

# Low-Voltage SPDT Analog Switch or 2:1 Multiplexer / De-multiplexer Bus Switch

## NC7SB3157, FSA3157

### Description

The NC7SB3157 / FSA3157 is a high-performance, single-pole / double-throw (SPDT) analog switch or 2:1 multiplexer / de-multiplexer bus switch.

The device is fabricated with advanced sub-micron CMOS technology to achieve high-speed enable and disable times and low on resistance. The break-before-make select circuitry prevents disruption of signals on the B Port due to both switches temporarily being enabled during select pin switching. The device is specified to operate over the 1.65 to 5.5 V  $V_{CC}$  operating range. The control input tolerates voltages up to 5.5 V, independent of the  $V_{CC}$  operating range.

### Features

- Useful in Both Analog and Digital Applications
- Space-Saving, SC70 6-Lead Surface Mount Package
- Ultra-Small, MicroPak™ Leadless Package
- Low On Resistance:  $< 10 \Omega$  on Typical at 3.3 V  $V_{CC}$
- Broad  $V_{CC}$  Operating Range: 1.65 V to 5.5 V
- Rail-to-Rail Signal Handling
- Power-Down, High-Impedance Control Input
- Over-Voltage Tolerance of Control Input to 7.0 V
- Break-Before-Make Enable Circuitry
- 250 MHz, 3 dB Bandwidth
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

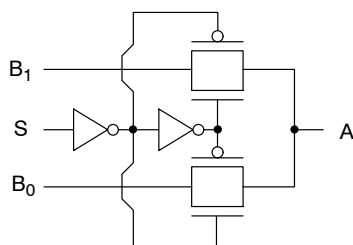
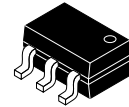


Figure 1. Logic Symbol

SIP6  
CASE 127EB



SC-88 (SC-70 6 Lead)  
CASE 419AD-01



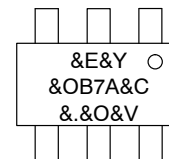
### MARKING DIAGRAM

SIP6

BB&K  
&2&Z

BB = Specific Device Code  
&K = Lot Code  
&2 = Date Code (Year and Week)  
&Z = Assembly Location

SC-88



&E = Designates Space  
&Y = Date Code (Year)  
&O = Plant Code  
B7A = Specific Device Code  
&C = Die Run Code  
&. = Pin 1 Dot  
&V = Date (Week)

### ORDERING INFORMATION

See detailed ordering and shipping information on page 8 of this data sheet.

NOTE: Some of the devices on this data sheet have been **DISCONTINUED**. Please refer to the table on page 8.

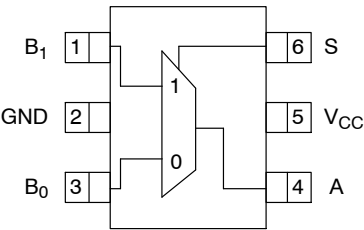


Figure 2. Pin Assignments SC70

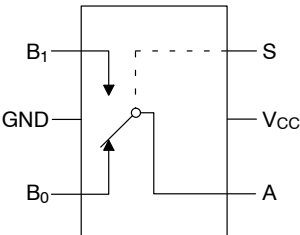


Figure 3. Analog Symbol

**FUNCTION TABLE**

| Input (S)        | Function                      |
|------------------|-------------------------------|
| Logic Level Low  | B <sub>0</sub> Connected to A |
| Logic Level High | B <sub>1</sub> Connected to A |

**PIN DESCRIPTIONS**

| Pin Names                          | Description   |
|------------------------------------|---------------|
| A, B <sub>0</sub> , B <sub>1</sub> | Data Ports    |
| S                                  | Control Input |

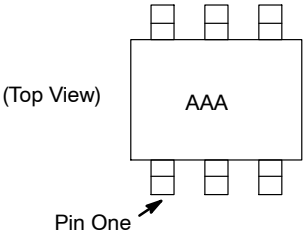


Figure 4. Pin One Orientation

NOTE: Orientation of top mark determines pin one location. Read the top product code mark left to right and pin one is the lower left pin (see Figure 4).

