



## Octal, 12-Bit, Low-Power, $\pm 15$ -V Output, Serial Input DIGITAL-TO-ANALOG CONVERTER

### FEATURES

- **Bipolar Output:**  $\pm 15$  V, Up to  $\pm 16.5$  V
- **Unipolar Output:** 0 V to +18 V
- **12-Bit Resolution**
- **Low Power:** 20.6 mW/Ch
- **Relative Accuracy:** 1 LSB Max
- **Low Zero-Code/Gain Error:**  $\pm 1$  LSB Max
- **Flexible System Calibration**
- **Low Glitch**
- **Settling Time:** 10  $\mu$ s
- **Channel Monitor Output**
- **Programmable Offset**
- **SPI™:** Up to 50-MHz, 1.8-V/3-V/5-V Logic
- **Schmitt Trigger Inputs**
- **Daisy-Chain Mode**
- **Packages:** QFN-48 (7x7mm), TQFP-64 (10x10mm)

### APPLICATIONS

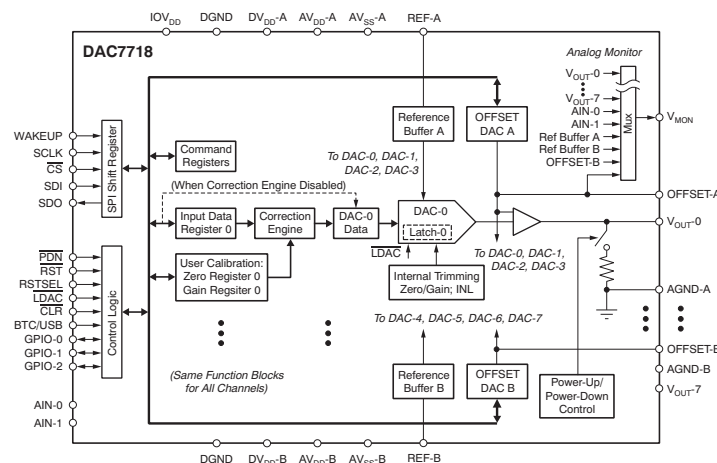
- **Automatic Test Equipment**
- **PLC and Industrial Process Control**
- **Communications**

### DESCRIPTION

The DAC7718 is a low-power, octal, 12-bit digital-to-analog converter (DAC). The output can be a bipolar  $\pm 15$ -V voltage when operating from a dual  $\pm 16.5$ V power supply, or a unipolar 0-V to +18-V voltage when operating from a +20-V power supply. This DAC provides low-power operation, good linearity, and low glitch over the specified temperature range of  $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$ . This device is trimmed in manufacturing and has very low zero-code and gain error. In addition, system level calibration can be performed to achieve  $\pm 1$  LSB zero-code and gain error over entire signal chain. The output range can be offset by properly setting the DAC offset register.

The DAC7718 features a standard, high-speed serial peripheral interface (SPI) at up to 50 MHz and 1.8-V, 3-V, and 5-V logic compatible, to communicate with a DSP or microprocessor. The input data of the device are double-buffered. An asynchronous load input ( $\overline{\text{LDAC}}$ ) transfers data from the DAC data register to the DAC latch. The asynchronous CLR input sets the output of all eight DACs to AGND. The  $V_{\text{MON}}$  pin is a monitor output that connects to the individual analog outputs and two external inputs through a multiplexer (mux).

The DAC7718 is pin-to-pin compatible with the [DAC8718](#) (16-bit) and the [DAC8218](#) (14-bit).



