

## TABLE OF CONTENTS

|                                  |   |
|----------------------------------|---|
| Features .....                   | 1 |
| Applications .....               | 1 |
| General Description .....        | 1 |
| Pin Configurations .....         | 1 |
| Revision History .....           | 2 |
| Specifications .....             | 3 |
| Electrical Characteristics ..... | 3 |

## REVISION HISTORY

### 9/13—Rev. E to Rev. F

|                                                             |    |
|-------------------------------------------------------------|----|
| Changes to Figure 3 and Figure 4 .....                      | 1  |
| Delete Figure 4 and Figure 5; Renumbered Sequentially ..... | 1  |
| Changes to Ordering Guide .....                             | 14 |

### 8/11—Rev. D to Rev. E

|                            |   |
|----------------------------|---|
| Changes to Figure 20 ..... | 8 |
|----------------------------|---|

### 11/10—Rev. C to Rev. D

|                                                                       |    |
|-----------------------------------------------------------------------|----|
| Changes to Features Section and General Descriptions<br>Section ..... | 1  |
| Updated Outline Dimensions .....                                      | 11 |
| Changes to Ordering Guide .....                                       | 14 |
| Added Automotive Products Section .....                               | 14 |

### 5/07—Rev. B to Rev. C

|                                                              |    |
|--------------------------------------------------------------|----|
| Change to Figure 1 .....                                     | 1  |
| Changes to Large Signal Voltage Gain Values in Table 1 ..... | 3  |
| Change to Phase Margin Symbol in Table 1 .....               | 3  |
| Change to $T_A$ Value for Table 2 .....                      | 4  |
| Changes to Large Signal Voltage Gain Values in Table 2 ..... | 4  |
| Change to Phase Margin Symbol in Table 2 .....               | 4  |
| Changes to Table 4 .....                                     | 5  |
| Changes to Outline Dimensions .....                          | 11 |
| Changes to Ordering Guide .....                              | 12 |

|                                           |    |
|-------------------------------------------|----|
| Absolute Maximum Ratings .....            | 5  |
| Thermal Characteristics .....             | 5  |
| ESD Caution .....                         | 5  |
| Typical Performance Characteristics ..... | 6  |
| Outline Dimensions .....                  | 11 |
| Ordering Guide .....                      | 14 |
| Automotive Products .....                 | 14 |

### 3/05—Rev. A to Rev. B

|                    |           |
|--------------------|-----------|
| Added AD8694 ..... | Universal |
|--------------------|-----------|

### 1/05—Rev. 0 to Rev. A

|                                             |           |
|---------------------------------------------|-----------|
| Added AD8691 .....                          | Universal |
| Changes to Features .....                   | 1         |
| Added Figure 1 and Figure 2 .....           | 1         |
| Changes to Electrical Characteristics ..... | 3         |
| Changes to Figure 6 caption .....           | 6         |
| Changes to Figure 9 .....                   | 6         |
| Updated Outline Dimensions .....            | 11        |
| Changes to Ordering Guide .....             | 11        |

### 10/04—Revision 0: Initial Version

## SPECIFICATIONS

## ELECTRICAL CHARACTERISTICS

$V_S = 2.7\text{ V}$ ,  $V_{CM} = V_S/2$ ,  $T_A = 25^\circ\text{C}$ , unless otherwise noted.

Table 1.

| Parameter                         | Symbol               | Test Conditions/Comments                                                                                  | Min  | Typ   | Max  | Unit    |
|-----------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------|------|-------|------|---------|
| INPUT CHARACTERISTICS             |                      |                                                                                                           |      |       |      |         |
| Offset Voltage                    | V <sub>OS</sub>      | V <sub>CM</sub> = −0.3 V to +1.6 V<br>V <sub>CM</sub> = −0.1 V to +1.6 V; −40°C < T <sub>A</sub> < +125°C |      | 0.4   | 2.0  | mV      |
| Input Bias Current                | I <sub>B</sub>       |                                                                                                           |      |       | 3.0  | mV      |
|                                   |                      | −40°C < T <sub>A</sub> < +85°C                                                                            |      | 0.2   | 1    | pA      |
| Input Offset Current              | I <sub>OS</sub>      | −40°C < T <sub>A</sub> < +125°C                                                                           |      |       | 50   | pA      |
|                                   |                      |                                                                                                           |      |       | 260  | pA      |
|                                   |                      | −40°C < T <sub>A</sub> < +85°C                                                                            |      | 0.1   | 0.5  | pA      |
|                                   |                      | −40°C < T <sub>A</sub> < +125°C                                                                           |      |       | 20   | pA      |
| Input Voltage Range               |                      |                                                                                                           | −0.3 |       | 75   | pA      |
| Common-Mode Rejection Ratio       | CMRR                 | V <sub>CM</sub> = −0.3 V to +1.6 V                                                                        | 68   | 90    | +1.6 | V       |
|                                   |                      | V <sub>CM</sub> = −0.1 V to +1.6 V; −40°C < T <sub>A</sub> < +125°C                                       | 60   | 85    |      | dB      |
| Large Signal Voltage Gain         | A <sub>VO</sub>      |                                                                                                           |      |       |      | dB      |
|                                   |                      | R <sub>L</sub> = 2 kΩ, V <sub>O</sub> = 0.5 V to 2.2 V                                                    | 90   | 250   |      | V/mV    |
| Offset Voltage Drift              | ΔV <sub>OS</sub> /ΔT | R <sub>L</sub> = 2 kΩ, V <sub>O</sub> = 0.5 V to 2.2 V                                                    | 60   |       |      | V/mV    |
|                                   |                      |                                                                                                           |      |       |      |         |
|                                   |                      |                                                                                                           |      | 2     | 12   | μV/°C   |
|                                   |                      |                                                                                                           |      | 1.3   | 6    | μV/°C   |
| INPUT CAPACITANCE                 |                      |                                                                                                           |      |       |      |         |
| Common-Mode Input Capacitance     | C <sub>CM</sub>      |                                                                                                           |      | 5     |      | pF      |
| Differential Input Capacitance    | C <sub>DM</sub>      |                                                                                                           |      | 2.5   |      | pF      |
| OUTPUT CHARACTERISTICS            |                      |                                                                                                           |      |       |      |         |
| Output Voltage High               | V <sub>OH</sub>      | I <sub>L</sub> = 1 mA<br>−40°C < T <sub>A</sub> < +125°C                                                  | 2.64 | 2.66  |      | V       |
| Output Voltage Low                | V <sub>OL</sub>      | I <sub>L</sub> = 1 mA                                                                                     |      | 25    | 40   | V       |
|                                   |                      | −40°C < T <sub>A</sub> < +125°C                                                                           |      |       | 60   | mV      |
| Short-Circuit Current             | I <sub>SC</sub>      |                                                                                                           |      | ±20   |      | mV      |
| Closed-Loop Output Impedance      | Z <sub>OUT</sub>     | f = 1 MHz, A <sub>V</sub> = 1                                                                             |      | 12    |      | mA      |
| POWER SUPPLY                      |                      |                                                                                                           |      |       |      |         |
| Power Supply Rejection Ratio      | PSRR                 | V <sub>S</sub> = 2.7 V to 5.5 V                                                                           | 80   | 95    |      | dB      |
|                                   |                      | −40°C < T <sub>A</sub> < +125°C                                                                           | 75   | 95    |      | dB      |
| Supply Current/Amplifier          | I <sub>SY</sub>      | V <sub>O</sub> = 0 V                                                                                      |      | 0.85  | 0.95 | mA      |
|                                   |                      | −40°C < T <sub>A</sub> < +125°C                                                                           |      |       | 1.2  | mA      |
| DYNAMIC PERFORMANCE               |                      |                                                                                                           |      |       |      |         |
| Slew Rate                         | SR                   | R <sub>L</sub> = 2 kΩ                                                                                     |      | 5     |      | V/μs    |
| Settling Time                     | t <sub>S</sub>       | To 0.01%                                                                                                  |      | 1     |      | μs      |
| Gain Bandwidth Product            | GBP                  |                                                                                                           |      | 10    |      | MHz     |
| Phase Margin                      | Ø <sub>m</sub>       |                                                                                                           |      | 60    |      | Degrees |
| Total Harmonic Distortion + Noise | THD + N              | G = 1, R <sub>L</sub> = 600 Ω, f = 1 kHz, V <sub>O</sub> = 250 mV p-p                                     |      | 0.003 |      | %       |
| NOISE PERFORMANCE                 |                      |                                                                                                           |      |       |      |         |
| Voltage Noise                     | e <sub>n p-p</sub>   | f = 0.1 Hz to 10 Hz                                                                                       |      | 1.6   | 3.0  | μV p-p  |
| Voltage Noise Density             | e <sub>n</sub>       | f = 1 kHz                                                                                                 |      | 8     | 12   | nV/√Hz  |
|                                   |                      | f = 10 kHz                                                                                                |      | 6.5   |      | nV/√Hz  |
| Current Noise Density             | i <sub>n</sub>       | f = 1 kHz                                                                                                 |      | 0.05  |      | pA/√Hz  |

