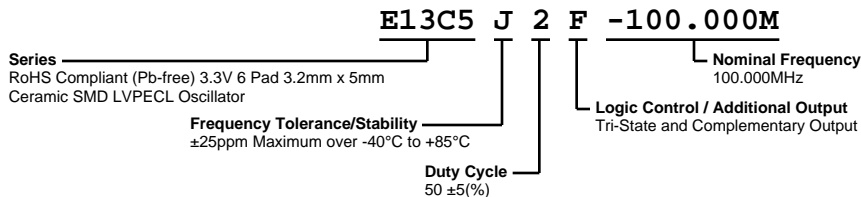


E13C5J2F-100.000M



ELECTRICAL SPECIFICATIONS

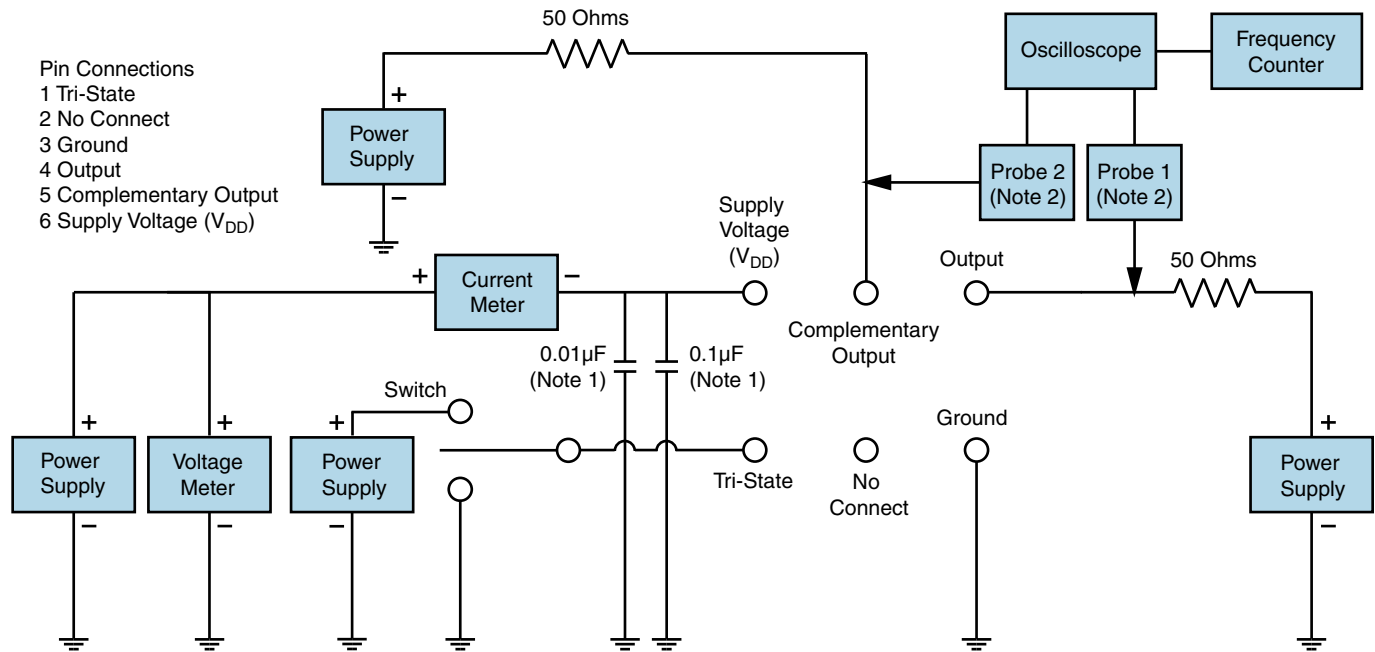
Nominal Frequency	100.000MHz
Frequency Tolerance/Stability	± 25 ppm Maximum over -40°C to $+85^{\circ}\text{C}$ (Inclusive of all conditions: Calibration Tolerance (at 25°C), Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°C , Shock, and Vibration)
Supply Voltage	$+3.3\text{Vdc} \pm 5\%$
Input Current	75mA Maximum
Output Voltage Logic High (Voh)	$V_{cc}-1.025\text{Vdc}$ Minimum from 0°C to $+85^{\circ}\text{C}$, $V_{cc}-1.085\text{Vdc}$ Minimum from -40°C to $+0^{\circ}\text{C}$
Output Voltage Logic Low (Vol)	$V_{cc}-1.620\text{Vdc}$ Maximum from 0°C to $+85^{\circ}\text{C}$, $V_{cc}-1.555\text{Vdc}$ Maximum from -40°C to $+0^{\circ}\text{C}$
Rise/Fall Time	300pSec Typical, 700pSec Maximum (Measured at 20% to 80% of Waveform)
Duty Cycle	$50 \pm 5\%$ (Measured at 50% of Waveform)
Load Drive Capability	50 Ohms into $V_{cc}-2.0\text{Vdc}$
Output Logic Type	LVPECL
Phase Noise	-60dBc/Hz at 10Hz Offset, -95dBc/Hz at 100Hz Offset, -125dBc/Hz at 1kHz Offset, -143dBc/Hz at 10kHz Offset, -145dBc/Hz at 100kHz Offset, -145dBc/Hz at 1MHz Offset, -146dBc/Hz at 10MHz Offset (All Values are Typical, $F_o=156.250\text{MHz}$)
Logic Control / Additional Output	Tri-State and Complementary Output
Tri-State Input Voltage (Vih and Vil)	Vih of 70% of V_{cc} Minimum or No Connect to Enable Output and Complementary Output, Vil of 30% of V_{cc} Maximum to Disable High Impedance Output and Complementary Output
Standby Current	30 μA Maximum (Without Load)
RMS Phase Jitter	0.4pSec Typical, 1pSec Maximum ($F_j=12\text{kHz}$ to 20MHz)
Start Up Time	10mSec Maximum
Storage Temperature Range	-55°C to $+125^{\circ}\text{C}$

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

E13C5J2F-100.000M

Test Circuit for Tri-State and Complementary Output



Note 1: An external 0.01 μF ceramic bypass capacitor in parallel with a 0.1 μF 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 (>500MHz) passive probe is recommended.

Note 3: Test circuit PCB traces need to be designed for a characteristic line impedance of 50 ohms.

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.