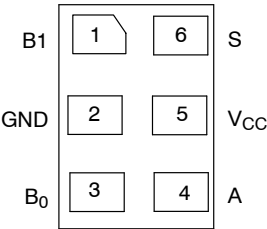


Figure 5. Pad Assignments for MicroPak

# ABSOLUTE MAXIMUM RATINGS

| Symbol           | Parameter                                         | Min. | Max.           | Unit  |
|------------------|---------------------------------------------------|------|----------------|-------|
| $V_{CC}$         | Supply Voltage                                    | -0.5 | +7.0           | V     |
| $V_S$            | DC Switch Voltage (Note 1)                        | -0.5 | $V_{CC} + 0.5$ | V     |
| $V_{IN}$         | DC Input Voltage (Note 1)                         | -0.5 | +7.0           | V     |
| $I_{IK}$         | DC Input Diode Current at $V_{IN} < 0$ V          | -    | -50            | mA    |
| $I_{OUT}$        | DC Output Current                                 | -    | 128            | mA    |
| $I_{CC}/I_{GND}$ | DC $V_{CC}$ or Ground Current                     | -    | $\pm 100$      | mA    |
| $T_{STG}$        | Storage Temperature Range                         | -65  | +150           | °C    |
| $T_J$            | Junction Temperature Under Bias                   | -    | +150           | °C    |
| $T_L$            | Junction Lead Temperature (Soldering, 10 seconds) | -    | +260           | °C    |
| MSL              | Moisture Sensitivity Level (JEDEC J-STD-020A)     | -    | 1              | Level |
| $P_D$            | Power Dissipation at +85°C                        | -    | 180            | mW    |
| ESD              | Human Body Model, JESD22-A114                     | -    | 4000           | V     |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. The input and output negative voltage ratings may be exceeded if the input and output diode current ratings are observed.

# RECOMMENDED OPERATING CONDITIONS

| Symbol        | Parameter                      |                                        | Min  | Max      | Unit |
|---------------|--------------------------------|----------------------------------------|------|----------|------|
| $V_{CC}$      | Supply Voltage Operating       |                                        | 1.65 | 5.50     | V    |
| $V_{IN}$      | Control Input Voltage (Note 2) |                                        | 0    | $V_{CC}$ | V    |
| $V_{IN}$      | Switch Input Voltage (Note 2)  |                                        | 0    | $V_{CC}$ | V    |
| $V_{OUT}$     | Output Voltage (Note 2)        |                                        | 0    | $V_{CC}$ | V    |
| $T_A$         | Operating Temperature          |                                        | -40  | +85      | °C   |
| $f_r, t_f$    | Input Rise and Fall Time       | Control Input $V_{CC} = 2.3$ V – 3.6 V | 0    | 10       | ns/V |
|               |                                | Control Input $V_{CC} = 4.5$ V – 5.5 V | 0    | 5        | ns/V |
| $\theta_{JA}$ | Thermal Resistance, SC70       |                                        | -    | 270      | °C/W |

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.

