REGULATORY COMPLIANCE

Lead Free COMPLIANT | EU RoHS 2011/65 + 2015/863 COMPLIANT | China RoHS COMPLIANT | REACH SVHC COMPLIANT | DRC CONFLICT FREE

ITEM DESCRIPTION

Quartz Crystal Resonator HC49/UP Short 2 Pad Surface Mount (SMD) 3.2mm Height Metal Resistance Weld Seal

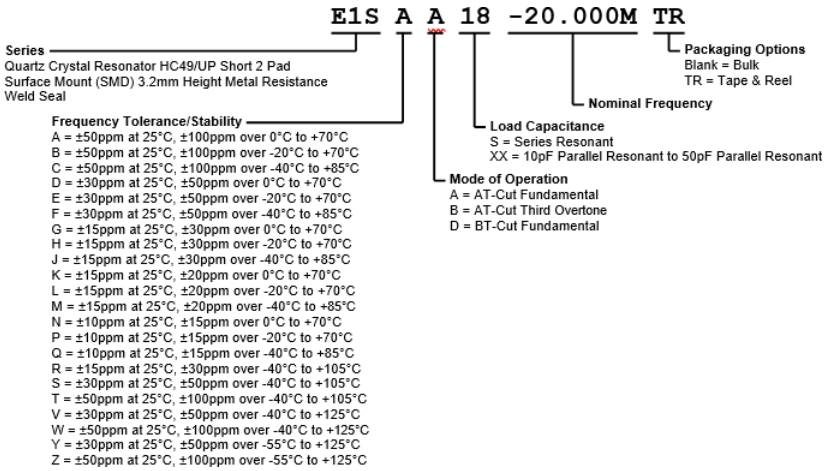
ELECTRICAL SPECIFICATIONS

Nominal Frequency	3.579545MHz to 50MHz
Frequency Tolerance/Stability	±50ppm at 25°C, ±100ppm over 0°C to +70°C ±50ppm at 25°C, ±100ppm over -20°C to +70°C ±50ppm at 25°C, ±100ppm over -40°C to +85°C ±30ppm at 25°C, ±50ppm over 0°C to +70°C ±30ppm at 25°C, ±50ppm over -20°C to +70°C ±30ppm at 25°C, ±50ppm over -40°C to +85°C ±15ppm at 25°C, ±30ppm over 0°C to +70°C ±15ppm at 25°C, ±30ppm over -20°C to +70°C ±15ppm at 25°C, ±30ppm over -40°C to +85°C ±15ppm at 25°C, ±20ppm over 0°C to +70°C ±15ppm at 25°C, ±20ppm over -20°C to +70°C ±15ppm at 25°C, ±20ppm over -40°C to +85°C ±10ppm at 25°C, ±15ppm over 0°C to +70°C ±10ppm at 25°C, ±15ppm over -20°C to +70°C ±10ppm at 25°C, ±15ppm over -40°C to +85°C ±15ppm at 25°C, ±30ppm over -40°C to +105°C ±30ppm at 25°C, ±50ppm over -40°C to +105°C ±50ppm at 25°C, ±100ppm over -40°C to +105°C ±30ppm at 25°C, ±50ppm over -40°C to +125°C ±50ppm at 25°C, ±100ppm over -40°C to +125°C ±30ppm at 25°C, ±50ppm over -55°C to +125°C ±50ppm at 25°C, ±100ppm over -55°C to +125°C
Aging at 25°C	±5ppm/year Maximum
Load Capacitance	Series Resonant, 10pF Parallel Resonant to 50pF Parallel Resonant
Shunt Capacitance	7pF Maximum
Equivalent Series Resistance	See the Equivalent Series Resistance (ESR), Mode of Operation, and Crystal Cut Table Below
Mode of Operation	AT-Cut Fundamental (Only available over Nominal Frequency range of 3.579545MHz to 30MHz) AT-Cut Third Overtone (Only available over Nominal Frequency range of 24.576MHz to 50MHz) BT-Cut Fundamental (Only available with Frequency Tolerance/Stability of ±50ppm at 25°C, ±100ppm over 0°C to +70°C; Only available over Nominal Frequency range of 24MHz to 40MHz)
Drive Level	1mWatt Maximum
Storage Temperature Range	-55°C to +125°C
Insulation Resistance	500 Megaohms Minimum (Measured at 100Vdc)

