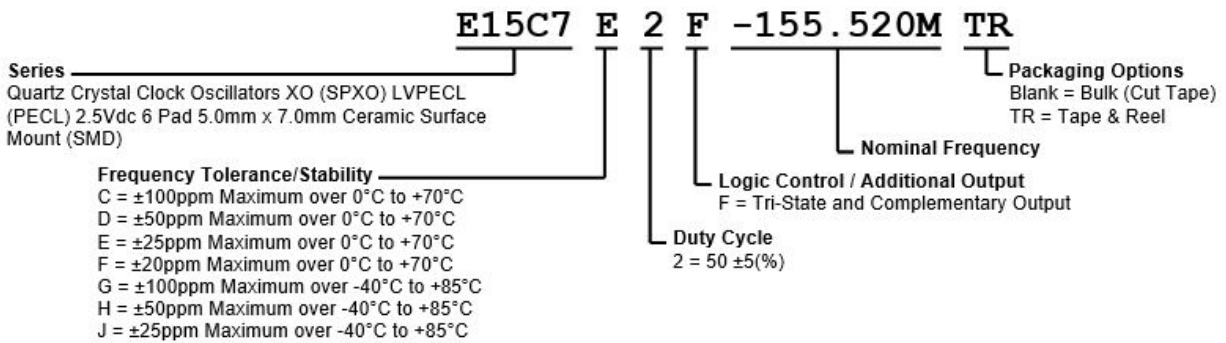
ITEM DESCRIPTION

Quartz Crystal Clock Oscillators XO (SPXO) LVPECL (PECL) 2.5Vdc 6 Pad 5.0mm x 7.0mm Ceramic Surface Mount (SMD)

