

## Marketing Bulletin

**DATE:** May 1<sup>st</sup>, 2008  
**TO:** All Sales Personnel  
**FROM:** Isaac Gonzalez  
**RE:** Product Termination

To all concerned parties,

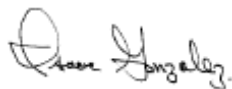
This bulletin is to notify all customers of the discontinuation of the following Ecliptek series effective May 1<sup>st</sup>, 2008:

<b>Series</b>	<b>Description</b>	<b>Recommended Replacement</b>
EC1SM	Resistance Welded Short HC-49/UP SMD Crystal	E1S Series
EC2SM	Resistance Welded HC-49/UP SMD Crystal	E2S Series

In compliance with our End of Life (EOL) policy, this will serve as advanced notice of product termination. New orders will not be accepted after September 1<sup>st</sup>, 2009, with delivery to conclude by December 31<sup>st</sup>, 2009.

If there are any questions pertaining to this bulletin, please feel free to contact me. Thank you again for your cooperation.

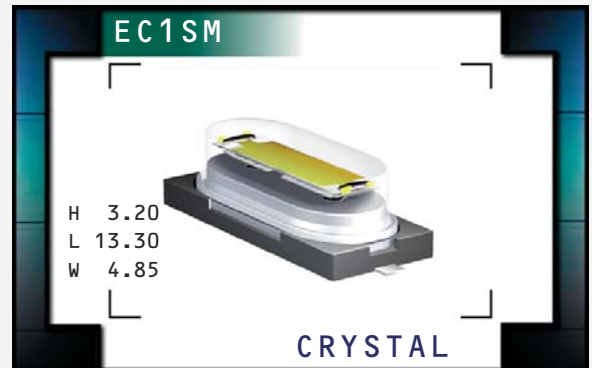
Best Regards,



Isaac Gonzalez  
Configuration Manager  
Ecliptek Corporation

# EC1SM Series

- HC-49/UP short package
- AT or BT cut available
- Resistance weld seal
- Tight tolerance/stability
- Tape and reel available



## NOTES

**OBSOLETE**

## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>	3.579545MHz to 50.000MHz
<b>Frequency Tolerance / Stability</b>	±50ppm / ±100ppm (Standard), ±30ppm / ±50ppm (AT cut only), ±15ppm / ±30ppm (AT cut only),
<b>Over Operating Temperature Range</b>	±15ppm / ±20ppm (AT cut only), or ±10ppm / ±15ppm (AT cut only)
<b>Operating Temperature Range</b>	0°C to 70°C (Standard), -20°C to 70°C (AT cut only), or -40°C to 85°C (AT cut only)
<b>Aging (at 25°C)</b>	±5ppm / year Maximum
<b>Storage Temperature Range</b>	-40°C to 85°C
<b>Shunt Capacitance</b>	7pF Maximum
<b>Insulation Resistance</b>	500 Megaohms Minimum at 100V <sub>DC</sub>
<b>Drive Level</b>	1 mWatt Maximum
<b>Load Capacitance (C<sub>L</sub>)</b>	18pF (Standard), Custom C <sub>L</sub> ≥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
3.579545MHz to 4.999MHz	200 Max	Fundamental / AT	15.000MHz to 15.999MHz	60 Max	Fundamental / AT
5.000MHz to 5.999MHz	150 Max	Fundamental / AT	16.000MHz to 23.999MHz	50 Max	Fundamental / AT
6.000MHz to 7.999MHz	120 Max	Fundamental / AT	24.000MHz to 30.000MHz	40 Max	Fundamental / AT
8.000MHz to 8.999MHz	90 Max	Fundamental / AT	24.000MHz to 40.000MHz	40 Max	Fundamental / BT
9.000MHz to 9.999MHz	80 Max	Fundamental / AT	28.6363MHz to 29.999MHz	150 Max	Third Overtone / AT
10.000MHz to 14.999MHz	70 Max	Fundamental / AT	30.000MHz to 50.000MHz	100 Max	Third Overtone / AT

## PART NUMBERING GUIDE

### EC1SM A - T - 20 - 30.00M 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, TR=Tape and Reel

#### FREQUENCY

#### LOAD CAPACITANCE

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

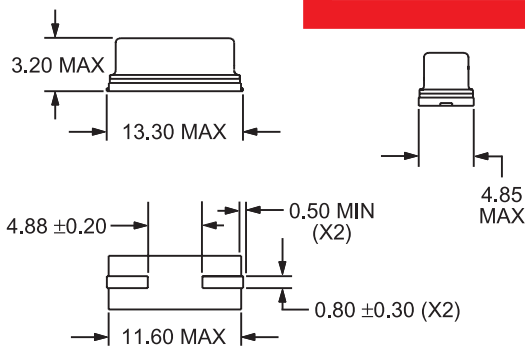
#### MODE OF OPERATION / CRYSTAL CUT

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

# OBSOLETE

#### MECHANICAL DIMENSIONS

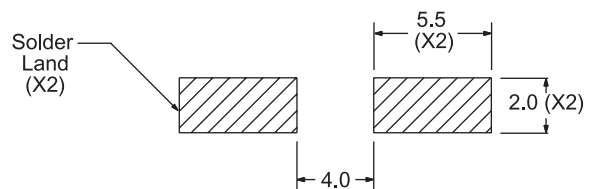
ALL DIMENSIONS IN MILLIMETERS



Coplanarity: 0.36mm Maximum

#### ACCEPTED SOLDER PAD LAYOUT

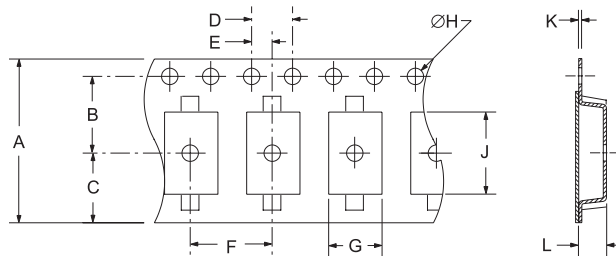
ALL DIMENSIONS IN MILLIMETERS



Tolerances = ±0.2

#### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	24±.3	11.5±.1	0.75±.1	4±.2	2±.1
F	G	H	J	K	L
12±.2	B0*	1.5+.1	A0*	.4±.1	K0*

REEL	M	N	O	P	Q
	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 M

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

MANUFACTURER  
 ECLIPTEK CORP.

