

1.1 Scope.

This specification covers the detail requirements for an ultralow drift, monolithic BiFET operational amplifier.

1.2 Part Number.

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

Device	Part Number
-1	AD547SH/883B

1.2.3 Case Outline.

See Appendix 1 of General Specification ADI-M-1000; package outline: H-08B.

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

Supply Voltage	$\pm 18\text{V}$
Internal Power Dissipation ¹	500mW
Differential Input Voltage	$\pm 20\text{V}$
Common-Mode Input Voltage Range	$\pm 12\text{V}$
Output Short Circuit Duration	Indefinite
Storage Temperature Range	-65°C to $+150^\circ\text{C}$
Operating Temperature Range	-55°C to $+125^\circ\text{C}$
Lead Temperature Range (Soldering 60sec)	$+300^\circ\text{C}$

NOTE

¹Maximum package power dissipation vs. ambient temperature.

Package Type	MAXIMUM AMBIENT Temperature for Rating	DERATE ABOVE MAXIMUM Ambient Temperature
TO-99	80°C	7.1mW/°C

1.5 Thermal Characteristics.

Thermal Resistance $\theta_{JC} = 65^\circ\text{C/W}$
 $\theta_{JA} = 150^\circ\text{C/W}$

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Test	Symbol	Device	Design Limit @ + 25°C	Sub Group 1	Sub Group 2, 3	Sub Group 4	Test Condition ¹	Units
Gain Open Loop	A _{OL}	– 1	250	250	100		V _O = ± 10V, R _L ≥ 2kΩ	V/mV min
Gain Bandwidth Product	GBW	– 1	0.7					MHz min
Slew Rate	t _{SR}	– 1	3.0				Unity Gain	V/μs min
Output Voltage Swing	V _{OUT}	– 1	10	10	10		R _L = 2kΩ	± V min
			12	12	12		R _L = 10kΩ	
Input Offset Voltage ²	V _{OS}	– 1	0.5	0.5				± mV max
Input Offset Drift	TC V _{OS}	– 1	5.0		5.0			± μV/°C max
Input Offset Current ³	I _{OS}	– 1	15	15				± pA max
Input Bias Current ³	I _B	– 1	25	25				± pA max
Differential Input Voltage	V _{DIFF}	– 1	20					± V
Common-Mode Rejection Ratio	CMRR	– 1	80	80	80		V _{IN} = ± 10V	dB min
Common-Mode Voltage Range	CMVR	– 1	10	10	10			± V min
Input Noise Voltage	E _{NPP}	– 1	4			4	0.1Hz to 10Hz	μV p-p max
Power Supply Current	I _Q	– 1	1.5	1.5				mA max
Power Supply Rejection Ratio	PSRR	– 1	100	100	100			± μV/V max
Output Short Circuit Current	I _{SC}	– 1	25					mA max

NOTES

¹T_A = + 25°C, V_S = ± 15V unless otherwise specified.

²Input offset voltage specifications are guaranteed with V_{OS} unnullled at T_A = + 25°C.

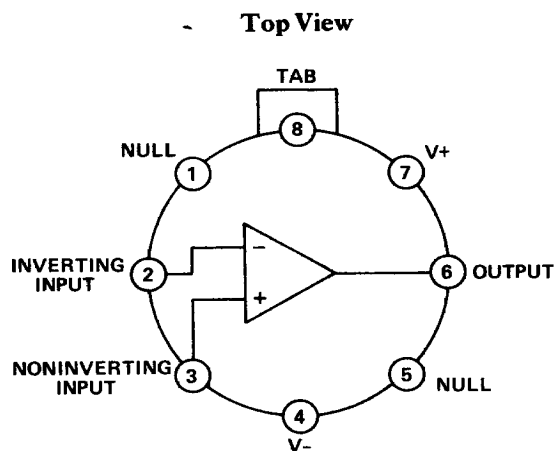
Nulling will induce an additional ± 3μV/°C.

³Bias current specifications guaranteed after 5 minutes of operation at T_A = + 25°C.

For temperatures above + 25°C, the current doubles every 10°C.

Table 1.

3.2.1 Functional Block Diagram and Terminal Assignments.



3.2.4 Microcircuit Technology Group.

This microcircuit is covered by technology group (85).

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).

