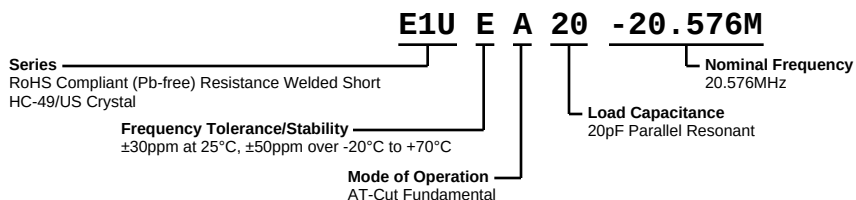


# E1UEA20-20.576M



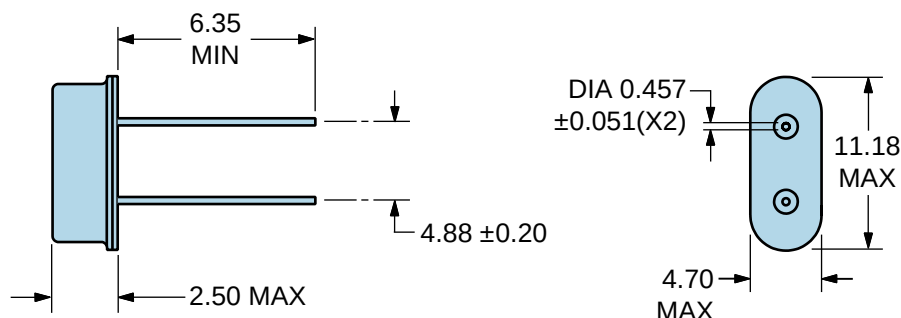
## ELECTRICAL SPECIFICATIONS

|                               |                                                                    |
|-------------------------------|--------------------------------------------------------------------|
| Nominal Frequency             | 20.576MHz                                                          |
| Frequency Tolerance/Stability | $\pm 30\text{ppm}$ at 25°C, $\pm 50\text{ppm}$ over -20°C to +70°C |
| Aging at 25°C                 | $\pm 5\text{ppm/year}$ Maximum                                     |
| Load Capacitance              | 20pF 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

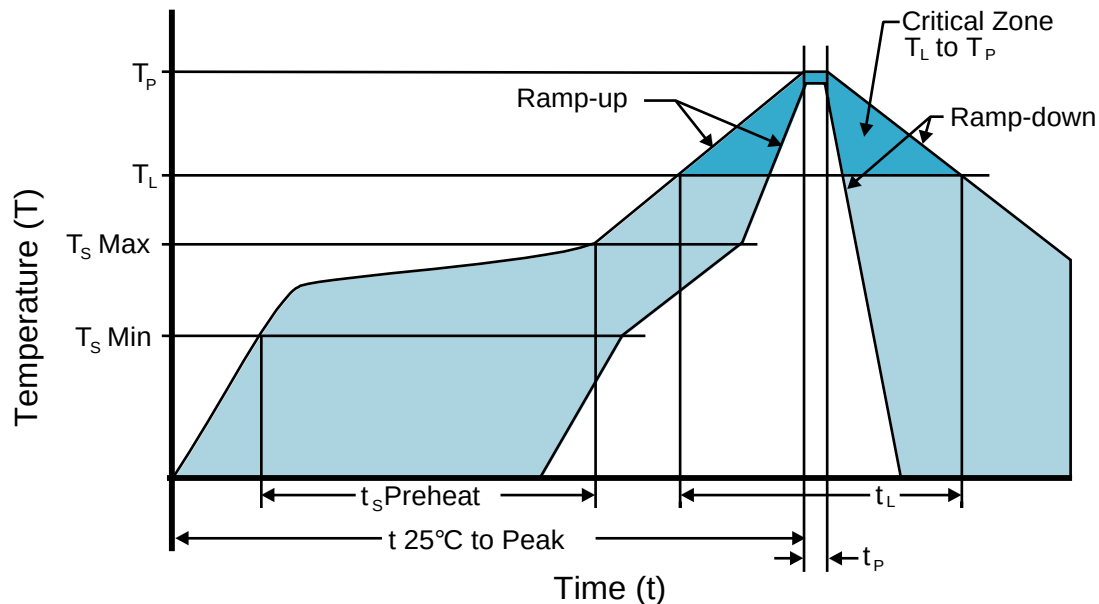
|                              |                                      |
|------------------------------|--------------------------------------|
| Fine Leak Test               | MIL-STD-883, Method 1014 Condition A |
| Gross Leak Test              | MIL-STD-883, Method 1014 Condition C |
| Lead Integrity               | MIL-STD-883, Method 2004             |
| Lead Termination             | Sn 2 $\mu\text{m}$ - 6 $\mu\text{m}$ |
| 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>E20.576M</b><br>E=Ecliptek Designator<br>M=MHz |