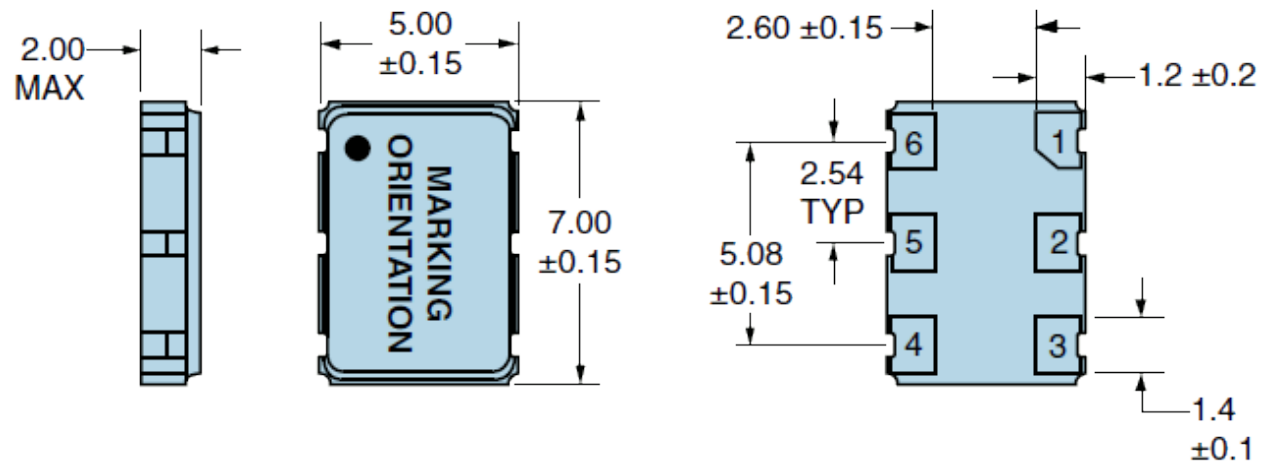
ELECTRICAL SPECIFICATIONS

Nominal Frequency	62.5MHz to 250MHz
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 $\pm 100\text{ppm}$ Maximum over 0°C to +70°C $\pm 50\text{ppm}$ Maximum over 0°C to +70°C $\pm 25\text{ppm}$ Maximum over 0°C to +70°C $\pm 20\text{ppm}$ Maximum over 0°C to +70°C $\pm 100\text{ppm}$ Maximum over -40°C to +85°C $\pm 50\text{ppm}$ Maximum over -40°C to +85°C $\pm 25\text{ppm}$ Maximum over -40°C to +85°C
Supply Voltage	2.5Vdc $\pm 5\%$
Input Current	75mA Maximum over Nominal Frequency of 62.5MHz to 159.999999MHz 100mA Maximum over Nominal Frequency of 160MHz to 250MHz
Output Voltage Logic High (V_{OH})	Vdd-1.025Vdc Minimum, 1.55Vdc Typical, Vdd-0.88Vdc Maximum at Frequency Tolerance/Stability of $\pm 100\text{ppm}$
Output Voltage Logic Low (V_{OL})	Vdd-1.81Vdc Minimum, 0.80Vdc Typical, Vdd-1.62Vdc Maximum at Frequency Tolerance/Stability of $\pm 100\text{ppm}$
Rise/Fall Time	Measured at 20% to 80% of Waveform 300pSec Typical, 700pSec Maximum
Duty Cycle	Measured at 50% of Waveform 50 $\pm 5\%$
Load Drive Capability	50 Ohms into Vdd-2.0Vdc
Output Logic Type	LVPECL
Phase Noise	All Values are Typical -60dBc/Hz at 10Hz Offset, -95dBc/Hz at 100Hz Offset, -125dBc/Hz at 1kHz Offset, -143dBc/Hz at 10kHz Offset, -145dBc/Hz at 100kHz Offset, -145dBc/Hz at 1MHz Offset, -146dBc/Hz at 10MHz Offset
Logic Control / Additional Output	Tri-State and Complementary Output
Tri-State Input Voltage (V_{IH} and V_{IL})	V_{IH} of 70% of Vdd Minimum or No Connect to Enable Output and Complementary Output, V_{IL} of 30% of Vdd Maximum to Disable High Impedance Output and Complementary Output
Standby Current	Without Load 30 μ A Maximum
RMS Phase Jitter	Fj=12kHz to 20MHz; Random 0.4pSec Typical, 1pSec Maximum
Start Up Time	10mSec Maximum
Storage Temperature Range	-55°C to +125°C

