EPSA22BBJL-75.000M

EPSA22 B B J L -75.000M

- **Series** — RoHS Compliant (Pb-free) 2.5V 4 Pad 3.2mm x 5mm Ceramic SMD LVCMOS Programmable Spread Spectrum Oscillator
- **Frequency Tolerance/Stability** — ±50ppm Maximum
- **Operating Temperature Range** — -40°C to +85°C
- **Output Control Function** — Power Down
- **Spread Spectrum** — -2.00% Down Spread
- **Nominal Frequency** — 75.000MHz

ELECTRICAL SPECIFICATIONS

Nominal Frequency	75.000MHz
Frequency Tolerance/Stability	±50ppm Maximum (Inclusive of all conditions: Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°C, Shock, and Vibration.)
Operating Temperature Range	-40°C to +85°C
Supply Voltage	2.5Vdc ±5%
Maximum Supply Voltage	-0.5Vdc to +3.2Vdc
Input Current	22mA 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	3nSec Maximum (Measured at 10% to 90% of Waveform)
Duty Cycle	50% ±5(%) (Measured at 50% of waveform)
Load Drive Capability	15pF Maximum
Output Logic Type	CMOS
Output Control Function	Power Down (Disabled Output: High Impedance)
Power Down Input Voltage (Vih and Vil)	70% of Vdd Minimum or No Connection to Enable Output, 30% of Vdd Maximum to Disable Output
Power Down Output Disable Time	100nSec Maximum
Power Down Output Enable Time	3mSec Maximum
Standby Current	10µA Maximum (Unloaded; Pad 1=Ground)
Spread Spectrum	-2.00% Down Spread
Modulation Frequency	30kHz Minimum, 32kHz Typical, 45kHz Maximum
Period Jitter	100pSec Maximum (Cycle to Cycle; Spread Spectrum-On)
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

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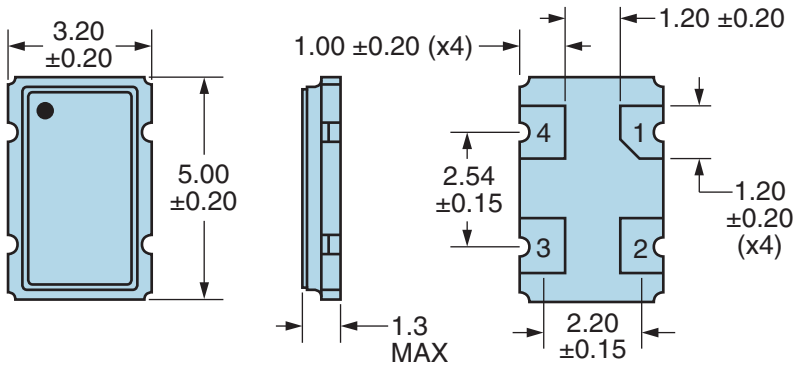
MECHANICAL DIMENSIONS (all dimensions in millimeters)

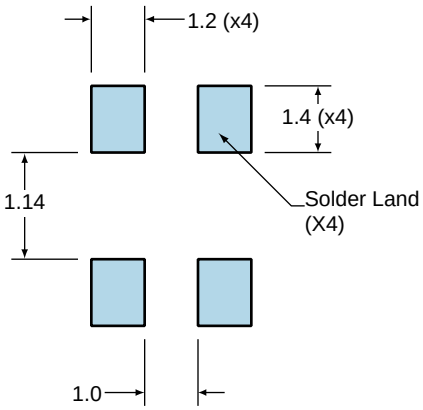


PIN	CONNECTION
1	Power Down
2	Case/Ground
3	Output
4	Supply Voltage

LINE	MARKING
1	**E75.000** *E=Ecliptek Designator*
2	**SXXXXX** *S=Configuration Designator* *XXXXX=Ecliptek Manufacturing Identifier*

