

EC2SMB-20-11.0592M **ITEM DESCRIPTION**

Quartz Crystal Resonator HC49/UP 2 Pad Surface Mount (SMD) 4.5mm Height Metal Resistance Weld Seal 11.0592MHz
±50ppm at 25°C, ±100ppm over -40°C to +85°C 20pF Parallel Resonant

ELECTRICAL SPECIFICATIONS

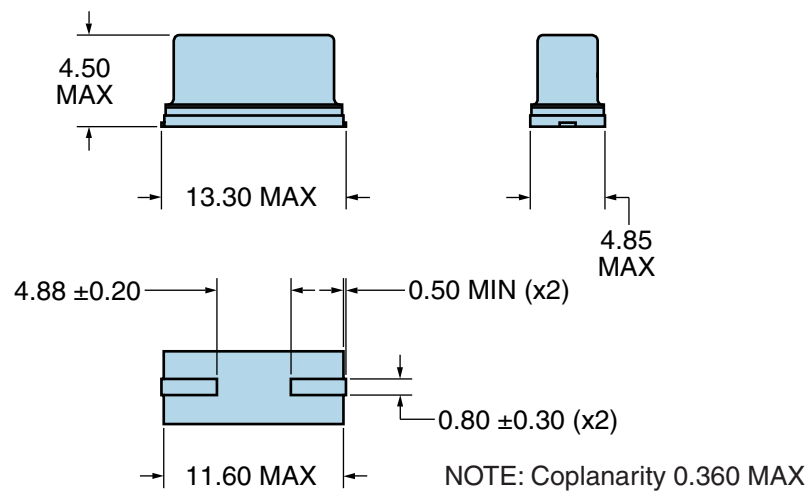
Nominal Frequency	11.0592MHz
Frequency Tolerance/Stability	±50ppm at 25°C, ±100ppm over -40°C to +85°C
Aging at 25°C	±5ppm/year Maximum
Load Capacitance	20pF Parallel Resonant
Shunt Capacitance (C0)	7pF Maximum
Equivalent Series Resistance	70 Ohms Maximum
Mode of Operation	AT-Cut Fundamental
Drive Level	1mWatt Maximum
Storage Temperature Range	-40°C to +85°C
Insulation Resistance	500 Megaohms Minimum at 100Vdc

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Fine Leak Test	MIL-STD-883, Method 1014 Condition A
Gross Leak Test	MIL-STD-883, Method 1014 Condition C
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

EC2SMB-20-11.0592M

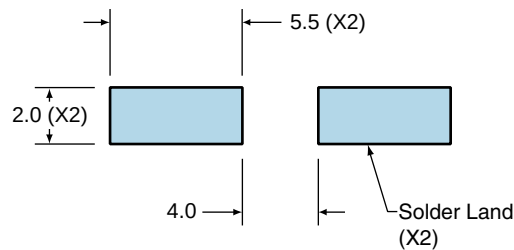
MECHANICAL DIMENSIONS (all dimensions in millimeters)



LINE	MARKING
1	E11.059M <i>E=Ecliptek Designator</i> <i>M=Frequency Unit of Measure</i>

