

## Analog IP

# 8bit 1MSPS D/A Converter

### Overview

This IP is an ultra-compact 8-bit D/A converter operating at a supply voltage of 1.8V. High accuracy and monotonicity are guaranteed. The R-2R ladder architecture provides fast transitions and very small offset errors. Integrated level-up shifter allows direct connection to logic circuits operating at core voltage. DAC enable control (DACE) not only saves power consumption by disabling the DAC, but also releases the IC pin connected to the DAC output for other functions (ADC input, comparator input or GPIO, etc.). This DAC is fabricated in TSMC 22nm, T22ULP process.

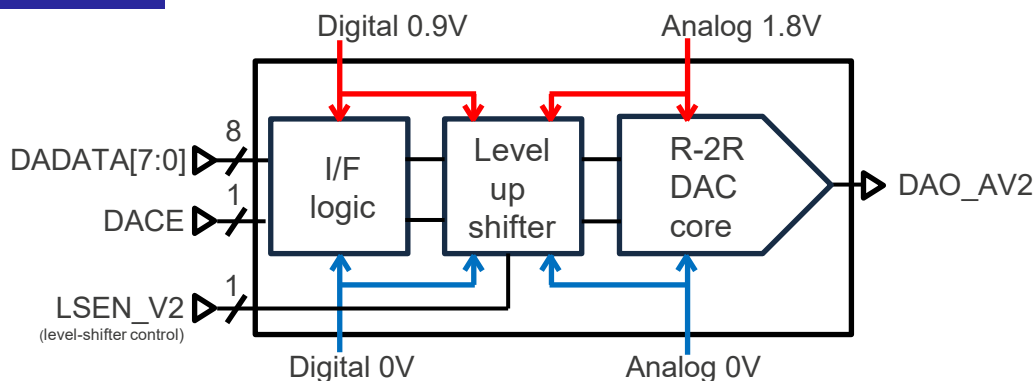
### Technology

Process: T22ULP

### Features

- Resolution: 8bit
- monotonicity
- Accuracy:  $DNL \leq \pm 1LSB$ ,  $INL \leq \pm 3LSB$  @  $R_{load} = 2M\Omega$
- Conversion period : Settling time  $1\mu s$  @  $C_{load} = 20pF$
- Sampling rate : 2MSPS
- DAC enable control (saving the power consumption and releasing the IC terminal for other function)
- Analog supply voltage :  $1.8 \pm 0.15V$
- Core(Digital) supply voltage:  $0.9 \pm 0.09V$
- Junction Temperature:  $-40 - 125\text{ }^{\circ}C$
- Ultra-compact

### Block diagram



CTPD-24-144  
R06PF0061EJ0101