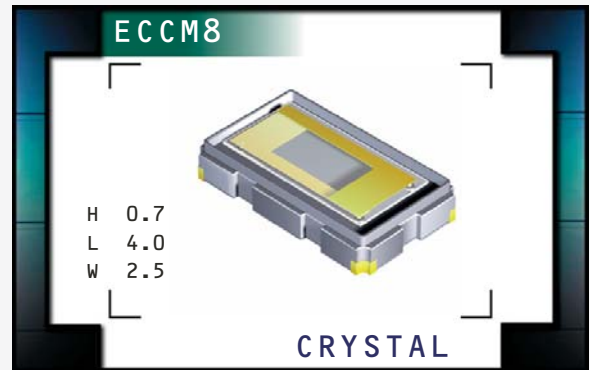


# ECCM8 Series



www.DataSheet4U.com®  
ECLIPTEK CORPORATION

- RoHS Compliant (Pb-Free)
- Miniature four pad ceramic surface mount package
- Standard frequencies up to 32.000MHz
- AT Cut
- Tape and reel available



## NOTES

### ELECTRICAL SPECIFICATIONS

<b>Nominal Frequency</b>	12MHz, 13MHz, 13.56MHz, 14.4MHz, 15.36MHz, 16MHz, 16.384MHz, 19.5MHz, 20MHz, 24MHz, 24.576MHz, 25MHz, 26MHz, 27MHz, 30MHz, 32MHz
<b>Frequency Tolerance / Stability</b>	±50ppm / ±100ppm, ±30ppm / ±50ppm, ±15ppm / ±30ppm, ±15ppm / ±20ppm, or
<b>Over Operating Temperature Range</b>	±10ppm / ±15ppm
<b>Operating Temperature Range</b>	0°C to +70°C, -20°C to +70°C, or -40°C to +85°C
<b>Load Capacitance (C<sub>L</sub>)</b>	10pF Parallel Resonant 12pF Parallel Resonant (Only available over Nominal Frequency range of 20MHz to 32MHz) 16pF Parallel Resonant (Only available over Nominal Frequency range of 20MHz to 32MHz)
<b>Shunt Capacitance</b>	5pF Maximum
<b>Mode of Operation</b>	Fundamental
<b>Crystal Cut</b>	AT-Cut
<b>Aging (at 25°C)</b>	±3ppm / year Maximum
<b>Drive Level</b>	100 µWatts Maximum
<b>Storage Temperature Range</b>	-40°C to 85°C
<b>Insulation Resistance</b>	500 Megaohms Minimum at 100V <sub>DC</sub>
<b>Spurious Response</b>	-3dB Minimum; F <sub>0</sub> to F <sub>0</sub> +5000ppm
<b>Equivalent Series Resistance</b>	70 Ohms Maximum from 12.000MHz to 15.999MHz 80 Ohms Maximum from 16.000MHz to 18.999MHz 60 Ohms Maximum from 19.000MHz to 32.000MHz

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
CRYSTAL

SERIES  
ECCM8

PACKAGE  
CERAMIC

CLASS  
CR46

REV. DATE  
03/08

### PART NUMBERING GUIDE

## ECCM8 A - 16 - 32.00M TR

#### FREQUENCY TOLERANCE/STABILITY

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

#### PACKAGING OPTIONS

Blank=Bulk, TR=Tape and Reel

#### FREQUENCY

#### LOAD CAPACITANCE

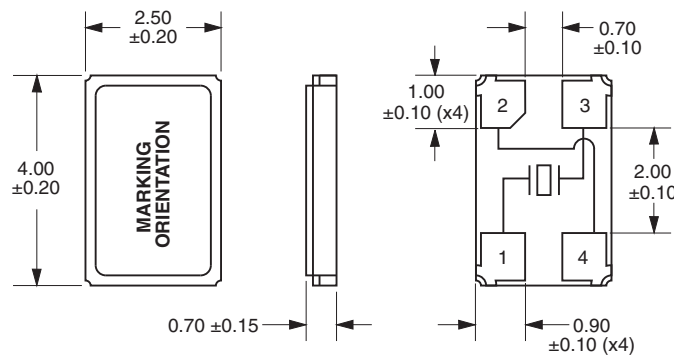
10=10pF Parallel Resonant  
 12=12pF Parallel Resonant  
 16=16PF Parallel Resonant

#### MODE OF OPERATION

A=Fundamental

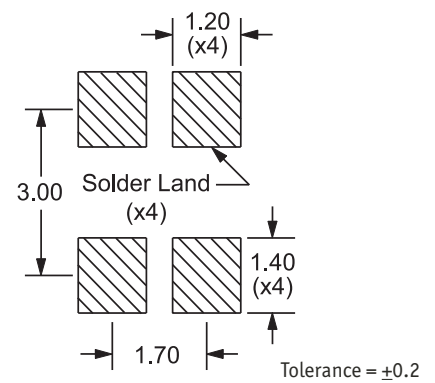
#### MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



#### SUGGESTED SOLDER PAD LAYOUT

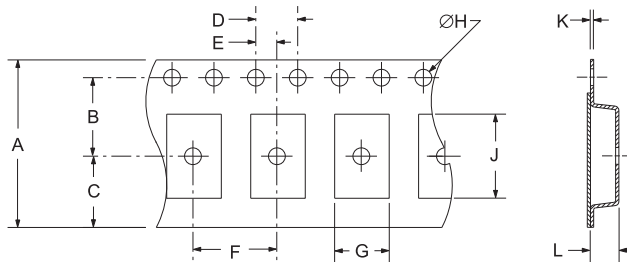
ALL DIMENSIONS IN MILLIMETERS



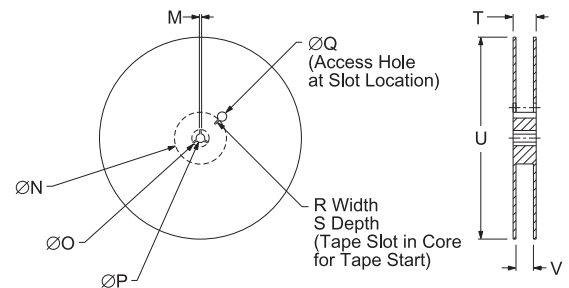
Pad 1: Crystal  
 Pad 2: Cover/Ground  
 Pad 3: Crystal  
 Pad 4: Cover/Ground

#### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E	
	12±.3	5.5±.1	4.75±.1	4±.1	2±.1	
	F	G	H	J	K	L
	4±.1	2.9±.1	1.5±.1	4.4±.1	.3±.05	1±.1



REEL	M	N	O	P	Q	
	1.5 MIN	50 MIN	20.2 MIN	13±.5	40 MIN	
	R	S	T	U	V	QTY/REEL
	2.5 MIN	10 MIN	18.4 MAX	180 MAX	12.4+2-0	1,000

#### 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
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Flammability	UL94-V0
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
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

\*Compliant to EIA-481A

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

Line 2: XXXXX  
 Ecliptek Manufacturing Identifier

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