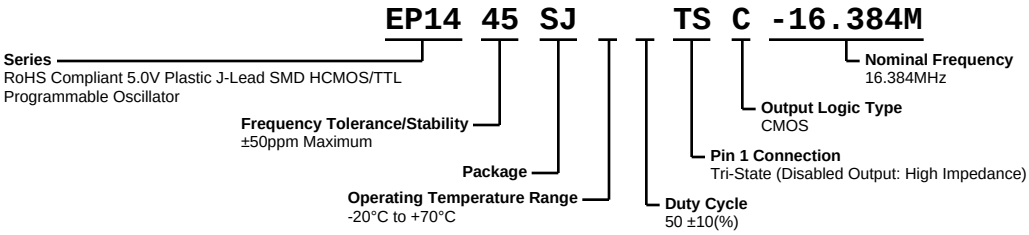
EP1445SJTSC-16.384M



ELECTRICAL SPECIFICATIONS

Nominal Frequency	16.384MHz
Frequency Tolerance/Stability	±50ppm Maximum (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)
Aging at 25°C	±5ppm/year Maximum
Operating Temperature Range	-20°C to +70°C
Supply Voltage	5.0Vdc ±10%
Input Current	45mA Maximum (Unloaded)
Output Voltage Logic High (Voh)	Vdd-0.4Vdc Minimum (IOH = -16mA)
Output Voltage Logic Low (Vol)	0.4Vdc Maximum (IOL = +16mA)
Rise/Fall Time	4nSec Maximum (Measured at 20% to 80% of waveform)
Duty Cycle	50 ±10(%) (Measured at 1.4Vdc with TTL Load; Measured at 50% of waveform with HCMOS Load)
Load Drive Capability	50pF HCMOS Load Maximum
Output Logic Type	CMOS
Pin 1 Connection	Tri-State (Disabled Output: High Impedance)
Tri-State Input Voltage (Vih and Vil)	+2.0Vdc Minimum to enable output, +0.8Vdc Max, to disable output, No Connect to enable output.
Standby Current	50µA Maximum (Pin 1 = Ground)
Disable Current	30mA Maximum (Pin 1 = Ground)
Absolute Clock Jitter	±250pSec Maximum, ±100pSec Typical
One Sigma Clock Period Jitter	±50pSec Maximum
Start Up Time	10mSec 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

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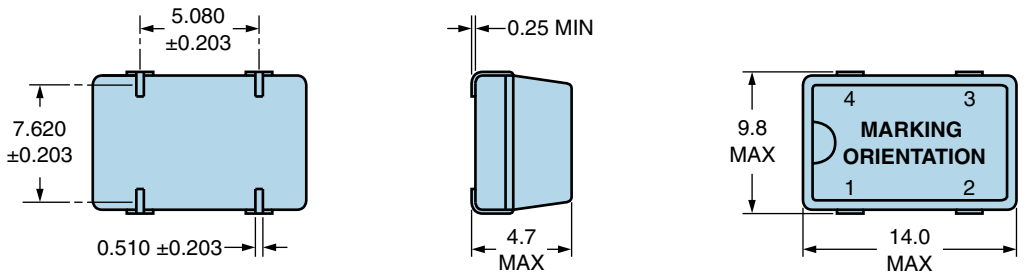
MECHANICAL DIMENSIONS (all dimensions in millimeters)

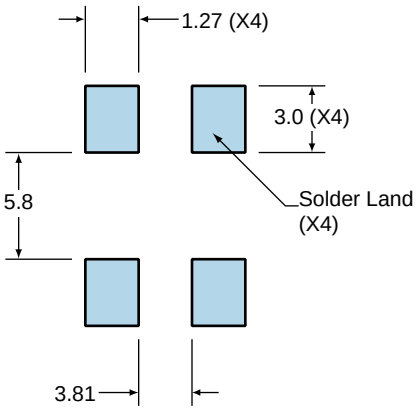


PIN	CONNECTION
1	Tri-State (High Impedance)
2	Ground
3	Output
4	Supply Voltage

LINE	MARKING
1	**ECLIPTEK**
2	**16.384M**
3	**PXXYZZ** *P=Configuration Designator* *XX=Ecliptek Manufacturing Code* *Y=Last Digit of the Year* *ZZ=Week of the Year*