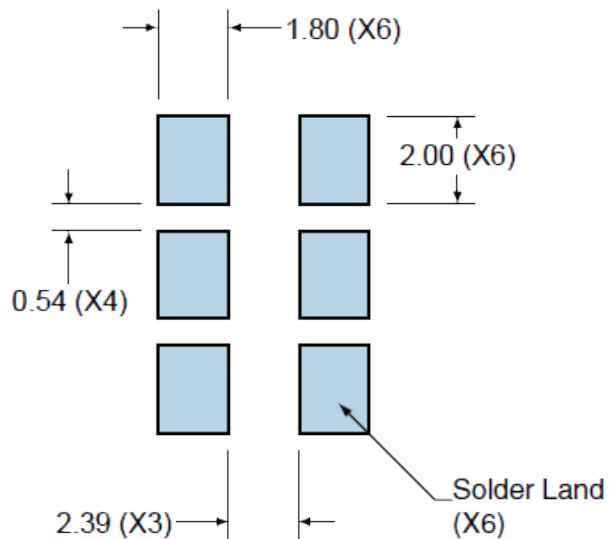
PART NUMBERING GUIDE



MECHANICAL DIMENSIONS



SUGGESTED SOLDER PAD LAYOUT

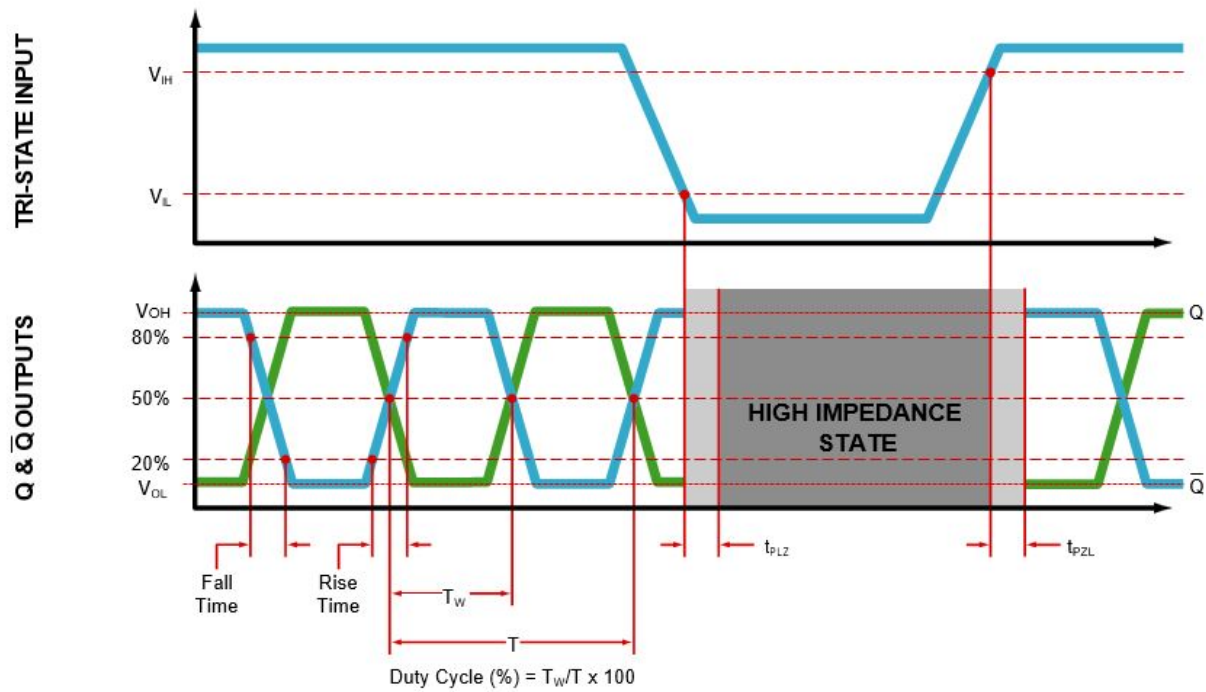


PIN	CONNECTION
1	Tri-State
2	No connect
3	Case/Ground
4	Output
5	Complementary Output
6	Supply Voltage

