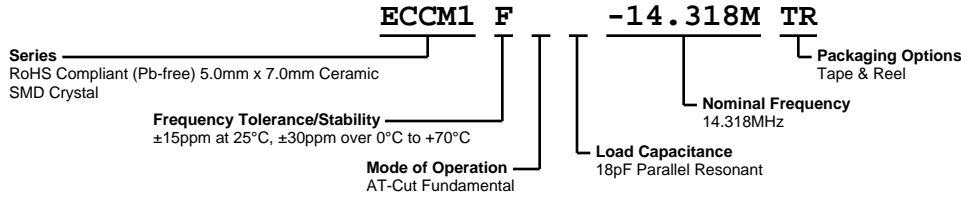


ECCM1F-14.318M TR



ECLIPTEK
CORPORATION



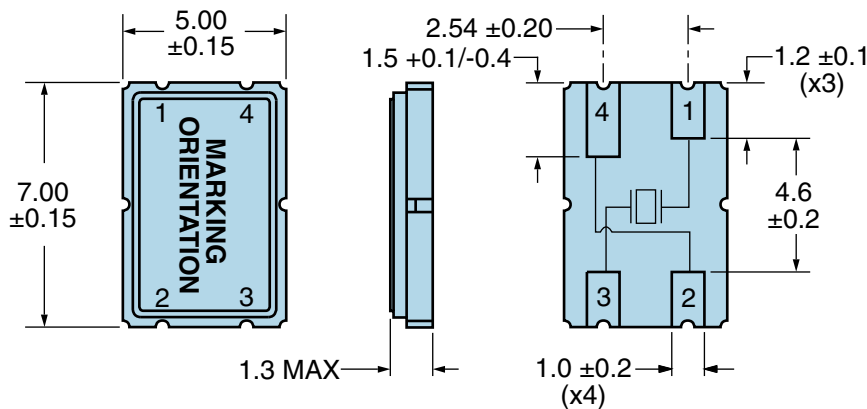
ELECTRICAL SPECIFICATIONS

| | |
|-------------------------------|--|
| Nominal Frequency | 14.318MHz |
| Frequency Tolerance/Stability | ±15ppm at 25°C, ±30ppm over 0°C to +70°C |
| Aging at 25°C | ±3ppm/year Maximum |
| Load Capacitance | 18pF Parallel Resonant |
| Shunt Capacitance (C0) | 7pF Maximum |
| Equivalent Series Resistance | 40 Ohms Maximum |
| Mode of Operation | AT-Cut Fundamental |
| Drive Level | 50µWatts Maximum, 50µWatts Correlation |
| Spurious Response | -3dB Minimum (Measured from Fo to Fo +5000ppm) |
| Storage Temperature Range | -40°C to +85°C |
| Insulation Resistance | 500 Megaohms Minimum (Measured at 100Vdc) |

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

| | |
|------------------------------|---|
| ESD Susceptibility | MIL-STD-883, Method 3015, Class 1, HBM: 1500V |
| Fine Leak Test | MIL-STD-883, Method 1014, Condition A |
| Flammability | UL94-V0 |
| Gross Leak Test | MIL-STD-883, Method 1014, Condition C |
| Mechanical Shock | MIL-STD-883, Method 2002, Condition B |
| Moisture Resistance | MIL-STD-883, Method 1004 |
| Moisture Sensitivity | J-STD-020, MSL 1 |
| Resistance to Soldering Heat | MIL-STD-202, Method 210, Condition K |
| Resistance to Solvents | MIL-STD-202, Method 215 |
| Solderability | MIL-STD-883, Method 2003 |
| Temperature Cycling | MIL-STD-883, Method 1010, Condition B |
| Vibration | MIL-STD-883, Method 2007, Condition A |

MECHANICAL DIMENSIONS (all dimensions in millimeters)



Note: Chamfer not shown.

| PIN | CONNECTION |
|-----|--------------|
| 1 | Crystal |
| 2 | Cover/Ground |
| 3 | Crystal |
| 4 | Cover/Ground |

| LINE | MARKING |
|------|---|
| 1 | E14.31 E=Ecliptek Designator |
| 2 | XXXXX XXXXX=Ecliptek Manufacturing Identifier |

