

1.1 Scope.

This specification covers the detail requirements for a high speed, fast settling monolithic, operational amplifier which is stable at closed-loop gains of 10 or greater.

1.2 Part Number.

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

Device	Part Number
-1	AD840S(Q)/883B
-2	AD840S(E)/883B

1.2.3 Case Outline.

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

Package	Description
Q-14	14-Pin Cerdip Package
E-20A	20 Contact LCC Package

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

Supply Voltage	$\pm 18\text{ V}$
Internal Power Dissipation ¹	
Q-14	1.3 W
E-20A	1.0 W
Input Common-Mode Voltage, Max Safe	$\pm V_S$
Differential Input Voltage	$\pm 6\text{ V}$
Rated Operating Temperature Range	-55°C to $+125^\circ\text{C}$
Storage Temperature Range	-65°C to $+150^\circ\text{C}$
Lead Temperature (Soldering 60 sec)	$+300^\circ\text{C}$

NOTE

¹Maximum internal power dissipation is specified so that T_J does not exceed $+175^\circ\text{C}$ at an ambient temperature of $+25^\circ\text{C}$. Junction temperatures greater than $+150^\circ\text{C}$ may cause significant degradation of performance. Therefore, use of a heat sink is recommended if the device is used in high temperature or high output current applications. Derate: Q-14 @ $8.7\text{ mW}/^\circ\text{C}$; E-20A @ $6.7\text{ mW}/^\circ\text{C}$.

1.5 Thermal Characteristics.

Thermal Resistance

Q-14 Package:	$\theta_{JC} = 30^\circ\text{C}/\text{W}$
	$\theta_{JA} = 110^\circ\text{C}/\text{W}$
E-20A Package:	$\theta_{JC} = 35^\circ\text{C}/\text{W}$
	$\theta_{JA} = 150^\circ\text{C}/\text{W}$

AD840—SPECIFICATIONS

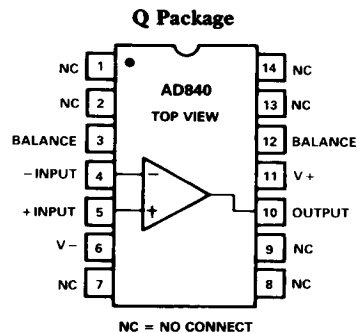
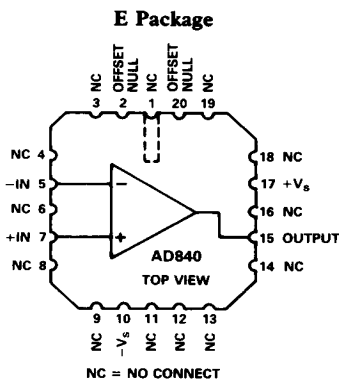
Table 1.

Test	Symbol	Device	Sub Group 1	Sub Group 2, 3	Test Condition ¹	Units
Input Offset Voltage	V_{OS}	-1, 2	1	2		$\pm$ mV max
Input Bias Current	I_B	-1, 2	8	12	$V_{CM} = 0$ V	$\pm$ μ A max
Input Offset Current	I_{OS}	-1, 2	0.4	0.6		$\pm$ μ A max
Common-Mode Rejection Ratio	CMRR	-1, 2	90	85	$V_{CM} = \pm 10$ V	dB min
Open-Loop Gain	A_{OL}	-1	100	50	$V_{OUT} = \pm 10$ V, $R_{LOAD} = 1$ k Ω	V/mV min
		-2	100	30		
		-1 -2	75 75	50 30	$V_{OUT} = \pm 10$ V, $R_{LOAD} = 500$ Ω	V/mV min
Output Voltage Swing	V_{OUT}	-1, 2	10	10	$R_L = 500$ Ω	$\pm$ V min
Output Current	I_{OUT}	-1, 2	50		$V_{OUT} = 0$ V	$\pm$ mA min
Power Supply Rejection Ratio	PSRR	-1, 2	90	80	$V_S = \pm 5$ V to ± 18 V	dB min
Power Supply Current	I_Q	-1, 2	14	18	$V_{OUT} = 0$ V	mA max

NOTE

¹ $V_S = \pm 15$ V, unless otherwise specified.

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).

Q Package Pinout

