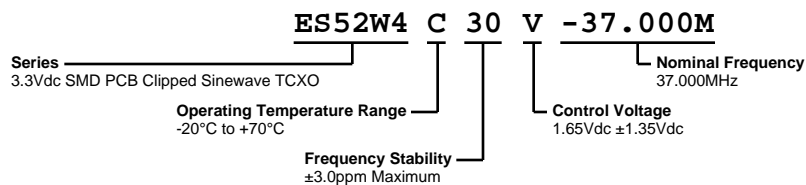


# ES52W4C30V-37.000M



## ELECTRICAL SPECIFICATIONS

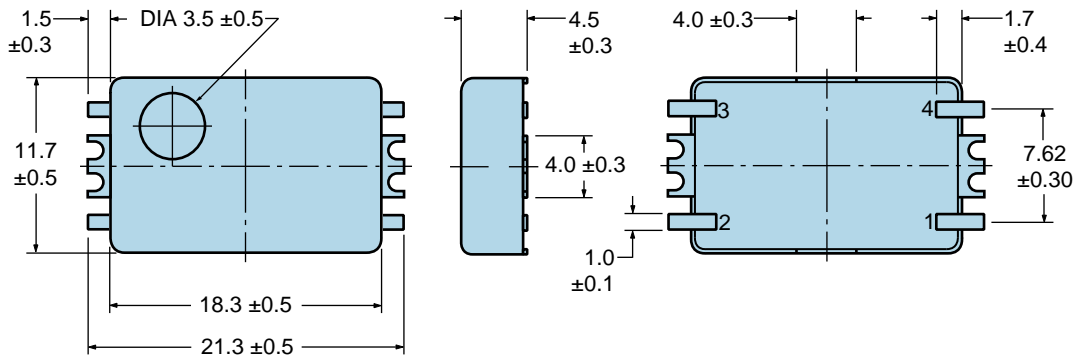
Nominal Frequency	37.000MHz
Frequency Stability	±3.0ppm Maximum (Inclusive of Operating Temperature Range)
Frequency Stability vs. Input Voltage	±0.3ppm Maximum (±5%)
Aging at 25°C	±1ppm/Year Maximum
Frequency Stability vs. Load	±0.2ppm Maximum (±2pF)
Operating Temperature Range	-20°C to +70°C
Supply Voltage	3.3Vdc ±5%
Input Current	3.0mA Maximum
Output Voltage	0.7Vp-p Minimum
Load Drive Capability	10kOhms//10pF
Output Logic Type	Clipped Sinewave
Control Voltage	1.65Vdc ±1.35Vdc
Frequency Deviation	±7ppm Minimum, ±20ppm Maximum (Referenced to Fo at Vc=1.65Vdc; Vdd=3.3Vdc)
Transfer Function	Positive Transfer Characteristic
Internal Trim	±3ppm Minimum (Top of Can)
Modulation Bandwidth	10kHz Minimum (Measured at -3dB with a Control Voltage of 1.65Vdc)
Input Impedance	10kOhms Typical
Phase Noise	-70dBc at 10Hz Offset, -100dBc at 100Hz Offset, -130dBc at 1kHz Offset, -140dBc at 10kHz Offset, -145dBc at 100kHz Offset (Typical Values Fo=19.200MHz at 25°C at Nominal Vdd and Vc)
Storage Temperature Range	-40°C to +85°C

## ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Fine Leak Test	MIL-STD-883, Method 1014 Condition A (Internal Crystal Only)
Gross Leak Test	MIL-STD-883, Method 1014 Condition C (Internal Crystal Only)
Lead Integrity	MIL-STD-883, Method 2004
Mechanical Shock	MIL-STD-202, Method 213 Condition C
Resistance to Soldering Heat	MIL-STD-202, Method 210
Resistance to Solvents	MIL-STD-202, Method 215
Solderability	MIL-STD-883, Method 2003
Temperature Cycling	MIL-STD-883, Method 1010
Vibration	MIL-STD-883, Method 2007 Condition A

# ES52W4C30V-37.000M

## MECHANICAL DIMENSIONS (all dimensions in millimeters)

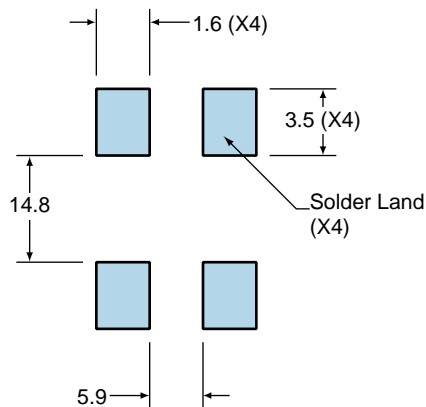


PIN	CONNECTION
1	Voltage Control
2	Ground
3	Output
4	Supply Voltage

LINE	MARKING
1	<b>ECLIPTEK</b>
2	<b>37.000M</b> <i>M=Nominal Frequency Unit of Measure</i>
3	<b>XXYYZZ</b> <i>XX=Ecliptek Manufacturing Code</i> <i>Y=Last Digit of the Year</i> <i>ZZ=Week of the Year</i>