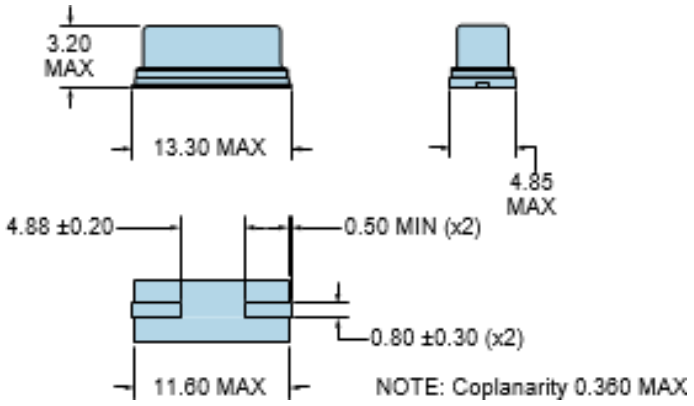
EQUIVALENT SERIES RESISTANCE (ESR), MODE OF OPERATION AND CRYSTAL CUT

Frequency Range	ESR (Ohms Max)	Mode	Frequency Range	ESR (Ohms Max)	Mode
3.579545MHz to 4.999999MHz	200	AT-Cut Fundamental	15MHz to 15.999999MHz	60	AT-Cut Fundamental
5MHz to 5.999999MHz	150	AT-Cut Fundamental	16MHz to 23.999999MHz	50	AT-Cut Fundamental
6MHz to 7.999999MHz	102	AT-Cut Fundamental	24MHz to 30MHz	40	AT-Cut Fundamental
8MHz to 8.999999MHz	90	AT-Cut Fundamental	24.576MHz to 29.999999MHz	150	AT-Cut Third Overtone
9MHz to 9.999999MHz	80	AT-Cut Fundamental	30MHz to 50MHz	100	AT-Cut Third Overtone
10MHz to 14.999999MHz	70	AT-Cut Fundamental	24MHz to 40MHz	40	BT-Cut Fundamental