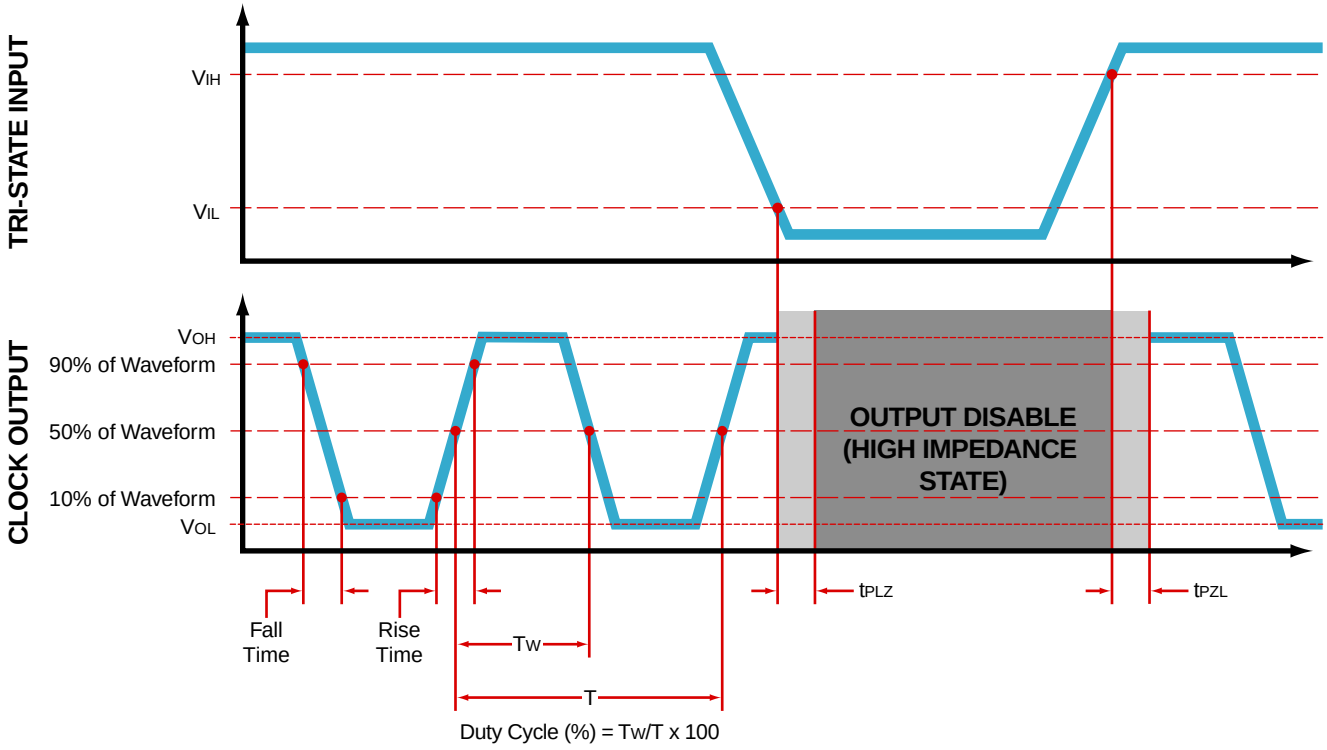
Suggested Solder Pad Layout

All Dimensions in Millimeters

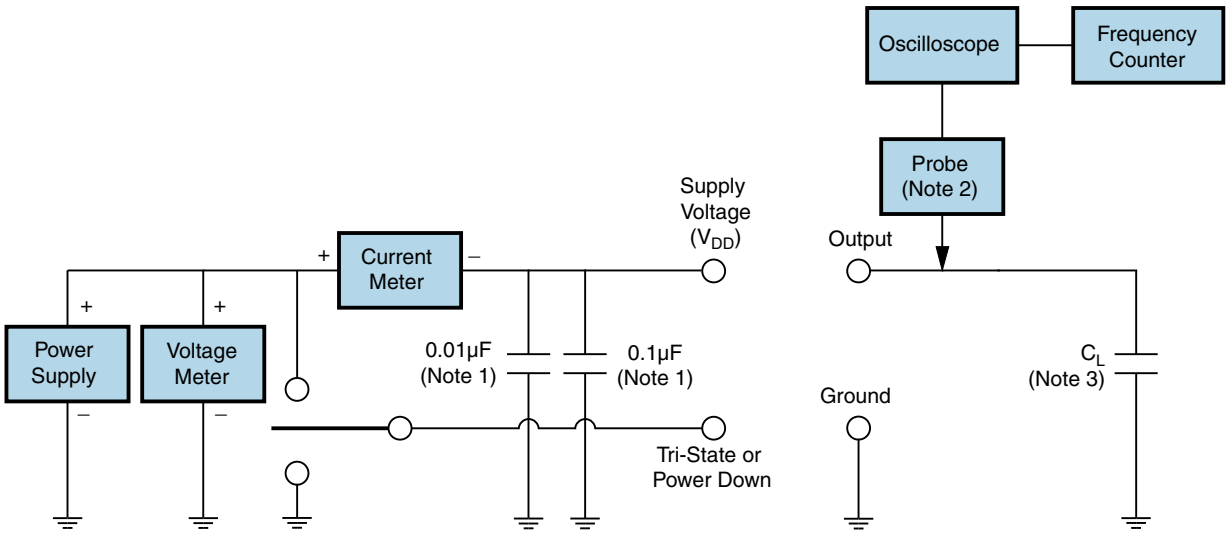


All Tolerances are ±0.1

OUTPUT WAVEFORM & TIMING DIAGRAM



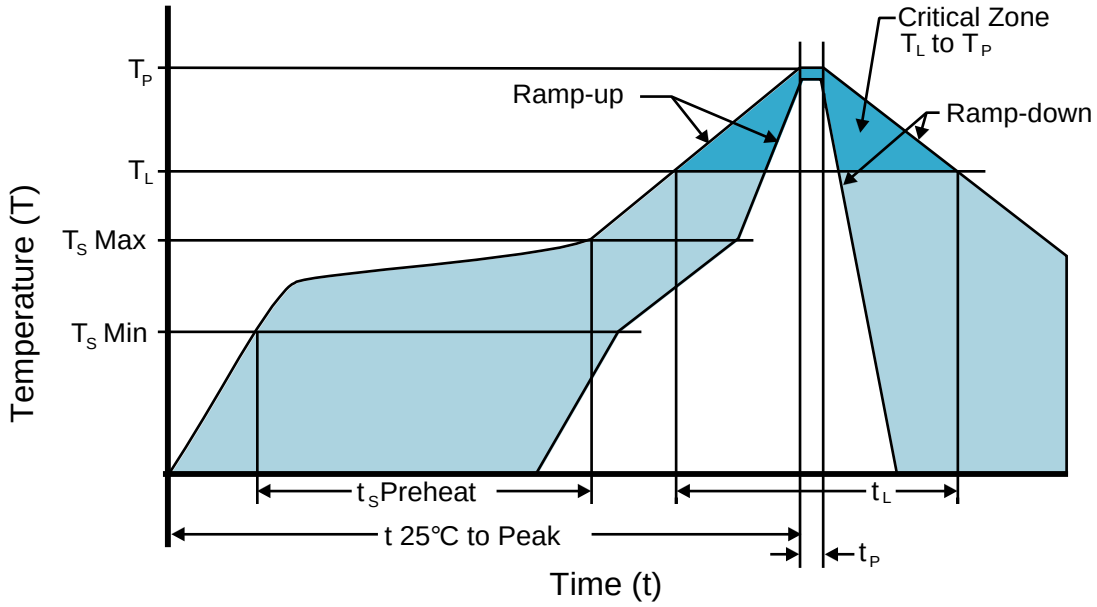
Test Circuit for CMOS Output



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 input capacitance (<12pF), 10X Attentuation Factor, High Impedance (>10Mohms), and High bandwidth (>300MHz) passive probe is recommended.
