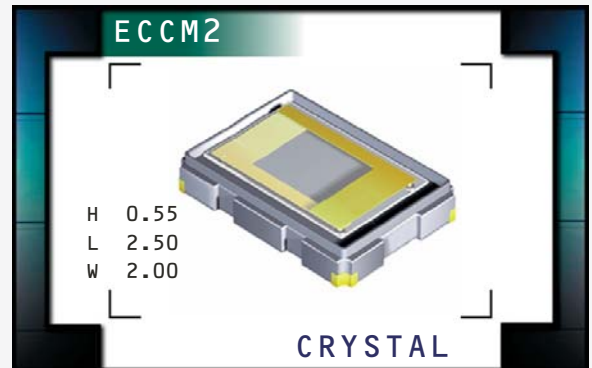


ECCM2 Series



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

Nominal Frequency (MHz) 16.000, 19.660, 20.000, 24.000, 24.576, 25.000, 26.000, 27.000, 29.4912, 29.939, 30.000, 30.720, 32.000, 34.400, 38.400, 40.000, 44.000, 48.000, and 50.000MHz

Frequency Tolerance / Stability

Over Operating Temperature Range $\pm 10\text{ppm} / \pm 10\text{ppm}$ or $\pm 10\text{ppm} / \pm 15\text{ppm}$

Operating Temperature Range -10°C to $+60^{\circ}\text{C}$ or -30°C to $+85^{\circ}\text{C}$

Load Capacitance (C_L) 8pF Parallel Resonant
12pF Parallel Resonant

Shunt Capacitance 5pF Maximum

Mode of Operation Fundamental

Crystal Cut AT-Cut

Aging (at 25°C) $\pm 3\text{ppm} / \text{year}$ Maximum

Drive Level 100 μWatts Maximum

Storage Temperature Range -40°C to 90°C

Insulation Resistance 500 Megaohms Minimum at $100V_{DC}$

Spurious Response -3dB Minimum; F_0 to $F_0 + 5000\text{ppm}$

Equivalent Series Resistance
100 Ohms Maximum from 16.000MHz to 19.999999MHz
80 Ohms Maximum from 20.000MHz to 29.999999MHz
60 Ohms Maximum from 30.000MHz to 39.999999MHz
50 Ohms Maximum from 40.000MHz to 50.000MHz

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
CRYSTAL

SERIES
ECCM2

PACKAGE
CERAMIC

CLASS
CR58

REV. DATE
09/09

PART NUMBERING GUIDE

ECCM2 Q A 12 - 20.000M TR

FREQUENCY TOLERANCE/STABILITY

Q=±10ppm at 25°C, ±15ppm over -30°C to +85°C
 R=±10ppm at 25°C, ±10ppm over -10°C to +60°C

MODE OF OPERATION

A=Fundamental

PACKAGING OPTIONS

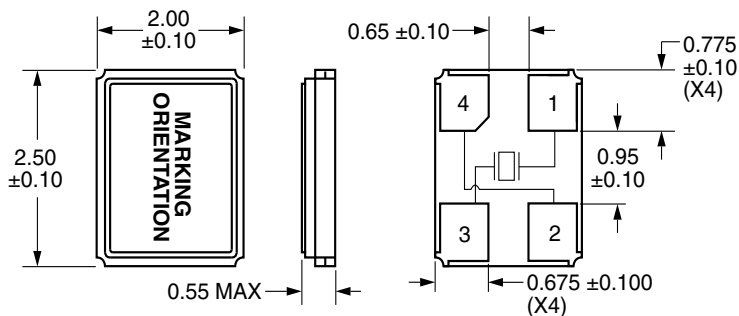
Blank=Bulk, TR=Tape and Reel

FREQUENCY

LOAD CAPACITANCE

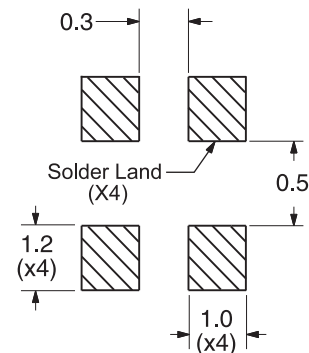
08=8pF Parallel Resonant
 12=12pF Parallel Resonant

MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



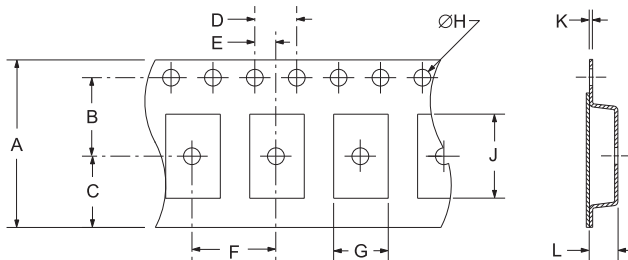
Pad 1: Input/Output
 Pad 2: Cover/Ground
 Pad 3: Input/Output
 Pad 4: Cover/Ground

SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS

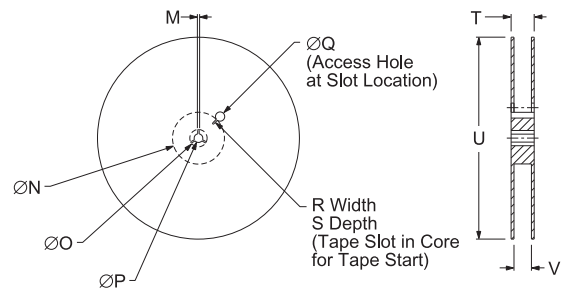


Tolerance = ±0.2

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
	4±.1	2.25±.05	1.55±.05	2.7±.1	.25±.05
				L	
				.65±.05	



REEL	M	N	O	P	Q
	1.5 MIN	50 MIN	20.2 MIN	13±.2	40 MIN
	R	S	T	U	V
	2.5 MIN	10 MIN	13.0 MAX	180 MAX	8.4+1.5-0
					QTY/REEL
					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: **XX.X**
 Frequency in MHz
 (3 Digits Maximum + Decimal)

Line 2: **XXX**
 Ecliptek Manufacturing Identifier

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