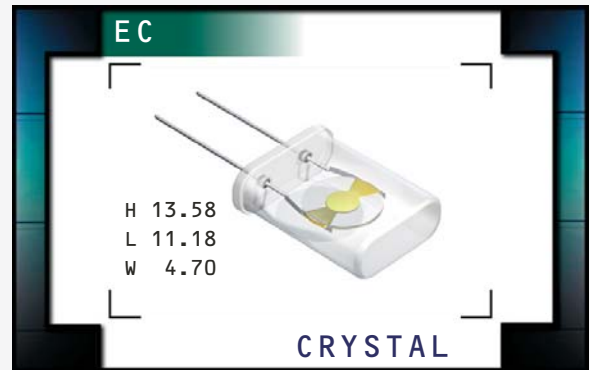


EC Series

- HC-49/U package
- AT cut
- Resistance weld seal
- Tight tolerance/stability
- Tape and reel, vinyl sleeve, insulator tab, third lead, and custom lead length options available



NOTES

ELECTRICAL SPECIFICATIONS

Frequency Range	1.8432MHz to 65.000MHz
Frequency Tolerance / Stability	±50ppm / ±100ppm (Standard), ±30ppm / ±50ppm,
Over Operating Temperature Range	±15ppm / ±30ppm, *±15ppm / ±20ppm, or ±10ppm / ±15ppm
Operating Temperature Range	0°C to 70°C (Standard), -20°C to 70°C, or -40°C to 85°C
Aging (at 25°C)	±5ppm / year Maximum
Storage Temperature Range	-40°C to 85°C
Shunt Capacitance	7pF Maximum
Insulation Resistance	500 Megaohms Minimum at 100V _{DC}
Drive Level	2 mWatts Maximum
Load Capacitance (C _L)	18pF (Standard), Custom C _L ≥ 10pF, or Series Resonant

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

Frequency Range	ESR (Ω)	Mode / Cut	Frequency Range	ESR (Ω)	Mode / Cut
1.8432MHz to 1.999MHz	650 Max	Fundamental / AT	4.100MHz to 4.999MHz	80 Max	Fundamental / AT
2.000MHz to 2.399MHz	550 Max	Fundamental / AT	5.000MHz to 5.999MHz	75 Max	Fundamental / AT
2.400MHz to 2.999MHz	350 Max	Fundamental / AT	6.000MHz to 6.999MHz	50 Max	Fundamental / AT
3.000MHz to 3.199MHz	250 Max	Fundamental / AT	7.000MHz to 7.999MHz	40 Max	Fundamental / AT
3.200MHz to 3.499MHz	200 Max	Fundamental / AT	8.000MHz to 9.999MHz	35 Max	Fundamental / AT
3.500MHz to 3.599MHz	180 Max	Fundamental / AT	10.000MHz to 12.999MHz	30 Max	Fundamental / AT
3.600MHz to 3.899MHz	150 Max	Fundamental / AT	13.000MHz to 32.768MHz	25 Max	Fundamental / AT
3.900MHz to 3.999MHz	120 Max	Fundamental / AT	24.000MHz to 29.999MHz	60 Max	Third Overtone / AT
4.000MHz to 4.099MHz	100 Max	Fundamental / AT	30.000MHz to 65.000MHz	40 Max	Third Overtone / AT

PART NUMBERING GUIDE

EC AT - 20 - 30.000M - G TR

FREQUENCY TOLERANCE / STABILITY

Blank=±50ppm at 25°C, ±100ppm from 0°C to 70°C
 A=±50ppm at 25°C, ±100ppm from -20°C to 70°C
 B=±50ppm at 25°C, ±100ppm from -40°C to 85°C
 C=±30ppm at 25°C, ±50ppm from 0°C to 70°C
 D=±30ppm at 25°C, ±50ppm from -20°C to 70°C
 E=±30ppm at 25°C, ±50ppm from -40°C to 85°C
 F=±15ppm at 25°C, ±30ppm from 0°C to 70°C
 G=±15ppm at 25°C, ±30ppm from -20°C to 70°C
 H=±15ppm at 25°C, ±30ppm from -40°C to 85°C
 J=±15ppm at 25°C, ±20ppm from 0°C to 70°C
 K=±15ppm at 25°C, ±20ppm from -20°C to 70°C
 L=±15ppm at 25°C, ±20ppm from -40°C to 85°C
 M=±10ppm at 25°C, ±15ppm from 0°C to 70°C
 N=±10ppm at 25°C, ±15ppm from -20°C to 70°C

