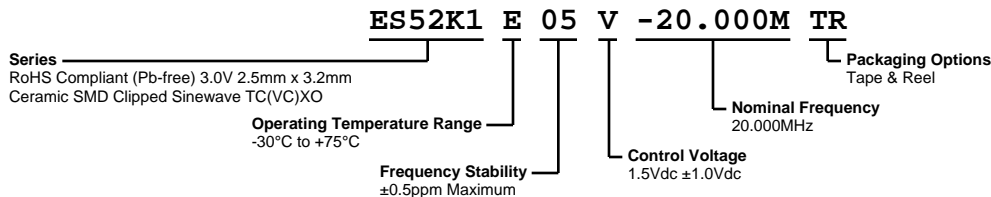


ES52K1E05V-20.000M TR



ECLIPTEK[®]
CORPORATION



ELECTRICAL SPECIFICATIONS

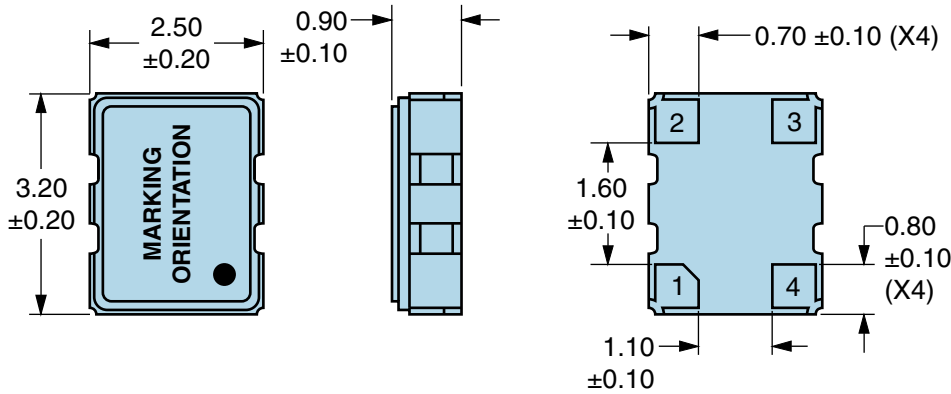
Nominal Frequency	20.000MHz
Frequency Stability vs. Frequency Tolerance	±0.5ppm Maximum (at 25°C ±2°C, at Vdd=3.0Vdc, and Vc=1.5Vdc)
Frequency Stability	±0.5ppm Maximum (Inclusive of Operating Temperature Range, At Vdd=3.0Vdc and Vc=1.5Vdc)
Frequency Stability vs. Input Voltage	±0.2ppm Maximum (±5%)
Frequency Stability vs. Aging	±1ppm/year Maximum (at 25°C)
Frequency Stability vs. Load	±0.2ppm Maximum (±1kOhm/±1pF)
Operating Temperature Range	-30°C to +75°C
Supply Voltage	+3.0Vdc ±5%
Input Current	2.0mA Maximum
Output Voltage	0.8Vp-p Clipped Sinewave Minimum (External DC-Cut capacitor required, 1000pF recommended)
Load Drive Capability	10kOhms//10pF
Output Logic Type	Clipped Sinewave
Control Voltage	1.5Vdc ±1.0Vdc
Frequency Deviation	±8ppm Minimum
Transfer Function	Positive Transfer Characteristic
Phase Noise	-80dBc/Hz at 10Hz Offset, -115dBc/Hz at 100Hz Offset, -135dBc/Hz at 1kHz Offset, and -148dBc/Hz at 10kHz Offset (Typical Values at 16.368MHz)
Start Up Time	5mSec Maximum
Storage Temperature Range	-55°C to +125°C

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Fine Leak Test	MIL-STD-883, Method 1014 Condition A
Gross Leak Test	MIL-STD-883, Method 1014 Condition C
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

ES52K1E05V-20.000M TR

MECHANICAL DIMENSIONS (all dimensions in millimeters)