ECCM1F-14.318M TR

Suggested Solder Pad Layout

All Dimensions in Millimeters

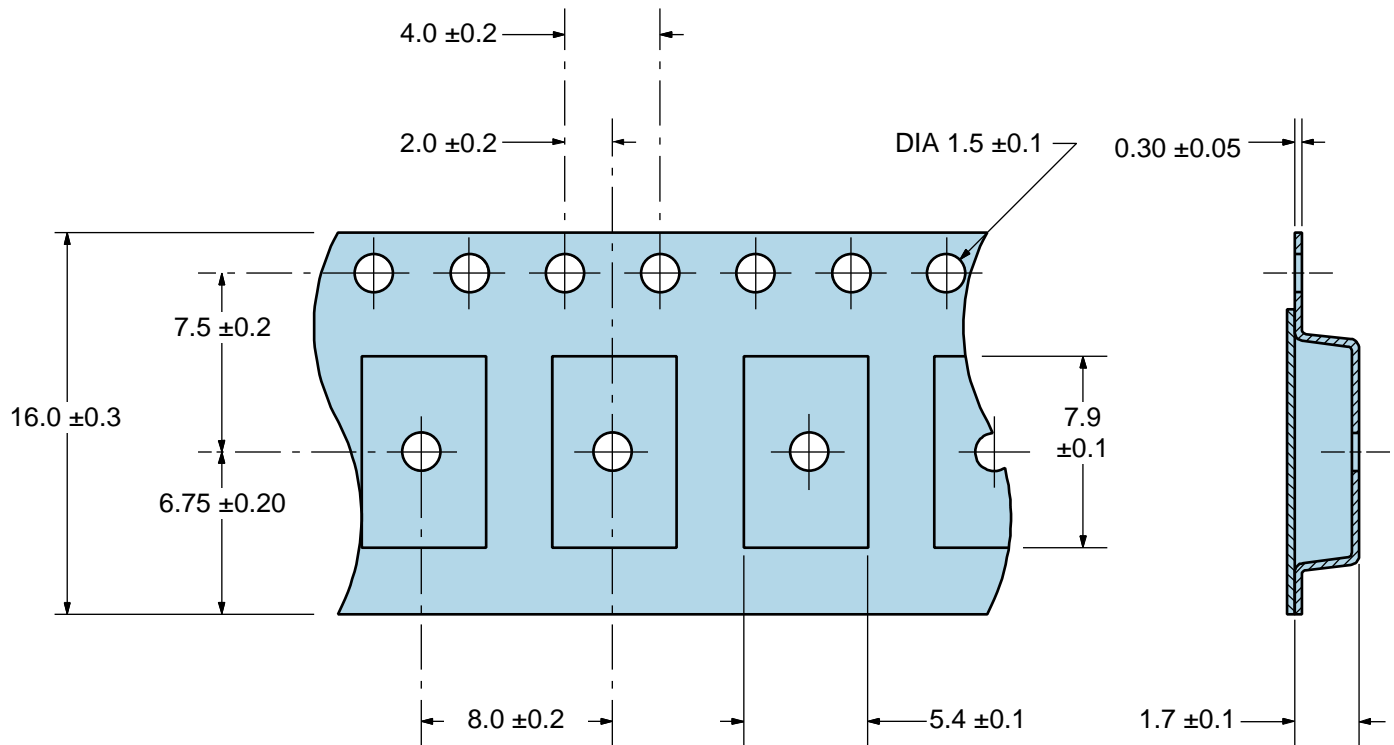


All Tolerances are ± 0.1

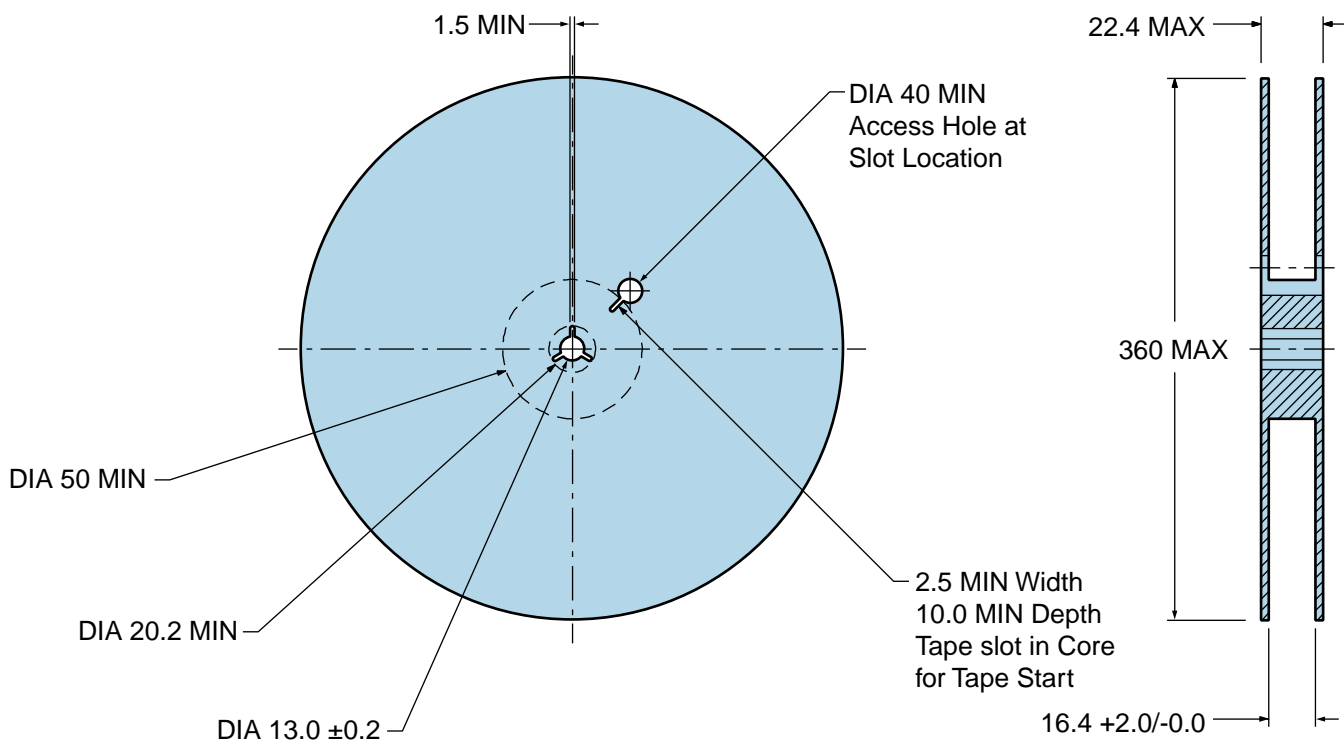
ECCM1F-14.318M TR

Tape & Reel Dimensions

Quantity Per Reel: 1,000 units



*Compliant to EIA 481A



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 240°C

| | |
|--|--|
| 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) | 60 - 120 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) | 240°C Maximum |
| Target Peak Temperature (T_P Target) | 240°C Maximum 1 Time / 230°C Maximum 2 Times |
| 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 |

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.