

1.1 Scope.

This specification covers the detail requirements for a voltage-to-frequency converter with full scale range of up to 150kHz.

1.2 Part Number

The complete part number per Table 1 of this specification is as follows:

Device	Part Number ¹
-1	AD537S(X)/883B

NOTE

¹See paragraph 1.2.3 for package identifier.

1.2.3 Case Outline.

See Appendix 1 of General Specification ADI-M-1000: package outline:

(X)	Package	Description
D	D-14	14-Pin DIP
H	H-10A	10-Pin Metal Package

1.3 Absolute Maximum Ratings. ($T_A = +25^\circ\text{C}$ unless otherwise noted)

Voltage, Rated Performance

Single Supply	4.5V to 36V
Dual Supply	$\pm 5\text{V}$ to $\pm 18\text{V}$
Storage Temperature Range	-65°C to $+150^\circ\text{C}$
Lead Temperature (Soldering 10sec)	$+300^\circ\text{C}$

1.5 Thermal Characteristics.

Thermal Resistance $\theta_{JC} = 25^\circ\text{C}/\text{W}$ for H-10A
$\theta_{JA} = 150^\circ\text{C}/\text{W}$ for H-10A
$\theta_{JC} = 25^\circ\text{C}/\text{W}$ for D-14
$\theta_{JA} = 95^\circ\text{C}/\text{W}$ for D-14

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Table 1.

Test	Symbol	Device	Design Limit @ +25°C	Sub Group 1	Sub Group 2, 3	Sub Group 4	Test Condition ¹	Units
Linearity Error	LE	-1	0.07	0.07			f = 10kHz	% max
			0.1			0.1	f = 100kHz	
Input Offset Voltage ²	V _{IO}	-1	2	2				mV max
Offset vs. Supply	V _{OS} /V _S	-1	100	100			15V < V _S < 20V	μV/V max
Offset Drift	ΔV _{OS} /ΔT	-1			10		25°C to +125°C	μV/°C max
					10		25°C to -55°C	
Gain Error	A _E	-1	5	5			C = 0.01μF, I _{IN} = 1.00mA	± % max
Gain vs. Supply	A _E /V _S	-1	0.1	0.1			f = 10kHz	%/V max
Gain Drift	dA _E /dT	-1			150		25°C to +125°C	± ppm/°C max
					150		25°C to -55°C	
Input Bias Current	I _{IB}	-1	100	100				± nA max
Input Resistance	R _I	-1	250					MΩ min
Initial Cal Temp Ref	V _{REF}	-1	293					mV min
			303					mV max
Voltage Reference Absolute Value ³	V _{REF}	-1	5	5				± % max
V _{REF} vs. Supply	V _{REF} /V _S	-1	0.03	0.03			15V < V _S < 35V	%/V max
Output Leakage Current	I _{OH}	-1	2	2	2		Logic 1	μA max
Output Voltage Logic Low	V _{OL}	-1	0.4	0.4	0.4		I _{SINK} = 10mA	V max
Quiescent Current	I _S	-1	2.5	2.5				mA max

NOTES

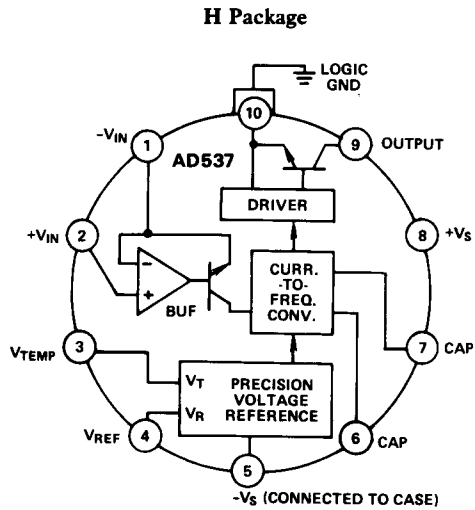
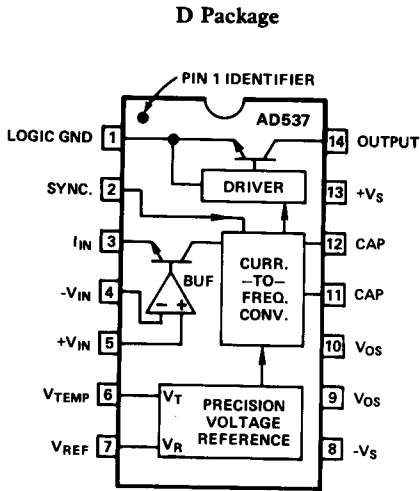
¹T_A = +25°C, V_S = +15V, C = 0.01μF.

²Trimable for D-14 package only.

³Nominal value 1.00V.

3.2.1 Functional Block Diagram and Terminal Assignments.

Top View



3.2.4 Microcircuit Technology Group.

This microcircuit is covered by technology group (57).

4.2.1 Life Test/Burn-In Circuit.

Steady state life test is per MIL-STD-883 Method 1005. Burn-in is per MIL-STD-883 Method 1015 test condition (B).

