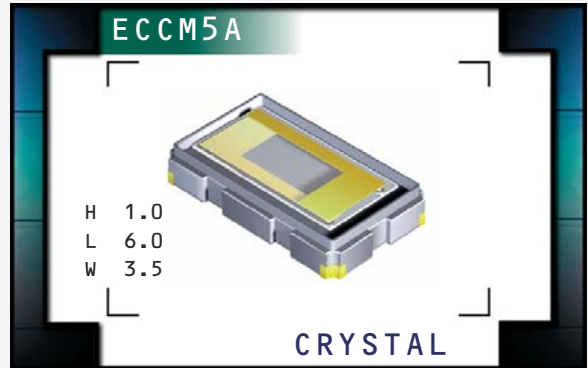


ECCM5A Series



ECLIPTEK[®]
CORPORATION

- RoHS Compliant (Pb-Free)
- Miniature four pad ceramic SMD package
- AT cut
- Tight tolerance/stability
- Frequencies to 35.328MHz available
- Tape and reel available



NOTES

| Operating Temperature Range | Frequency Stability | | | |
|-----------------------------|------------------------|--------|--------|--------|
| | X Denotes Availability | | | |
| | Code | ±20ppm | ±30ppm | ±50ppm |
| -10°C to +60°C | A | X | X | X |
| -20°C to +60°C | B | X | X | X |
| 0°C to +70°C | C | X | X | X |
| -10°C to +70°C | D | X | X | X |
| -20°C to +70°C | E | X | X | X |
| -40°C to +85°C | F | X | X | X |

ELECTRICAL SPECIFICATIONS

| | |
|---|--|
| Frequency Range | 10MHz, 10.245MHz, 11.0592MHz, 11.2896MHz, 12MHz, 12.288MHz, 13MHz, 14.318MHz, 14.31818MHz, 14.4756MHz, 16MHz, 16.384MHz, 18.432MHz, 18.82744MHz, 19.216MHz, 19.6608MHz, 20MHz, 20.945MHz, 24MHz, 24.576MHz, 25MHz, 25.92MHz, 26MHz, 26.460937MHz, 27MHz, 27.1727MHz, 28MHz, 28.24MHz, 28.636MHz, 30MHz, 30.3061MHz, 30.667MHz, 31.3344MHz, 31.556MHz, 31.608MHz, 31.68MHz, 32MHz, 33MHz, 33.333MHz, 33.8688MHz, or 35.328MHz |
| Frequency Tolerance | ±15ppm, ±30ppm, or ±50ppm |
| Frequency Stability | Per Table 1 |
| Operating Temperature Range | Per Table 1 |
| Aging (at 25°C) | ±3ppm / year Maximum |
| Storage Temperature Range | -40°C to 85°C |
| Shunt Capacitance | 5pF Maximum |
| Insulation Resistance | 500 Megaohms Minimum at 100V _{DC} |
| Drive Level | 100 μWatts Maximum |
| Load Capacitance (C_L) | 18pF Parallel Resonant (Standard) 10pF Parallel Resonant to 50pF Parallel Resonant, or Series Resonant |
| Spurious Response | -3dB Minimum; F ₀ to F ₀ +5000ppm |

EQUIVALENT SERIES RESISTANCE (ESR), MODE OF OPERATION (MODE), AND CUT

| Frequency Range | ESR (Ω) | Mode / Cut |
|---------------------------|------------|------------------|
| 10.000MHz to 19.999999MHz | 60 Maximum | Fundamental / AT |
| 20.000MHz to 34.999999MHz | 50 Maximum | Fundamental / AT |
| 35.000MHz to 35.328MHz | 40 Maximum | Fundamental / AT |

