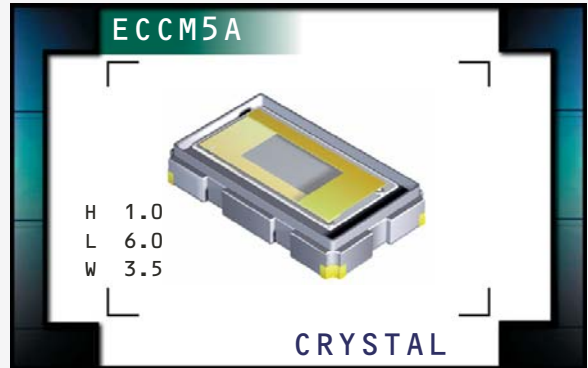


# ECCM5A Series



**ECLIPTEK**<sup>®</sup>  
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

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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

<b>Frequency Range</b>	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
<b>Frequency Tolerance</b>	±15ppm, ±30ppm, or ±50ppm
<b>Frequency Stability</b>	Per Table 1
<b>Operating Temperature Range</b>	Per Table 1
<b>Aging (at 25°C)</b>	±3ppm / year Maximum
<b>Storage Temperature Range</b>	-40°C to 85°C
<b>Shunt Capacitance</b>	5pF Maximum
<b>Insulation Resistance</b>	500 Megaohms Minimum at 100V <sub>DC</sub>
<b>Drive Level</b>	100 μWatts Maximum
<b>Load Capacitance (C<sub>L</sub>)</b>	18pF Parallel Resonant (Standard) 10pF Parallel Resonant to 50pF Parallel Resonant, or Series Resonant
<b>Spurious Response</b>	-3dB Minimum; F <sub>0</sub> to F <sub>0</sub> +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 - 32.000M 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

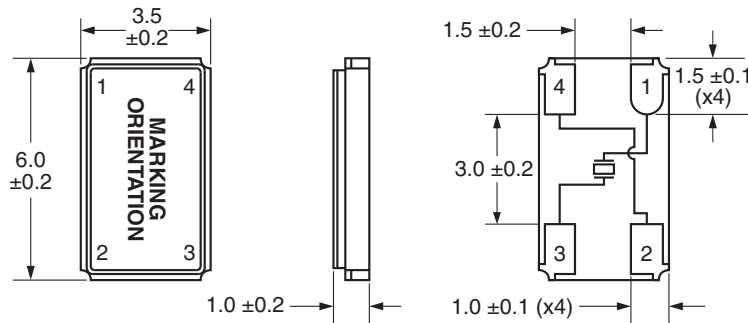
**PACKAGING OPTIONS**  
Blank=Bulk, TR=Tape and Reel

**FREQUENCY**

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

#### MECHANICAL DIMENSIONS

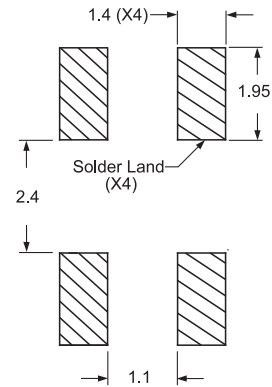
ALL DIMENSIONS IN MILLIMETERS



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

#### SUGGESTED SOLDER PAD LAYOUT

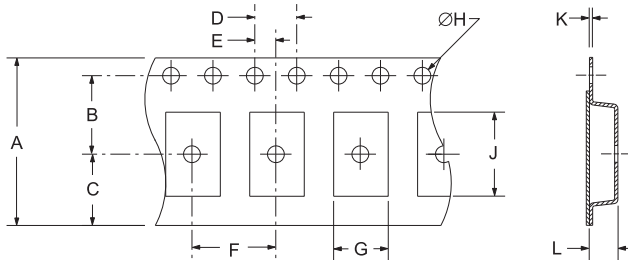
ALL DIMENSIONS IN MILLIMETERS



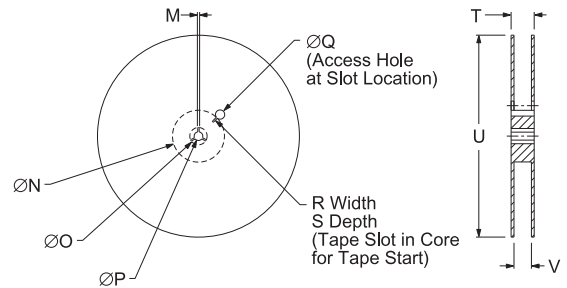
Tolerance = ±0.2

#### 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.

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