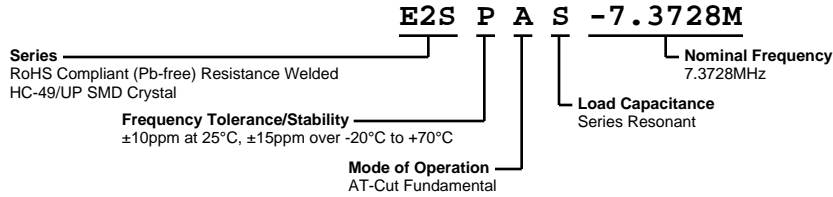


# E2SPAS-7.3728M



**ECLIPTEK**  
CORPORATION



## ELECTRICAL SPECIFICATIONS

|                               |  |
|-------------------------------|--|
| Nominal Frequency             | 7.3728MHz                                  |
| Frequency Tolerance/Stability | ±10ppm at 25°C, ±15ppm over -20°C to +70°C |
| Aging at 25°C                 | ±5ppm/year Maximum                         |
| Load Capacitance              | Series Resonant                            |
| Shunt Capacitance (C0)        | 7pF Maximum                                |
| Equivalent Series Resistance  | 120 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>E7.3728M</b><br>E=Ecliptek Designator<br>M=MHz |

# E2SPAS-7.3728M

## Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are  $\pm 0.1$

## 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

## Recommended Solder Reflow Methods



### Low Temperature Infrared/Convection 245°C

|  |  |
|--|--|
| <b><math>T_S</math> MAX to <math>T_L</math> (Ramp-up Rate)</b> | 5°C/second Maximum                                     |
| <b>Preheat</b>   |  |
| - 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  |
| <b>Ramp-up Rate (<math>T_L</math> to <math>T_P</math>)</b>     | 5°C/second Maximum                                     |
| <b>Time Maintained Above:</b>                                  |  |
| - Temperature ( $T_L$ )  | 150°C  |
| - Time ( $t_L$ )   | 200 Seconds Maximum                                    |
| <b>Peak Temperature (<math>T_P</math>)</b>                     | 245°C Maximum  |
| <b>Target Peak Temperature (<math>T_P</math> Target)</b>       | 245°C Maximum 2 Times / 230°C Maximum 1 Time           |
| <b>Time within 5°C of actual peak (<math>t_p</math>)</b>       | 10 seconds Maximum 2 Times / 80 seconds Maximum 1 Time |
| <b>Ramp-down Rate</b>  | 5°C/second Maximum                                     |
| <b>Time 25°C to Peak Temperature (t)</b>                       | N/A  |
| <b>Moisture Sensitivity Level</b>                              | 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.