Suggested Solder Pad Layout

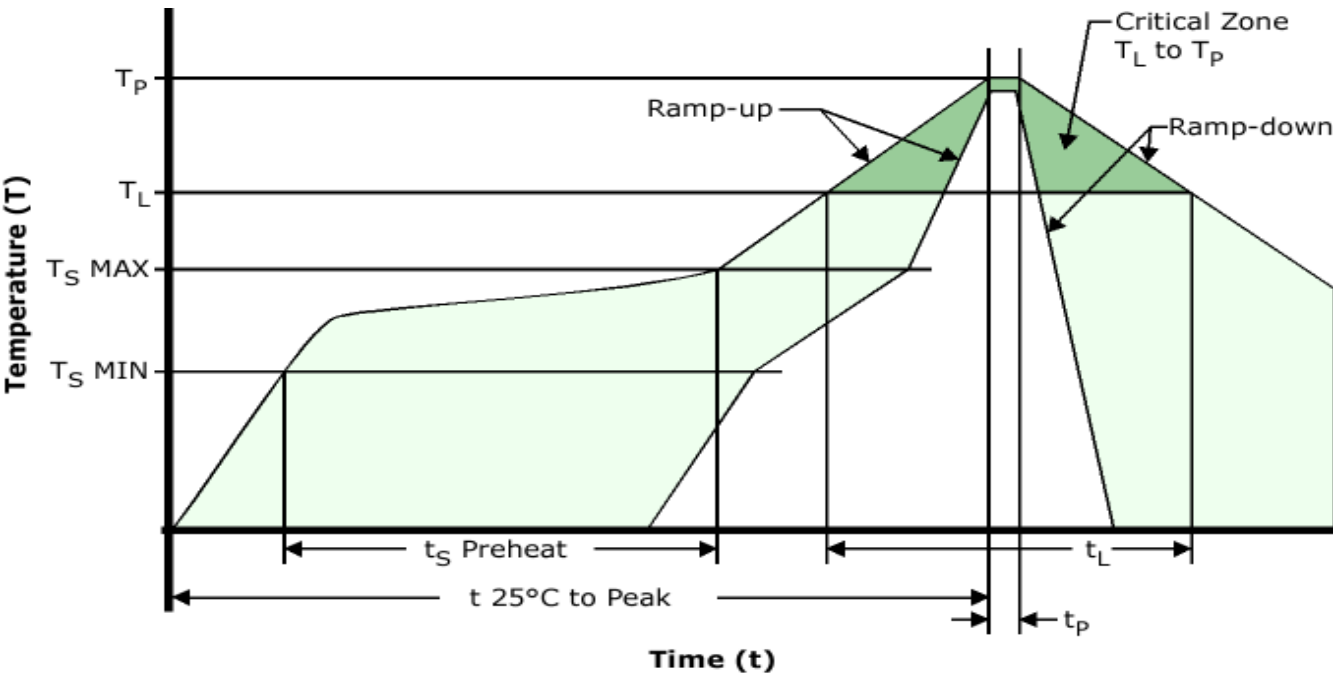
All Dimensions in Millimeters



All Tolerances are ±0.1

EC2SMB-20-11.0592M [↗](#)

Recommended Solder Reflow Methods

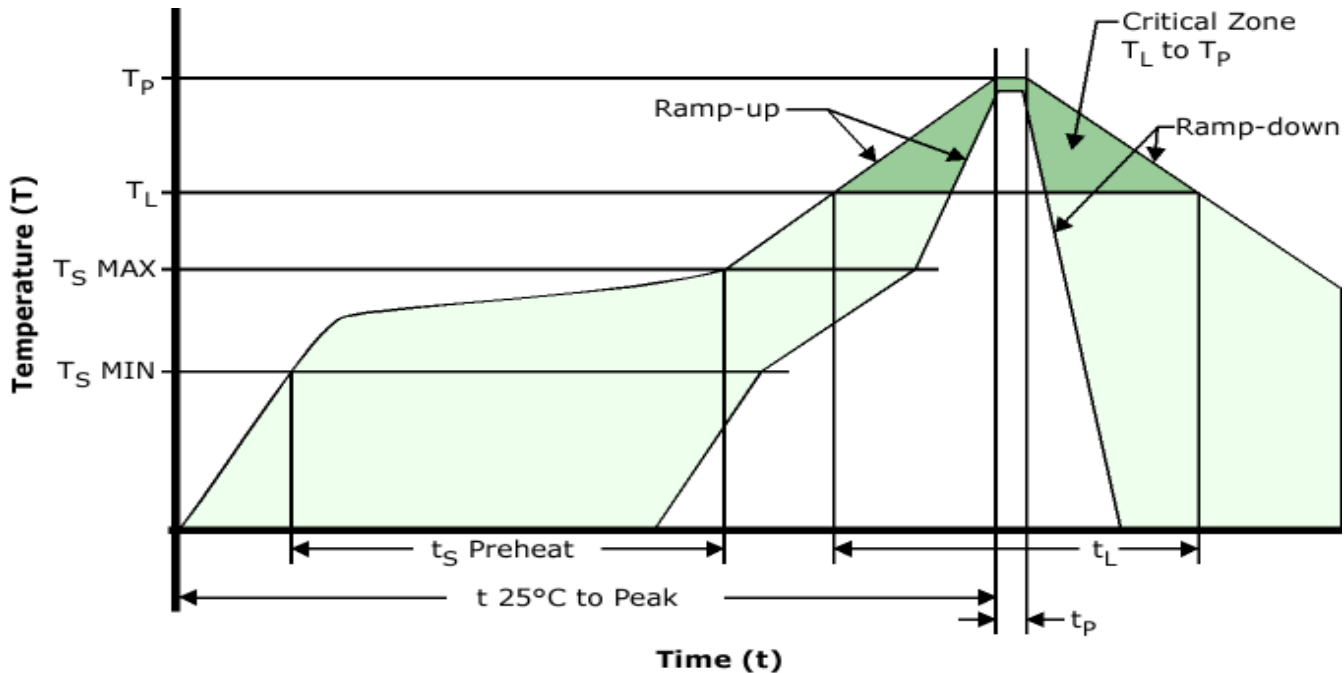


High Temperature Infrared/Convection

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 MIN)	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

EC2SMB-20-11.0592M [↗](#)

Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 245°C

TS MAX to TL (Ramp-up Rate) 5°C/Second Maximum

Preheat

- Temperature Minimum (TS MIN) N/A
- Temperature Typical (TS TYP) 150°C
- Temperature Maximum (TS MAX) N/A
- Time (ts MIN) 30 - 60 Seconds

Ramp-up Rate (TL to TP) 5°C/Second Maximum

Time Maintained Above:

- Temperature (TL) 150°C
- Time (tL) 200 Seconds Maximum

Peak Temperature (TP) 245°C Maximum

Target Peak Temperature (TP Target) 245°C Maximum 2 Times / 230°C Maximum 1 Time

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

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.