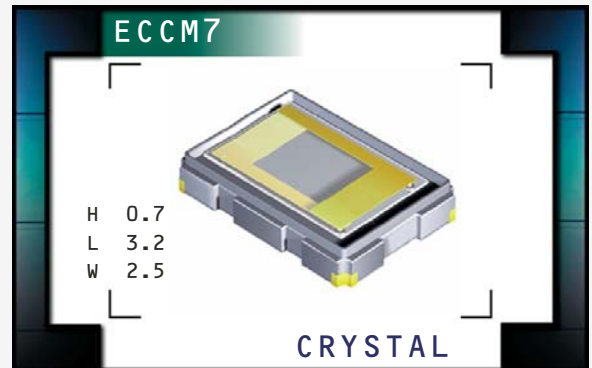


# ECCM7 Series



www.DataSheet4U.com®  
ECLIPTEK CORPORATION

- RoHS Compliant (Pb-Free)
- Miniature four pad ceramic surface mount package
- Standard frequencies up to 50.000MHz
- AT Cut
- Tape and reel available



## NOTES

### ELECTRICAL SPECIFICATIONS

<b>Nominal Frequency (MHz)</b>	13.000, 13.500, 14.318, 14.746, 15.000, 15.360, 16.000, 16.368, 16.384, 18.432, 19.200, 19.500, 20.000, 22.1184, 24.000, 24.576, 25.000, 26.000, 27.000, 28.6363, 29.491, 30.000, 32.000, 32.256, 33.000, 40.000, 48.000, 49.152, and 50.000MHz
<b>Frequency Tolerance / Stability</b>	$\pm 10\text{ppm}$ / $\pm 10\text{ppm}$ , $\pm 10\text{ppm}$ / $\pm 15\text{ppm}$ , $\pm 15\text{ppm}$ / $\pm 20\text{ppm}$ , $\pm 15\text{ppm}$ / $\pm 30\text{ppm}$ ,
<b>Over Operating Temperature Range</b>	$\pm 30\text{ppm}$ / $\pm 50\text{ppm}$ or $\pm 50\text{ppm}$ / $\pm 50\text{ppm}$
<b>Operating Temperature Range</b>	-10°C to +60°C, -20°C to +70°C, or -30°C to +85°C
<b>Load Capacitance (C<sub>L</sub>)</b>	10pF Parallel Resonant 12pF Parallel Resonant 16pF Parallel Resonant Series Resonant
<b>Shunt Capacitance</b>	5pF Maximum
<b>Mode of Operation</b>	Fundamental
<b>Crystal Cut</b>	AT-Cut
<b>Aging (at 25°C)</b>	$\pm 3\text{ppm}$ / year Maximum
<b>Drive Level</b>	100 $\mu\text{Watts}$ 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>	100 Ohms Maximum from 13.000MHz to 18.999MHz 80 Ohms Maximum from 19.000MHz to 29.999MHz 60 Ohms Maximum from 30.000MHz to 50.000MHz

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
CRYSTAL

SERIES  
ECCM7

PACKAGE  
CERAMIC

CLASS  
CR38

REV. DATE  
03/08

PART NUMBERING GUIDE

**ECCM7 A A 16 - 32.000M TR**

**FREQUENCY TOLERANCE/STABILITY**

- A=±50ppm at 25°C, ±50ppm over -10°C to +60°C
- B=±50ppm at 25°C, ±50ppm over -20°C to +70°C
- D=±30ppm at 25°C, ±50ppm over -10°C to +60°C
- E=±30ppm at 25°C, ±50ppm over -20°C to +70°C
- F=±30ppm at 25°C, ±50ppm over -30°C to +85°C
- G=±15ppm at 25°C, ±30ppm over -10°C to +60°C
- H=±15ppm at 25°C, ±30ppm over -20°C to +70°C
- J=±15ppm at 25°C, ±30ppm over -30°C to +85°C
- K=±15ppm at 25°C, ±20ppm over -10°C to +60°C
- L=±15ppm at 25°C, ±20ppm over -20°C to +70°C
- M=±15ppm at 25°C, ±20ppm over -30°C to +85°C
- N=±10ppm at 25°C, ±15ppm over -10°C to +60°C
- P=±10ppm at 25°C, ±15ppm over -20°C to +70°C
- Q=±10ppm at 25°C, ±15ppm over -30°C to +85°C
- R=±10ppm at 25°C, ±10ppm over -10°C to +60°C