$V_S = 5.0\text{ V}$ ,  $V_{CM} = V_S/2$ ,  $T_A = 25^\circ\text{C}$ , unless otherwise noted.

Table 2.

| Parameter                         | Symbol                   | Test Conditions/Comments                                                                                                                                      | Min                | Typ              | Max              | Unit                         |
|-----------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------|------------------|------------------------------|
| <b>INPUT CHARACTERISTICS</b>      |                          |                                                                                                                                                               |                    |                  |                  |                              |
| Offset Voltage                    | $V_{OS}$                 | $V_{CM} = -0.3\text{ V to }+3.9\text{ V}$<br>$V_{CM} = -0.1\text{ V to }+3.9\text{ V}; -40^\circ\text{C} < T_A < +125^\circ\text{C}$                          |                    | 0.4              | 2.0              | mV                           |
| Input Bias Current                | $I_B$                    |                                                                                                                                                               |                    | 0.2              | 1                | pA                           |
|                                   |                          | $-40^\circ\text{C} < T_A < +85^\circ\text{C}$                                                                                                                 |                    |                  | 50               | pA                           |
|                                   |                          | $-40^\circ\text{C} < T_A < +125^\circ\text{C}$                                                                                                                |                    |                  | 260              | pA                           |
| Input Offset Current              | $I_{OS}$                 |                                                                                                                                                               |                    | 0.1              | 0.5              | pA                           |
|                                   |                          | $-40^\circ\text{C} < T_A < +85^\circ\text{C}$                                                                                                                 |                    |                  | 20               | pA                           |
|                                   |                          | $-40^\circ\text{C} < T_A < +125^\circ\text{C}$                                                                                                                |                    |                  | 75               | pA                           |
| Input Voltage Range               |                          |                                                                                                                                                               | -0.3               |                  | +3.9             | V                            |
| Common-Mode Rejection Ratio       | CMRR                     | $V_{CM} = -0.3\text{ V to }+3.9\text{ V}$<br>$V_{CM} = -0.1\text{ V to }+3.9\text{ V}; -40^\circ\text{C} < T_A < +125^\circ\text{C}$                          | 70                 | 95               |                  | dB                           |
|                                   |                          |                                                                                                                                                               | 67                 | 95               |                  | dB                           |
| Large Signal Voltage Gain         | $A_{VO}$                 | $V_O = 0.5\text{ V to }4.5\text{ V}$ , $R_L = 2\text{ k}\Omega$ , $V_{CM} = 0\text{ V}$                                                                       | 250                | 2000             |                  | V/mV                         |
|                                   |                          | $V_O = 0.5\text{ V to }4.5\text{ V}$ , $R_L = 2\text{ k}\Omega$ , $V_{CM} = 0\text{ V}$                                                                       | 150                |                  |                  | V/mV                         |
| Offset Voltage Drift              | $\Delta V_{OS}/\Delta T$ |                                                                                                                                                               |                    | 2                | 12               | $\mu\text{V}/^\circ\text{C}$ |
|                                   |                          |                                                                                                                                                               |                    | 1.3              | 6                | $\mu\text{V}/^\circ\text{C}$ |
| <b>INPUT CAPACITANCE</b>          |                          |                                                                                                                                                               |                    |                  |                  |                              |
| Common-Mode Input Capacitance     | $C_{CM}$                 |                                                                                                                                                               |                    | 5                |                  | pF                           |
| Differential Input Capacitance    | $C_{DM}$                 |                                                                                                                                                               |                    | 2.5              |                  | pF                           |
| <b>OUTPUT CHARACTERISTICS</b>     |                          |                                                                                                                                                               |                    |                  |                  |                              |
| Output Voltage High               | $V_{OH}$                 | $I_L = 1\text{ mA}$<br>$I_L = 10\text{ mA}$<br>$-40^\circ\text{C to }+125^\circ\text{C}$                                                                      | 4.96<br>4.7<br>4.6 | 4.98<br>4.78     |                  | V<br>V<br>V                  |
| Output Voltage Low                | $V_{OL}$                 | $I_L = 1\text{ mA}$<br>$I_L = 10\text{ mA}$<br>$I_L = 10\text{ mA}$<br>$-40^\circ\text{C to }+125^\circ\text{C}$<br>$-40^\circ\text{C to }+125^\circ\text{C}$ |                    | 20<br>165<br>185 | 40<br>210<br>240 | mV<br>mV<br>mV               |
|                                   |                          |                                                                                                                                                               |                    |                  | 290              | mV                           |
|                                   |                          |                                                                                                                                                               |                    |                  | 370              | mV                           |
| Short-Circuit Current             | $I_{SC}$                 |                                                                                                                                                               |                    | $\pm 80$         |                  | mA                           |
| Closed-Loop Output Impedance      | $Z_{OUT}$                | $f = 1\text{ MHz}$ , $A_v = 1$                                                                                                                                |                    | 10               |                  | $\Omega$                     |
| <b>POWER SUPPLY</b>               |                          |                                                                                                                                                               |                    |                  |                  |                              |
| Power Supply Rejection Ratio      | PSRR                     | $V_S = 2.7\text{ V to }5.5\text{ V}$<br>$-40^\circ\text{C} < T_A < +125^\circ\text{C}$                                                                        | 80<br>75           | 95<br>95         |                  | dB<br>dB                     |
| Supply Current/Amplifier          | $I_{SY}$                 | $V_O = 0\text{ V}$<br>$-40^\circ\text{C} < T_A < +125^\circ\text{C}$                                                                                          |                    | 0.95             | 1.05             | mA                           |
|                                   |                          |                                                                                                                                                               |                    |                  | 1.3              | mA                           |
| <b>DYNAMIC PERFORMANCE</b>        |                          |                                                                                                                                                               |                    |                  |                  |                              |
| Slew Rate                         | SR                       | $R_L = 2\text{ k}\Omega$                                                                                                                                      |                    | 5                |                  | V/ $\mu\text{s}$             |
| Settling Time                     | $t_s$                    | To 0.01%                                                                                                                                                      |                    | 1                |                  | $\mu\text{s}$                |
| Full Power Bandwidth              | $BW_P$                   | <1% distortion                                                                                                                                                |                    | 360              |                  | kHz                          |
| Gain Bandwidth Product            | GBP                      |                                                                                                                                                               |                    | 10               |                  | MHz                          |
| Phase Margin                      | $\phi_m$                 |                                                                                                                                                               |                    | 65               |                  | Degrees                      |
| Total Harmonic Distortion + Noise | THD + N                  | $G = 1$ , $R_L = 600\text{ }\Omega$ , $f = 1\text{ kHz}$ , $V_O = 1\text{ V p-p}$                                                                             |                    | 0.0006           |                  | %                            |
| <b>NOISE PERFORMANCE</b>          |                          |                                                                                                                                                               |                    |                  |                  |                              |
| Voltage Noise                     | $e_{n\text{ p-p}}$       | $f = 0.1\text{ Hz to }10\text{ Hz}$                                                                                                                           |                    | 1.6              | 3.0              | $\mu\text{V p-p}$            |
| Voltage Noise Density             | $e_n$                    | $f = 1\text{ kHz}$                                                                                                                                            |                    | 8                | 12               | nV/ $\sqrt{\text{Hz}}$       |
|                                   | $e_n$                    | $f = 10\text{ kHz}$                                                                                                                                           |                    | 6.5              |                  | nV/ $\sqrt{\text{Hz}}$       |
| Current Noise Density             | $i_n$                    | $f = 1\text{ kHz}$                                                                                                                                            |                    | 0.05             |                  | pA/ $\sqrt{\text{Hz}}$       |