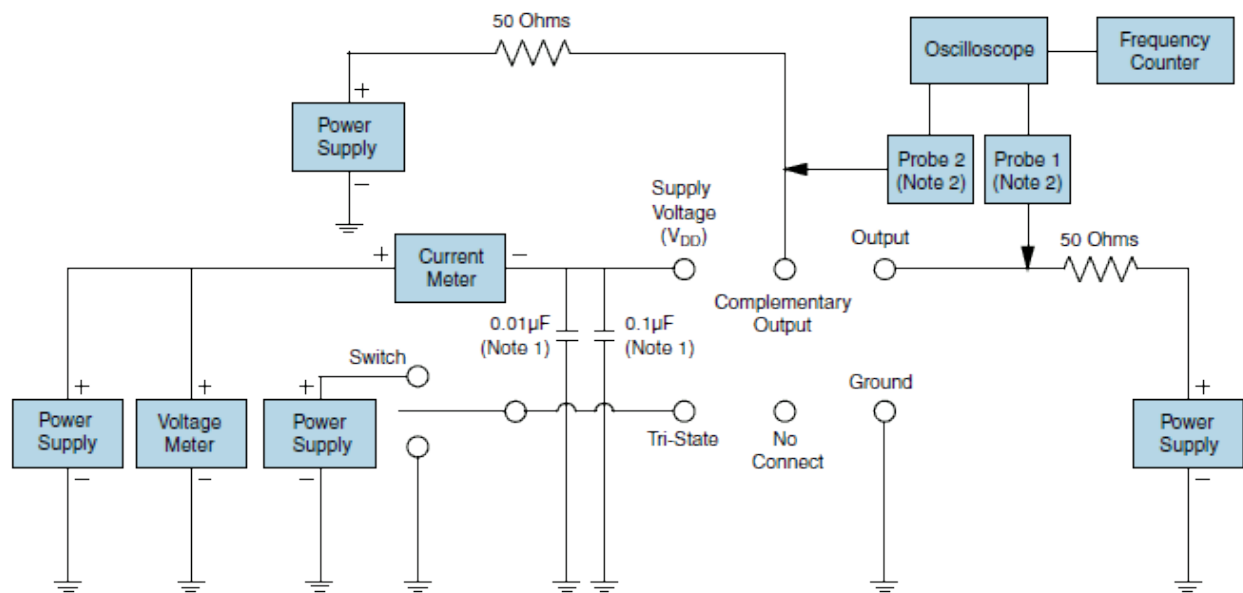
All Tolerances are ± 0.1

All Dimensions in Millimeters

OUTPUT WAVEFORM & TIMING DIAGRAM



TEST CIRCUIT FOR TRI-STATE AND COMPLEMENTARY 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 to (Less than 2mm) the package ground and supply voltage pin is required.