**PACKAGING OPTIONS**

Blank=Bulk, TR=Tape and Reel

**FREQUENCY**

**LOAD CAPACITANCE**

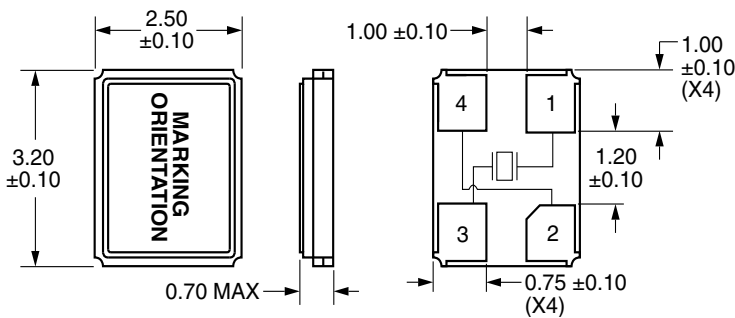
- 10=10pF Parallel Resonant
- 12=12pF Parallel Resonant
- 16=16PF Parallel Resonant
- S=Series Resonant

**MODE OF OPERATION**

A=Fundamental

**MECHANICAL DIMENSIONS**

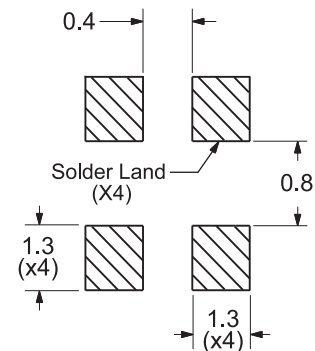
ALL DIMENSIONS IN MILLIMETERS



Pad 1: Input/Output  
Pad 2: Cover/Ground  
Pad 3: Input/Output  
Pad 4: Cover/Ground

**SUGGESTED SOLDER PAD LAYOUT**

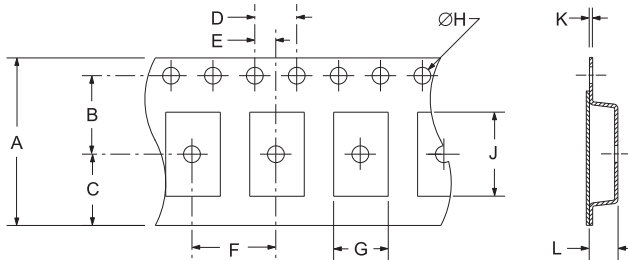
ALL DIMENSIONS IN MILLIMETERS



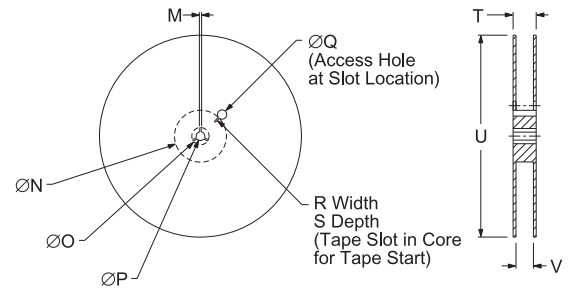
Tolerance = ±0.2

**TAPE AND REEL DIMENSIONS**

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	8±.2	3.5±.1	2.75±.1	4±.1	2±.05
F	G	H	J	K	L
4±.1	2.9±.1	1.5±.2	3.6±.1	.2±.05	1.0±.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	13.0 MAX	180 MAX	8.4+1.5-0	3,000

**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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