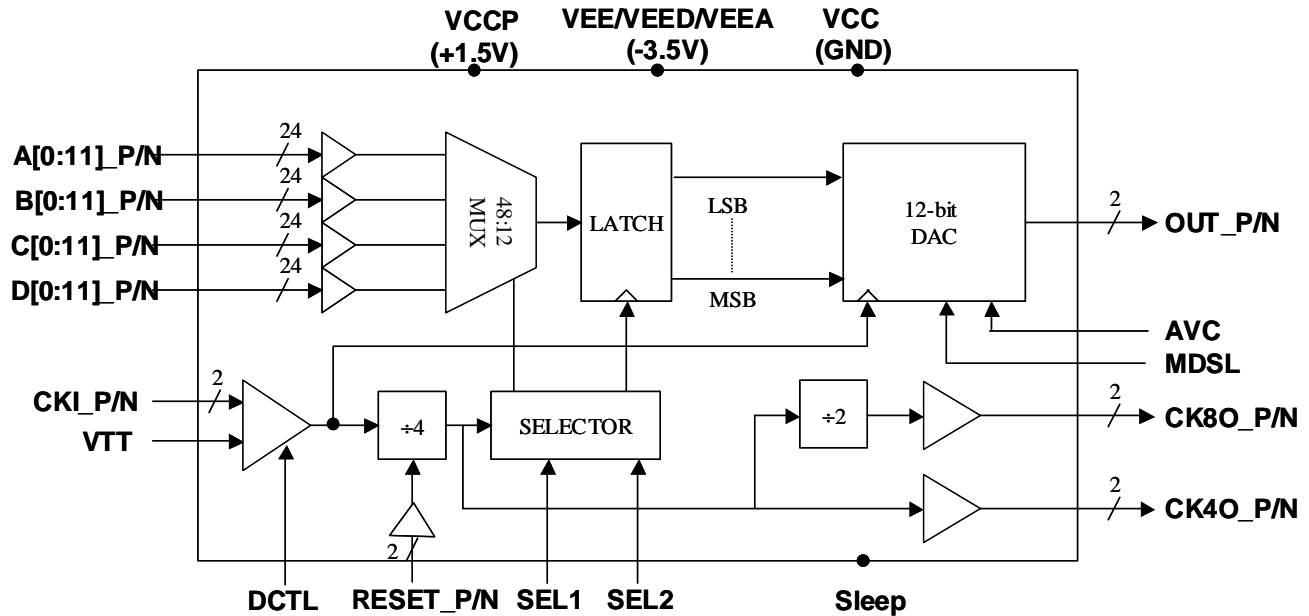


## MD657B – Analog Output Mode Selectable MUXDAC



### KEY FEATURES

- 4:1 multiplexing ratio for each input bit of DAC
- 12-bit resolution DAC up to **5.5 Gsps rate**
- DAC analog output format can be selected between Normal-Hold (NH) mode or Return-to-Zero (RZ) mode
- Complementary outputs with 50- $\Omega$  back terminations
- Both complementary divide-by-4 and divide-by-8 clock outputs are provided for data synchronization
- 2.25 W power consumption
- Variable 400~800 mV<sub>pp</sub> single-ended output swing
- On-chip 100 ohm termination between each differential input data and RESET pair
- LQFP package with exposed pad

### Description

**MD657B** is a high-speed 12-bit Digital to Analog Converter (DAC) integrated with a 48:12 (12 channels of 4:1) input multiplexer. The on-chip DAC can be operated at a sampling rate up to 5.5 Gsps. The analog outputs of DAC can be selected between Normal-Hold mode (for the 1<sup>st</sup> Nyquist band) or Return-to-Zero mode (for the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Nyquist band) operation. The differential digital data input interfaces are LVPECL, LVDS, and CML compatible. 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. Complementary outputs are available with 50- $\Omega$  output back terminations. Divided-by-4 clock 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 outputs are also provided. A RESET function is provided for system applications which need to synchronize the outputs from multiple **MD657B**'s.