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
CRYSTAL

SERIES
ECCM5A

PACKAGE
CERAMIC

CLASS
CR30

REV. DATE
03/08

PART NUMBERING GUIDE

ECCM5A 5 D C - 20 - 32.00M TR

FREQUENCY TOLERANCE (AT 25°C)
 4=±15ppm, 5=±30ppm, 6=±50ppm

FREQUENCY STABILITY
 D=±20ppm, E=±30ppm, F=±50ppm

OPERATING TEMPERATURE RANGE
 Per Table 1

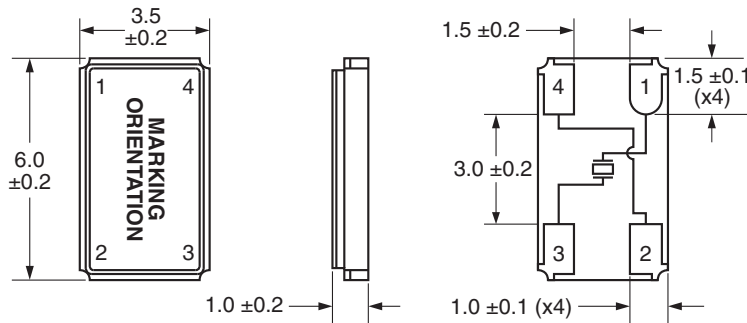
PACKAGING OPTIONS
 Blank=Bulk, TR=Tape and Reel

FREQUENCY

LOAD CAPACITANCE
 Blank=18pF Parallel Resonant (Standard)
 S=Series Resonant
 XX=10pF Parallel Resonant to 50pF Parallel Resonant

MECHANICAL DIMENSIONS

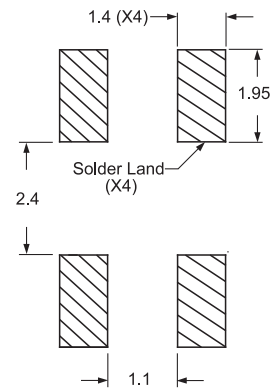
ALL DIMENSIONS IN MILLIMETERS



Pad 1: Input
 Pad 2: Case/Ground
 Pad 3: Output
 Pad 4: Case/Ground

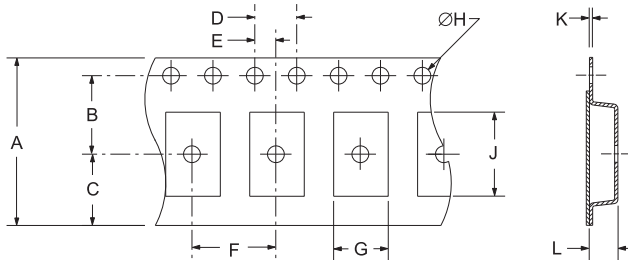
SUGGESTED SOLDER PAD LAYOUT

ALL DIMENSIONS IN MILLIMETERS

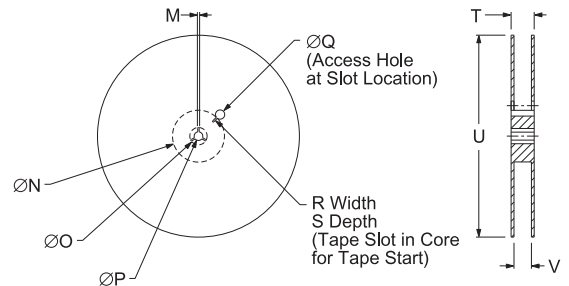


TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



| TAPE | A | B | C | D | E | |
|------|-------|--------|---------|------|--------|-----|
| | 16±.3 | 7.5±.1 | 6.75±.2 | 4±.1 | 2±.05 | |
| | F | G | H | J | K | L |
| | 8±.1 | B0* | 1.5±.1 | A0* | .3±.05 | K0* |



| REEL | M | N | O | P | Q | |
|------|---------|--------|----------|---------|----------|----------|
| | 1.5 MIN | 50 MIN | 20.2 MIN | 13±.2 | 40 MIN | |
| | R | S | T | U | V | QTY/REEL |
| | 2.5 MIN | 10 MIN | 22.4 MAX | 360 MAX | 16.4+2-0 | 1,000 |

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

| PARAMETER | SPECIFICATION |
|------------------------------|---|
| ESD Susceptibility | MIL-STD-883, Method 3015, Class 1, HBM: 1500V |
| Fine Leak Test | MIL-STD-883, Method 1014, Condition A |
| Gross Leak Test | MIL-STD-883, Method 1014, Condition C |
| Flammability | UL94-V0 |
| 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 |

MARKING SPECIFICATIONS

*Compliant to EIA-481A

Line 1: E XX.XX
 Frequency in MHz
 (4 Digits Maximum + Decimal)

Line 2: XXXXX
 Ecliptek Manufacturing Identifier

MANUFACTURER
 ECLIPTEK CORP.

CATEGORY
 CRYSTAL

SERIES
 ECCM5A

PACKAGE
 CERAMIC

CLASS
 CR30

REV. DATE
 03/08