

E1SPA12-25.00187M TR

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

REGULATORY COMPLIANCE (Data Sheet downloaded on Dec 11, 2015)


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ITEM DESCRIPTION

Quartz Crystal Resonator HC49/UP Short 2 Pad Surface Mount (SMD) 3.2mm Height Metal Resistance Weld Seal 25.00187MHz ± 10 ppm at 25°C, ± 15 ppm over -20°C to +70°C 12pF Parallel Resonant

ELECTRICAL SPECIFICATIONS

Nominal Frequency	25.00187MHz
Frequency Tolerance/Stability	± 10 ppm at 25°C, ± 15 ppm over -20°C to +70°C
Aging at 25°C	± 5 ppm/year Maximum
Load Capacitance	12pF Parallel Resonant
Shunt Capacitance	7pF Maximum
Equivalent Series Resistance	40 Ohms Maximum
Mode of Operation	AT-Cut Fundamental
Drive Level	1mWatt Maximum
Storage Temperature Range	-55°C to +125°C
Insulation Resistance	500 Megaohms Minimum (Measured at 100Vdc)

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-202, Method 213, Condition C
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	J-STD-020, MSL1
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

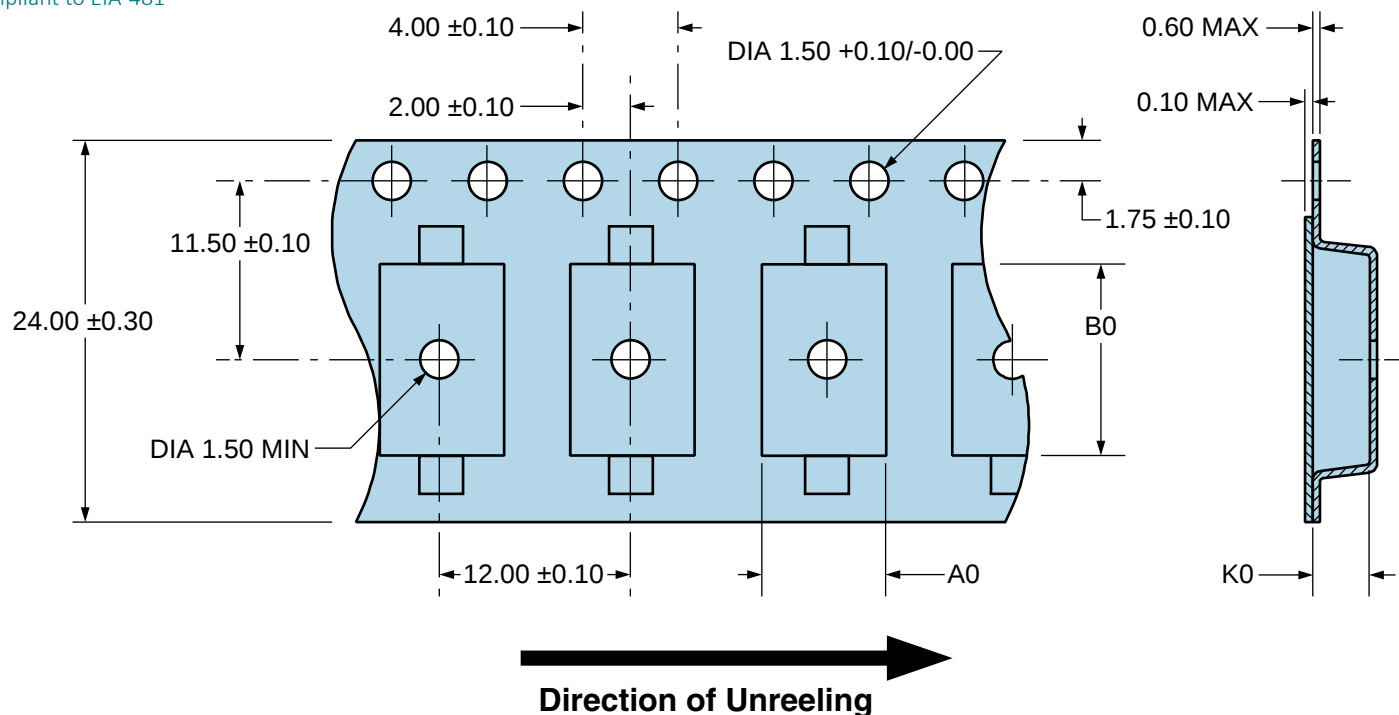
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Tape & Reel Dimensions

