

### 1.1 Scope.

This specification covers the detail requirements for a precision, monolithic laser-trimmed high speed amplifier.

### 1.2 Part Number.

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

| Device | Part Number    |
|--------|----------------|
| -1     | AD846S(X)/883B |

### 1.2.3 Case Outline.

See Appendix 1 of General Specification ADI-M-1000: package outline: Q-8

| (X) | Package | Description          |
|-----|---------|----------------------|
| Q   | Q-8     | 8-Pin Cerdip Package |

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

|  |   |
|--|---|
| Supply Voltage                           | $\pm 18\text{V}$                            |
| Internal Power Dissipation <sup>1</sup>  | 1.3W  |
| Input Common Mode Voltage, Max Safe      | $ V_S  - 3\text{V}$                         |
| Output Short Circuit Duration            | Indefinite                                  |
| Differential Input Voltage               | $\pm 1\text{V}$                             |
| Continuous Input Current                 |   |
| Inverting or Noninverting                | 2.0mA                                       |
| Storage Temperature Range                | $-65^\circ\text{C}$ to $+150^\circ\text{C}$ |
| Operating Temperature Range              | $-55^\circ\text{C}$ to $+125^\circ\text{C}$ |
| Lead Temperature Range (Soldering 60sec) | $+300^\circ\text{C}$                        |

NOTE:

<sup>1</sup>Maximum internal power dissipation is specified so that  $T_j$  does not exceed  $+175^\circ\text{C}$  at an ambient temperature of  $+25^\circ\text{C}$ . Derate at  $8.7\text{mW}/^\circ\text{C}$ .

### 1.5 Thermal Characteristics.

|                                  |  |
|----------------------------------|--|
| Thermal Resistance $\theta_{JC}$ | $= 30^\circ\text{C}/\text{W}$ for Q-8  |
| $\theta_{JA}$                    | $= 110^\circ\text{C}/\text{W}$ for Q-8 |

# AD846 — SPECIFICATIONS

Table 1.

| Test                                       | Symbol     | Device | Sub Group 1 <sup>1</sup> | Sub Group 2, 3 | Test Condition <sup>2</sup>          | Units           |
|--|------------|--------|--------------------------|----------------|--------------------------------------|-----------------|
| Input Offset Voltage                       | $V_{OS}$   | -1     | 200                      | 350            |                                      | $\pm \mu V$ max |
| Power Supply Rejection Ratio <sup>3</sup>  | PSRR       | -1     | 110                      | 94             | 5V-18V                               | dB min          |
| Common-Mode Rejection Ratio                | CMRR       | -1     | 110                      | 94             | $V_{CM} = \pm 10V$                   | dB min          |
| Input Bias Current <sup>1</sup>            | $I_B$      | -1     | 450                      | 1500           | Inverting                            | $\pm nA$ max    |
|  |            |        | 15                       | 20             | Noninverting                         | $\pm \mu A$ max |
| Input Bias Current vs. Supply <sup>3</sup> | $I_{BPSR}$ | -1     | 15                       | 25             | Inverting 5V-18V                     | nA/V max        |
|  |            |        | 15                       | 20             | Noninverting 5V-18V                  |                 |
| Input Bias Current vs. Common Mode         | $I_{BCMR}$ | -1     | 10                       | 20             | Inverting $V_{CM} = \pm 10V$         | nA/V max        |
|  |            |        | 15                       | 20             | Noninverting $V_{CM} = \pm 10V$      |                 |
| Open-Loop Transresistance                  | TZ         | -1     | 100                      | 50             | $V_O = \pm 10V$<br>$R_L = 500\Omega$ | M $\Omega$ min  |
| Output Voltage Swing                       | $V_{OUT}$  | -1     | 10                       |                | $R_L = 500\Omega$                    | $\pm V$ min     |
| Quiescent Current                          | $I_Q$      | -1     | 6.0                      | 7              |                                      | mA max          |

**NOTES**

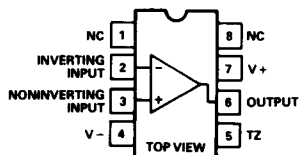
<sup>1</sup>All specifications are tested after equivalent of 5 minutes at  $T_A = +25^\circ C$ .

<sup>2</sup> $V_S = \pm 15V$ , unless otherwise noted.

<sup>3</sup>Test conditions:  $+V_S = 15V$ ,  $-V_S = -5V$  to  $-18V$  and  $+V_S = 5V$  to  $18V$ ,  $-V_S = -15V$ .

### 3.2.1 Functional Block Diagram and Terminal Assignments.

Cerdip (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).

