

## 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.

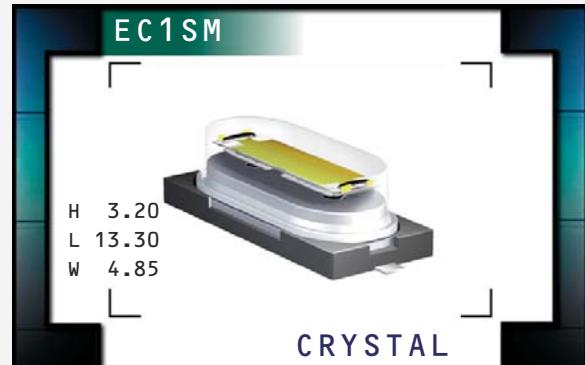
Best Regards,

A handwritten signature in black ink, appearing to read 'Isaac Gonzalez'.

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

### ELECTRICAL SPECIFICATIONS

Frequency Range	3.579545MHz to 50.000MHz
Frequency Tolerance / Stability	±50ppm / ±100ppm (Standard), ±30ppm / ±50ppm (AT cut only), ±15ppm / ±30ppm (AT cut only),
Over Operating Temperature Range	±15ppm / ±20ppm (AT cut only), or ±10ppm / ±15ppm (AT cut only)
Operating Temperature Range	0°C to 70°C (Standard), -20°C to 70°C (AT cut only), or -40°C to 85°C (AT cut only)
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 <sub>DC</sub>
Drive Level	1 mWatt Maximum
Load Capacitance (C <sub>L</sub> )	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 - 30.000M 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  
 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

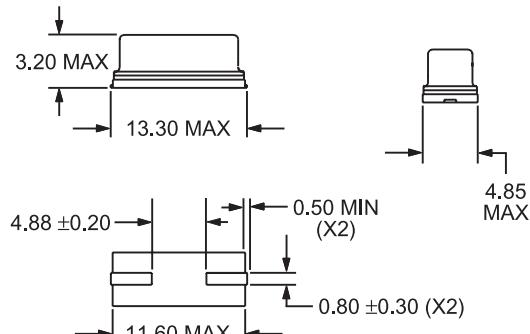
Blank=18pF (Standard), S=Series  
 XX=XXpF (Custom)

### MODE OF OPERATION / CRYSTAL CUT

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

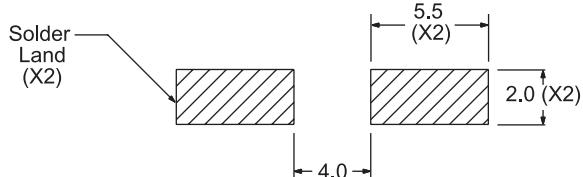
### MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



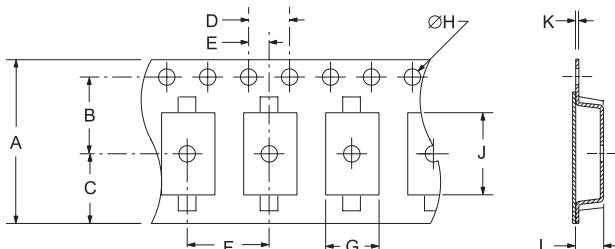
### SUGGESTED SOLDER PAD LAYOUT

ALL DIMENSIONS IN MILLIMETERS



### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
F	24±.3	11.5±.1	0.75±.1	4±.2	2±.1
G	12±.2	80*	1.5+.1	A0*	.4±.1
H					K0*

REEL	M	N	O	P	Q
R	5 MIN	50 MIN	20.2 MIN	13±.2	40 MIN
S	2.5 MIN	10 MIN	30.4 MAX	360 MAX	24.4+2-0
T					
U					
V					
W					
X					
Y					
Z					
QTY/REEL					

### 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

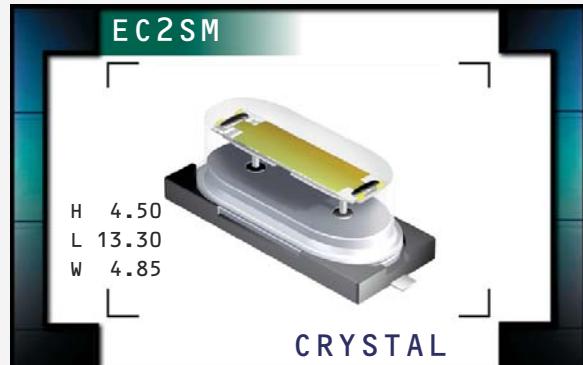
Line 1: E XX.XXX M

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

\*Compliant to EIA-481A

# EC2SM Series

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



## NOTES

### 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

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 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  
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#### PACKAGING OPTIONS

Blank=Bulk, TR=Tape and Reel

#### FREQUENCY

#### LOAD CAPACITANCE

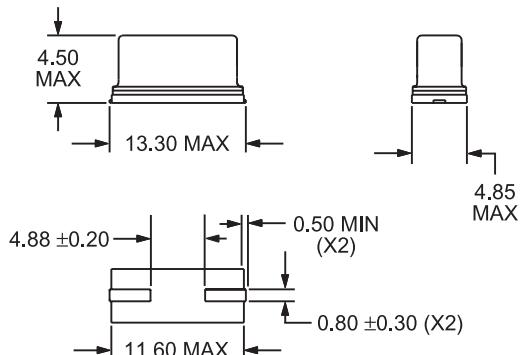
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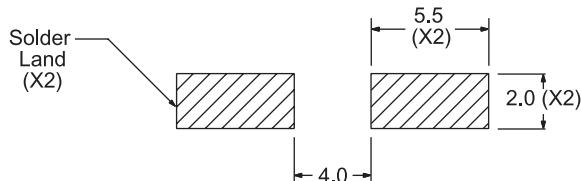
#### MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



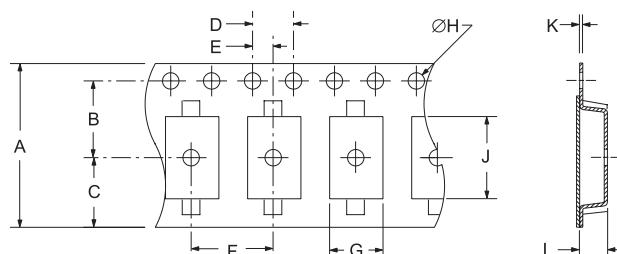
#### SUGGESTED SOLDER PAD LAYOUT

ALL DIMENSIONS IN MILLIMETERS



#### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



Coplanarity: 0.36mm Maximum

Tolerances = ±0.2

TAPE	A	B	C	D	E
F	24±.3	11.5±.1	10.75±.1	4±.2	2±.1
G				K	L
H	12±.2	B0*	1.5±.1	A0*	.4±.1
J					K0*

REEL	M	N	O	P	Q
R	1.5 MIN	50 MIN	20.2 MIN	13±.2	40 MIN
S	2.5 MIN	10 MIN	30.4 MAX	360 MAX	QTY/REEL
T				24.4±2-0	1,000
U					
V					
W					
X					
Y					
Z					

#### ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

##### PARAMETER

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 MIL-STD-883, Method 2002  
 MIL-STD-883, Method 1010  
 MIL-STD-883, Method 210  
 MIL-STD-883, Method 215

#### MARKING SPECIFICATIONS

Line 1: E XX.XXX M

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