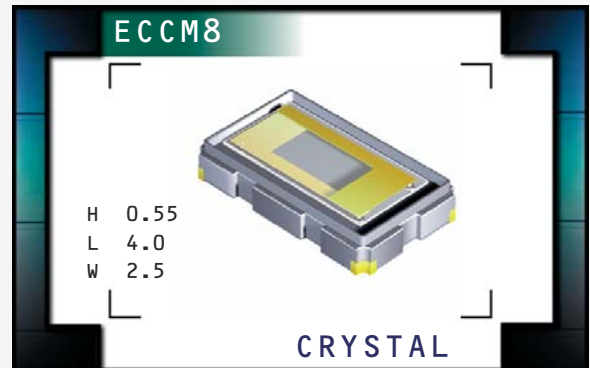


ECCM8 Series



- 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

Nominal Frequency	16.000MHz, 20.000MHz, 24.576MHz, 25.000MHz, 26.000MHz, 27.000MHz, 32.000MHz
Frequency Tolerance / Stability	±50ppm / ±100ppm, ±30ppm / ±50ppm, ±15ppm / ±30ppm, ±15ppm / ±20ppm, or
Over Operating Temperature Range	±10ppm / ±15ppm
Operating Temperature Range	0°C to +70°C, -20°C to +70°C, or -40°C to +85°C
Load Capacitance (C _L)	10pF, 12pF, or 16pF
Shunt Capacitance	5pF Maximum
Mode of Operation	Fundamental
Crystal Cut	AT-Cut
Aging (at 25°C)	±3ppm / year Maximum
Drive Level	100 µWatts Maximum
Storage Temperature Range	-40°C to 85°C
Insulation Resistance	500 Megaohms Minimum at 100V _{DC}
Spurious Response	-3dB Minimum; F ₀ to F ₀ +5000ppm
Equivalent Series Resistance	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
05/05

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

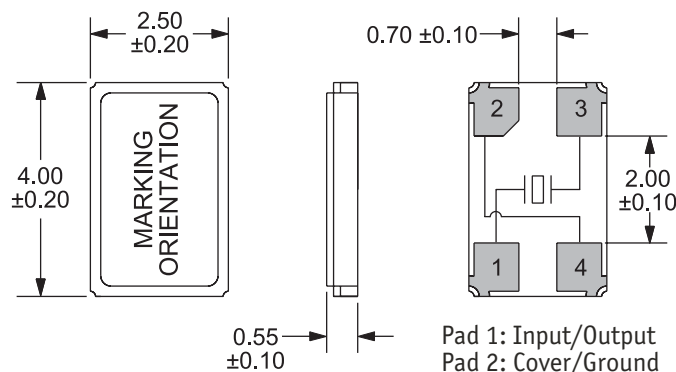
10=10pF
 12=12pF
 16=16PF

MODE OF OPERATION

A=Fundamental

MECHANICAL DIMENSIONS

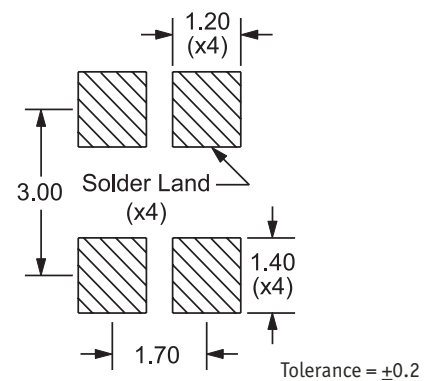
ALL DIMENSIONS IN MILLIMETERS



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

SUGGESTED SOLDER PAD LAYOUT

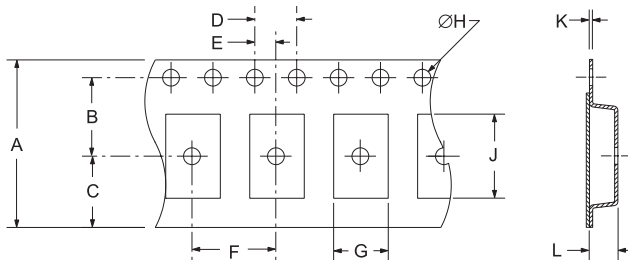
ALL DIMENSIONS IN MILLIMETERS



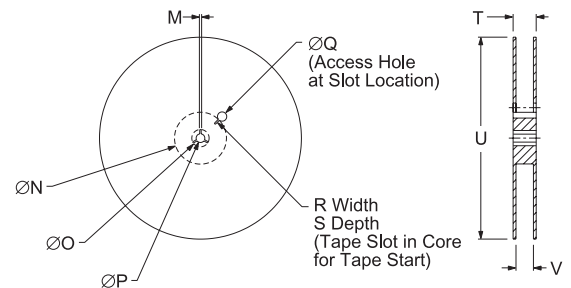
Tolerance = ±0.2

TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	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

Fine Leak Test
 Gross Leak Test
 Mechanical Shock

High Temperature Storage
 Low Temperature Storage
 Moisture Resistance
 Solder Thermal Stability
 Thermal Shock
 Vibration

SPECIFICATION

JIS C 6701 10.6 Leak Rate: 2.1×10^{-9} Pa-m³/6 Maximum.
 JIS C 6701 10.6 Leak Rate: 1.27×10^{-5} Pa-m³/8 Maximum.
 Random drop on rigid hard wood surface 3 times at height of 75cm.
 JIS C 7021 B-10: at 85°C for 1000 hours.
 JIS C 7021 B-12: at -40°C for 1000 hours.
 JIS C 7021 B-11: at 85°C and 90% humidity for 1000 hours.
 Recommended Solder Reflow profile 1 time.
 100 cycles over -40°C to +85°C for 30 minutes.
 JIS C 6701 10.26: at 10Hz to 55Hz, 1.5mm amplitude for 1 minute. Test Time: X, Y, Z each direction for 2 hours.

MARKING SPECIFICATIONS

*Compliant to EIA-481A

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

Line 2: XX Y ZZ
 Week of Year
 Last Digit of Year
 Ecliptek Manufacturing Identifier

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