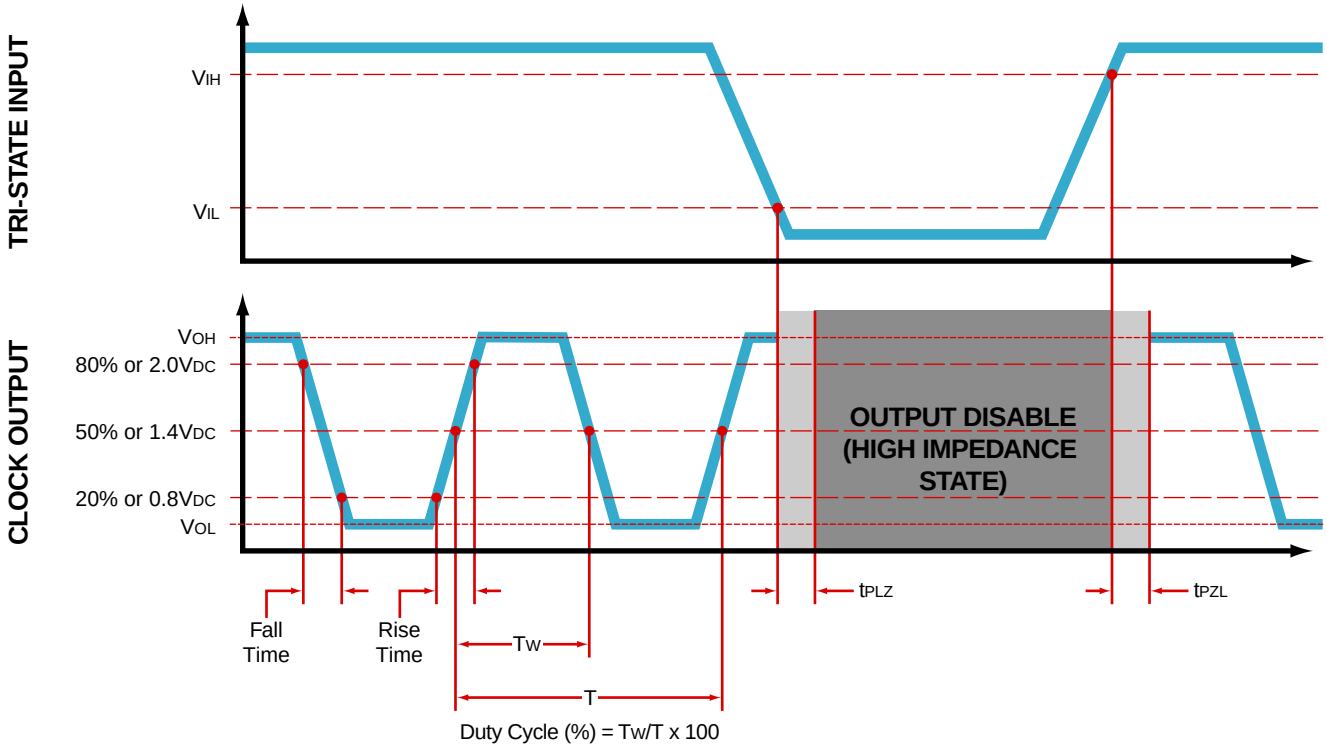
Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are ±0.1

