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## DAC0800-MDC -MWC

### 8-BIT DIGITAL-TO- ANALOG CONVERTER

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#### FEATURES

- **Fast Settling Output Current: 100 ns**
- **Full Scale Error:  $\pm 1$  LSB**
- **High Output Compliance:  $-10V$  to  $+15V$**
- **Complementary Current Outputs**
- **Interfaces Directly with TTL, CMOS, PMOS**
- **Wide Power Supply Range:  $\pm 4.5V$  to  $\pm 15V$**
- **Low Power Consumption: 33 mW at  $\pm 5V$**

#### DESCRIPTION

The DAC0800 series are monolithic 8-bit high-speed featuring typical settling times of 100 ns. The DAC0800 series also features high compliance complementary current outputs to allow differential output voltages of  $20 V_{P-P}$  with simple resistor loads. The reference-to-full-scale current matching of better than  $\pm 1$  LSB eliminates the need for full-scale trims in most applications.

#### ORDERING INFORMATION <sup>(1)</sup>

PRODUCT	PACKAGE	ORDERABLE PART NUMBER	PACKAGE QUANTITY
DAC0800-MDC	Bare die in wafer pack <sup>(2)</sup>	DAC0800-MDC	221
DAC0800-MWC	Whole wafer sale <sup>(2)</sup>	DAC0800-MWC	1

(1) For the most current package and ordering information, see the TI web site at [www.ti.com](http://www.ti.com).

(2) Processing is per the Texas Instruments commercial production baseline and is in compliance with the Texas Instruments Quality Control System in effect at the time of manufacture. Electrical screening consists of DC parametric and functional testing at room temperature only. Unless otherwise specified by Texas Instruments AC performance and performance over temperature is not warranted. See Tested Parameters table below.



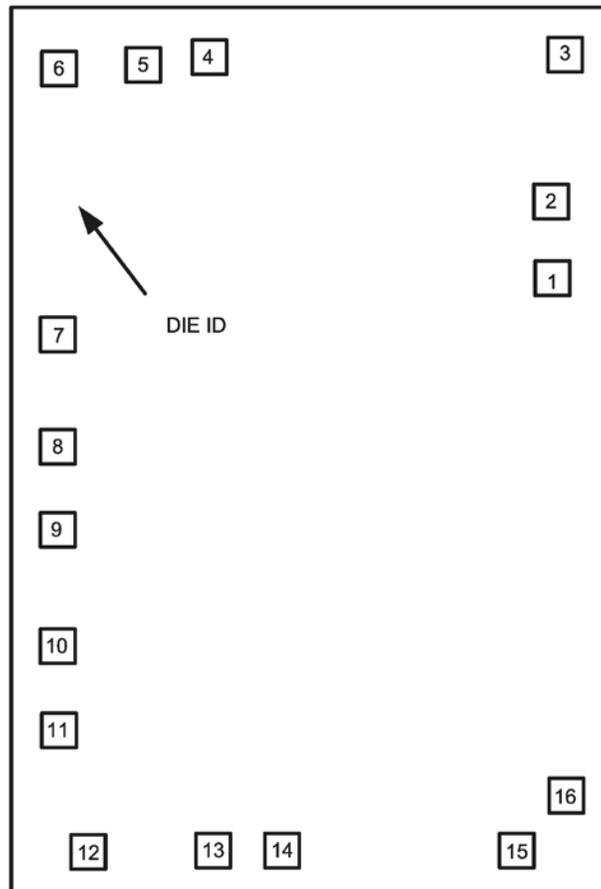
This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.



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## BARE DIE INFORMATION

DIE LAYOUT (B-STEP)      January 6,2016



## DIE CHARACTERISTICS

Fabrication Attributes		General Die Information	
Physical Die Identification	DAC0800LB	Bond Pad Opening Size (min)	88.90 $\mu$ m x 91.44 $\mu$ m
Die Step	B	Bond Pad Metallization	AL 0.5%CU
Physical Attributes		Passivation	PECVDOX NITRIDE
Wafer Diameter	150mm	Back Side Metal	BAREBACK
Die Size (Drawn)	1651 $\mu$ m x 2286 $\mu$ m 65.0mils x 90.0mils	Back Side Connection	Floating
Thickness	330 $\mu$ m Nominal		
Min Pitch	182.88 $\mu$ m		

**BOND PAD COORDIATES IN MICRONS**

Die Bond Pad Coordinate Locations (B-Step)						
(Referenced to die center, coordinates in $\mu\text{m}$ ) NC = No Connection, N.U. = Not Used						
Signal Name	Pad Number	X/Y Coordinates		Pad Size		
		X	Y	X	Y	
T CONT VLC	1	660	445	91	x	91
/IOUT	2	660	648	91	x	91
V -	3	699	1016	91	x	91
IOUT	4	-287	1016	91	x	91
B1 MSB	5	-470	996	91	x	91
B2	6	-699	991	91	x	91
B3	7	-699	312	91	x	91
B4	8	-699	13	91	x	91
B5	9	-699	-198	91	x	91
B6	10	-699	-498	91	x	91
B7	11	-699	-709	91	x	91
B8 LSB	12	-612	-1016	91	x	91
V +	13	-279	-1016	91	x	91
VREF +	14	-89	-1016	91	x	91
VREF -	15	554	-1016	91	x	91
COMP	16	700	-876	89	x	91

**TESTED PARAMETERS<sup>(1)</sup>**

1. Monotonicity
2. Nonlinearity
3. Full scale current
4. Full scale symmetry
5. Zero scale current
6. Output current range:  $V_- = -5V$ ,  $V_+ = 15V$
7. Logic input current: Logic "0"
8. Logic input current: Logic "1"
9. Reference bias current
10. Power supply current:  $V_s = \pm 5V$ ,  $I_{REF} = 1mA$
11. Power supply current:  $V_s = +5V, -15V$ ,  $I_{REF} = 2mA$
12. Power supply current:  $V_s = \pm 15V$ ,  $I_{REF} = 2mA$

(1) This die product undergoes the same wafer fabrication process as its packaged counterparts. The parameters listed in this table comprise the elements TI uses to probe those products before packaging. The DAC0800-MDC is probed using the same process but, as noted above, does not undergo the full suite of post-packaging electrical screening as its packaged counterparts.

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