SatCon Electronics

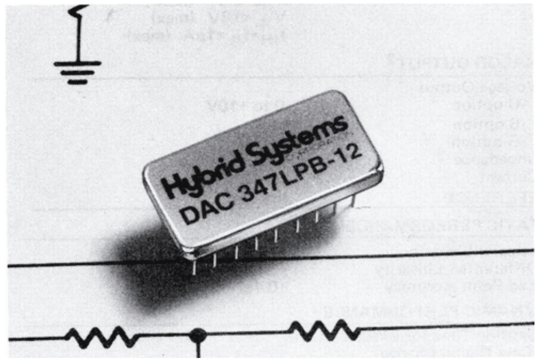
DAC347

Sipex Data Converter Line

Low Power, Wide Temperature Range DACs

FEATURES

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



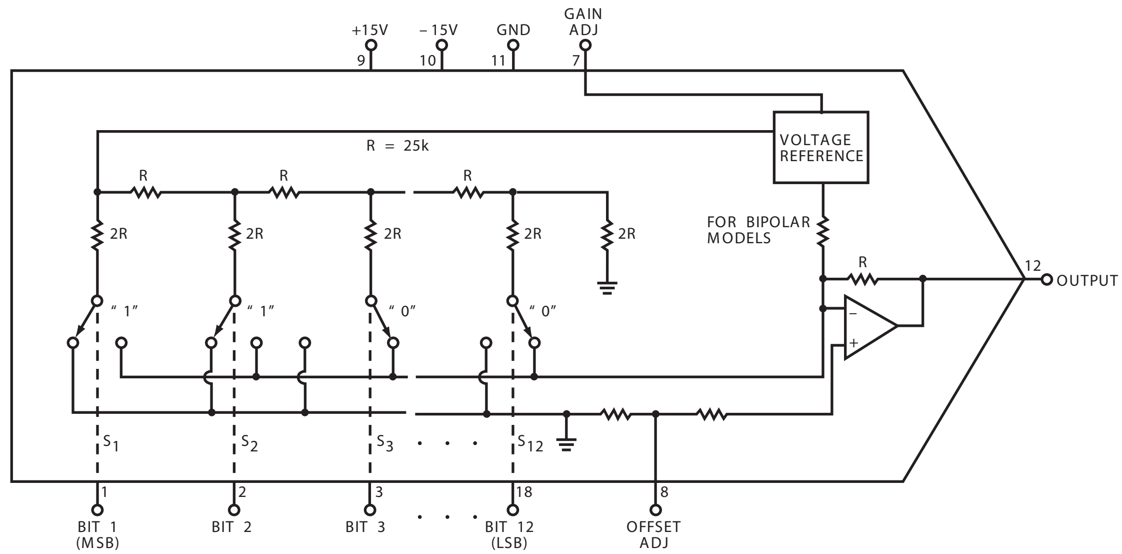
DESCRIPTION

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



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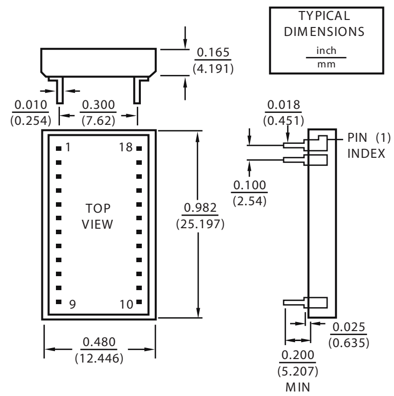
SPECIFICATIONS

(Typical @ +25ºC 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}=1µA (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)
– 25º C TO +85º 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.
– 55º C TO +125º 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	–55º C to +125ºC B Versions
Range	0ºC to 70º C C Versions
MECHANICAL	
Case Style	18 pin ceramic

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.