## ABSOLUTE MAXIMUM RATINGS

$T_A = 25^\circ\text{C}$ , unless otherwise noted.

Table 3.

| Parameter                            | Rating                                             |
|--------------------------------------|----------------------------------------------------|
| Supply Voltage                       | 6 V                                                |
| Input Voltage                        | $V_{SS} - 0.3\text{ V}$ to $V_{DD} + 0.3\text{ V}$ |
| Differential Input Voltage           | $\pm 6\text{ V}$                                   |
| Output Short-Circuit Duration to GND | Observe derating curves                            |
| Storage Temperature Range            | $-65^\circ\text{C}$ to $+150^\circ\text{C}$        |
| Operating Temperature Range          | $-40^\circ\text{C}$ to $+125^\circ\text{C}$        |
| Junction Temperature Range           | $-65^\circ\text{C}$ to $+150^\circ\text{C}$        |
| Lead Temperature (Soldering, 60 sec) | $300^\circ\text{C}$                                |

Stresses above those listed under Absolute Maximum Ratings may cause permanent damage to the device. This is a stress rating only; functional operation of the device at these or any other conditions above those indicated in the operational section of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## THERMAL CHARACTERISTICS

$\theta_{JA}$  is specified for the worst-case conditions, that is, the device soldered in the circuit board for surface-mount packages.

Table 4. Thermal Resistance

| Package Type          | $\theta_{JA}$ | $\theta_{JC}$ | Unit                      |
|-----------------------|---------------|---------------|---------------------------|
| 8-Lead MSOP (RM-8)    | 210           | 45            | $^\circ\text{C}/\text{W}$ |
| 8-Lead SOIC (R-8)     | 158           | 43            | $^\circ\text{C}/\text{W}$ |
| 5-Lead TSOT (UJ-5)    | 207           | 61            | $^\circ\text{C}/\text{W}$ |
| 5-Lead SC70 (KS-5)    | 376           | 126           | $^\circ\text{C}/\text{W}$ |
| 14-Lead TSSOP (RU-14) | 180           | 35            | $^\circ\text{C}/\text{W}$ |
| 14-Lead SOIC (R-14)   | 120           | 36            | $^\circ\text{C}/\text{W}$ |

## ESD CAUTION



### ESD (electrostatic discharge) sensitive device.

Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

## TYPICAL PERFORMANCE CHARACTERISTICS

$V_S = +5\text{ V}$  or  $\pm 2.5\text{ V}$ , unless otherwise noted.