Note 3: Capacitance value CL includes sum of all probe and fixture capacitance. See applicable specification sheet for 'Load Drive Capability'.

EPSA22BBJL-75.000M

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

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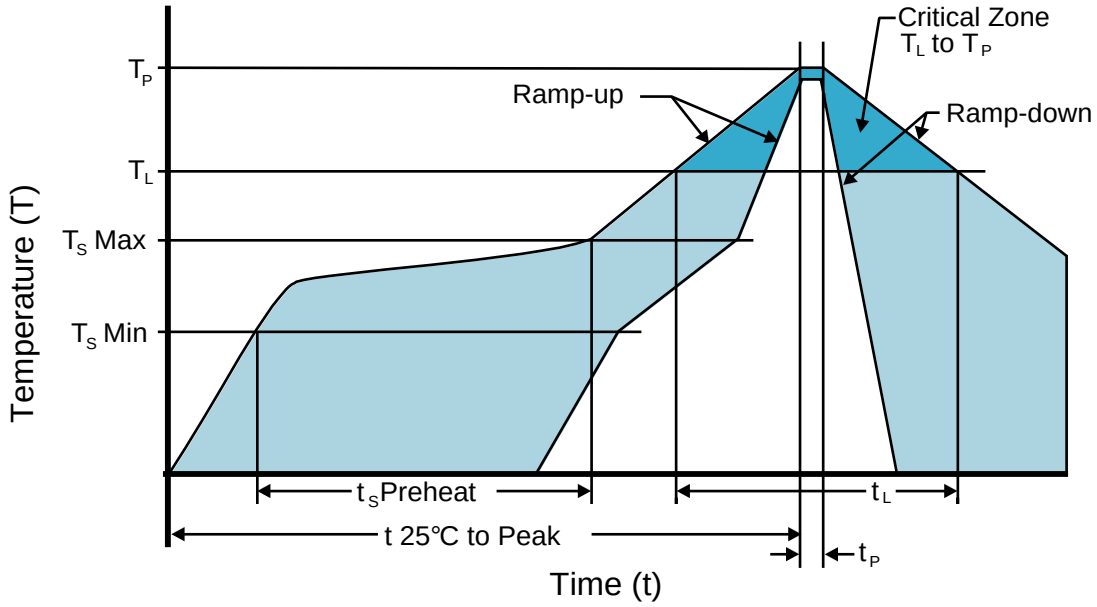
Recommended Solder Reflow Methods



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.