

Product EOL Announcement

The Product EOL Announcement signifies that a product series has entered the final phase of the Ecliptek Product Life Cycle, and serves as advance notice of product termination per the Ecliptek End of Life (EOL) policy.

Ecliptek Corporation announces End of Life initiation for the following product series with the intent of discontinuing its availability.

EOL Series	Description
EC4SM	4.0mm Epoxy Base SMD Crystal

EOL Timeline

The last date Ecliptek will accept orders (Stage 2) and the last date orders may be scheduled for shipment (Stage 3) are listed in the table below.

Stage 1 EOL Announce Date	Stage 2 Last Date to Order	Stage 3 Last Date to Ship
5-April-2011	31-December-2011	31-March-2012

Alternative Products

In order to fulfill your requirements beyond this product's discontinuation, we invite you to evaluate the recommended alternative Ecliptek product series referenced below. Please click on the link to view the data sheet.

Alternative Series	Description
E1S	RoHS Compliant (Pb-free) Resistance Welded Short HC-49/UP SMD Crystal

Automated EOL Notification

Ecliptek offers automated notification of Product EOL Announcements. Place part numbers for which you'd like to receive EOL Notifications into your personalized [Parts List](#) on our website and we'll email you when EOL is announced.

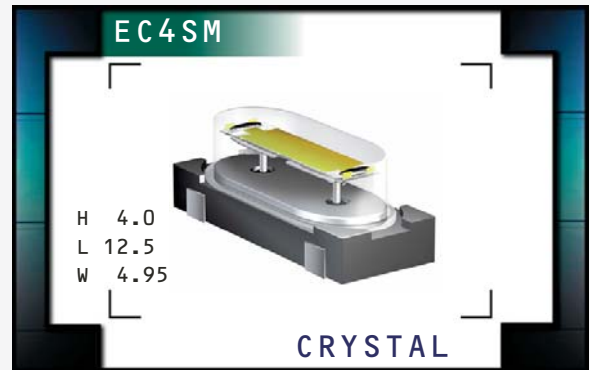
Please do not hesitate to contact us if you have any questions or need further assistance.

Ecliptek Global Customer Support Team
(800) 433-1280 x300
customersupport@ecliptek.com

All product warranties for discontinued products will be honored in full according to Ecliptek [Terms and Conditions of Sale](#).

EC4SM Series

- Four pad surface mount short package
- AT-Cut
- Resistance weld seal
- Tight tolerance/stability
- Interchangeable with plastic surface mount crystals
- Tape and reel available



NOTES

ELECTRICAL SPECIFICATIONS

Frequency Range	3.579545MHz to 30.000MHz
Frequency Tolerance / Stability	±50ppm / ±100ppm (Standard), ±30ppm / ±50ppm, ±15ppm / ±30ppm,
Over Operating Temperature Range	or ±15ppm / ±20ppm
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	1 mWatt Maximum
Load Capacitance (C_L)	10pF, 12pF, 13pF, 14pF, 15pF, 16pF, 18pF, 20pF, 22pF, 24pF, 27pF, 30pF, 32pF, 33pF Parallel Resonant, 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
3.579545MHz to 4.999MHz	200 Max	Fundamental / AT	10.000MHz to 14.999MHz	70 Max	Fundamental / AT
5.000MHz to 5.999MHz	150 Max	Fundamental / AT	15.000MHz to 15.999MHz	60 Max	Fundamental / AT
6.000MHz to 7.999MHz	120 Max	Fundamental / AT	16.000MHz to 23.999MHz	50 Max	Fundamental / AT
8.000MHz to 8.999MHz	90 Max	Fundamental / AT	24.000MHz to 30.000MHz	40 Max	Fundamental / AT
9.000MHz to 9.999MHz	80 Max	Fundamental / AT			

PART NUMBERING GUIDE

EC4SM - 20 - 25.000M 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
 J=±15ppm at 25°C, ±20ppm from 0°C to 70°C