Note 2: A low capacitance ($<12\text{pF}$), 10X attenuation factor, high impedance ($>10\text{Mohms}$), and high bandwidth ($>500\text{MHz}$) passive Probe is recommended.

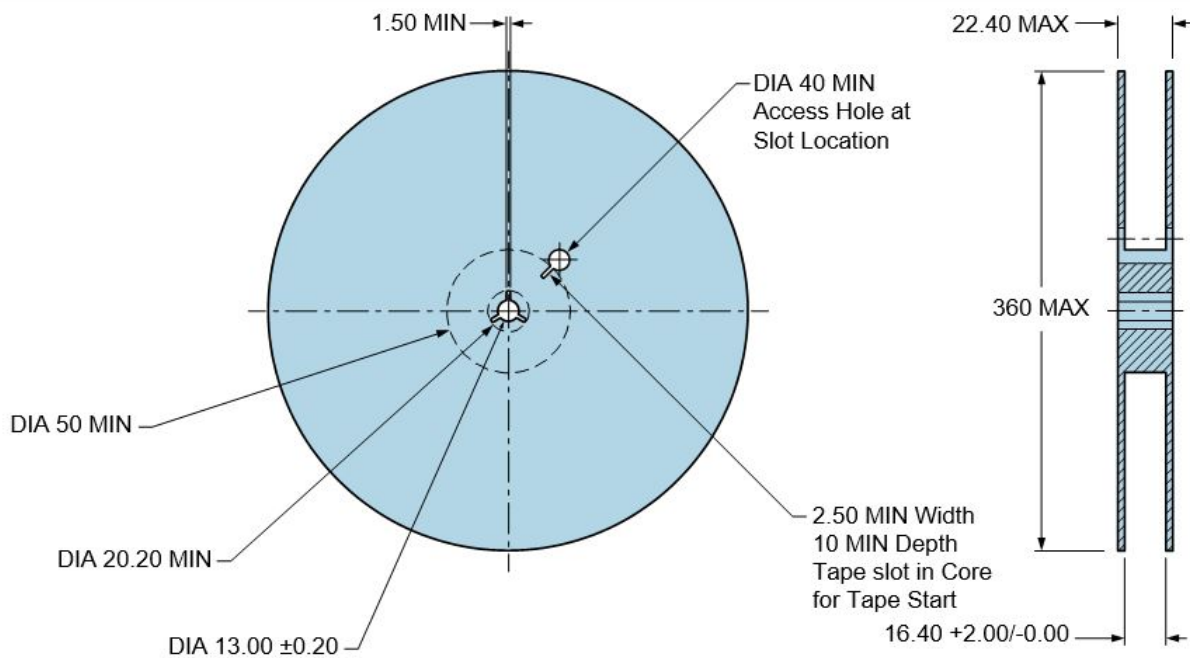
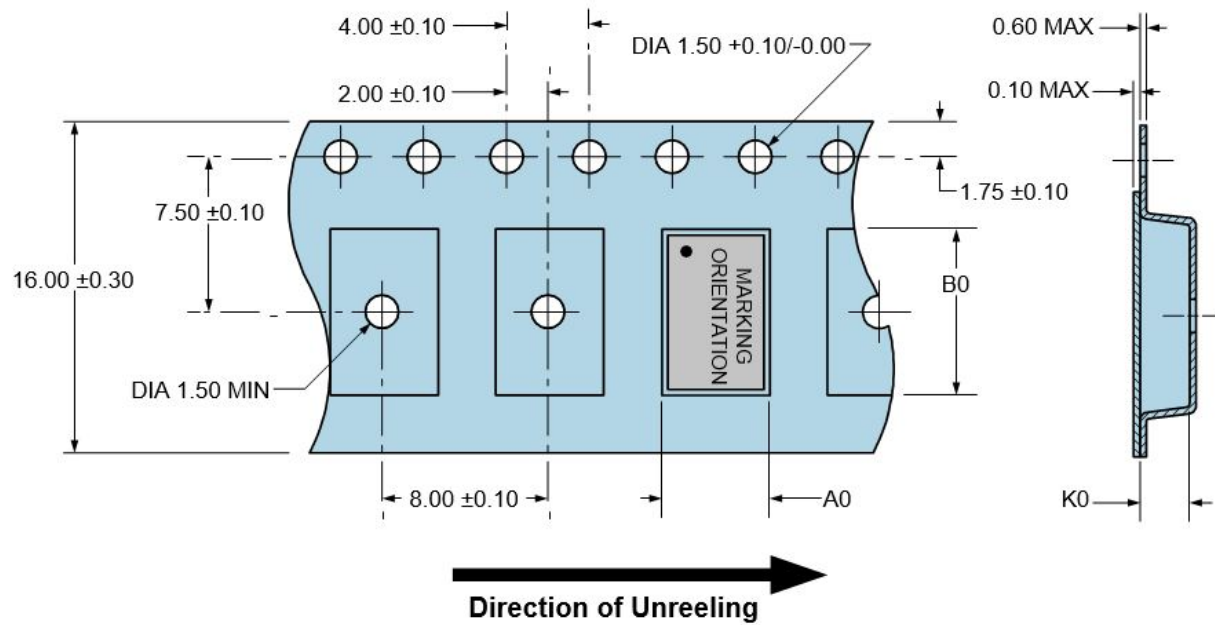
Note 3: Test circuit PCB traces need to be designed for a characteristic line impedance of 50 ohms.