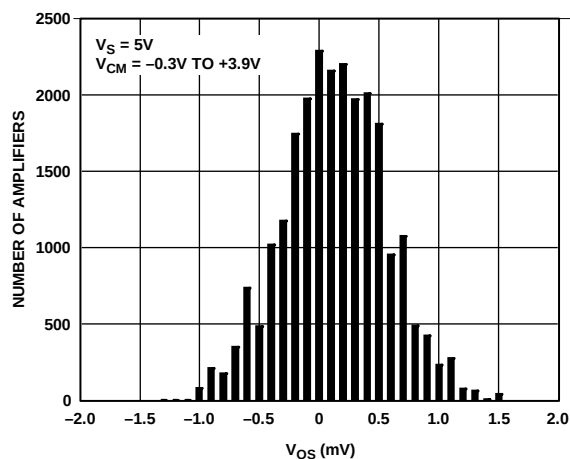


Figure 5. Input Offset Voltage Distribution

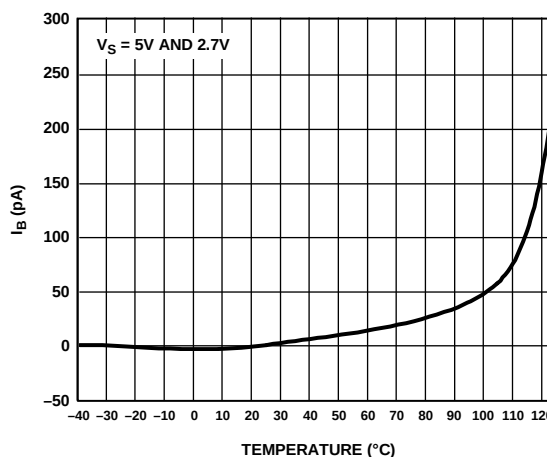


Figure 8. Input Bias Current vs. Temperature

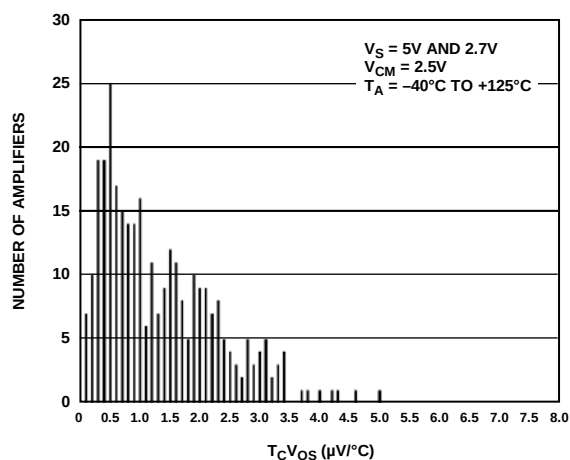


Figure 6. AD8692/AD8694 Input Offset Voltage Drift Distribution

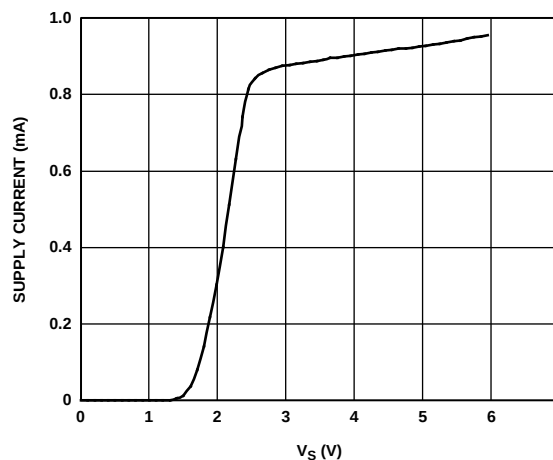


Figure 9. Supply Current vs. Supply Voltage

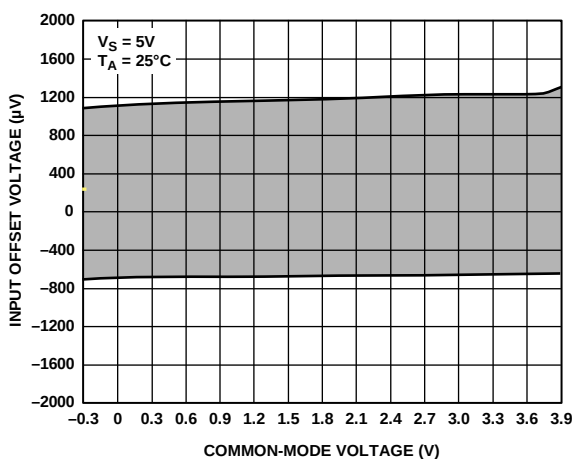


Figure 7. Input Offset Voltage vs. Common-Mode Voltage

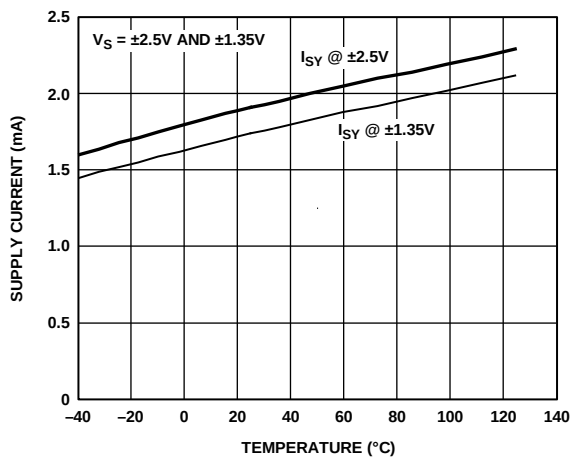


Figure 10. Supply Current vs. Temperature

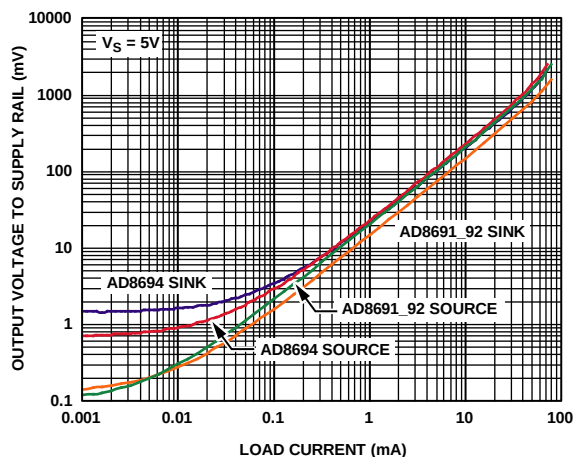


Figure 11. Output Voltage to Supply Rail vs. Load Current

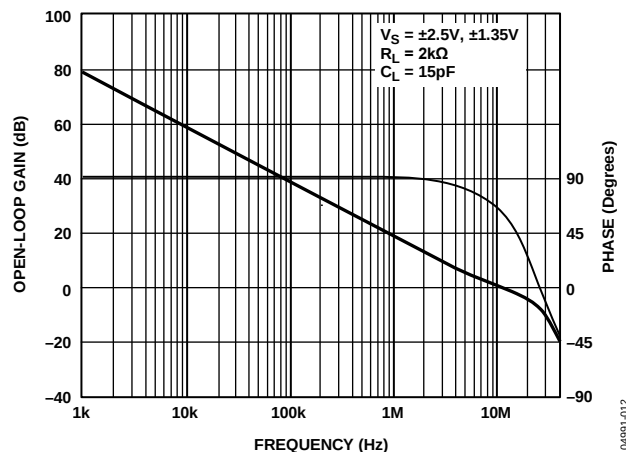


Figure 14. Open-Loop Gain and Phase vs. Frequency

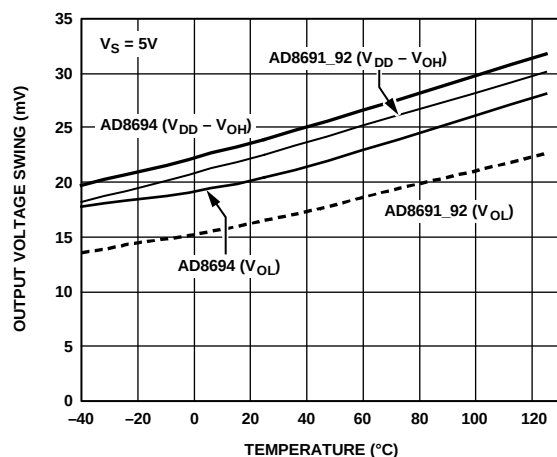
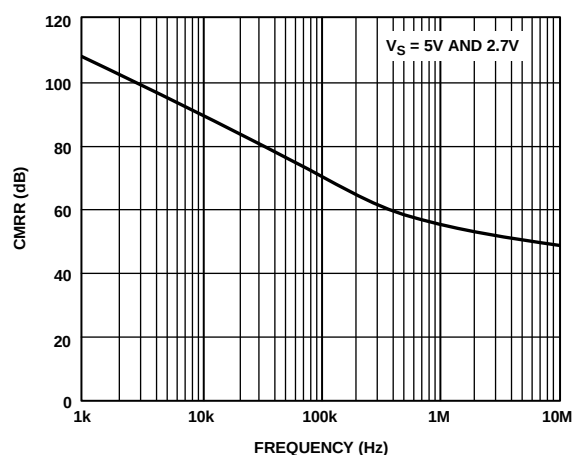
Figure 12. Output Voltage Swing vs. Temperature ( $I_L = 1mA$ )