## Recommended Solder Reflow Methods



### High Temperature Solder Bath (Wave Solder)

|                                   |                                    |
|-----------------------------------|------------------------------------|
| $T_s$ MAX to $T_L$ (Ramp-up Rate) | $3^{\circ}\text{C/second}$ Maximum |
|-----------------------------------|------------------------------------|

#### Preheat

|                                    |                       |
|------------------------------------|-----------------------|
| - Temperature Minimum ( $T_s$ MIN) | $150^{\circ}\text{C}$ |
| - Temperature Typical ( $T_s$ TYP) | $175^{\circ}\text{C}$ |
| - Temperature Maximum ( $T_s$ MAX) | $200^{\circ}\text{C}$ |
| - Time ( $t_s$ MIN)                | 60 - 180 Seconds      |

|                                 |                                    |
|---------------------------------|------------------------------------|
| Ramp-up Rate ( $T_L$ to $T_p$ ) | $3^{\circ}\text{C/second}$ Maximum |
|---------------------------------|------------------------------------|

#### Time Maintained Above:

|                         |                       |
|-------------------------|-----------------------|
| - Temperature ( $T_L$ ) | $217^{\circ}\text{C}$ |
| - Time ( $t_L$ )        | 60 - 150 Seconds      |

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| Peak Temperature ( $T_p$ ) | $260^{\circ}\text{C}$ Maximum for 10 Seconds Maximum |
|----------------------------|------------------------------------------------------|

|                                         |                                             |
|-----------------------------------------|---------------------------------------------|
| Target Peak Temperature ( $T_p$ Target) | $250^{\circ}\text{C} \pm 5^{\circ}\text{C}$ |
|-----------------------------------------|---------------------------------------------|

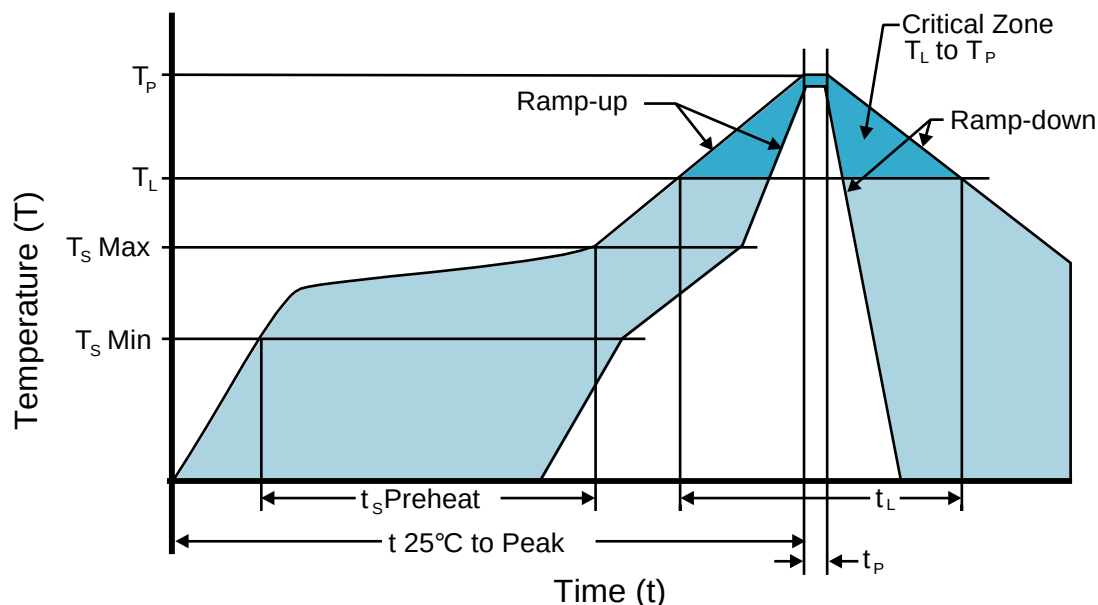
|                                                          |                 |
|----------------------------------------------------------|-----------------|
| Time within $5^{\circ}\text{C}$ of actual peak ( $t_p$ ) | 20 - 40 seconds |
|----------------------------------------------------------|-----------------|

|                |                                    |
|----------------|------------------------------------|
| Ramp-down Rate | $6^{\circ}\text{C/second}$ Maximum |
|----------------|------------------------------------|

|                                                   |                   |
|---------------------------------------------------|-------------------|
| Time $25^{\circ}\text{C}$ to Peak Temperature (t) | 8 minutes Maximum |
|---------------------------------------------------|-------------------|

|                            |         |
|----------------------------|---------|
| Moisture Sensitivity Level | Level 1 |
|----------------------------|---------|

## Recommended Solder Reflow Methods



### Low Temperature Solder Bath (Wave Solder)

$T_s$  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 ( $t_s$  MIN) 30 - 60 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 ( $T_p$ ) 245°C Maximum

Target Peak Temperature ( $T_p$  Target) 245°C Maximum 1 Time / 235°C Maximum 2 Times

Time within 5°C of actual peak ( $t_p$ ) 5 seconds Maximum 1 Time / 15 seconds Maximum 2 Times

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.