

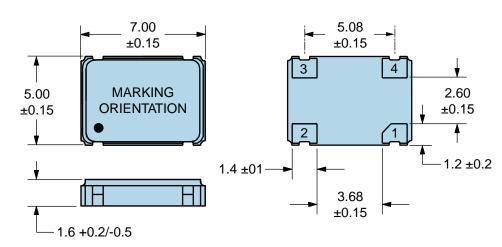
Nominal Frequency	19.440MHz
Frequency Tolerance/Stability	±25ppm Maximum (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Ouput Load Change, First Year Aging at 25°C, Shock, and Vibration)
Operating Temperature Range	-10°C to +70°C
Supply Voltage	3.3Vdc ±10%
Input Current	10mA Maximum
Output Voltage Logic High (Voh)	90% of Vdd Minimum (IOH=-8mA)
Output Voltage Logic Low (Vol)	10% of Vdd Maximum (IOL=+8mA)
Rise/Fall Time	5nSec Maximum (w/15pF Load), 7nSec Maximum (w/30pF Load) (Measured at 20% to 80% of waveform)
Duty Cycle	50 ±5(%) (Measured at 50% of waveform)
Load Drive Capability	30pF Maximum
Output Logic Type	CMOS
Pin 1 Connection	Tri-State (High Impedance)
Tri-State Input Voltage (Vih and Vil)	+0.7Vdd Minimum or No Connect to Enable Output, +0.3Vdd Maximum to Disable Output (High Impedance)
Standby Current	10µA Maximum (Disabled Output: High Impedance)
RMS Phase Jitter	1pSec Maximum (12kHz to 20MHz offset frequency)
Start Up Time	10mSec Maximum
Storage Temperature Range	-55°C to +125°C

#### ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

ESD Susceptibility	MIL-STD-883, Method 3015, Class 1, HBM: 1500V	
Fine Leak Test	MIL-STD-883, Method 1014, Condition A	
Flammability	UL94-V0	
Gross Leak Test	MIL-STD-883, Method 1014, Condition C	
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	

# EC2625TTS-19.440M TR

## **MECHANICAL DIMENSIONS (all dimensions in millimeters)**



PIN	CONNECTION
1	Tri-State
2	Ground/Case Ground
3	Output
4	Supply Voltage
LINE MARKING	
1	ECLIPTEK
2	19.440M
3	XXYZZ XX=Ecliptek Manufacturing Code

Y=Last Digit of the Year

ZZ=Week of the Year

### Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are ±0.1



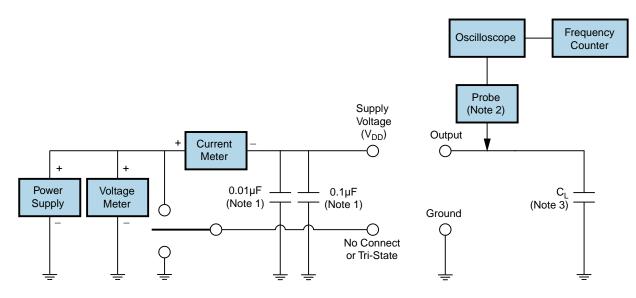
# EC2625TTS-19.440M TR



#### **OUTPUT WAVEFORM & TIMING DIAGRAM**



**Test Circuit for CMOS Output** 



Note 1: An external  $0.1\mu$ F low frequency tantalum bypass capacitor in parallel with a  $0.01\mu$ F high frequency ceramic bypass capacitor close to the package ground and V<sub>DD</sub> pin is required.

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

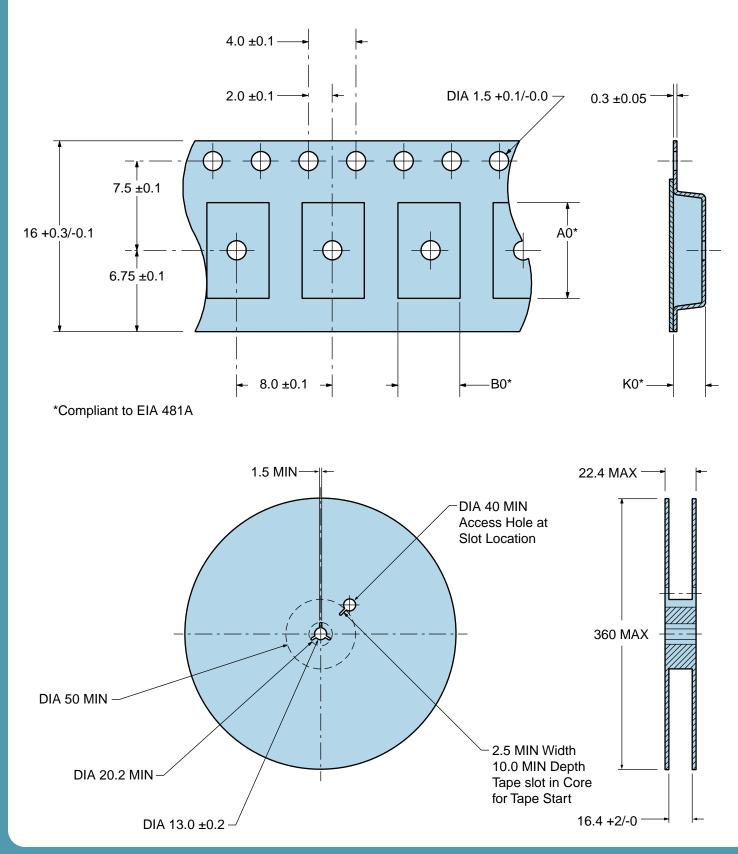
Note 3: Capacitance value  $\dot{C}_L$  includes sum of all probe and fixture capacitance.

