

EB19E2J2H-50.000M TR

[Click part number to visit Part Number Details page](#)

REGULATORY COMPLIANCE (Data Sheet downloaded on Jul 9, 2020)


[Click badges to download compliance docs](#)

Regulatory Compliance standards are subject to updates by governing bodies. Click the badges to download the latest compliance docs for this part number directly from Ecliptek.



ITEM DESCRIPTION

Quartz Crystal Clock Oscillators XO (SPXO) LVC MOS (CMOS) 1.62Vdc to 3.63Vdc 4 Pad 2.5mm x 3.2mm Ceramic Surface Mount (SMD) 50.000MHz ± 25 ppm over -40°C to +85°C

ELECTRICAL SPECIFICATIONS

Nominal Frequency	50.000MHz
Frequency Tolerance/Stability	± 25 ppm Maximum over -40°C to +85°C (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°C, Shock, and Vibration)
Supply Voltage	1.62Vdc to 3.63Vdc
Input Current	5mA Maximum
Output Voltage Logic High (Voh)	90% of Vdd Minimum (IOH= -4mA)
Output Voltage Logic Low (Vol)	10% of Vdd Maximum (IOL= +4mA)
Rise/Fall Time	4nSec Maximum (Measured at 20% to 80% of waveform)
Duty Cycle	50 ± 5 (%) (Measured at 50% of waveform)
Load Drive Capability	15pF Maximum
Output Logic Type	CMOS
Pin 1 Connection	Tri-State (High Impedance)
Tri-State Input Voltage (Vih and Vil)	80% of Vdd Minimum or No Connect to Enable Output, 20% of Vdd Maximum to Disable Output (High Impedance)
Standby Current	10 μ A Maximum (Disabled Output: High Impedance)
RMS Phase Jitter	1pSec Maximum (Fj = 12kHz to 20MHz)
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

 Click part number to visit
Part Number Details page

Technical drawing of a square microchip showing three views: top, side, and bottom.

Top View: A square chip with a central square area labeled "MARKING ORIENTATION" and a small dot in the bottom right corner. Dimensions: width 2.50 ± 0.15 , height 3.20 ± 0.15 .

Side View: A narrow rectangular profile showing the chip's thickness. Dimension: width 0.75 ± 0.10 .

Bottom View: A square chip with four rectangular pads labeled 1, 2, 3, and 4. Pad 1 is at the bottom left, pad 2 at the top left, pad 3 at the top right, and pad 4 at the bottom right. Dimensions: width 2.50 ± 0.15 , height 3.20 ± 0.15 . Pad dimensions: pad 1 width 0.90 ± 0.20 , pad 2 width 1.20 ± 0.10 , pad 3 width 1.00 ± 0.10 , pad 4 width 1.00 ± 0.10 .

LINE	MARKING
1	E50.0 <i>E=Eclipsek Designator</i>
2	XXXXXX <i>XXXXXX=Eclipsek Manufacturing Identifier</i>

1-800-ECLIPTEK or 714.433.1200

EB19E2J2H-50.000M TR

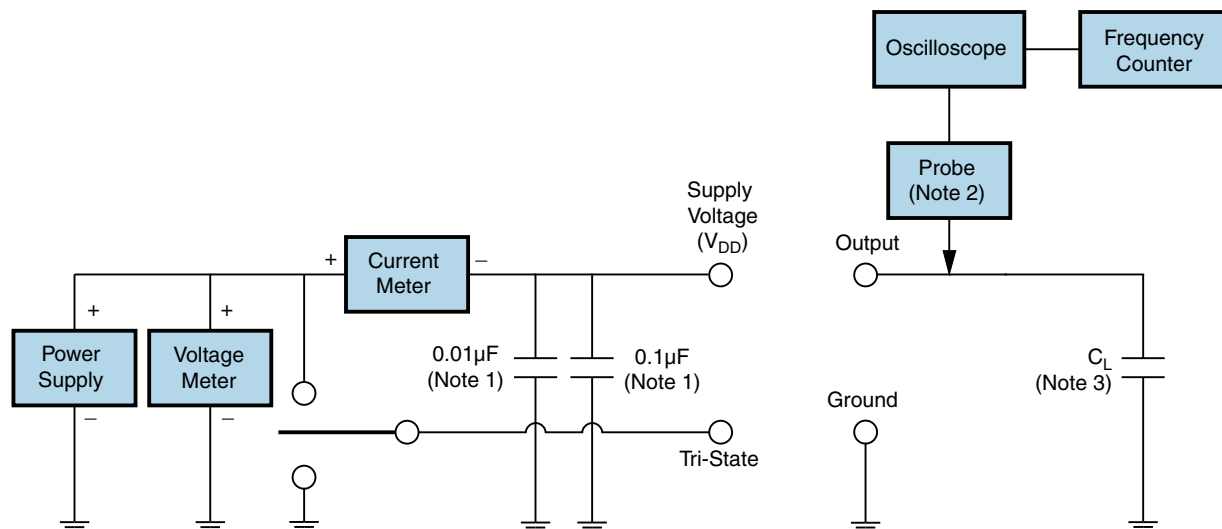
[Click part number to visit Part Number Details page](#)

OUTPUT WAVEFORM & TIMING DIAGRAM



EB19E2J2H-50.000M TR [Click part number to visit Part Number Details page](#)

Test Circuit for CMOS Output



Note 1: An external 0.01µF ceramic bypass capacitor in parallel with a 0.1µF high frequency ceramic bypass capacitor close (less than 2mm) to the package ground and supply voltage 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.

EB19E2J2H-50.000M TR

Tape & Reel Dimensions

Quantity Per Reel: 1,000 units

All Dimensions in Millimeters

Compliant to EIA-481



EB19E2J2H-50.000M TR

[Click part number to visit Part Number Details page](#)

Recommended Solder Reflow Methods



High Temperature Infrared/Convection

Ts MAX to Tl (Ramp-up Rate)	3°C/Second Maximum
Preheat	
- Temperature Minimum (Ts MIN)	150°C
- Temperature Typical (Ts TYP)	175°C
- Temperature Maximum (Ts MAX)	200°C
- Time (ts MIN)	60 - 180 Seconds
Ramp-up Rate (Tl to Tp)	3°C/Second Maximum
Time Maintained Above:	
- Temperature (Tl)	217°C
- Time (tL)	60 - 150 Seconds
Peak Temperature (Tp)	260°C Maximum for 10 Seconds Maximum
Target Peak Temperature (Tp Target)	250°C +0/-5°C
Time within 5°C of actual peak (tp)	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

EB19E2J2H-50.000M TR

[Click part number to visit Part Number Details page](#)

Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 240°C

TS MAX to TL (Ramp-up Rate)	5°C/Second Maximum
-----------------------------	--------------------

Preheat

- Temperature Minimum (TS MIN)	N/A
- Temperature Typical (TS TYP)	150°C
- Temperature Maximum (TS MAX)	N/A
- Time (ts MIN)	60 - 120 Seconds

Ramp-up Rate (TL to TP)	5°C/Second Maximum
-------------------------	--------------------

Time Maintained Above:

- Temperature (TL)	150°C
- Time (tL)	200 Seconds Maximum

Peak Temperature (TP)	240°C Maximum
-----------------------	---------------

Target Peak Temperature (TP Target)	240°C Maximum 2 Times / 230°C Maximum 1 Time
-------------------------------------	--

Time within 5°C of actual peak (tp)	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.