PACKAGING OPTIONS

Blank=Bulk, TR=Tape and Reel

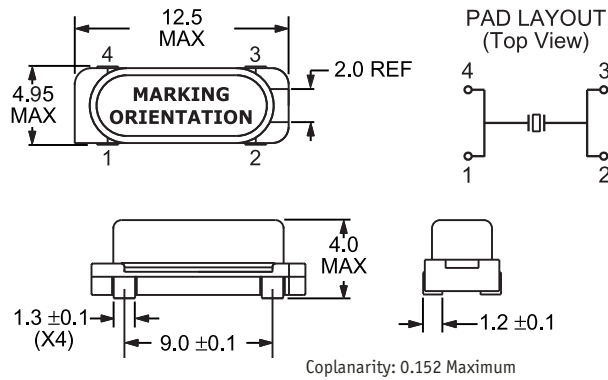
FREQUENCY

LOAD CAPACITANCE

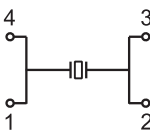
Blank=18pF Parallel Resonant
 10=10pF Parallel Resonant, 12=12pF Parallel Resonant,
 13=13pF Parallel Resonant, 14=14pF Parallel Resonant,
 15=15pF Parallel Resonant, 16=16pF Parallel Resonant,
 20=20pF Parallel Resonant, 22=22pF Parallel Resonant,
 24=24pF Parallel Resonant, 27=27pF Parallel Resonant,
 30=30pF Parallel Resonant, 32=32pF Parallel Resonant,
 33=33pF Parallel Resonant, S=Series Resonant

MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS

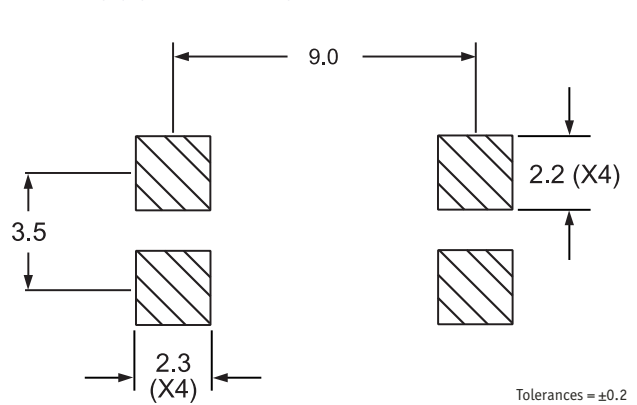


PAD LAYOUT (Top View)



SUGGESTED SOLDER PAD LAYOUT

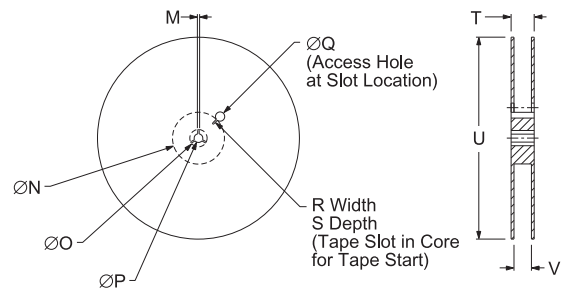
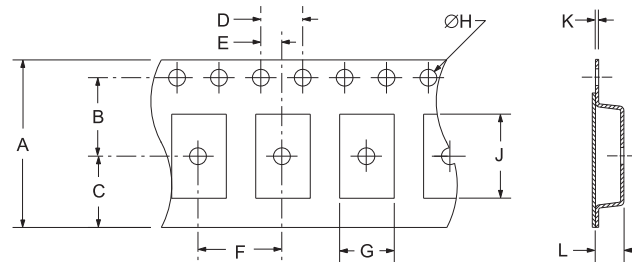
ALL DIMENSIONS IN MILLIMETERS



Tolerances = ±0.2

TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E	
	24±.3	11.5±.1	10.75±.1	4±.1	2±.1	
F	G	H	J	K	L	
	12±.1	5.4±.1	1.5+.1	2.5±.1	.4±.05	4.2±.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	30.4 MAX	360 MAX	24.4+2-0	1,000

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

PARAMETER

Fine Leak Test
 Gross Leak Test
 Mechanical Shock
 Vibration
 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 2002
 MIL-STD-883, Method 1010
 MIL-STD-883, Method 210
 MIL-STD-883, Method 215

MARKING SPECIFICATIONS

*Compliant to EIA-481A

Line 1: E XX.XXX

Frequency in MHz
 (5 Digits Maximum + Decimal)

MANUFACTURER
 ECLIPTEK CORP.

CATEGORY
 CRYSTAL

SERIES
 EC4SM

PACKAGE
 EPOXY BASE SHORT

CLASS
 CR33

REV. DATE
 04/11