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PAG (S-PQFP-G64)

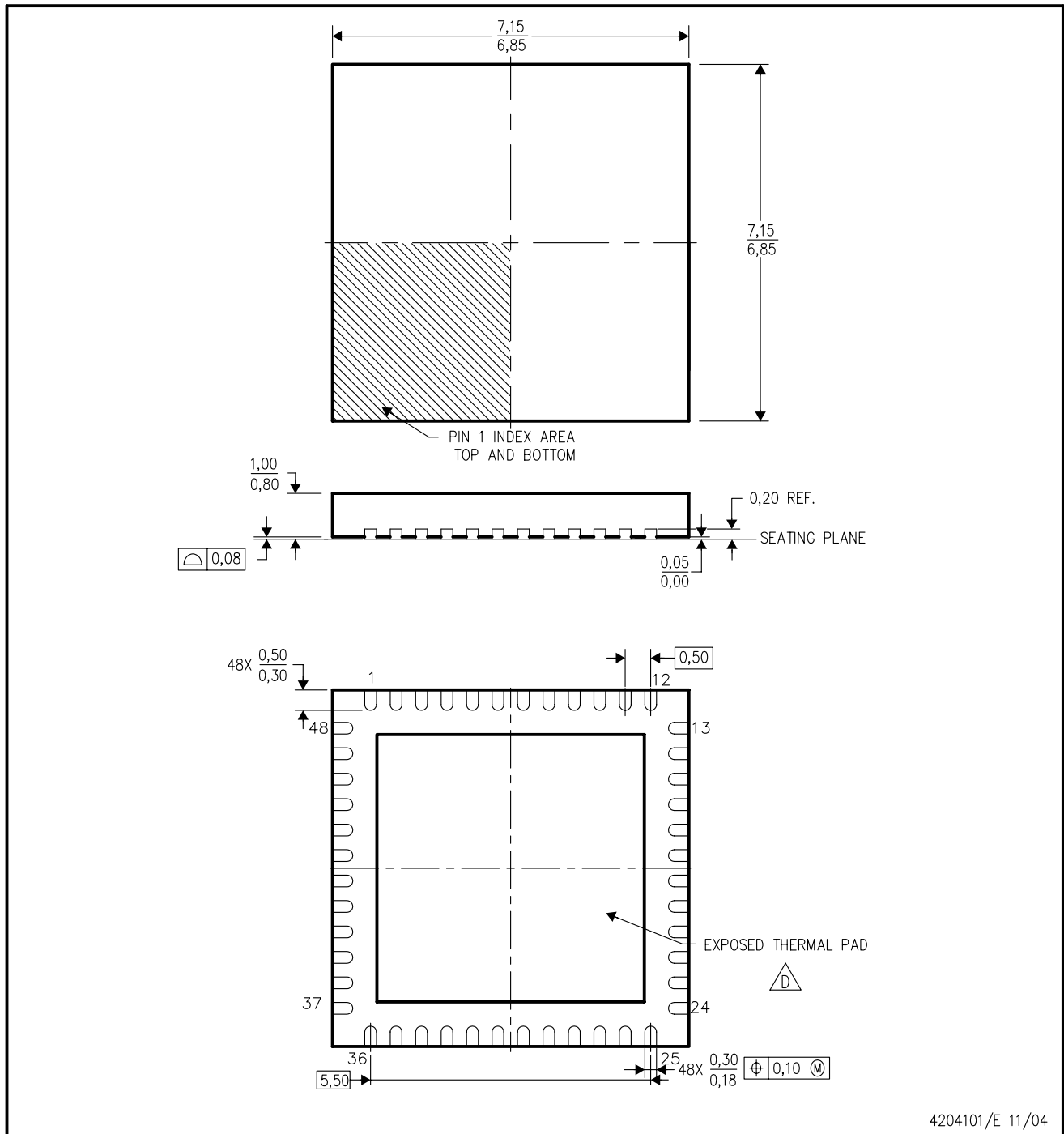
PLASTIC QUAD FLATPACK



- NOTES: A. All linear dimensions are in millimeters.  
 B. This drawing is subject to change without notice.  
 C. Falls within JEDEC MS-026

RGZ (S-PQFP-N48)

PLASTIC QUAD FLATPACK



- NOTES:
- A. All linear dimensions are in millimeters. Dimensioning and tolerancing per ASME Y14.5M-1994.
  - B. This drawing is subject to change without notice.
  - C. Quad Flatpack, No-leads (QFN) package configuration.
  - D. The package thermal pad must be soldered to the board for thermal and mechanical performance. See the Product Data Sheet for details regarding the exposed thermal pad dimensions.
  - E. Falls within JEDEC MO-220.

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