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°C unless otherwise noted)

Supply Voltage ..... ±18 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 ..... ±6 V
Rated Operating Temperature Range ..... −55°C to +125°C
Storage Temperature Range ..... −65°C to +150°C
Lead Temperature (Soldering 60 sec) ..... +300°C

NOTE
[1]Maximum internal power dissipation is specified so that T_J does not exceed +175°C at an ambient temperature of +25°C. Junction temperatures greater than +150°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 mW/°C; E-20A @ 6.7 mW/°C.

1.5 Thermal Characteristics.

Thermal Resistance

Q-14 Package: θ_{JC} = 30°C/W
θ_{JA} = 110°C/W

E-20A Package: θ_{JC} = 35°C/W
θ_{JA} = 150°C/W

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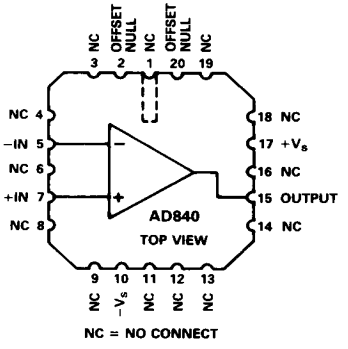
Table 1.

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

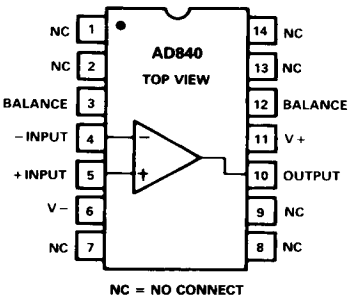
NOTE
[1]V_S = ±15 V, unless otherwise specified.

3.2.1 Functional Block Diagram and Terminal Assignments.

E Package



Q Package



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