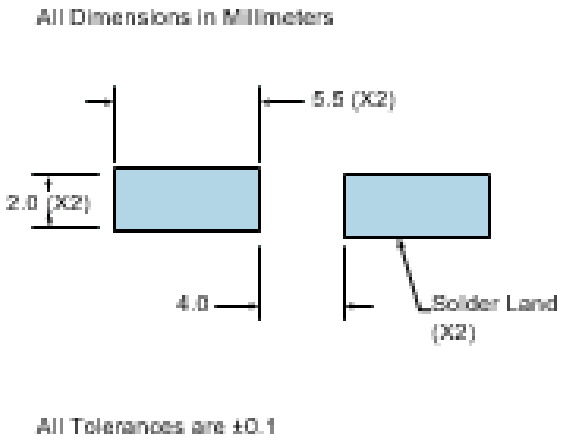
PART NUMBERING GUIDE



MECHANICAL DIMENSIONS



SUGGESTED SOLDER PAD LAYOUT

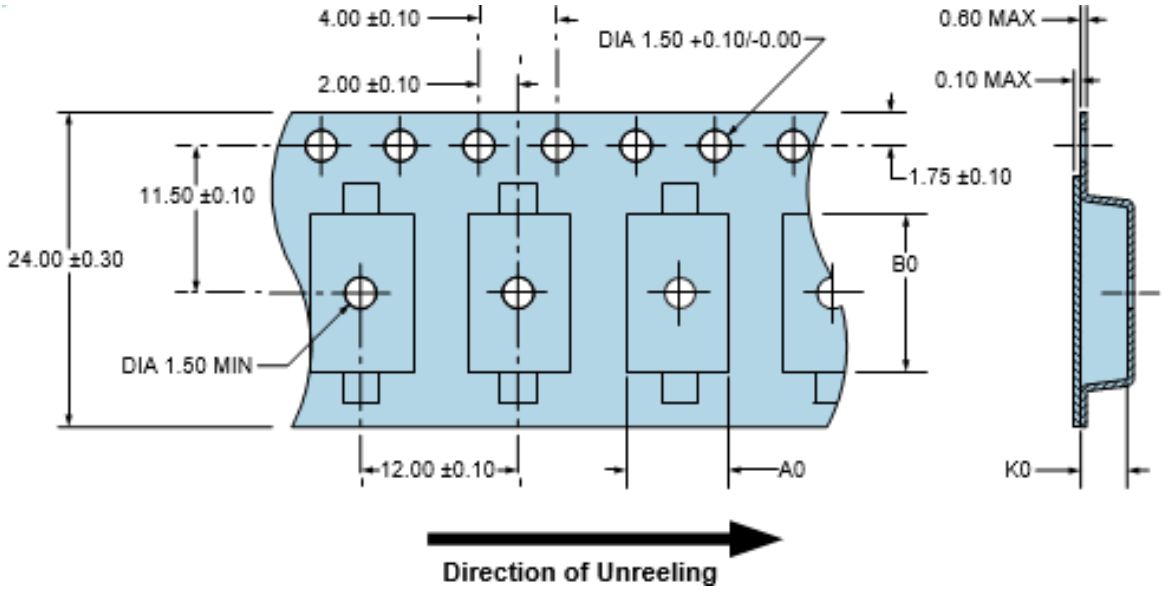


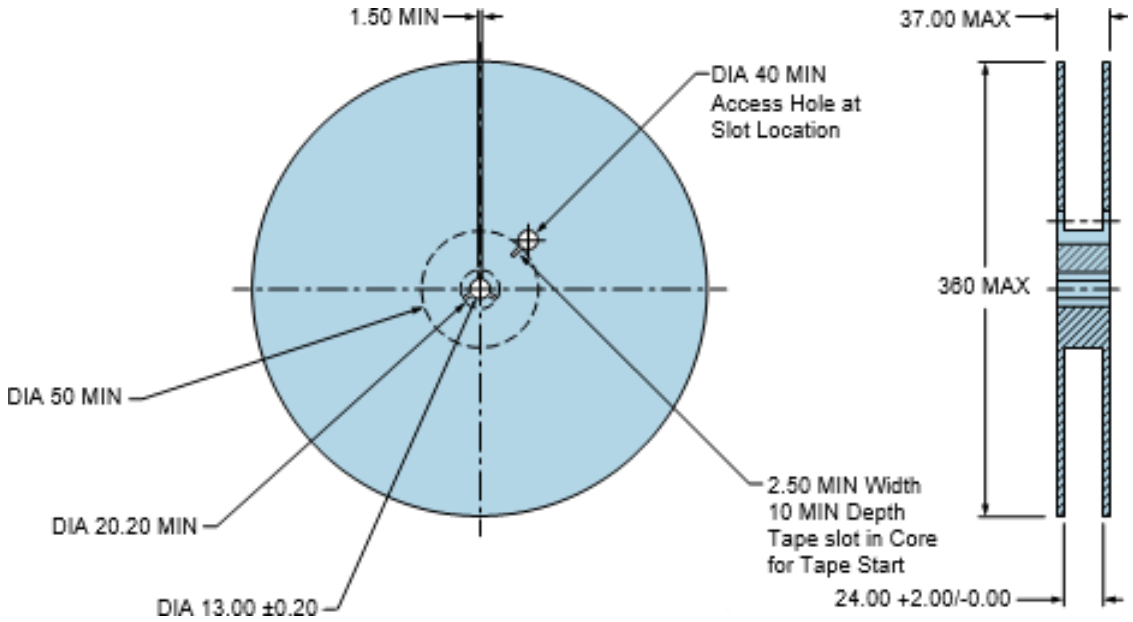
TAPE & REEL DIMENSIONS

Quantity Per Reel: 1,000 units

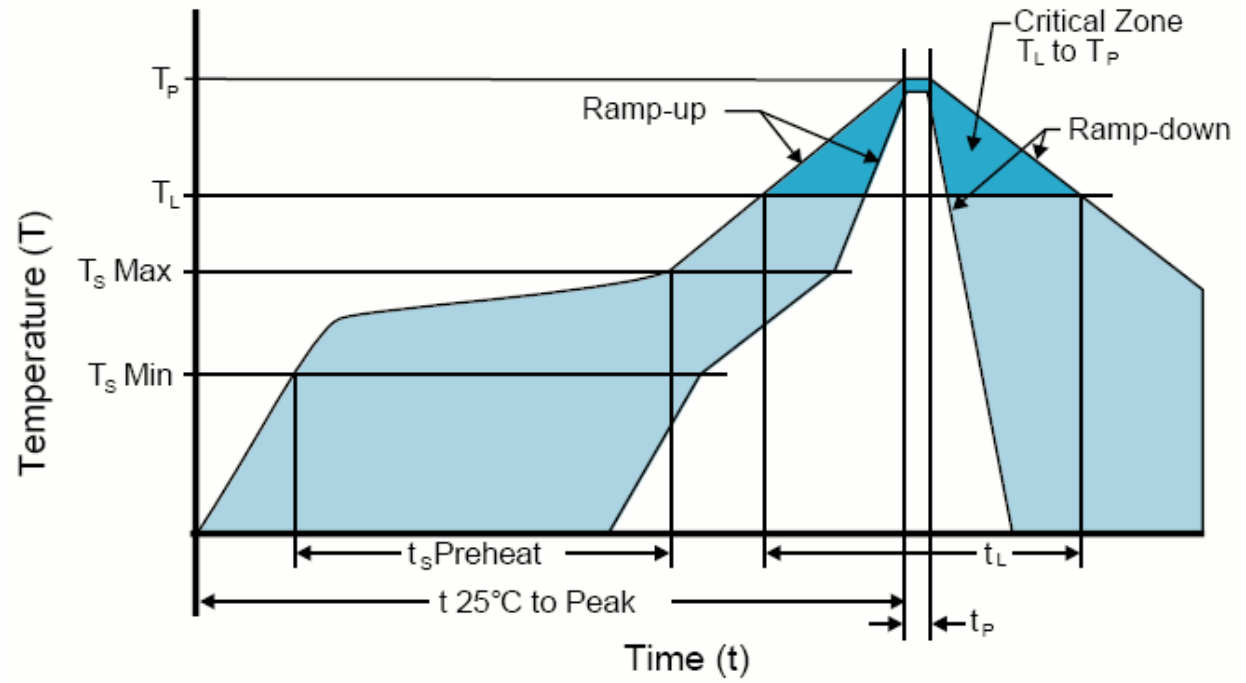
All Dimensions in Millimeters

Compliant to EIA-481





RECOMMENDED SOLDER REFLOW METHOD

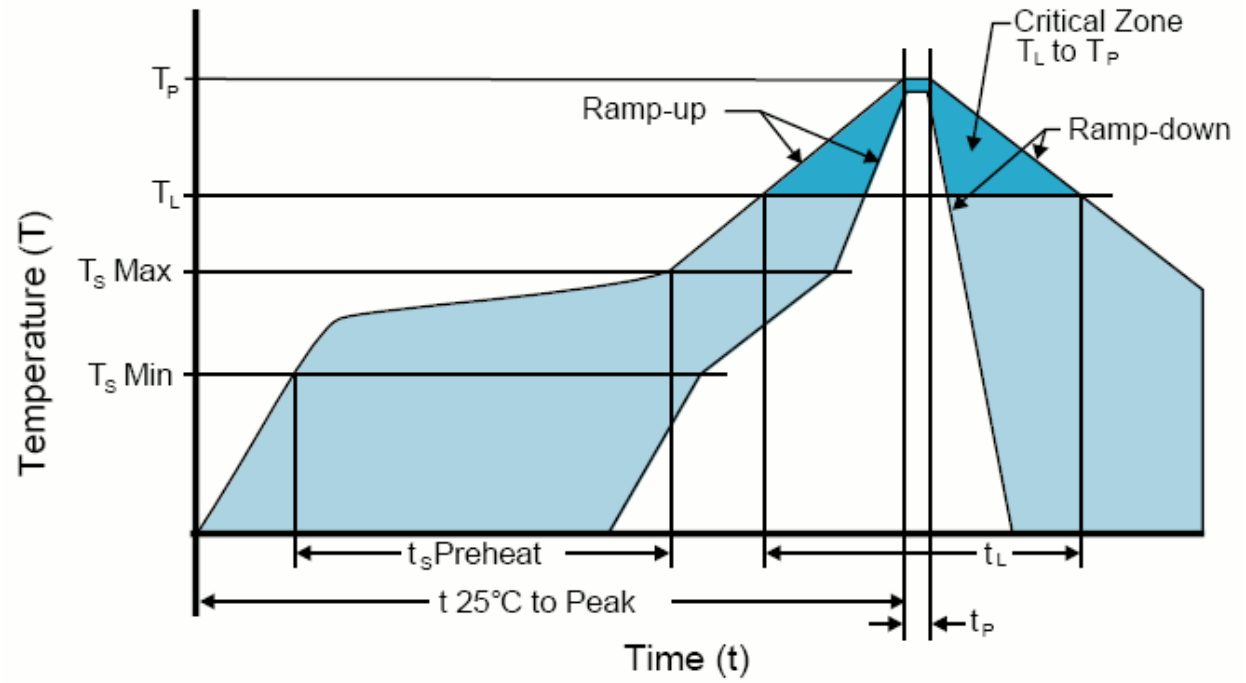


HIGH TEMPERATURE INFRARED/CONVECTION	
T_S MAX to T_L (Ramp-up Rate)	3°C/Second Maximum
Preheat **- Temperature Minimum (T_S MIN)** **- Temperature Typical (T_S TYP)** **- Temperature Maximum(T_S MAX)** **- Time (t_S)**	 150°C 175°C 200°C 60 - 180 Seconds
Ramp-up Rate (T_L to T_P)	3°C/Second Maximum
Time 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 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)** **- Temperature Typical (T_s TYP)** **- Temperature Maximum(T_s MAX)** **- Time (t_s)**	 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 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.)

Mouser Electronics

Authorized Distributor

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ABRACON:
E1SFA18-3.6864M TR