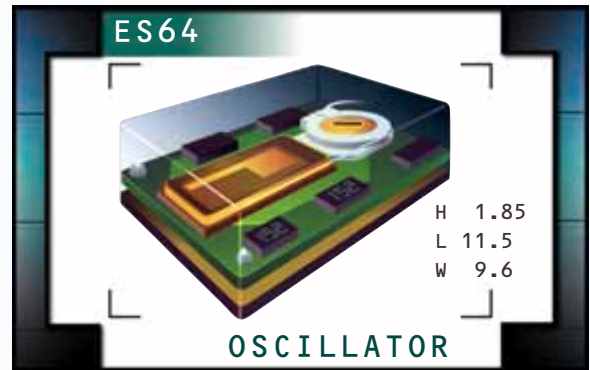


# ES64 Series

- Temperature Compensated Crystal Oscillator (TCXO)
- Sinewave Output
- 5.0V or 3.0V Supply Voltage
- Four pad surface mount
- Stability to 1.5ppm
- Internal and or external voltage control option available



## NOTES

### ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>	10.000MHz to 22.000MHz (Standard Frequencies: 12.800MHz, 13.000MHz, and 14.400MHz)	
<b>Storage Temperature Range</b>	-30°C to 85°C	
<b>Operating Temperature Range</b>	See Table 1	
<b>Supply Voltage (V<sub>DD</sub>)</b>	5.0V <sub>DC</sub> ±5% or 3.0V <sub>DC</sub> ±5%	
<b>Load Drive Capability</b>	10kOhms // 10pF	
<b>Input Current</b>	2.0mA Maximum	
<b>Aging (at 25°C)</b>	±1ppm / Year Maximum	
<b>Frequency Deviation Options</b>		
<b>Internal Trim Only (Top of Can)</b>	±3ppm Minimum	
<b>External Trim Only (Voltage Control)</b>	2.5V <sub>DC</sub> ±2.0V <sub>DC</sub> w/5.0V <sub>DC</sub> Supply Voltage; 1.5V <sub>DC</sub> ±1.0V <sub>DC</sub> w/3.0V <sub>DC</sub> Supply Voltage, Positive Transfer Characteristic	±8ppm Minimum
<b>External Trim and Internal Trim</b>	2.5V <sub>DC</sub> ±2.0V <sub>DC</sub> w/5.0V <sub>DC</sub> Supply Voltage; 1.5V <sub>DC</sub> ±1.0V <sub>DC</sub> w/3.0V <sub>DC</sub> Supply Voltage, Positive Transfer Characteristic	±5ppm Minimum (Control Voltage); ±3ppm Minimum (Internal Trim)
<b>Output Voltage</b>	w/5.0V <sub>DC</sub> ±5% Supply Voltage w/3.0V <sub>DC</sub> ±5% Supply Voltage	1.0Vp-p Clipped Sinewave Minimum 0.7Vp-p Clipped Sinewave Minimum
<b>Frequency Stability</b>	vs. Operating Temperature Range vs. Frequency Tolerance (25°C ±2°C)	See Table 1 ±0.5ppm Maximum w/ Internal Trim Only, ±0.5ppm Maximum w/ Internal and External Trim, ±2ppm Maximum w/ External Trim Only
	vs. Input Voltage (±5%)	±0.3ppm Maximum
	vs. Load (±1kΩ//±1pF)	±0.3ppm Maximum

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES ES64	PACKAGE METAL	VOLTAGE 3.0V or 5.0V	CLASS OS37	REV. DATE 06/00
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# PART NUMBERING GUIDE

## ES64 25 E V 5 - 12.800M TR

**FREQUENCY STABILITY**  
Two Digit Code Per Table 1

**OPERATING TEMP. RANGE**  
One Letter Code Per Table 1

**EXTERNAL/INTERNAL TRIM OPTIONS**  
Blank=Internal Trim Only  
V=Internal and External Trim, W=External Trim Only

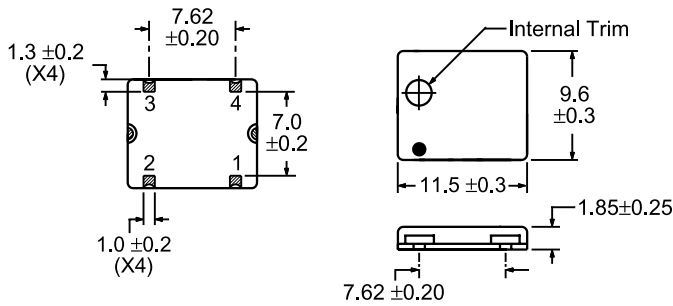
**PACKAGING OPTIONS**  
Blank=Bulk  
TR=Tape and Reel