Figure 15. CMRR vs. Frequency

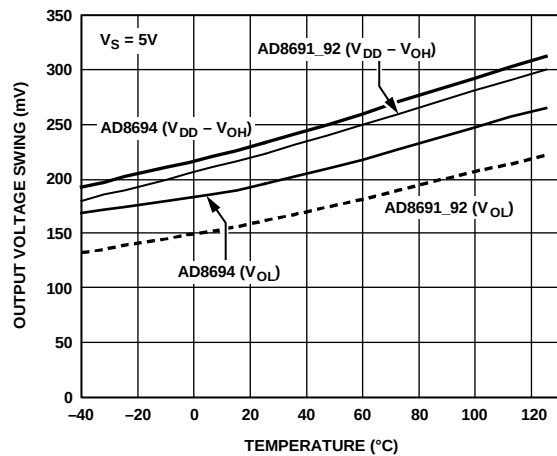
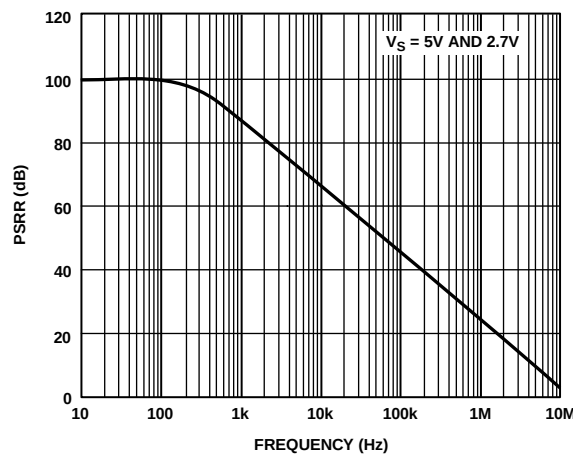
Figure 13. Output Voltage Swing vs. Temperature ( $I_L = 10mA$ )

