

Product Overview

MC100E446: 5.0 V ECL 4-Bit Parallel to Serial Converter

For complete documentation, see the data sheet

The MC10E/100E446 is an integrated 4-bit parallel to serial data converter. The device is designed to operate for NRZ data rates of up to 1.3 Gb/s. The chip generates a divide by 4 and a divide by 8 clock for both 4-bit conversion and a two chip 8-bit conversion function. The conversion sequence was chosen to convert the parallel data into a serial stream from bit D0 to D3. A serial input is provided to cascade two E446 devices for 8 bit conversion applications. Note that the serial output data clocks off of the negative input clock transition.

The SYNC input will asynchronously reset the internal clock circuitry. This pin allows the user to reset the internal clock conversion unit and thus select the start of the conversion process.

The MODE input is used to select the conversion mode of the device. With the MODE input LOW, or open, the device will function as a 4-bit converter. When the mode input is driven HIGH the internal load clock will change on every eighth clock cycle thus allowing for an 8-bit conversion scheme using two E446's. When cascaded in an 8-bit conversion scheme the devices will not operate at the 1.3 Gb/s data rate of a single device. Refer to the applications section of this data sheet for more information on cascading the E446.

The V_{BB} pin, an internally generated voltage supply, is available to this device only. For single-ended input conditions, the unused differential input is connected to V_{BB} as a switching reference voltage. V_{BB} may also rebias AC coupled inputs. When used, decouple V_{BB} and V_{CC} via a 0.01 F capacitor and limit current sourcing or sinking to 0.5 mA. When not used, V_{BB} should be left open.

The 100 Series contains temperature compensation.

Features

- On Chip Clock b8;4 and b8;8
- 1.5 Gb/s Typical Data Rate Capability
- Differential Clock and Serial Inputs
- V_{BB} Output for Single-ended Input Applications
- Asynchronous Data Synchronization
- Mode Select to Expand to 8 Bits
- PECL Mode Operating Range: $V_{CC} = 4.2\text{ V to }5.7\text{ V}$ with $V_{EE} = 0\text{ V}$
- NECL Mode Operating Range: $V_{CC} = 0\text{ V}$ with $V_{EE} = -4.2\text{ V to }-5.7\text{ V}$
- Internal Input Pulldown Resistors
- ESD Protection: > 2 kV HBM, > 100 V MM

For more features, see the data sheet

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

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