Quantity Per Reel: 1,000 units

All Dimensions in Millimeters

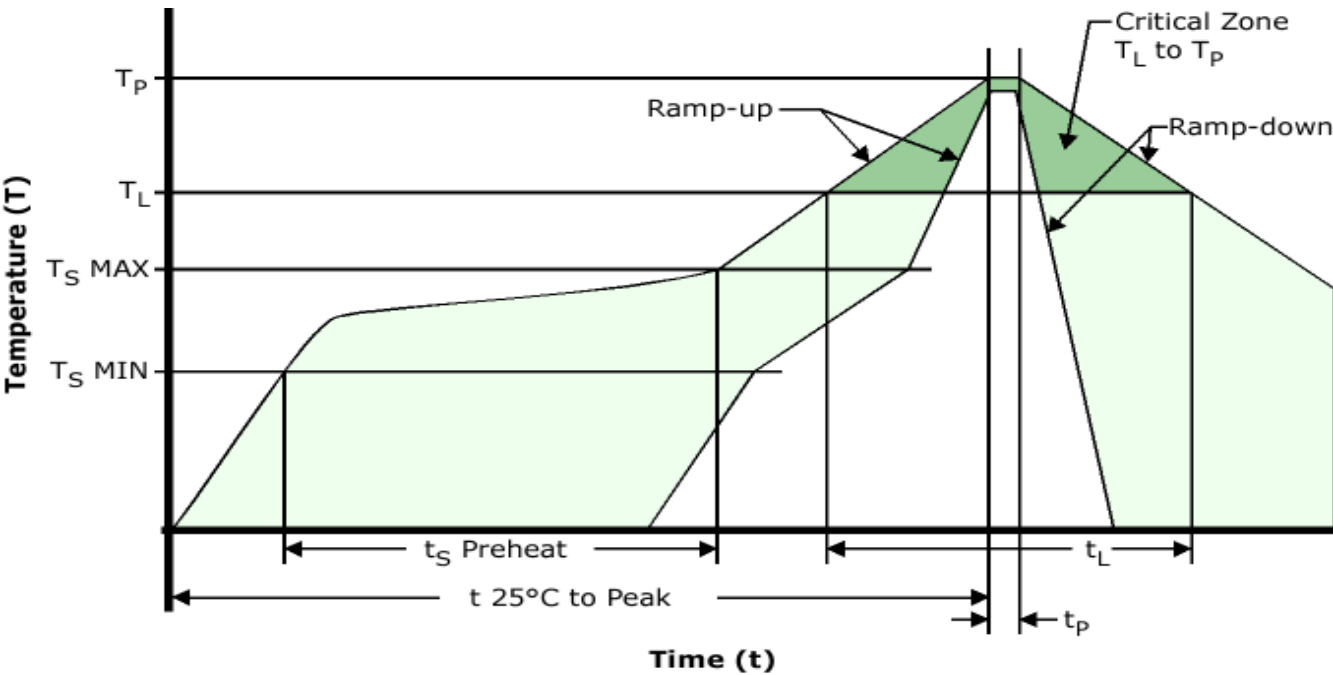
Compliant to EIA-481



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Recommended Solder Reflow Methods



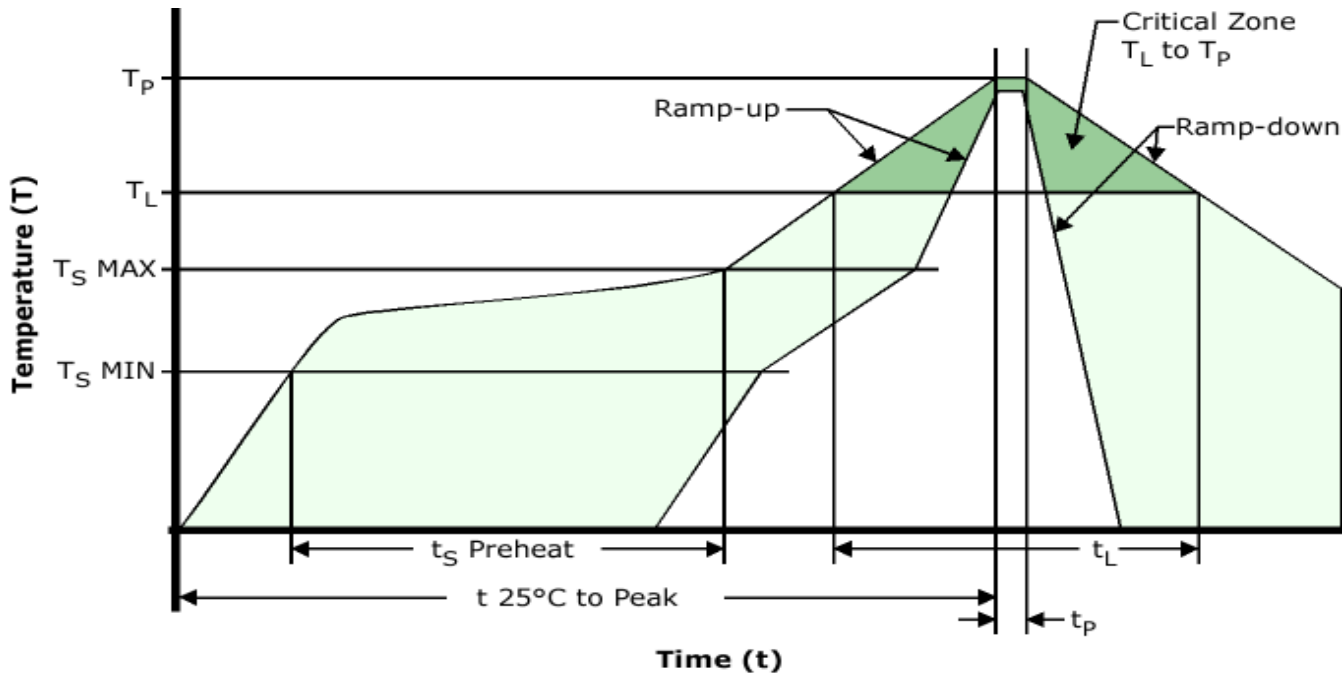
High Temperature Infrared/Convection

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

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Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 245°C

T _S MAX to T _L (Ramp-up Rate)	5°C/Second Maximum
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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)	30 - 60 Seconds

Ramp-up Rate (T _L to T _P)	5°C/Second Maximum
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Time Maintained Above:

- Temperature (T _L)	150°C
- Time (t _L)	200 Seconds Maximum

Peak Temperature (T _P)	245°C Maximum
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Target Peak Temperature (T _P Target)	245°C Maximum 2 Times / 230°C Maximum 1 Time
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Time within 5°C of actual peak (t _p)	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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Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum.

High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum.