

Fact Sheet

Military Semiconductor Products

TLC5618AM / 5962-9955702QxA

SGYV071, October 1999

TLC5618A, DUAL 12-BIT DAC WITH POWER DOWN

HIGHLIGHTS

The TLC5618AM is a dual 12-bit voltage output digital-to-analog converter (DAC) with buffered reference inputs (high impedance). The DACs have an output voltage range that is two times the reference voltage, and the DACs are monotonic. The device is simple to use, running from a single supply of 5 V. A power-on reset function is incorporated in the device to ensure repeatable start-up conditions.

Digital control of the TLC5618AM is over a 3-wire CMOS compatible serial bus. The device receives a 16-bit word for programming and producing the analog output. The digital inputs feature Schmitt triggers for high noise immunity. Digital communication protocols include the SPI™, QSPI™, and Microwire™ standards.

The TLC5618AM has an internal state machine that counts the number of clocks from the falling edge of CS\ and then updates and disables the device from accepting further data inputs. The TLC5618AM is recommended for use with SMJ320 DSPs and SPI™ compatible processors. The TLC5618AM is characterized for operation from -55°C to 125°C.

KEY FEATURES/BENEFITS

- Programmable settling time to 0.5 LSB
2.5 μ s or 12.5 μ s typ
- Two 12-Bit CMOS Voltage Output DACs in an 8-pin package
- Simultaneous updates for DAC A and DAC B
- Single supply operation
- 3-Wire serial interface
- Output voltage range ... 2 times the reference input voltage
- Software powerdown mode
- Internal power-on reset
- SMJ320 DSP and SPI™ compatible
- Low power consumption:
3 mW typ in slow mode,
8 mW typ in fast mode
- Input data update rate of 1.21 MHz
- Operating free-air temperature range: -55°C to 125°C

DIE SIZE

The current die (BDLE5618AIN) has a size of: 60 x 68 mils

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TECHNOLOGY

- 0.8 μm LinEPIC-1ZS™ CMOS process
- Class 2 ESD rating per MIL-STD-883, method 30

PACKAGING

Package Option: 8-pin Ceramic Dual in Line Package (JG)
20-pin Leadless Ceramic Chip Carrier (FK)

POWER DISSIPATION

The table below shows modeled data. This data can be used for approximating system thermal characteristics:

Package Thermal Data

Package	R _{qJA}	R _{qJC}
8-Pin DIP	119° C/W	15° C/W
20-Pin LCC	91° C/W	6° C/W

Note: much better thermal impedances can be achieved by using air flow, or by increasing metal backplane thickness or trace area in the Printed Circuit Board (PCB) that is used.

MILITARY TLC5618AM FAMILY:

The following table details the military TLC5618AM products currently offered by TI:

Device	# Of Pins	DSCC Number
TLC5618AMJGB	8	5962-9955702QPA
TLC5618AMFKB	20	5962-9955702Q2A
TLC5618AMJG	8	-----

SUPPORT

Additional information regarding this product is available by calling the Texas Instruments Product Information Center (PIC) at (972) 644-5580 during normal business hours (CST/CDT) . Online information is available at: <http://www.ti.com/sc/docs/pic/americas.htm>

SUPPORT LITERATURE

You can access data sheets via TI's home page on the internet (<http://www.ti.com>) or reference the literature number SLAS156E when contacting the PIC.

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