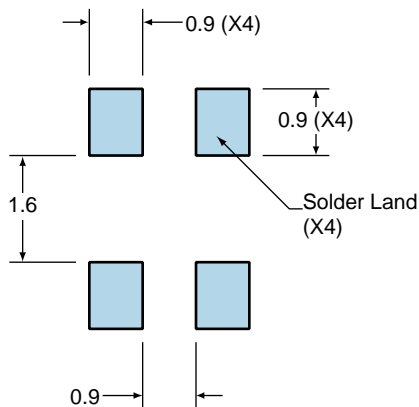


PIN	CONNECTION
1	Voltage Control
2	Case/Ground
3	Output
4	Supply Voltage

LINE	MARKING
1	EXX.XXX E=Ecliptek XX.XXX=Nominal Frequency in MHz (5 Digits Maximum + Decimal)
2	XXYZZ XX=Ecliptek Manufacturing Code Y=Last Digit of the Year ZZ=Week of the Year

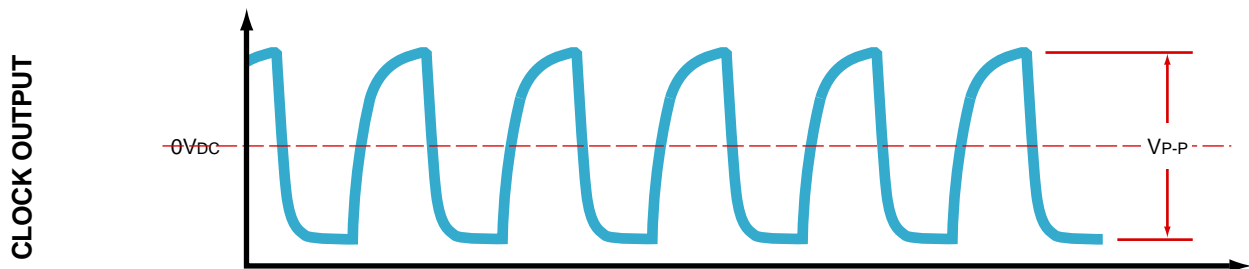
Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are ±0.1