CATEGORY  
 CRYSTAL

SERIES  
 EC1SM

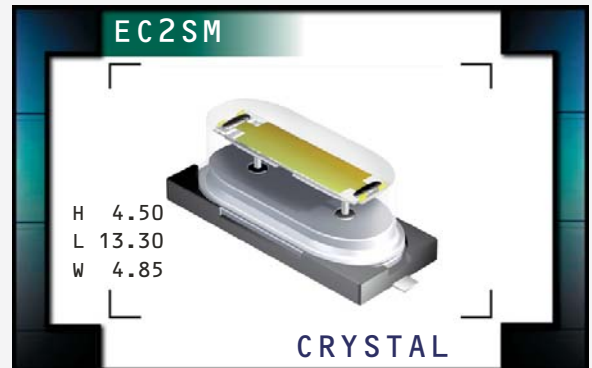
PACKAGE  
 HC-49/UP Short

CLASS  
 CR21

REV. DATE  
 03/06

# EC2SM Series

- HC-49/UP package
- AT or BT cut available
- Resistance weld seal
- Tight tolerance/stability
- Tape and reel available



## NOTES

OBSOLETE

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<b>Aging (at 25°C)</b>	±5ppm / year Maximum
<b>Storage Temperature Range</b>	-40°C to 85°C
<b>Shunt Capacitance</b>	7pF Maximum
<b>Insulation Resistance</b>	500 Megaohms Minimum at 100V <sub>DC</sub>
<b>Drive Level</b>	1 mWatt Maximum
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PART NUMBERING GUIDE

**EC2SM A - T - 20 - 30.00M TR**

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 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, TR=Tape and Reel

**FREQUENCY**

**LOAD CAPACITANCE**

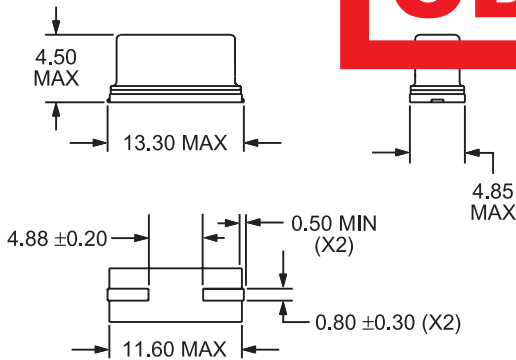
Blank=18pF (Standard), S=Series  
 XX=XXpF (Custom)

**MODE OF OPERATION / CRYSTAL CUT**

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

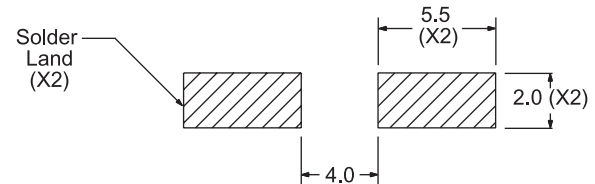


**MECHANICAL DIMENSIONS**  
 ALL DIMENSIONS IN MILLIMETERS



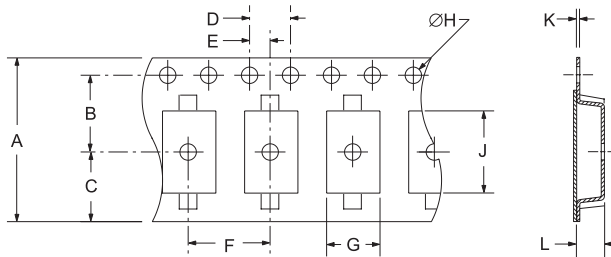
Coplanarity: 0.36mm Maximum

**SOLDER LAND DIMENSIONS**  
 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±.2	2±.1
F	G	H	J	K	L
12±.2	B0*	1.5+.1	A0*	.4±.1	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	30.4 MAX	360 MAX	24.4+2-0	1,000

\*Compliant to EIA-481A

**ENVIRONMENTAL/MECHANICAL SPECIFICATIONS**

**PARAMETER**

**SPECIFICATION**

Fine Leak Test MIL-STD-883, Method 1014, Condition A  
 Gross Leak Test MIL-STD-883, Method 1014, Condition C  
 Mechanical Shock MIL-STD-202, Method 213, Condition C  
 Vibration MIL-STD-883, Method 2007, Condition A  
 Solderability MIL-STD-883, Method 2002  
 Temperature Cycling MIL-STD-883, Method 1010  
 Resistance to Soldering Heat MIL-STD-883, Method 210  
 Resistance to Solvents MIL-STD-883, Method 215

**MARKING SPECIFICATIONS**

Line 1: E XX.XXX M

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

MANUFACTURER  
 ECLIPTEK CORP.

CATEGORY  
 CRYSTAL

SERIES  
 EC2SM

PACKAGE  
 HC-49/UP

CLASS  
 CR03

REV. DATE  
 03/06