Product Overview

MCH12140: Phase Frequency Detector

For complete documentation, see the data sheet

Product Description

The MCH12140 or K12140 is a phase frequency-detector intended for phase-locked loop applications which require a minimum amount of phase and frequency difference at lock. When used in conjunction with high performance VCO such as the MC100EL1648, a high bandwidth PLL can be realized. The device is functionally compatible with the MC12040 phase-frequency detector with the maximum frequency extending to 800 MHz.

When the Reference (R) and VCO (V) inputs are unequal in frequency and/or phase, the differential UP (U) and DOWN (D) outputs will provide pulse streams which when subtracted and integrated provide an error voltage for control of a VCO. See AND8040 for further information. The device is packaged in a small outline, surface mount 8-lead SOIC package. There are two versions of the device to provide I/O compatibility to the two existing ECL standards. The MCH12140 is compatible with MECL 10H logic levels while the MCK12140 is compatible to 100 K ECL logic levels. This device can also be used in +5.0 V systems. See AND8020 for termination information.

Features

- 800 MHz Typical Bandwidth
- Small Outline 8-Lead SOIC Package
- 75 k Internal Input Pulldown Resistors
- > 1000 V ESD Protection
- Pb-Free Packages are Available

Part Electrical Specifications

Product	Compliance	Status	Input Level	Output Level	V_{CC} Typ (V)	Transfer Gain Typ (mV/degree)	CMRR Max (V)	f_{Toggle} Max (MHz)	t_{pd} Typ (ns)	t_{Jitter} Typ (ps)	t_R & t_F Max (ps)	Package Type
MCH12140DG	Pb-free / Halide free	Active	ECL	ECL	5			800	0.44	0.2	350	SOIC-8
MCH12140DR2G	Pb-free / Halide free	Active	ECL	ECL	5			800	0.44	0.2	350	SOIC-8

Package Availability

Type	Pb-free	Standard
SOIC-8	✓	✓