Figure 16. PSRR vs. Frequency

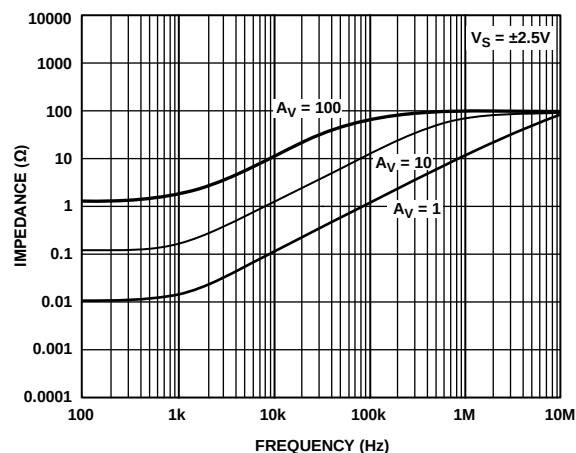


Figure 17. Closed-Loop Output Impedance vs. Frequency

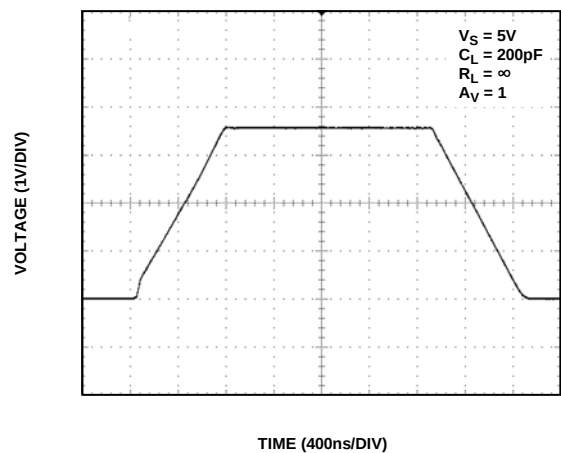


Figure 20. Large Signal Transient Response

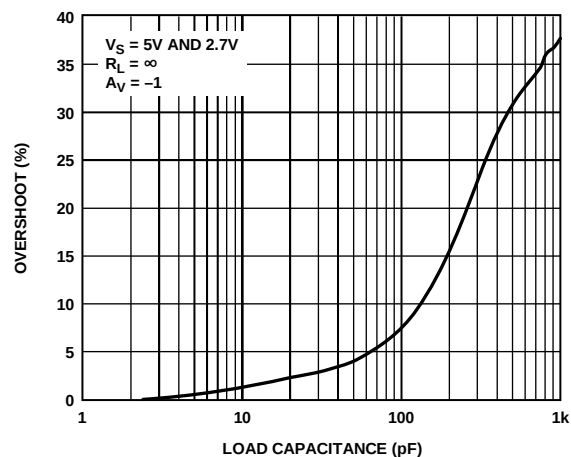


Figure 18. Small Signal Overshoot vs. Load Capacitance

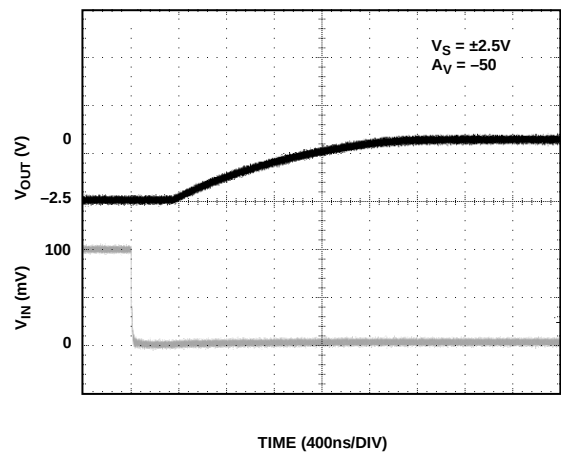


Figure 21. Positive Overload Recovery

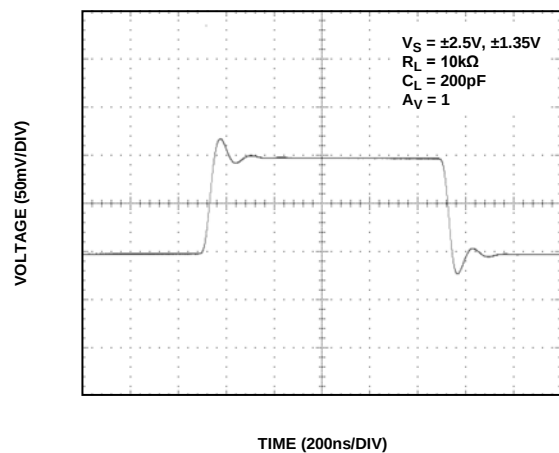


Figure 19. Small Signal Transient Response

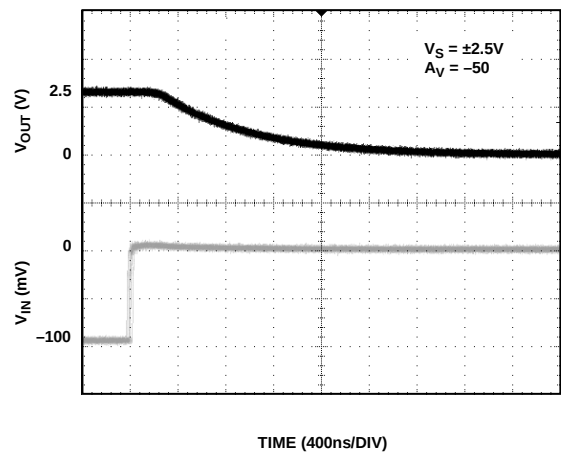
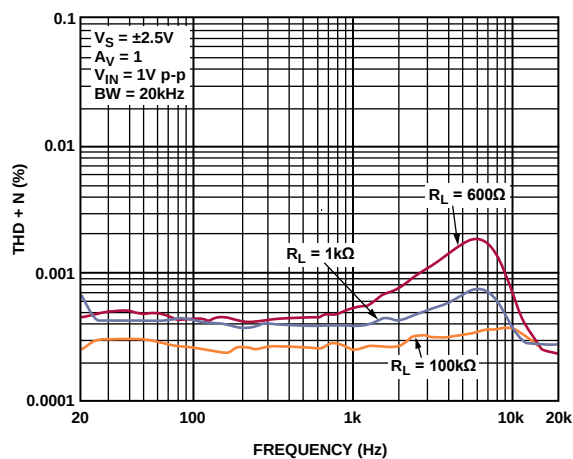
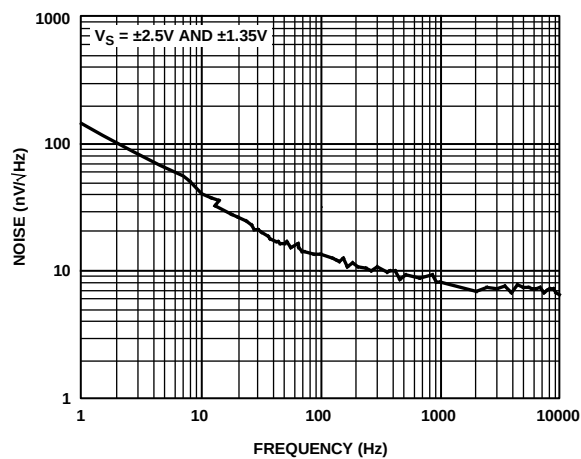


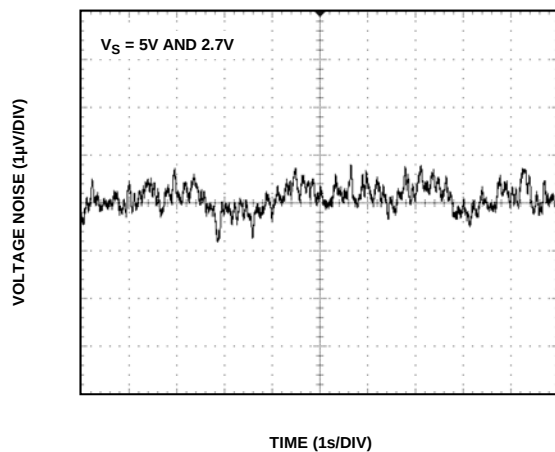
Figure 22. Negative Overload Recovery



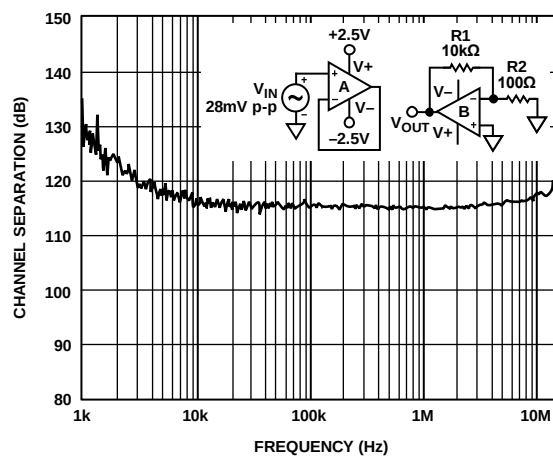
04991-021



04991-023



04991-022



04991-024



$V_S = +2.7\text{ V}$  or  $\pm 1.35\text{ V}$ , unless otherwise noted.

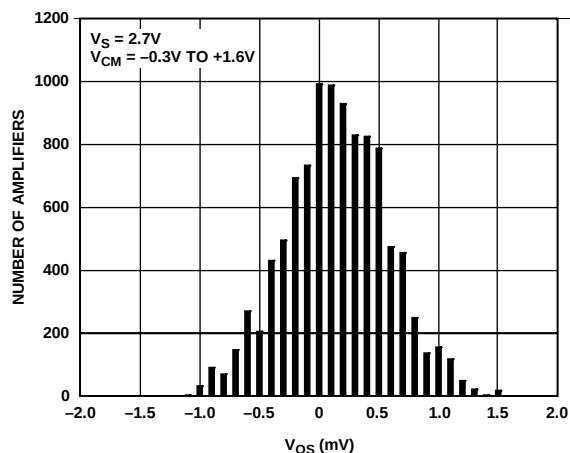


Figure 27. Input Offset Voltage Distribution

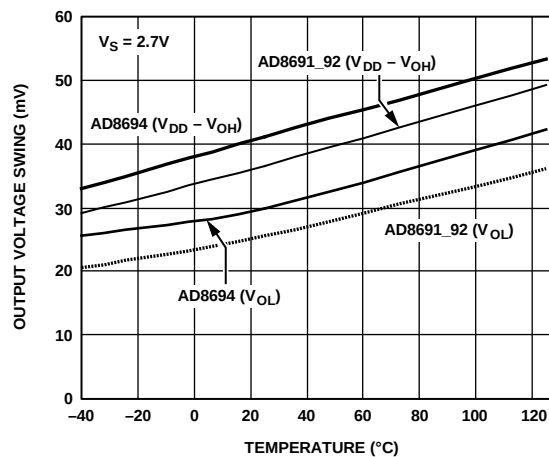


Figure 30. Output Voltage Swing vs. Temperature ( $I_L = 1\text{ mA}$ )