OUTPUT WAVEFORM & TIMING DIAGRAM

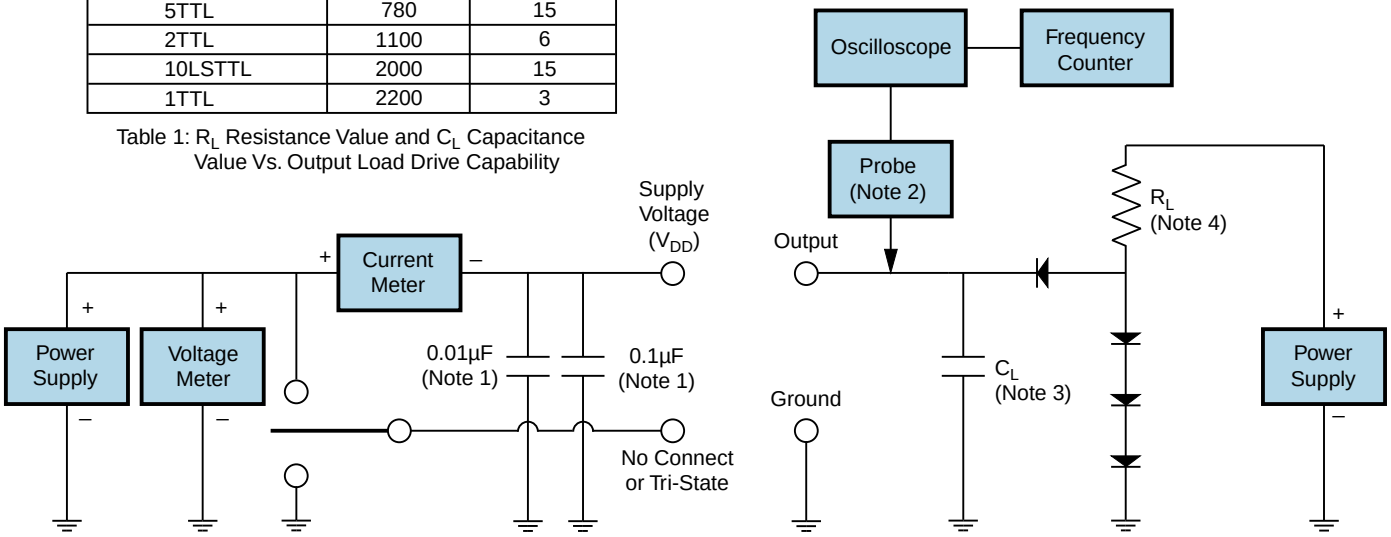


Duty Cycle (%) = Tw/T x 100

Test Circuit for TTL Output

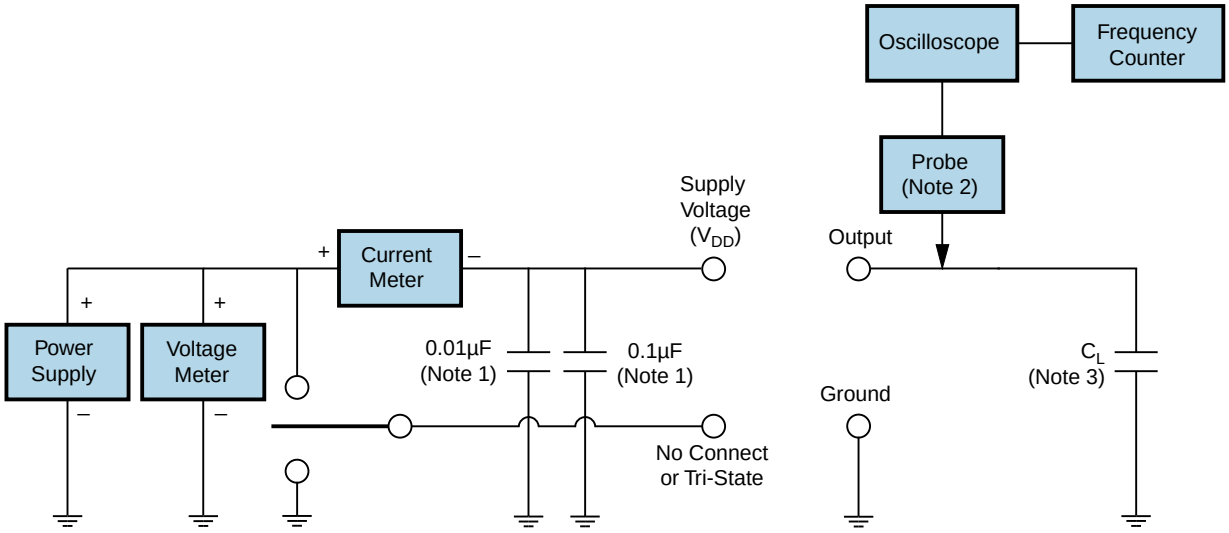
Output Load Drive Capability	R_L Value (Ohms)	C_L Value (pF)
10TTL	390	15
5TTL	780	15
2TTL	1100	6
10LSTTL	2000	15
1TTL	2200	3

Table 1: R_L Resistance Value and C_L Capacitance Value Vs. Output Load Drive Capability



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.
Note 4: Resistance value R_L is shown in Table 1. See applicable specification sheet for 'Load Drive Capability'.
Note 5: All diodes are MMBD7000, MMBD914, or equivalent.

Test Circuit for CMOS Output



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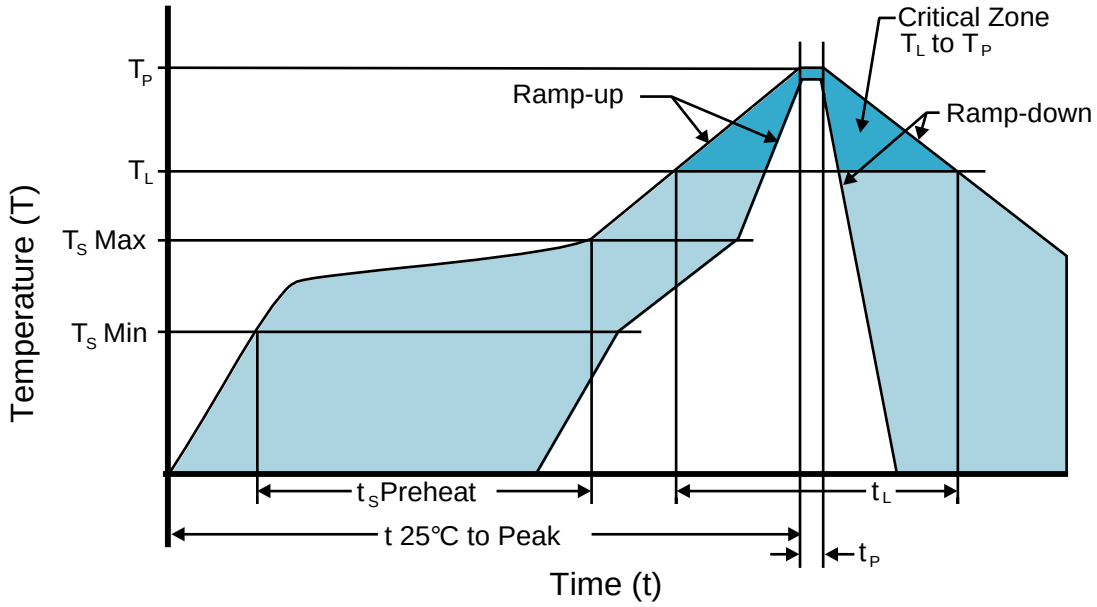
Recommended Solder Reflow Methods



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.