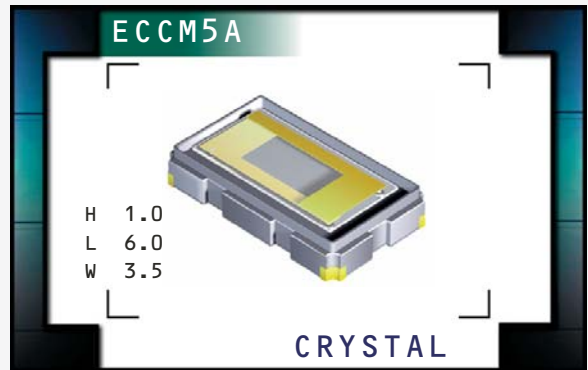


ECCM5A Series



- 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

TABLE 1: PART NUMBERING CODES

Operating Temperature Range	Frequency Stability			
	Code	±20ppm	±30ppm	±50ppm
		D	E	F
-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

X Denotes Availability

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
01/08

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

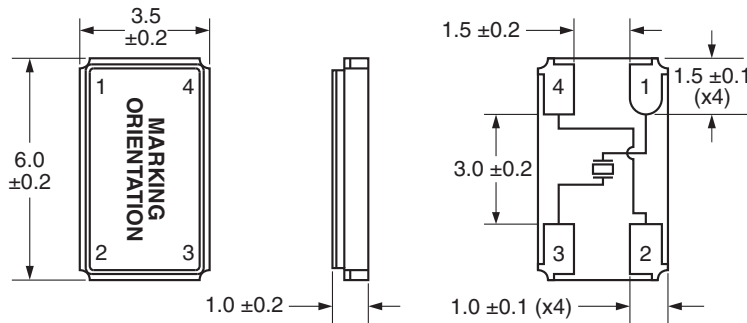
PACKAGING OPTIONS
Blank=Bulk, TR=Tape and Reel

FREQUENCY

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

MECHANICAL DIMENSIONS

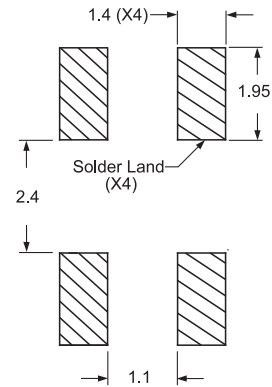
ALL DIMENSIONS IN MILLIMETERS



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

SUGGESTED SOLDER PAD LAYOUT

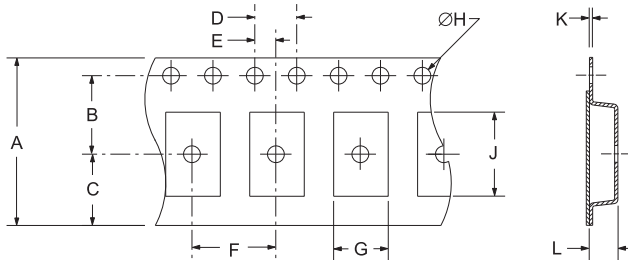
ALL DIMENSIONS IN MILLIMETERS



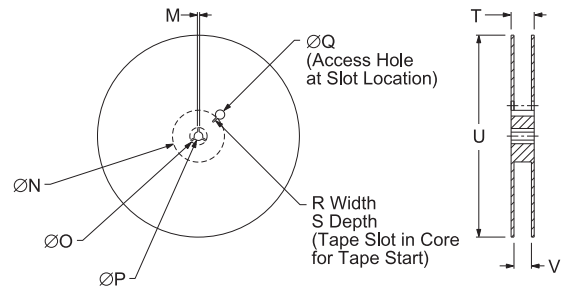
Tolerance = ±0.2

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: XX Y ZZ
Week of Year
Last Digit of Year
Ecliptek Manufacturing Identifier

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