PACKAGING OPTIONS

Blank=Bulk, A=Tray, TR=Tape and Reel

AVAILABLE OPTIONS

Blank=None (Standard), CLXXX=Custom Lead Length(pp46)
 G=Gull Wing, G3=Gull Wing & Metal Jacket (pp47)
 I2=Insulator Tab (pp48)
 L=Third Lead(pp48)
 L2=Alternate Third Lead (pp48)
 V=Vinyl Sleeveing (pp48)

FREQUENCY

LOAD CAPACITANCE

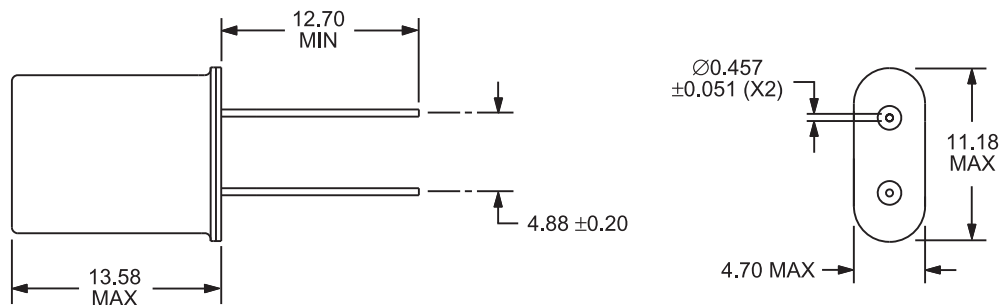
Blank=18pF (Standard), S=Series, XX=XXpF (Custom)

MODE OF OPERATION / CRYSTAL CUT

Blank=Fundamental / AT, T=Third Overtone / AT

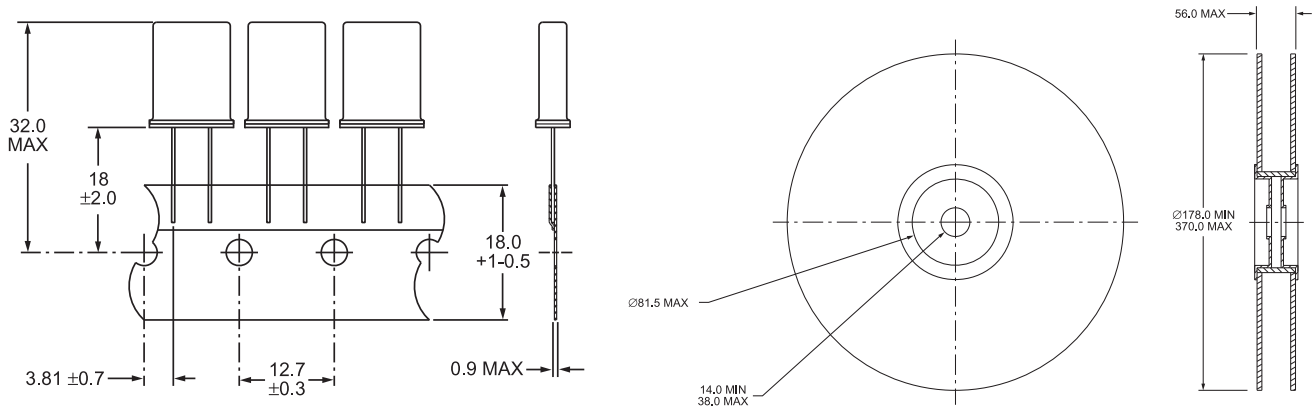
MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



1000 Pieces per Reel
 Compliant to EIA-468B

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

PARAMETER

Fine Leak Test
 Gross Leak Test
 Mechanical Shock
 Vibration
 Lead Integrity
 Solderability
 Temperature Cycling
 Resistance to Soldering Heat
 Resistance to Solvents

SPECIFICATION

MIL-STD-883, Method 1014, Condition A
 MIL-STD-883, Method 1014, Condition C
 MIL-STD-202, Method 213, Condition C
 MIL-STD-883, Method 2007, Condition A
 MIL-STD-883, Method 2004
 MIL-STD-883, Method 2002
 MIL-STD-883, Method 1010
 MIL-STD-883, Method 210
 MIL-STD-883, Method 215

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: E XX.XXXM

Frequency in MHz (5 Digits Maximum + Decimal)
 E or Blank (No Marking)

Line 3: XX

Ecliptek Manufacturing Identifier

MANUFACTURER
 ECLIPTEK CORP.

CATEGORY
 CRYSTAL

SERIES
 EC

PACKAGE
 HC-49/U

CLASS
 CR05

REV. DATE
 11/07