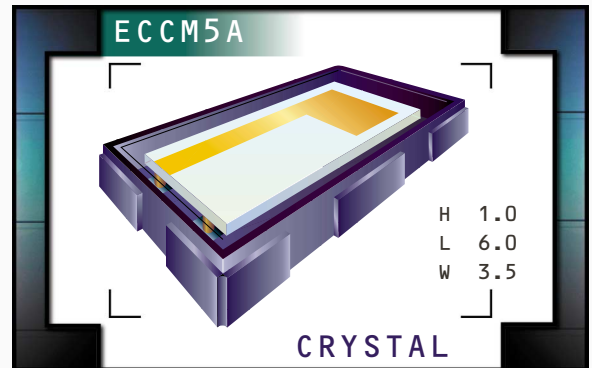


ECCM5A Series

- Miniature four pad ceramic surface mount package
- AT cut
- Tight tolerance/stability
- Frequencies to 32.000MHz available
- Tape and reel available



NOTES

TABLE 1: PART NUMBERING CODES				
Operating Temperature Range	X Denotes Availability	Frequency Stability		
		±20ppm	±30ppm	±50ppm
	Code	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

ELECTRICAL SPECIFICATIONS

Frequency Range	11.0592MHz to 32.000MHz
Frequency Tolerance	±30ppm, or ±50ppm
Frequency Stability	Per Table 1
Operating Temperature Range	Per Table 1
Aging (at 25°C)	±2ppm / 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 (Standard), C _L ≥10pF, 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
11.0592MHz to 24.000MHz	50 Maximum	Fundamental / AT
24.001MHz to 32.000MHz	40 Maximum	Fundamental / AT

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
CRYSTAL

SERIES
ECCM5A

PACKAGE
CERAMIC

CLASS
CR30

REV. DATE
12/01

PART NUMBERING GUIDE

ECCM5A 5 D C - 20 - 32.00M TR

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

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

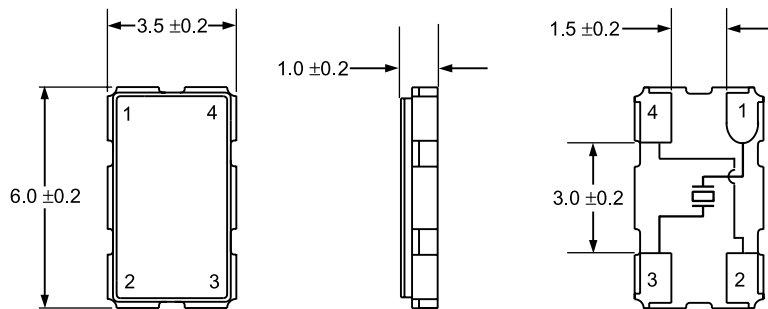
OPERATING TEMPERATURE RANGE
Per Table 1

PACKAGING OPTIONS
Blank=Bulk, TR=Tape and Reel

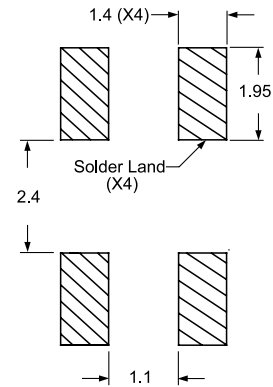
FREQUENCY

LOAD CAPACITANCE
Blank=18pF (Standard)
S=Series, XX=XXpF (Custom)

MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS

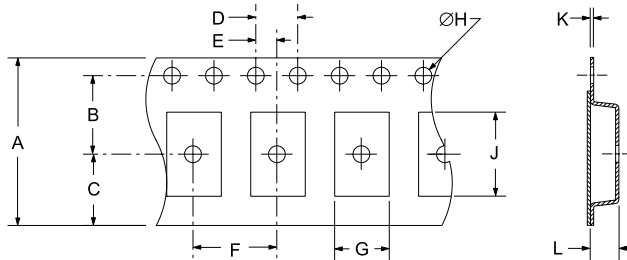


SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS

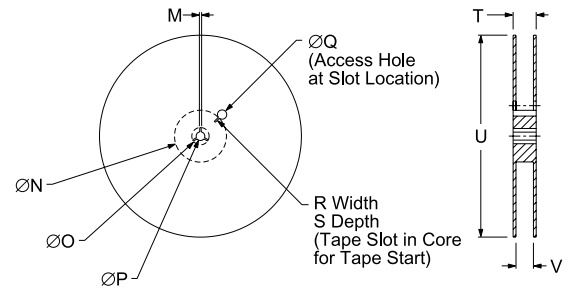


Tolerance = ±0.2

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	3.9±.1	1.5±.1	6.4±.1	.3 ±.05	1.3±.1



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
Seal Integrity	Bubble test in Perfluorocarbon at +125°C ±5°C for 60 seconds minimum.
Solderability	Sn63 Solder dip at +230°C ±5°C for 5 seconds/75% coverage.
Marking Permanency	10 Strokes with brush after 1 minute soak in solvent, 3 times.
Shock	Random drop on hard wooden plate 3 times from a height of 50cm.
Vibration	Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X,Y and Z) for a total of 6 hours.

MARKING SPECIFICATIONS

*Compliant to EIA-481A

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

Line 2: XX YY ZZ
Week of Year
Last Digit of Year
Ecliptek Manufacturing Identifier

MANUFACTURER
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