DAC337

Sipex Data Converter Line

Adjustment-Free 8-Bit DACs

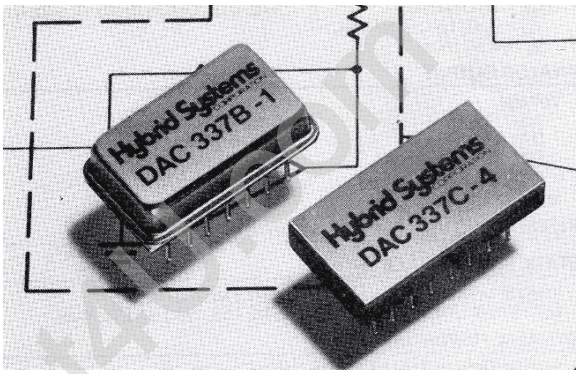
FEATURES

- No Zero Or Gain Adjusts
- ±½LSB Linearity
- Internal Reference and Output Amplifier
-
- Low Power

DESCRIPTION

The DAC337 Series digital-to-analog converters are designed for completely adjustment-free operation.

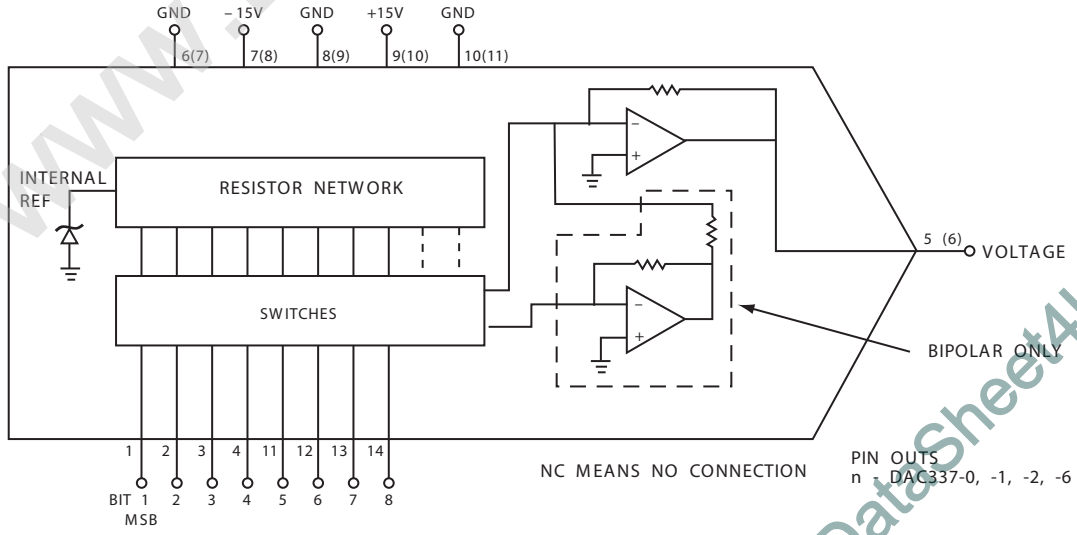
The word "simplicity" best characterizes the DAC337 Series. All models are housed in hermetically-sealed DIP style packages and operate on ±15V power supplies. Each model incorporates a precision reference, highly stable thin-film nichrome resistor network, output amplifier, and switches. ±1/2 LSB inearity is achieved without the use of external zero and gain adjustment circuits.



Four output voltage ranges are offered — 0 to +10,0 to –10 (unipolar) and ±5, ±10 (bipolar).

SatCon offers the DAC337 for commercial and industrial applications.

FUNCTIONAL DIAGRAM



NC MEANS NO CONNECTION

PIN OUTS
n - DAC337-0, -1, -2, -6

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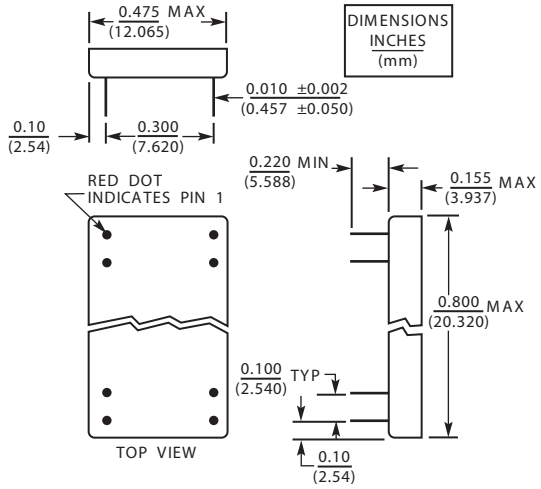
SPECIFICATIONS