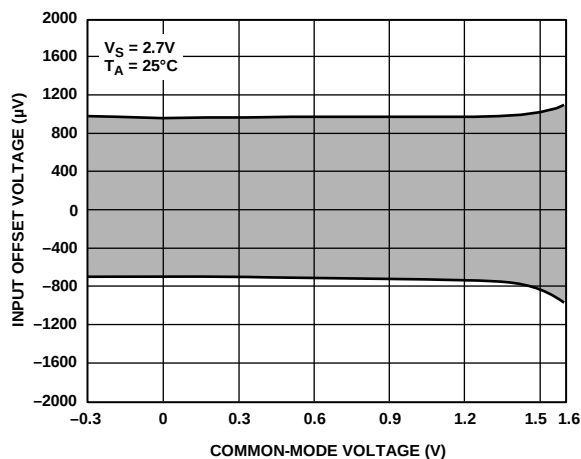


Figure 28. Input Offset Voltage vs. Common-Mode Voltage

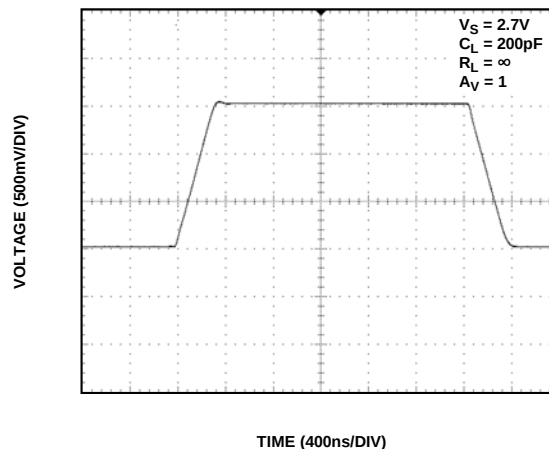


Figure 31. Large Signal Transient Response

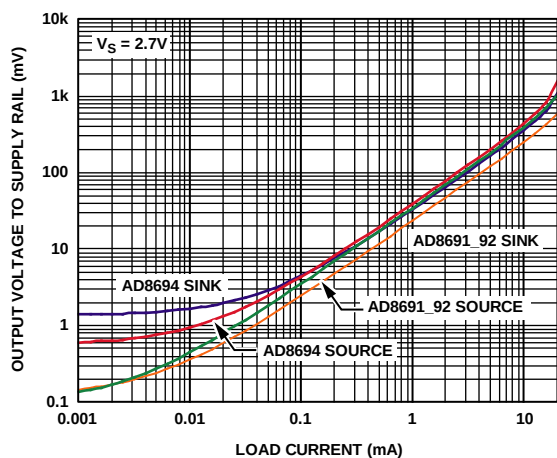
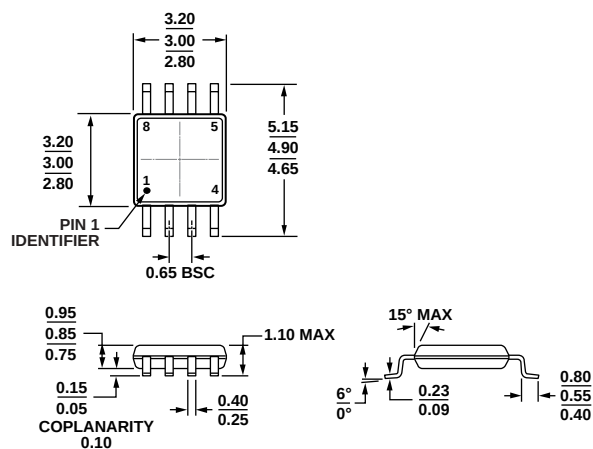


Figure 29. Output Voltage to Supply Rail vs. Load Current

## OUTLINE DIMENSIONS

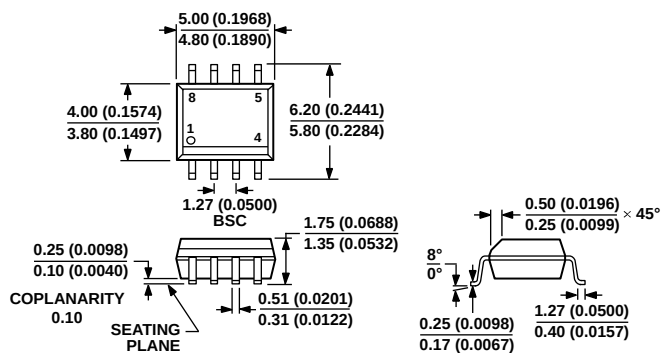


COMPLIANT TO JEDEC STANDARDS MO-187-AA

Figure 32. 8-Lead Mini Small Outline Package [MSOP]  
(RM-8)

Dimensions shown in millimeters

10-07-2006-B

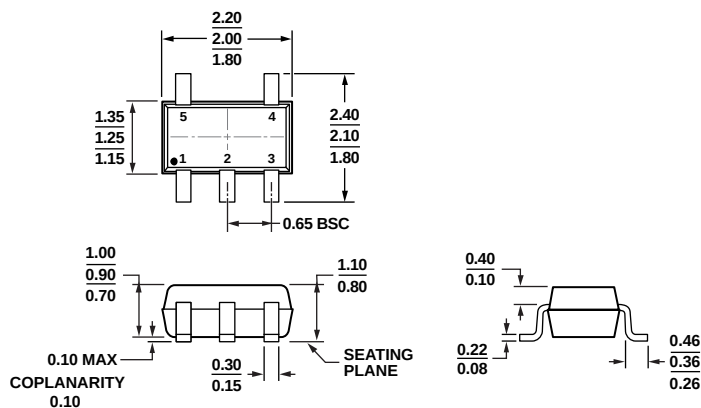


COMPLIANT TO JEDEC STANDARDS MS-012-AA

CONTROLLING DIMENSIONS ARE IN MILLIMETERS; INCH DIMENSIONS  
(IN PARENTHESES) ARE ROUNDED-OFF MILLIMETER EQUIVALENTS FOR  
REFERENCE ONLY AND ARE NOT APPROPRIATE FOR USE IN DESIGN.Figure 33. 8-Lead Standard Small Outline Package [SOIC\_N]  
Narrow Body (R-8)

Dimensions shown in millimeters and (inches)

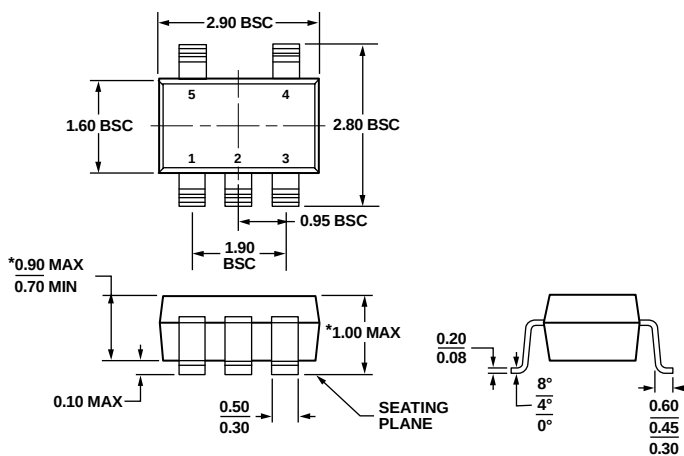
012407-A



COMPLIANT TO JEDEC STANDARDS MO-203-AA

Figure 34. 5-Lead Thin Shrink Small Outline Package [SC70]  
(KS-5)

