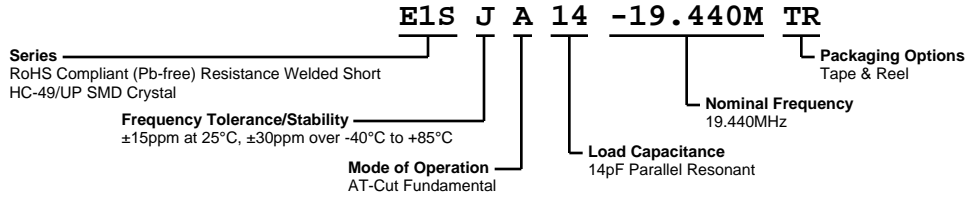


# E1SJA14-19.440M TR



**ECLIPTEK**  
CORPORATION



## ELECTRICAL SPECIFICATIONS

Nominal Frequency	19.440MHz
Frequency Tolerance/Stability	±15ppm at 25°C, ±30ppm over -40°C to +85°C
Aging at 25°C	±5ppm/year Maximum
Load Capacitance	14pF Parallel Resonant
Shunt Capacitance (C0)	7pF Maximum
Equivalent Series Resistance	50 Ohms Maximum
Mode of Operation	AT-Cut Fundamental
Drive Level	1mWatt Maximum
Storage Temperature Range	-40°C to +125°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
Lead Termination	Sn 2µm - 6µm
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

## MECHANICAL DIMENSIONS (all dimensions in millimeters)



LINE	MARKING
1	<b>E19.440M</b> E=Ecliptek Designator M=MHz

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## Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are  $\pm 0.1$

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## Tape & Reel Dimensions

Quantity Per Reel: 1,000 units



\*Compliant to EIA 481A



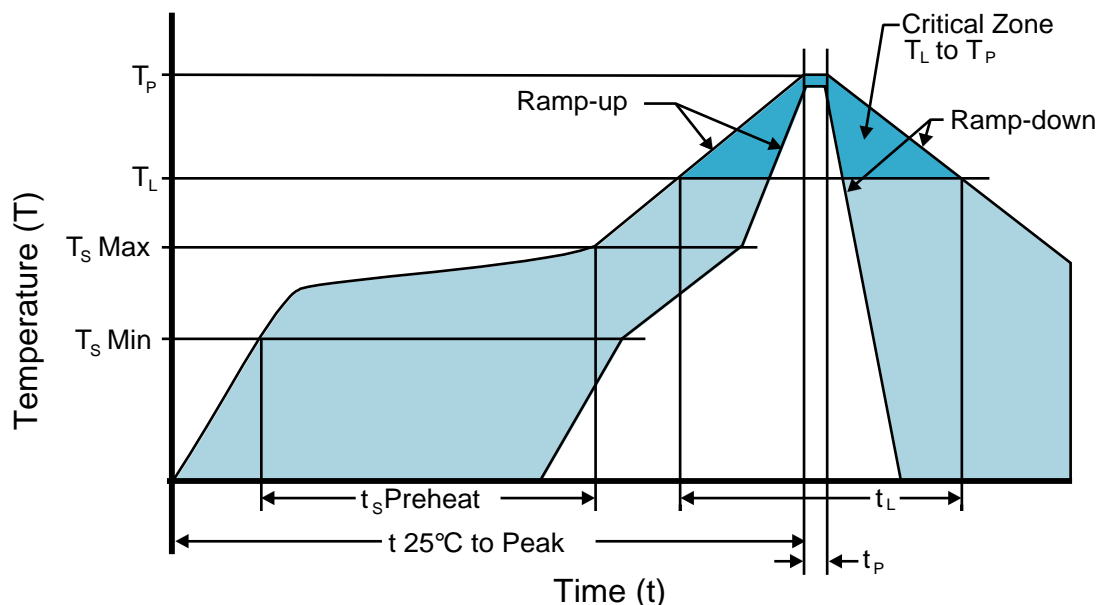
## Recommended Solder Reflow Methods



### High Temperature Infrared/Convection

<b><math>T_s</math> MAX to <math>T_L</math> (Ramp-up Rate)</b>	3°C/second Maximum
<b>Preheat</b>	
- 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
<b>Ramp-up Rate (<math>T_L</math> to <math>T_p</math>)</b>	3°C/second Maximum
<b>Time Maintained Above:</b>	
- Temperature ( $T_L$ )	217°C
- Time ( $t_L$ )	60 - 150 Seconds
<b>Peak Temperature (<math>T_p</math>)</b>	260°C Maximum for 10 Seconds Maximum
<b>Target Peak Temperature (<math>T_p</math> Target)</b>	250°C +0/-5°C
<b>Time within 5°C of actual peak (<math>t_p</math>)</b>	20 - 40 seconds
<b>Ramp-down Rate</b>	6°C/second Maximum
<b>Time 25°C to Peak Temperature (t)</b>	8 minutes Maximum
<b>Moisture Sensitivity Level</b>	Level 1

## Recommended Solder Reflow Methods



### Low Temperature Infrared/Convection 245°C

**T<sub>s</sub> MAX to T<sub>L</sub> (Ramp-up Rate)** 5°C/second Maximum

#### Preheat

- Temperature Minimum (T<sub>s</sub> MIN) N/A
- Temperature Typical (T<sub>s</sub> TYP) 150°C
- Temperature Maximum (T<sub>s</sub> MAX) N/A
- Time (t<sub>s</sub> MIN) 30 - 60 Seconds

**Ramp-up Rate (T<sub>L</sub> to T<sub>p</sub>)** 5°C/second Maximum

#### Time Maintained Above:

- Temperature (T<sub>L</sub>) 150°C
- Time (t<sub>L</sub>) 200 Seconds Maximum

**Peak Temperature (T<sub>p</sub>)** 245°C Maximum

**Target Peak Temperature (T<sub>p</sub> Target)** 245°C Maximum 2 Times / 230°C Maximum 1 Time

**Time within 5°C of actual peak (t<sub>p</sub>)** 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.