(Typical for all models @ +25° C and nominal power supplies unless otherwise noted)

SERIES	**DAC337**
TYPE	**Fixed Ref., Volt, Output**
DIGITAL INPUT	
Resolution	8 Bits
Coding	
DAC337-0	Complementary Binary
DAC337-1,6	Offset Binary
DAC337-2	Binary
Logic Compatibility	TTL, DTL, CMOS (from 5V supply)
V_{IH}= 2.4V typ., 3.5V min.	
V_{IH}= 0.8V max.	
ANALOG OUTPUT	
Voltage	
DAC337-0	0 to –10V@ –5mA
DAC337-1	+5V +5mA
DAC337-2	0 to +10V@ +5mA
DAC337-6	±10V@ +5mA
Impedance	<0.1
REFERENCE	**Internal**
STATIC PERFORMANCE	
Integral Linearity	±1/2 LSB, max.
Differential Linearity	±1/2 LSB, typ.; ±1 LSB.max.
DYNAMIC PERFORMANCE	
Settling Time to 1/2 LSB for Full Scale Change	
DAC337–0,–1,–2	20µs
DAC337-6	40µs
For 1 LSB change	5µs typ.; 10µs max
Slew Rate	0.5V/µs
STABILITY (T_{MIN} TO T_{MAX})	
Accuracy	1LSB
Linearity	±1/1 LSB, max.
Offset	±1 LSB, max.
POWER SUPPLY	
Voltage @ Current	+15V ±20% @ +6mA, max.
	–15V ±20% @ –13mA, max.
Power Supply Rejection Ratio	+15V Supply, 0.1% FSR/Volt
	–15V Supply, 0.2% FSR/Volt
TEMPERATURE RANGE	
Operating	0°C to +70°C
Storage	–65°C to +150°C
MECHANICAL	
Case Style	Metal or ceramic at manufacturer's option

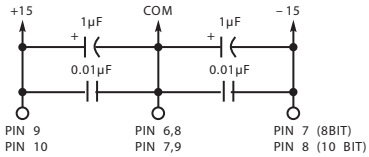
PIN	FUNCTION	PIN	FUNCTION
1	BIT1 (MSB)	14	BIT 8 (LSB)
2	BIT 2	13	BIT 7
3	BIT 3	12	BIT 6
4	BIT 4	11	BIT 5
5	OUTPUT	10	N.C.
6	GND	9	+15V
7	-15V	8	GND

DAC337 -0, -1, -2, -6



APPLICATION INFORMATION

RECOMMENDED POWER SUPPLY BY-PASS CIRCUIT



TRANSFER CHARACTERISTICS

DAC337	TRANSFER CHARACTERISTICS ANALOG OUTPUT							
INPUT PINS	337 –0	–1	–2	–6				
11111111	0V	+5V	–9.961V	+10V				
10000000	–4.961V	+0.040V	+5V	+0.080V				
11111111	–5V	0	+4.961V	0V				
11111111	–9.961V	–4.961V	0V	–9.921V				
1111111111					0V	+5V	+9.990V	+10V
1000000000					–4.961V	+0.010V	+5V	+0.020V
0111111111					5V	0V	+4.990V	0V
0000000000					–9.990V	–4.990V	0V	–9.980V

CAUTION: ESD (Electro-Static Discharge) sensitive device. Permanent damage may occur when unconnected devices are subjected to high energy electrostatic fields. Unused devices must be stored in conductive foam or shunts. Protective foam should be discharged to the destination socket before devices are removed. Devices should be-handled at static safe workstations only. Unused digital inputs must be grounded or tied to the logic supply voltage. Unless otherwise noted, the supply voltage at any digital input should never exceed the supply voltage by more than 0.5 volts or go betow –0.5 volts. If this condition cannot be maintained, limit input current on digital inputs by using series resistors or contact SatCon for technical assistance.

Specifications subject to change without notice.

SatCon Electronics