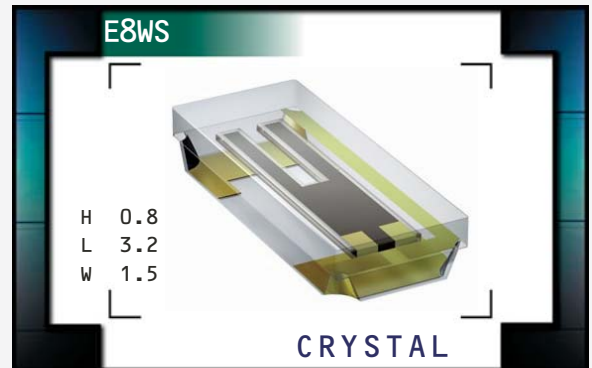


# E8WS Series

- 32.768kHz watch crystal
- Miniature two pad surface mount package
- $\pm 20$ ppm frequency tolerance
- 9.0pF or 12.5pF Parallel Resonant load capacitance
- Tape and reel available



## NOTES

### ELECTRICAL SPECIFICATIONS

Frequency	32.768kHz
Frequency Tolerance (at 25°C)	$\pm 20$ ppm
Frequency Stability	-0.04ppm / $(\Delta^\circ\text{C})^2$ Maximum, Parabolic; Turn Over Temperature at 25°C $\pm 5^\circ\text{C}$
Operating Temperature Range	-40°C to +85°C
Aging (at 25°C)	$\pm 3$ ppm / year Maximum
Storage Temperature Range	-55°C to +125°C
Shunt Capacitance	1.0pF Typical, 2pF Maximum
Motional Capacitance	3.4fF Typical
Equivalent Series Resistance	70,000 Ohms Maximum
Insulation Resistance	500 Megaohms Minimum at 100V <sub>DC</sub>
Drive Level	0.5 $\mu$ Watt Maximum
Load Capacitance (C <sub>L</sub> )	12.5pF Parallel Resonant or 9.0pF Parallel Resonant

# PART NUMBERING GUIDE

## E8WSDC 12 - 32.768K TR

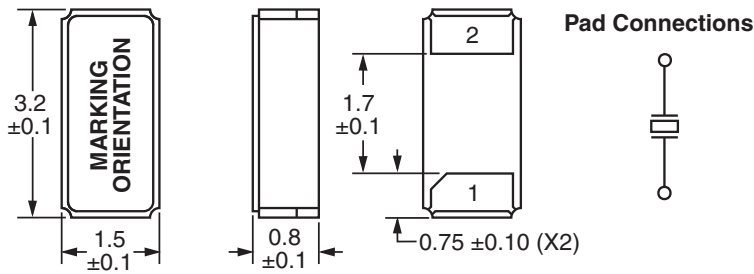
### LOAD CAPACITANCE

09 = 9pF Parallel Resonant  
12 = 12.5pF Parallel Resonant

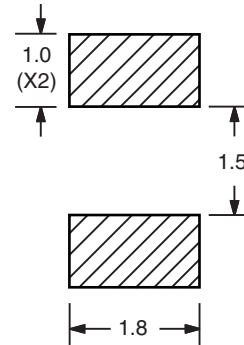
### PACKAGE OPTIONS

Blank = Bulk  
TR = Tape and Reel

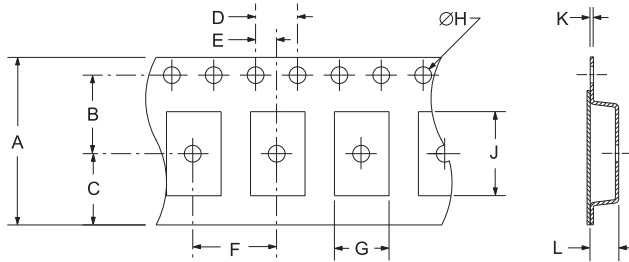
### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



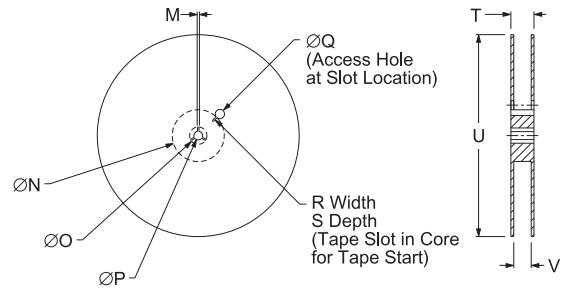
### SUGGESTED SOLDER PAD LAYOUTS ALL DIMENSIONS IN MILLIMETERS



### TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



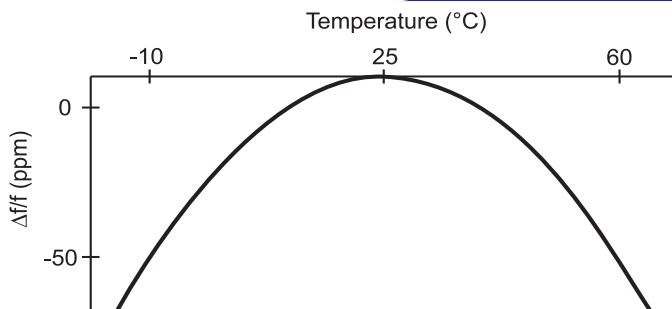
TAPE	A	B	C	D	E
	12±.3	5.5±.1	4.75±.1	4±.2	2±.1
F	G	H	J	K	L
4±.1	A0*	1.5±.1	B0*	0.6 MAX	K0*



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	3,000

### PARABOLIC TEMPERATURE CURVE

\*Compliant to EIA481A



### MARKING SPECIFICATIONS

Line 1: XXXXXXXX

Ecliptek Manufacturing Code  
(8 Characters Maximum)

### ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic	Specification
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-883, Method 2002, Condition B

Characteristic	Specification
Resistance to Soldering Heat	MIL-STD-202, Method 210
Solderability	MIL-STD-883, Method 2003
Vibration	MIL-STD-883, Method 2007, Condition A

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
CRYSTAL

SERIES  
E8WS

PACKAGE  
CERAMIC

CLASS  
CR57

REV. DATE  
10/11