**FREQUENCY**

**SUPPLY VOLTAGE**  
5=5.0V<sub>DC</sub>±5%  
3=3.0V<sub>DC</sub>±5%

Operating Temperature Range	Frequency Stability				
	X Denotes Availability for all frequencies 0 Denotes Standard Frequencies Availability Only				
	±1.5ppm	±2.0ppm	±2.5ppm	±3.0ppm	
Code	15	20	25	30	
0°C to +50°C	A	0	X	X	X
-10°C to +60°C	B	0	X	X	X
-20°C to +70°C	C	0	X	X	X
-30°C to +60°C	D		X	X	X
-30°C to +75°C	E		X	X	X

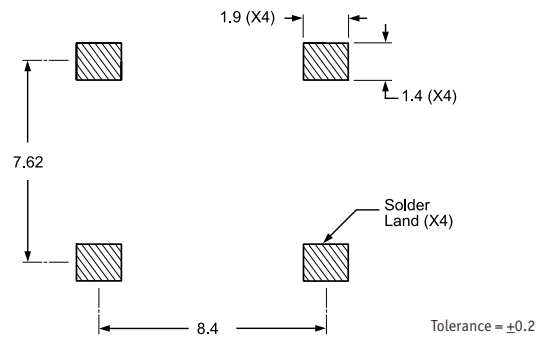
### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



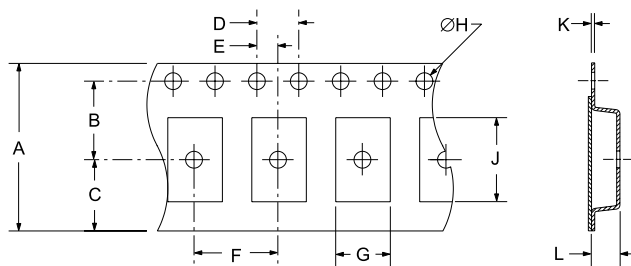
Pin 1: Voltage Control or No Connect  
Pin 2: Ground/Case Ground

Pin 3: Output  
Pin 4: Supply Voltage

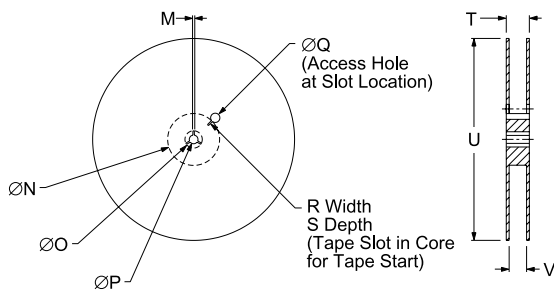
### SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS



### TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E	
	24±.3	10.75±.1	11.5±.1	4±.2	2±.1	
	F	G	H	J	K	L
	12±.2	10.2±.1	1.55±.05	12±.1	.3±.05	2.3±.1



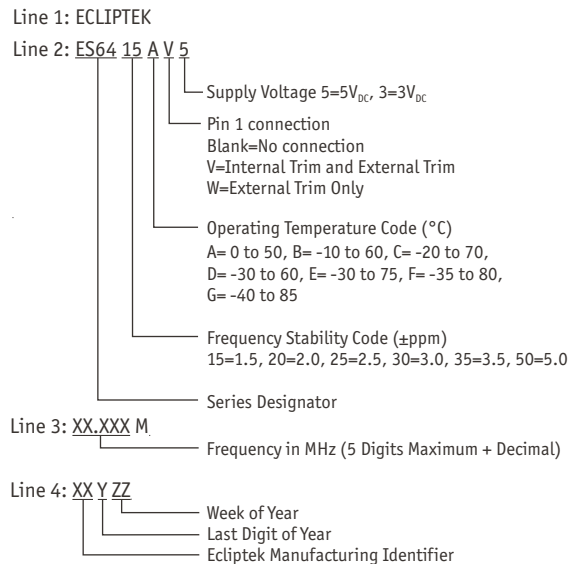
REEL	M	N	O	P	Q	
	1.5 MIN	50 MIN	20.2 MIN	13±.2	40 MIN	
	R	S	T	U	V	QTY/REEL
	2.5 MIN	10 MIN	30.4 MAX	360 MAX	24.4±2.0	2000

\*Compliant to EIA 481A

### ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Parameter	Specification
Shock	Random drop on hard wooden plate 3 times from a height of 30cm.
Vibration	Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

### MARKING SPECIFICATIONS



MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	ES64	METAL	3.0V or 5.0V	OS37	06/00