

Low Power, Wide Temperature Range DACs

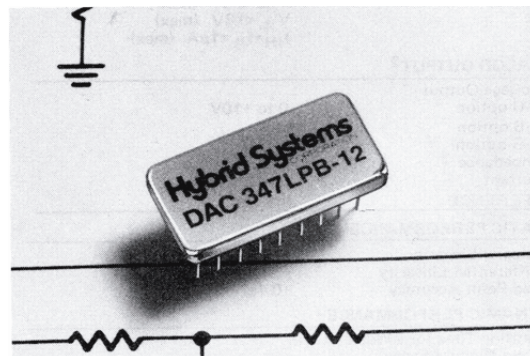
FEATURES

- 10- and 12-bit models
- Very low power: less than 300 mW
- Wide operating temperature range:
 -55°C to +125°C
- MIL-STD-883 Rev. C, Level B or commercial
 processing
- 18 pin hermetic package

DESCRIPTION

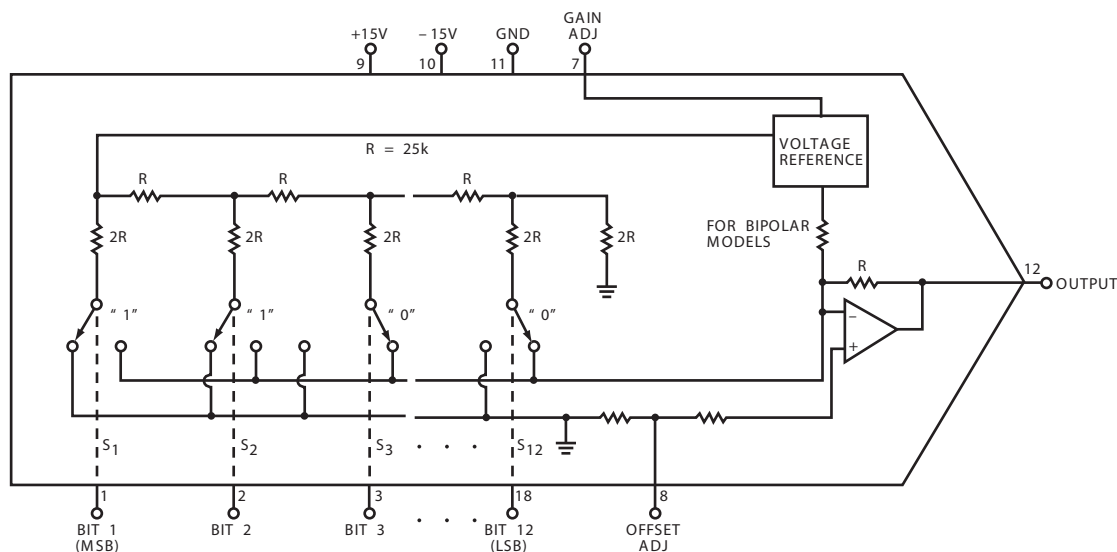
This Series is specifically designed and tested for low power operation. The models feature low total power dissipation of less than 300 mW. Each unit incorporates a pretrimmed output amplifier and a low power internal reference.

The DAC347 Series are high performance, general purpose, digital to analog converters utilizing matched CMOS current switches and ultra stable thin-film nichrome resistor networks. All DAC347 Series models provide optimum stability in performance over the full -55°C to +125°C temperature range.



Unipolar models use complementary binary coding and bipolar models use complementary offset binary coding. Each DAC347 Series converter comes packaged in a hermetically sealed 18-pin package, ideal for applications where maximum performance in minimum space is required.

FUNCTIONAL DIAGRAM



DAC347

SPECIFICATIONS

(Typical @ +25°C using nominal supplies unless otherwise noted).

SERIES	DAC347
TYPE	Fixed Ref, Volt Output
DIGITAL INPUT	
Resolution	
-10 option	10-bits
-12 option	12-bits
Coding Unipolar	Comp. Binary
Bipolar	Comp Offset Binary
Logic Compatibility ¹	DTL, TTL, CMOS
	$V_{IH}=2.4V$ (min)
	$V_{IL}=0.8V$ (max)
	$I_{IH}=I_{IL}=1\mu A$ (max)

ANALOG OUTPUT2

Voltage Output	
-U option	0 to +10V
-B option	±5V
-G option	±10V
Impedance	0.1
Current	±5mA
REFERENCE	Internal

STATIC PERFORMANCE

Integral Linearity	±1/2 LSB (max)
Differential Linearity	±1/2 LSB ±1LSB (max)
End Point Accuracy	±0.1%

DYNAMIC PERFORMANCE

Settling Time for a Worst Case Digital Change	
-10 models (to ±0.05%)	20μS (max)
-12 models (to ±0.05%)	20μS (max)

-25° C TO +85° C OPERATION

Change in Accuracy ³	
-10 models	±0.15% F.S.R.
-12 models	±0.1% F.S.R.
Differential Linearity	
-10 models	±0.1% F.S.R.
-12 models	±0.025% F.S.R.
Linearity Error	
-10 models	±0.05% F.S.R.
-12 models	±0.0125% F.S.R.

-55° C TO +125° C OPERATION

Change in Accuracy	
-10 models	±0.7% F.S.R.
-12 models	±0.35% F.S.R.
Differential Linearity	
-10 models	±0.1% F.S.R.
-12 models	±0.05% F.S.R.
Linearity Error	
-10 models	±0.05% F.S.R.
-12 models	±0.025% F.S.R.

POWER REQUIREMENTS

Power Supply	+15V, ±3% @ 6mA (typ), 9mA (max) -15V, ±3% @ 9mA (typ), 12mA (max)
Power Supply Rejection Ratio	0.001% /% (typ), 0.002% /% (max)

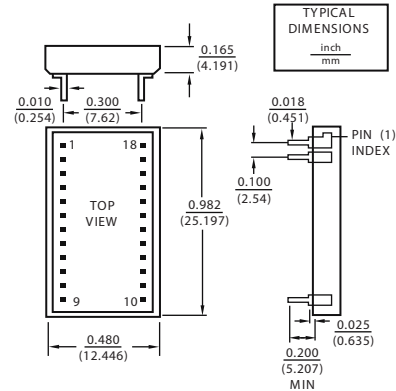
ENVIRONMENTAL

Operating Temperature	-55° C to +125°C
Range	B Versions 0°C to 70° C C Versions

MECHANICAL

Case Style	18 pin ceramic
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CASE A (CERAMIC): ADC542



PIN	FUNCTION	PIN	FUNCTION
1	BIT 1 (MSB)	18	BIT 1 (LSB)
2	Bit 2	17	Bit 11
3	Bit 3	16	Bit 10
4	Bit 4	15	Bit 9
5	Bit 5	14	Bit 8
6	Bit 6	13	Bit 7
7	GAIN ADJ	12	OUTPUT
8	OFFSET ADJ	11	GND
9	+15V	10	-15V

ORDERING INFORMATION

MODEL	DESCRIPTION
DAC347LPB-12-U	MIL, 12-Bit. 0 to +10V
DAC347LPC-10-G	Comm 10-Bit, ±10V
DAC347LPC-12-G	Comm, 12-Bit, ±10V
DAC347LPC-10-B	Comm, 10-Bit, ±5V
DAC347LPC-12-B	Comm, 12-Bit, ±5V
DAC347LPC-10-U	Comm, 10-Bit. 0 to +10V
DAC347LPC-12-U	Comm, 10-Bit. 0 to +10V

LPC models are commercially processed.
LPB models are processed to MIL-STD-883
Rev. C. Level B

Specifications subject to change without notice.