TAPE & REEL DIMENSIONS

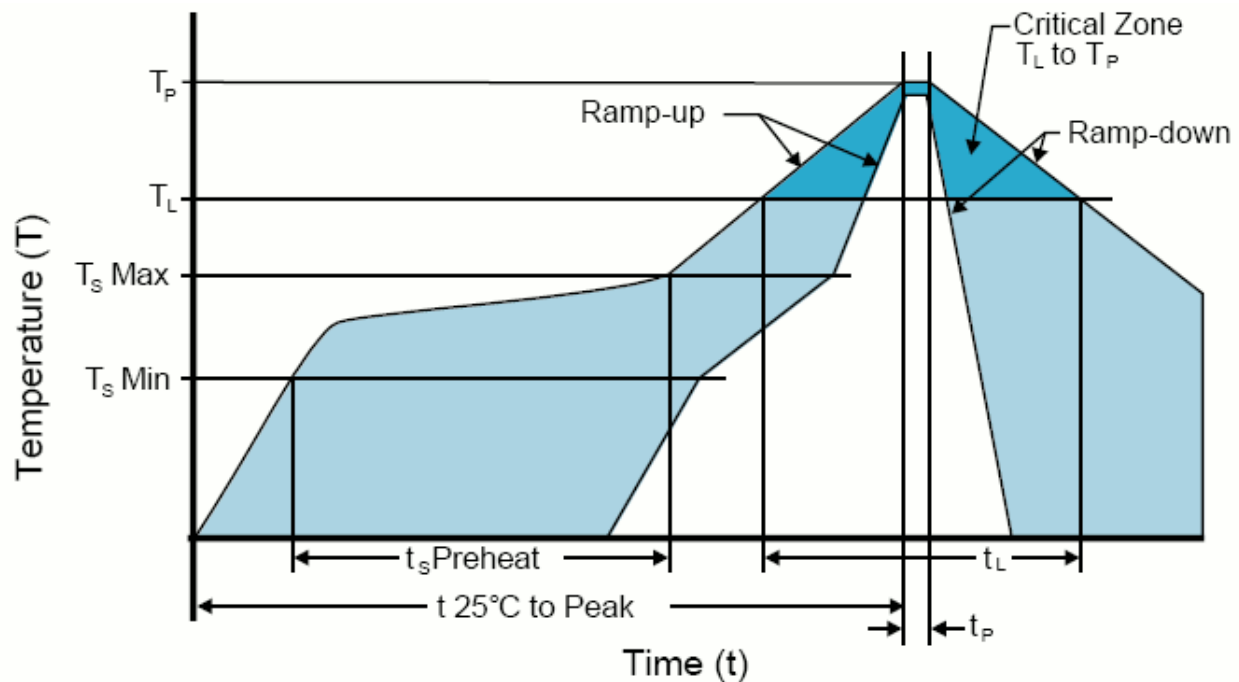
Quantity per Reel: 1,000 Units

All Dimensions in Millimeters

Compliant to EIA-481



RECOMMENDED SOLDER REFLOW METHOD



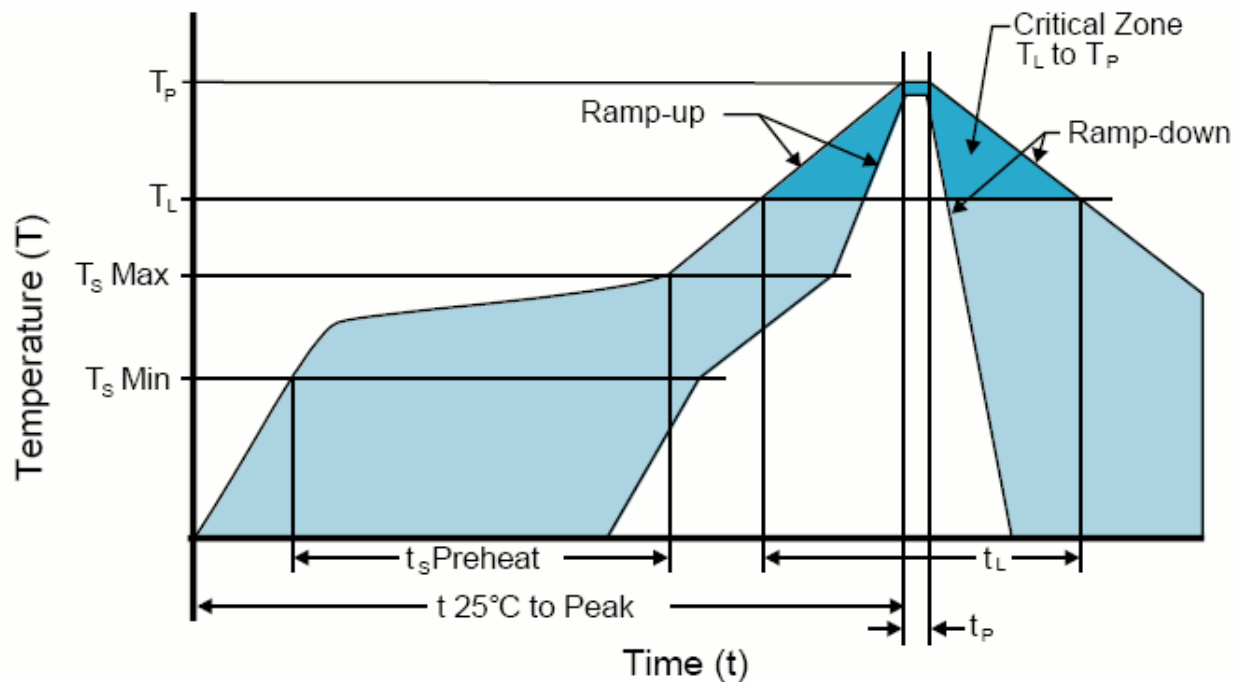
HIGH TEMPERATURE INFRARED/CONVECTION

T _s 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)	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.

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

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)	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)	240°C Maximum
Target Peak Temperature (T_P Target)	240°C Maximum 2 Times / 230°C Maximum 1 Time
Time within 5°C of actual peak (t_P)	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.)

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