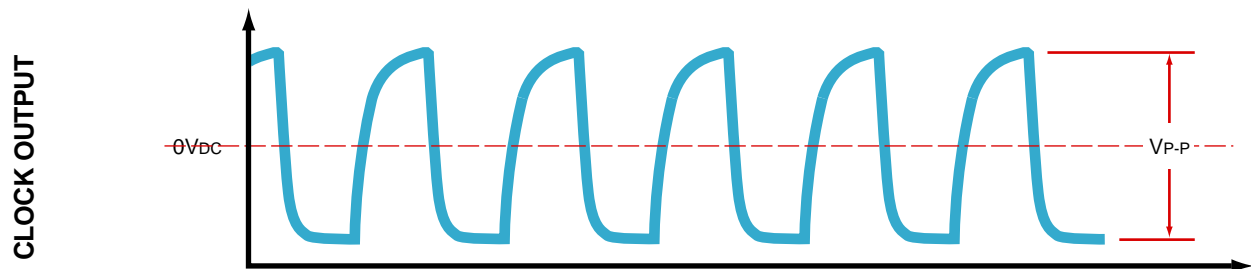
## Suggested Solder Pad Layout

All Dimensions in Millimeters



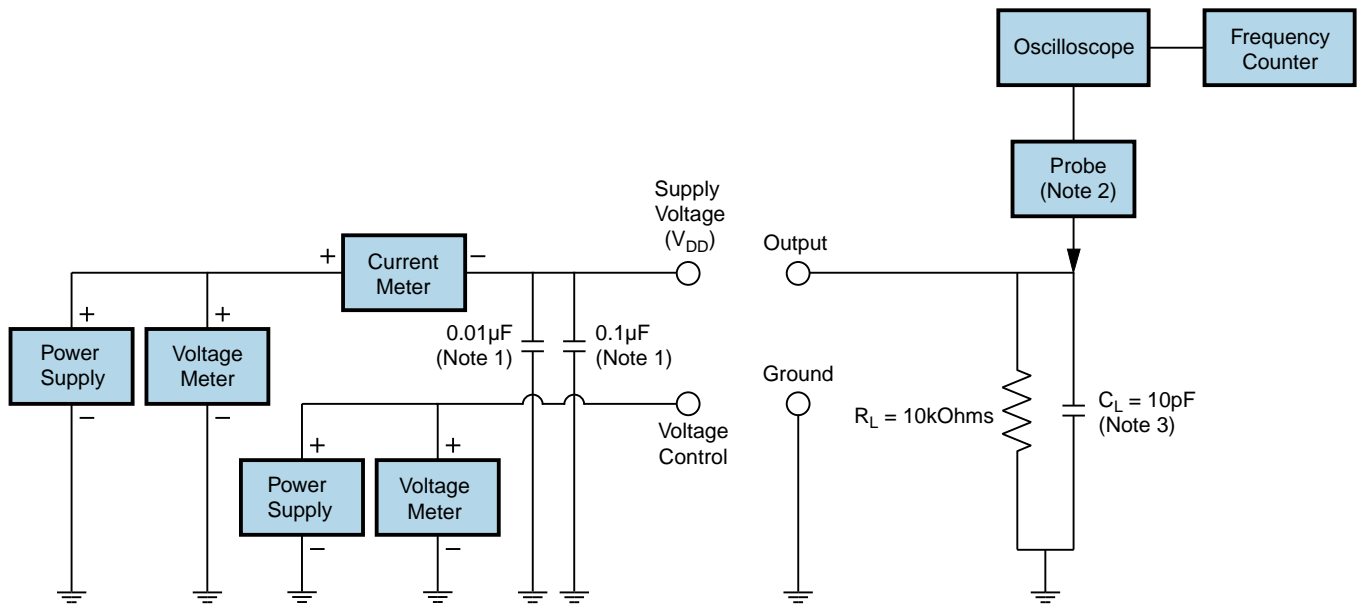
All Tolerances are ±0.1

## OUTPUT WAVEFORM



# ES52W4C30V-37.000M

## Test Circuit for Voltage Control Option



Note 1: An external 0.1µF low frequency tantalum bypass capacitor in parallel with a 0.01µF high frequency ceramic bypass capacitor close to the package ground and  $V_{DD}$  pin is required.

Note 2: A low capacitance (<12pF), 10X attenuation factor, high impedance (>10Mohms), and high bandwidth (>300MHz) passive probe is recommended.

Note 3: Capacitance value  $C_L$  includes sum of all probe and fixture capacitance.

## Recommended Solder Reflow Methods



### Low Temperature Infrared/Convection 240°C

<b><math>T_S</math> MAX to <math>T_L</math> (Ramp-up Rate)</b>	5°C/second Maximum
<b>Preheat</b>	
- Temperature Minimum ( $T_S$ MIN)	N/A
- Temperature Typical ( $T_S$ TYP)	150°C
- Temperature Maximum ( $T_S$ MAX)	N/A
- Time ( $t_S$ MIN)	60 - 120 Seconds
<b>Ramp-up Rate (<math>T_L</math> to <math>T_P</math>)</b>	5°C/second Maximum
<b>Time Maintained Above:</b>	
- Temperature ( $T_L$ )	150°C
- Time ( $t_L$ )	200 Seconds Maximum
<b>Peak Temperature (<math>T_P</math>)</b>	240°C Maximum
<b>Target Peak Temperature (<math>T_P</math> Target)</b>	240°C Maximum 1 Time / 230°C Maximum 2 Times
<b>Time within 5°C of actual peak (<math>t_p</math>)</b>	10 seconds Maximum 2 Times / 80 seconds Maximum 1 Time
<b>Ramp-down Rate</b>	5°C/second Maximum
<b>Time 25°C to Peak Temperature (t)</b>	N/A
<b>Moisture Sensitivity Level</b>	Level 1

### Low Temperature Manual Soldering

185°C Maximum for 10 seconds Maximum, 2 times Maximum.

### High Temperature Manual Soldering

260°C Maximum for 5 seconds Maximum, 2 times Maximum.