# EC2625TTS-19.440M TR



## Tape & Reel Dimensions

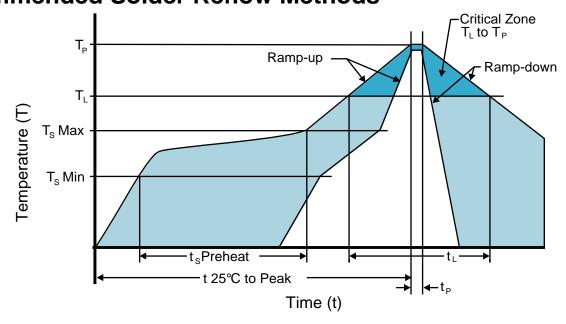
Quantity Per Reel: 1,000 units





# **Recommended Solder Reflow Methods**

EC2625TTS-19.440M TR



### **High Temperature Infrared/Convection**

<u> </u>	
T <sub>s</sub> MAX to T <sub>L</sub> (Ramp-up Rate)	3°C/second Maximum
Preheat	
- Temperature Minimum (T <sub>s</sub> MIN)	150°C
- Temperature Typical (T <sub>s</sub> TYP)	175°C
<ul> <li>Temperature Maximum (T<sub>s</sub> MAX)</li> </ul>	200°C
- Time (t <sub>s</sub> MIN)	60 - 180 Seconds
Ramp-up Rate (T⊾ to T <sub>P</sub> )	3°C/second Maximum
Time Maintained Above:	
- Temperature (T∟)	217°C
- Time (t∟)	60 - 150 Seconds
Peak Temperature (T <sub>P</sub> )	260°C Maximum for 10 Seconds Maximum
Target Peak Temperature (T <sub>P</sub> Target)	250°C +0/-5°C
Time within 5°C of actual peak (t <sub>P</sub> )	20 - 40 seconds
Ramp-down Rate	6°C/second Maximum
Time 25°C to Peak Temperature (t)	8 minutes Maximum
Moisture Sensitivity Level	Level 1
Additional Notes	Temperatures shown are applied to body of device.



## **Recommended Solder Reflow Methods**

EC2625TTS-19.440M TR



## Low Temperature Infrared/Convection 240°C

$T_s$ MAX to $T_L$ (Ramp-up Rate)	5°C/second Maximum
Preheat	
- Temperature Minimum (T <sub>s</sub> MIN)	N/A
- Temperature Typical (T <sub>s</sub> TYP)	150°C
- Temperature Maximum (T <sub>s</sub> MAX)	N/A
- Time (t <sub>s</sub> MIN)	60 - 120 Seconds
Ramp-up Rate (T⊾ to T <sub>P</sub> )	5°C/second Maximum
Time Maintained Above:	
- Temperature (T∟)	150°C
- Time (t∟)	200 Seconds Maximum
Peak Temperature (T <sub>P</sub> )	240°C Maximum
Target Peak Temperature (T <sub>P</sub> Target)	240°C Maximum 1 Time / 230°C Maximum 2 Times
Time within 5°C of actual peak (t <sub>p</sub> )	10 seconds Maximum 2 Times / 80 seconds Maximum 1 Time
Ramp-down Rate	5°C/second Maximum
Time 25°C to Peak Temperature (t)	N/A
Moisture Sensitivity Level	Level 1
Additional Notes	Temperatures shown are applied to body of device.

### Low Temperature Manual Soldering

185°C Maximum for 10 seconds Maximum, 2 times Maximum. (Temperatures shown are applied to body of device.)

### **High Temperature Manual Soldering**

260°C Maximum for 5 seconds Maximum, 2 times Maximum. (Temperatures shown are applied to body of device.)