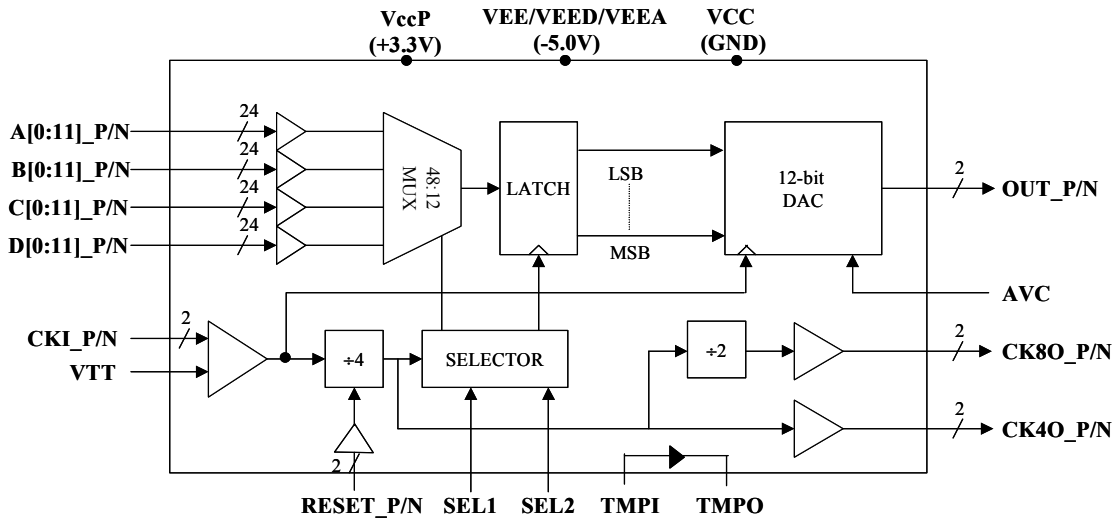


MD651D – High Speed > 4GHz MUXDAC



Key Features

- 12-bit resolution DAC with > 3-GSPS rate
- 4:1 multiplexing ratio for each input bit of DAC
- SFDR better than -50 dBc
- Complementary outputs with 50-Ω back terminations
- Complementary divided-by-4 and divide-by-8 clock LVDS outputs for data synchronization
- Variable 400~800 mV_{pp} single-ended output swing
- On-chip 100 ohm termination between each differential LVDS input data and RESET pair
- LQFP 14x14 128L package
- 2.6W power consumption

Applications

- Arbitrary waveform generation
- Radar/Ladar design and testing
- Software defined radio
- Electronic warfare
- Wireless basestations
- RF signal source generation
- Hard disk and magnetic storage testing
- WLAN testing
- Advanced communication modulations

Description

MD651D is a high-speed 12-bit Digital to Analog Converter (DAC) integrated with a 48:12 (12 channels of 4:1) input multiplexer. The converter can be operated at a sampling rate up to 3.5 GSPS. The digital data inputs are LVDS with on-chip 100 ohm termination resistors. After the 48 pairs of differential data inputs were multiplexed up to 4 times of speed, the 12 high speed data bits are latched and encoded to drive DAC output stage. To minimize the glitch energy and to achieve high linearity, the DAC is based on a 4-bit segmented with 8-bit R-2R architecture. Complementary outputs are available with 50-Ω output back terminations. Divided-by-4 clock LVDS outputs and sampling phase selection (SEL1 and SEL2) are provided to ease the alignment of sampling phase relative to the input data. Divided-by-8 clock LVDS outputs are also provided. A RESET function is provided for system applications which need to synchronize the outputs from multiple **MD651D**'s.