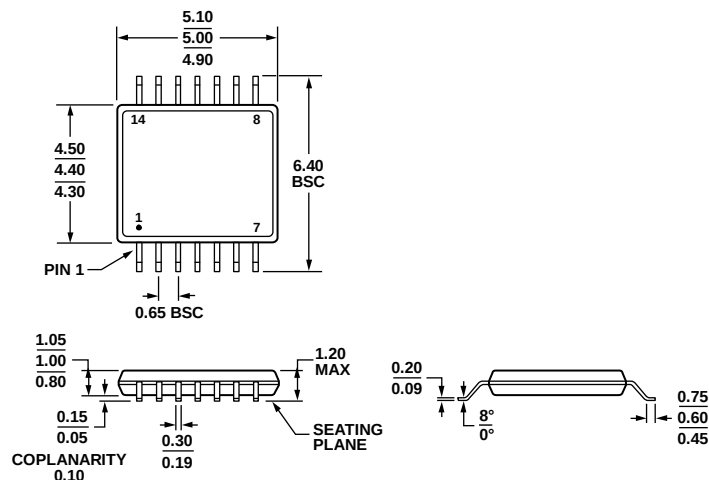
Dimensions shown in millimeters



\*COMPLIANT TO JEDEC STANDARDS MO-193-AB WITH  
THE EXCEPTION OF PACKAGE HEIGHT AND THICKNESS.

Figure 35. 5-Lead Thin Small Outline Transistor Package [TSOT]  
(UJ-5)

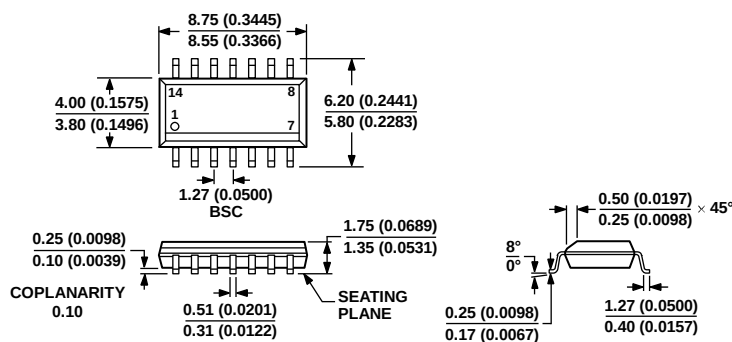
Dimensions shown in millimeters



COMPLIANT TO JEDEC STANDARDS MO-153-AB-1

Figure 36. 14-Lead Thin Shrink Small Outline Package [TSSOP]  
(RU-14)

Dimensions shown in millimeters



COMPLIANT TO JEDEC STANDARDS MS-012-AB  
CONTROLLING DIMENSIONS ARE IN MILLIMETERS; INCH DIMENSIONS  
(IN PARENTHESES) ARE ROUNDED-OFF MILLIMETER EQUIVALENTS FOR  
REFERENCE ONLY AND ARE NOT APPROPRIATE FOR USE IN DESIGN.

Figure 37. 14-Lead Standard Small Outline Package [SOIC\_N]  
Narrow Body (R-14)

Dimensions shown in millimeters and (inches)

## ORDERING GUIDE

| Model <sup>1, 2</sup> | Temperature Range | Package Description | Package Option | Branding |
|-----------------------|-------------------|---------------------|----------------|----------|
| AD8691AUJZ-R2         | −40°C to +125°C   | 5-Lead TSOT         | UJ-5           | ACA      |
| AD8691AUJZ-REEL       | −40°C to +125°C   | 5-Lead TSOT         | UJ-5           | ACA      |
| AD8691AUJZ-REEL7      | −40°C to +125°C   | 5-Lead TSOT         | UJ-5           | ACA      |
| AD8691AKSZ-R2         | −40°C to +125°C   | 5-Lead SC70         | KS-5           | ACA      |
| AD8691AKSZ-REEL       | −40°C to +125°C   | 5-Lead SC70         | KS-5           | ACA      |
| AD8691AKSZ-REEL7      | −40°C to +125°C   | 5-Lead SC70         | KS-5           | ACA      |
| AD8691WAUJZ-R7        | −40°C to +125°C   | 5-Lead TSOT         | UJ-5           | ACA      |
| AD8691WAUJZ-RL        | −40°C to +125°C   | 5-Lead TSOT         | UJ-5           | ACA      |
| AD8692ARMZ-R7         | −40°C to +125°C   | 8-Lead MSOP         | RM-8           | APA      |
| AD8692ARMZ-REEL       | −40°C to +125°C   | 8-Lead MSOP         | RM-8           | APA      |
| AD8692ARZ             | −40°C to +125°C   | 8-Lead SOIC_N       | R-8            |          |
| AD8692ARZ-REEL        | −40°C to +125°C   | 8-Lead SOIC_N       | R-8            |          |
| AD8692ARZ-REEL7       | −40°C to +125°C   | 8-Lead SOIC_N       | R-8            |          |
| AD8692WARMZ-REEL      | −40°C to +125°C   | 8-Lead MSOP         | RM-8           | APA      |
| AD8694ARUZ            | −40°C to +125°C   | 14-Lead TSSOP       | RU-14          |          |
| AD8694ARUZ-REEL       | −40°C to +125°C   | 14-Lead TSSOP       | RU-14          |          |
| AD8694WARUZ           | −40°C to +125°C   | 14-Lead TSSOP       | RU-14          |          |
| AD8694WARUZ-REEL      | −40°C to +125°C   | 14-Lead TSSOP       | RU-14          |          |
| AD8694ARZ             | −40°C to +125°C   | 14-Lead SOIC_N      | R-14           |          |
| AD8694ARZ-REEL        | −40°C to +125°C   | 14-Lead SOIC_N      | R-14           |          |
| AD8694ARZ-REEL7       | −40°C to +125°C   | 14-Lead SOIC_N      | R-14           |          |
| AD8694WAC-P3          | −40°C to +125°C   | Die                 |                |          |
| AD8694WAC-P7          | −40°C to +125°C   | Die                 |                |          |

<sup>1</sup> Z = RoHS Compliant Part.<sup>2</sup> W = Qualified for Automotive Applications.

## AUTOMOTIVE PRODUCTS

The [AD8691W](#)/[AD8692W](#)/[AD8694W](#) models are available with controlled manufacturing to support the quality and reliability requirements of automotive applications. Note that these automotive models may have specifications that differ from the commercial models; therefore, designers should review the Specifications section of this data sheet carefully. Only the automotive grade products shown are available for use in automotive applications. Contact your local Analog Devices account representative for specific product ordering information and to obtain the specific Automotive Reliability reports for these models.

## NOTES

## **NOTES**