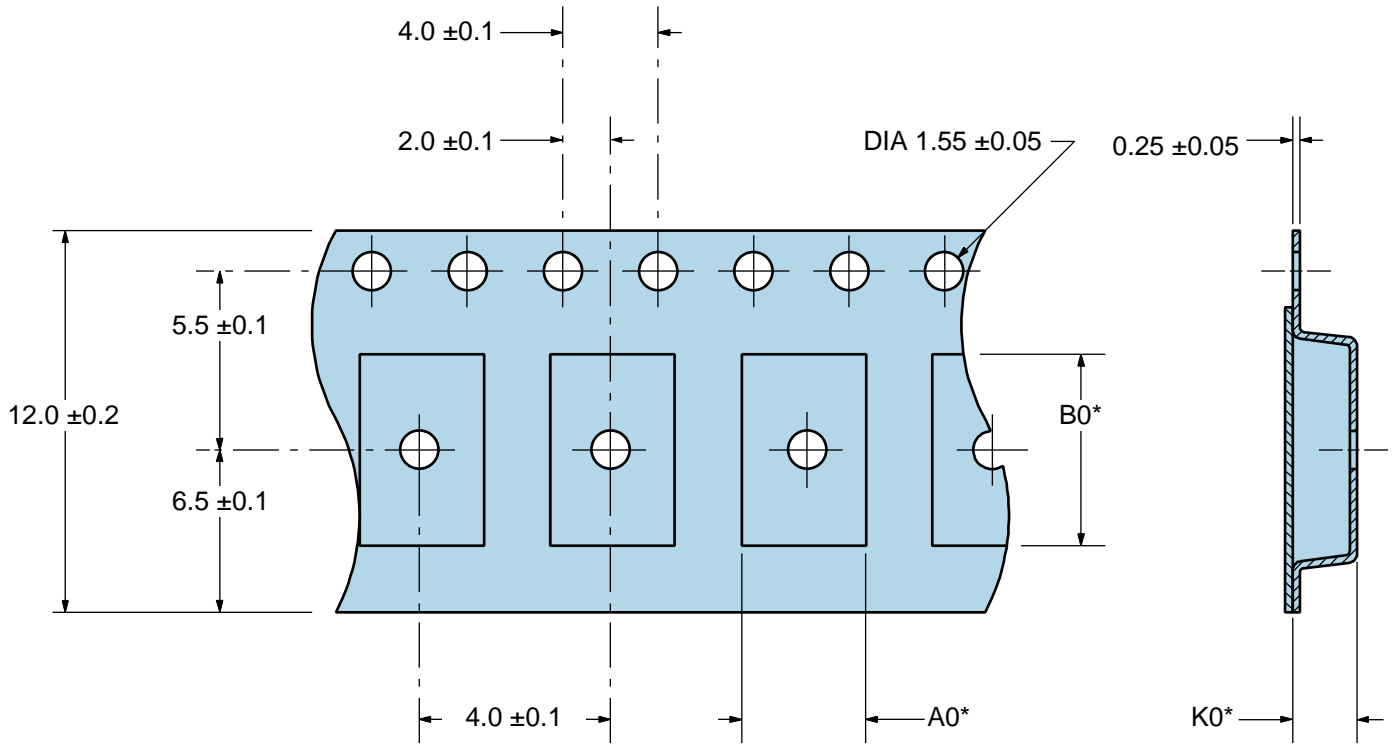
OUTPUT WAVEFORM



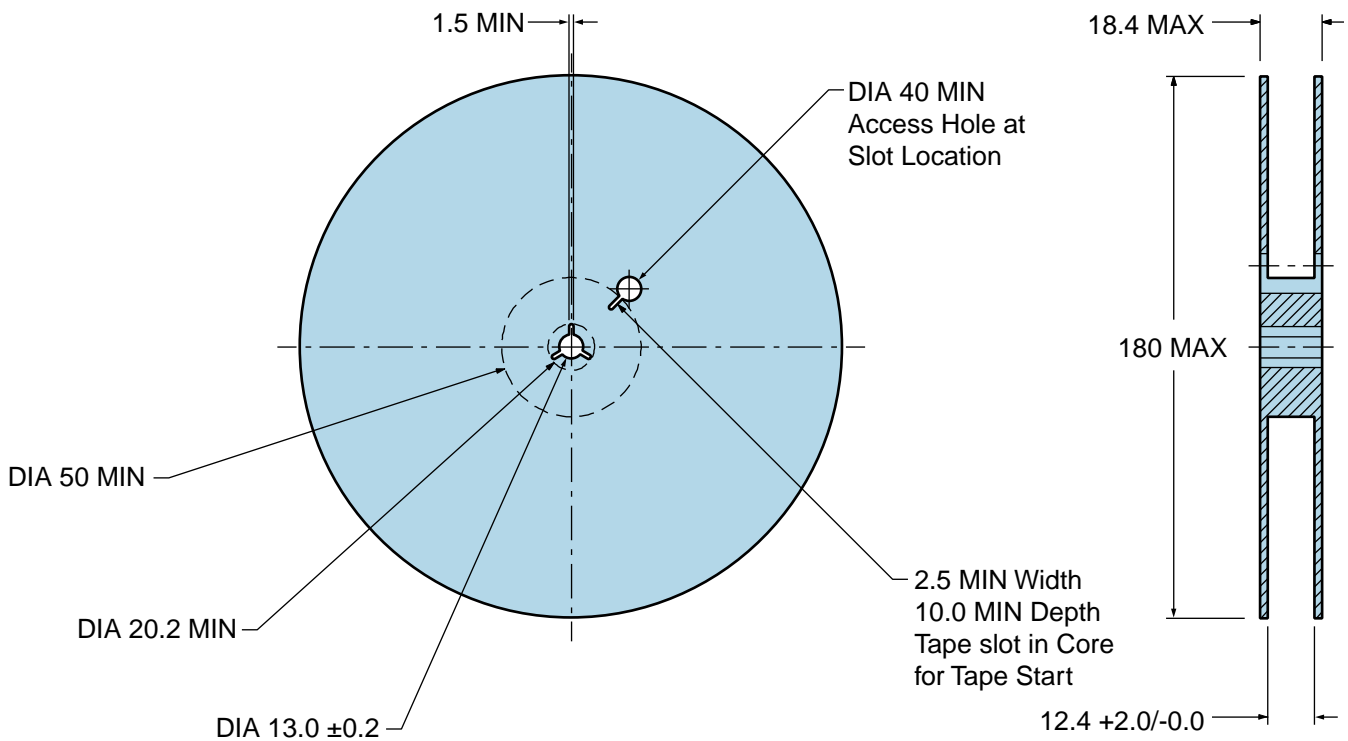
ES52K1E05V-20.000M TR

Tape & Reel Dimensions

Quantity Per Reel: 1,000 units



*Compliant to EIA 481A



Recommended Solder Reflow Methods



High Temperature Infrared/Convection

T_S MAX to T_L (Ramp-up Rate) 3°C/second Maximum

Preheat

- Temperature Minimum (T_S MIN) 150°C
- Temperature Typical (T_S TYP) 175°C
- Temperature Maximum (T_S MAX) 200°C
- Time (t_s MIN) 60 - 180 Seconds

Ramp-up Rate (T_L to T_P) 3°C/second Maximum

Time Maintained Above:

- Temperature (T_L) 217°C
- Time (t_L) 60 - 150 Seconds

Peak Temperature (T_P) 260°C Maximum for 10 Seconds Maximum

Target Peak Temperature (T_P Target) 250°C +0/-5°C

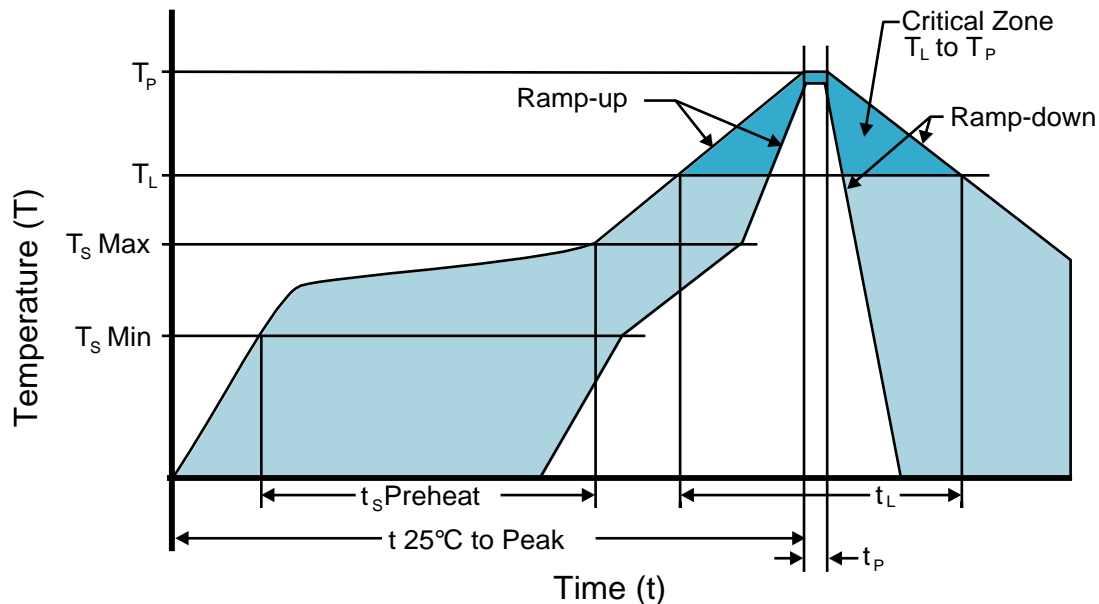
Time within 5°C of actual peak (t_p) 20 - 40 seconds

Ramp-down Rate 6°C/second Maximum

Time 25°C to Peak Temperature (t) 8 minutes Maximum

Moisture Sensitivity Level Level 1

Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 240°C

T_S MAX to T_L (Ramp-up Rate)	5°C/second Maximum
Preheat	
- 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
Ramp-up Rate (T_L to T_P)	5°C/second Maximum
Time Maintained Above:	
- Temperature (T_L)	150°C
- Time (t_L)	200 Seconds Maximum
Peak Temperature (T_P)	240°C Maximum
Target Peak Temperature (T_P Target)	240°C Maximum 1 Time / 230°C Maximum 2 Times
Time within 5°C of actual peak (t_p)	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

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.