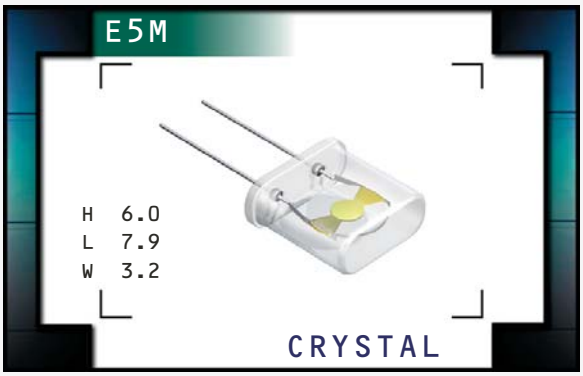
E5M Series

- RoHS Compliant (Pb-Free)
- UM-5 package
- AT cut
- Tight tolerance/stability
- Frequencies to 150.000MHz available



NOTES

TABLE 1: PART NUMBERING CODES

FREQUENCY STABILITY	X = Available N/A = Not Available		OPERATING TEMPERATURE RANGE		
			0°C to 50°C	-20°C to 70°C	-40°C to 85°C
		Code	A	B	C
	±10ppm	B	X	X	N/A
	±15ppm	C	X	X	X
	±30ppm	D	X	X	X

ELECTRICAL SPECIFICATIONS

Frequency Range	10.000MHz to 150.000MHz
Frequency Tolerance	±10ppm or ±15ppm
Frequency Stability	Per Table 1
Operating Temperature Range	Per Table 1
Aging (at 25°C)	±1ppm / year Maximum
Storage Temperature Range	-55°C to 125°C
Shunt Capacitance	7pF Maximum
Insulation Resistance	500 Megaohms Minimum at 100V_{DC}
Load Capacitance (C_L)	8pF Parallel Resonant to 50pF Parallel Resonant, or Series Resonant

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

Frequency Range	ESR (Ω)	Mode / Cut	Drive Level (µW)
10.000MHz to 15.999MHz	50 Maximum	Fundamental / AT	50 Maximum
16.000MHz to 60.000MHz	40 Maximum	Fundamental / AT	10 Maximum
30.000MHz to 150.000MHz	70 Maximum	Third Overtone / AT	100 Maximum
80.000MHz to 100.000MHz	150 Maximum	Fifth Overtone / AT	100 Maximum
100.001MHz to 120.000MHz	120 Maximum	Fifth Overtone / AT	100 Maximum
120.001MHz to 150.000MHz	100 Maximum	Fifth Overtone / AT	100 Maximum

MANUFACTURER	CATEGORY	SERIES	PACKAGE	CLASS	REV. DATE
ECLIPTEK CORP.	CRYSTAL	E5M	UM-5	CR12	03/08

PART NUMBERING GUIDE

E5M 2 C B A 20 - 30.000M

FREQUENCY TOLERANCE (AT 25°C)
2=±10ppm
3= ±15ppm

FREQUENCY STABILITY
B=±10ppm
C=±15ppm
D=±30ppm

OPERATING TEMPERATURE RANGE
A=0°C to 50°C
B=-20°C to 70°C
C=-40°C to 85°C

FREQUENCY

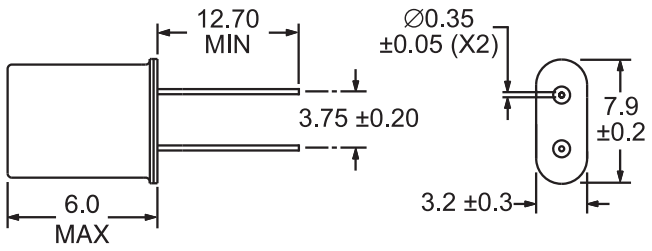
LOAD CAPACITANCE
S=Series Resonant
XX=8pF Parallel Resonant to 50pF Parallel Resonant

MODE OF OPERATION
A=Fundamental
B=Third Overtone
C=Fifth Overtone

NOTES

MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



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
Flammability	UL94-V0
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Lead Integrity	MIL-STD-833, Method 2004
Mechanical Shock	MIL-STD-202, Method 213, Condition C
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

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

Line 2: XXXXX
Ecliptek Manufacturing Identifier

MANUFACTURER	CATEGORY	SERIES	PACKAGE	CLASS	REV. DATE
ECLIPTEK CORP.	CRYSTAL	E5M	UM-5	CR12	03/08