



Low-Cost High-Speed, IC Operational Amplifier

AD518

1.1 Scope.

This specification covers the detail requirements for a high-speed precision monolithic op amp with a high slew rate and wide bandwidth using feed forward circuitry.

1.2 Part Number.

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

Device	Part Number
-1	AD518SH/883B

1.2.3 Case Outline.

See Appendix 1 of General Specification ADI-M-1000: package outline: HO8A

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

Supply Voltage	$\pm 20\text{V}$
Internal Power Dissipation ¹	500mW
Differential Input Voltage ²	$\pm 11.5\text{V}$
Input Common-Mode Voltage, Max Safe	$\pm V_S$
Output Short Circuit Duration	Indefinite
Storage Temperature Range	-65°C to $+150^\circ\text{C}$
Operating Temperature Range (Ambient)	-55°C to $+125^\circ\text{C}$
Lead Temperature Range (Soldering 60sec)	$+300^\circ\text{C}$

NOTES

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

²The inputs are shunted with back to back diodes; if the V_{DIFF} is greater than $\pm 1\text{V}$, a resistor should be used in series with the inputs to limit the current to $\pm 10\text{mA}$.

1.5 Thermal Characteristics.

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



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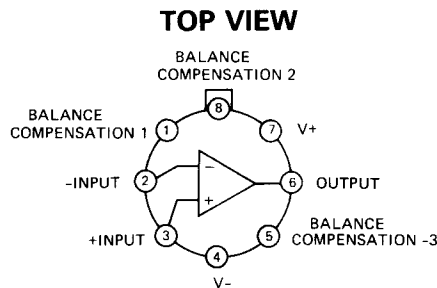
Test	Symbol	Device	Design Limit @ +25°C	Sub Group 1	Sub Group 2, 3	Sub Group 4	Test Condition ¹	Units
Gain Open Loop	A _{OL}	-1	50		25	50	R _L ≥ 2kΩ ΔV _O = 10V	V/mV min
Gain Bandwidth Product	GBW	-1	10					MHz min
Slew Rate, Unity Gain	t _{SR}	-1	50					V/μs min
Output Voltage Swing	V _{OUT}	-1	12	12	12		R _L = 2kΩ	± V min
Output Short Circuit Current	I _{SC}	-1	25	65				± mA max
Input Offset Voltage Drift	TCV _{IO}	-1	20		20		R _S = 100Ω	± μV/°C max
Input Offset Voltage	V _{IO}	-1	4	4	6		R _S = 100Ω	± mV max
Input Offset Current	I _{OS}	-1	50	50	100			± nA max
Input Bias Current	I _B	-1	250	250	400			± nA max
Common-Mode Rejection	CMRR	-1	80		80	80		dB min
Common-Mode Voltage Range	CMVR	-1	10	10				± V max
Power Supply Current	I _Q	-1	7	7				mA max
Power Supply Rejection Ratio	PSRR	-1	100		150	100		μV/V max

NOTE

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

Table 1.

3.2.1 Functional Block Diagram and Terminal Assignments.



3.2.4 Microcircuit Technology Group.

This microcircuit is covered by technology group (49).

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).

