



Product Overview

MC100EL1648: Voltage Controlled Oscillator, ECL, 5.0 V

For complete documentation, see the data sheet

Product Description

The MC100EL1648 requires an external parallel tank circuit consisting of the inductor (L) and capacitor (C). A varactor diode may be incorporated into the tank circuit to provide a voltage variable input for the oscillator (V_{CO}). This device may also be used in many other applications requiring a fixed frequency clock. The MC100EL1648 is ideal in applications requiring a local oscillator. Systems include electronic test equipment and digital high-speed telecommunications.

The MC100EL1648 is based on the V_{CO} circuit topology of the MC1648. The MC100EL1648 uses advanced bipolar process technology which results in a design which can operate at an extended frequency range.

The ECL output circuitry of the MC100EL1648 is not a traditional open emitter output structure and instead has an on-chip termination resistor with a nominal value of 510 ohms. This facilitates direct ac-coupling of the output signal into a transmission line. Because of this output configuration, an external pull-down resistor is not required to provide the output with a dc current path. This output is intended to drive one ECL load. If the user needs to fanout the signal, an ECL buffer such as the MC10EL16 Line Receiver/Driver should be used

NOTE: The MC100EL1648 is NOT useable as a crystal oscillator.

Features

- Typical Operating Frequency Up to 1100 MHz
- Low-Power 19 mA at 5.0 Vdc Power Supply
- Phase Noise -90 dBc/Hz at 25 kHz Typical
- ESD Protection: >2 KV HBM, >100 V MM
- PECL Mode Operating Range: V_{CC} = 5.0 V with V_{EE} = 0 V
- NECL Mode Operating Range: V_{CC} = 0 V with V_{EE} = -5.2 V
- Input Capacitance = 6.0 pF (TYP)
- Meets or Exceeds JEDEC Spec EIA/JESD78 IC Latchup Test
- Maximum Series Resistance for L (External Inductance) = 50 Ω (TYP)
- Moisture Sensitivity Level 1. For Additional Information, see Application Note AND8003/D

Part Electrical Specifications

Product	Compliance	Status	Input Level	Output Level	f_{Max} Typ (MHz)	V_{CC} Typ (V)	Duty Cycle (%)	Package Type
MC100EL1648DG	Pb-free	Active	ECL	ECL	1100	5.5	50	SOIC-8
MC100EL1648DR2G	Pb-free	Active	ECL	ECL	1100	5.5	50	SOIC-8
MC100EL1648DTG	Pb-free Halide free	Active	ECL	ECL	1100	5.5	50	TSSOP-8
MC100EL1648DTR2G	Pb-free Halide free	Active	ECL	ECL	1100	5.5	50	TSSOP-8
MC100EL1648MNR4G	Pb-free Halide free	Active	ECL	ECL	1100	5.5	50	DFN-8

For more information please contact your local sales support at www.onsemi.com

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