2. Control input must be held HIGH or LOW; it must not float.

DC ELECTRICAL CHARACTERISTICS

| Symbol             | Parameter                                           | Conditions                                                     | V <sub>CC</sub> (V) | T <sub>A</sub> = +25°C |       |                      | T <sub>A</sub> = -40°C to +85°C |                      | Unit |
|--------------------|-----------------------------------------------------|----------------------------------------------------------------|---------------------|------------------------|-------|----------------------|---------------------------------|----------------------|------|
|                    |                                                     |                                                                |                     | Min.                   | Typ.  | Max.                 | Min.                            | Max.                 |      |
| V <sub>IH</sub>    | High Level Input Voltage                            |                                                                | 1.65–1.95           | 0.75 V <sub>CC</sub>   | –     | –                    | 0.75 V <sub>CC</sub>            | –                    | V    |
|                    |                                                     |                                                                | 2.3–5.5             | 0.7 V <sub>CC</sub>    | –     | –                    | 0.7 V <sub>CC</sub>             | –                    | V    |
| V <sub>IL</sub>    | Low Level Input Voltage                             |                                                                | 1.65–1.95           | –                      | –     | 0.25 V <sub>CC</sub> | –                               | 0.25 V <sub>CC</sub> | V    |
|                    |                                                     |                                                                | 2.3–5.5             | –                      | –     | 0.3 V <sub>CC</sub>  | –                               | 0.3 V <sub>CC</sub>  | V    |
| I <sub>IN</sub>    | Input Leakage Current                               | 0 ≤ V <sub>IN</sub> ≤ 5.5 V                                    | 0–5.5               | –                      | ±0.05 | ±0.1                 | –                               | ±1                   | μA   |
| I <sub>OFF</sub>   | Off State Leakage Current                           | 0 ≤ A, B ≤ V <sub>CC</sub>                                     | 1.65–5.5            | –                      | ±0.05 | ±0.1                 | –                               | ±1                   | μA   |
| R <sub>ON</sub>    | Switch On Resistance (Note 3)                       | V <sub>IN</sub> = 0 V, I <sub>O</sub> = 30 mA                  | 4.5                 | –                      | 3.0   | 7.0                  | –                               | 7.0                  | Ω    |
|                    |                                                     | V <sub>IN</sub> = 2.4 V, I <sub>O</sub> = –30 mA               | 4.5                 | –                      | 5.0   | 12.0                 | –                               | 12.0                 |      |
|                    |                                                     | V <sub>IN</sub> = 4.5 V, I <sub>O</sub> = –30 mA               | 4.5                 | –                      | 7.0   | 15.0                 | –                               | 15.0                 |      |
|                    |                                                     | V <sub>IN</sub> = 0 V, I <sub>O</sub> = 24 mA                  | 3.0                 | –                      | 4.0   | 9.0                  | –                               | 9.0                  |      |
|                    |                                                     | V <sub>IN</sub> = 3 V, I <sub>O</sub> = –24 mA                 | 3.0                 | –                      | 10.0  | 20.0                 | –                               | 20.0                 |      |
|                    |                                                     | V <sub>IN</sub> = 0 V, I <sub>O</sub> = 8 mA                   | 2.3                 | –                      | 5.0   | 12.0                 | –                               | 12.0                 |      |
|                    |                                                     | V <sub>IN</sub> = 2.3 V, I <sub>O</sub> = –8 mA                | 2.3                 | –                      | 13.0  | 30.0                 | –                               | 30.0                 |      |
|                    |                                                     | V <sub>IN</sub> = 0 V, I <sub>O</sub> = 4 mA                   | 1.65                | –                      | 6.5   | 20.0                 | –                               | 20.0                 |      |
|                    |                                                     | V <sub>IN</sub> = 1.65 V, I <sub>O</sub> = –4 mA               | 1.65                | –                      | 17.0  | 50.0                 | –                               | 50.0                 |      |
| I <sub>CC</sub>    | Quiescent Supply Current; All Channels On or Off    | V <sub>IN</sub> = V <sub>CC</sub> or GND I <sub>OUT</sub> = 0  | 5.5                 | –                      | –     | 1                    | –                               | 10                   | μA   |
|                    | Analog Signal Range                                 |                                                                | V <sub>CC</sub>     | 0                      | –     | V <sub>CC</sub>      | 0                               | V <sub>CC</sub>      | V    |
| R <sub>RANGE</sub> | On Resistance Over Signal Range (Note 3, 7)         | I <sub>A</sub> = –30 mA, 0 ≤ V <sub>Bn</sub> ≤ V <sub>CC</sub> | 4.5                 | –                      | –     | –                    | –                               | 25.0                 | Ω    |
|                    |                                                     | I <sub>A</sub> = –24 mA, 0 ≤ V <sub>Bn</sub> ≤ V <sub>CC</sub> | 3.0                 | –                      | –     | –                    | –                               | 50.0                 |      |
|                    |                                                     | I <sub>A</sub> = –8 mA, 0 ≤ V <sub>Bn</sub> ≤ V <sub>CC</sub>  | 2.3                 | –                      | –     | –                    | –                               | 100                  |      |
|                    |                                                     | I <sub>A</sub> = –4 mA, 0 ≤ V <sub>Bn</sub> ≤ V <sub>CC</sub>  | 1.65                | –                      | –     | –                    | –                               | 300                  |      |
| ΔR <sub>ON</sub>   | On Resistance Match Between Channels (Note 3, 4, 5) | I <sub>A</sub> = –30 mA, V <sub>Bn</sub> = 3.15                | 4.5                 | –                      | 0.15  | –                    | –                               | –                    | Ω    |
|                    |                                                     | I <sub>A</sub> = –24 mA, V <sub>Bn</sub> = 2.1                 | 3.0                 | –                      | 0.2   | –                    | –                               | –                    |      |
|                    |                                                     | I <sub>A</sub> = –8 mA, V <sub>Bn</sub> = 1.6                  | 2.3                 | –                      | 0.5   | –                    | –                               | –                    |      |
|                    |                                                     | I <sub>A</sub> = –4 mA, V <sub>Bn</sub> = 1.15                 | 1.65                | –                      | 0.50  | –                    | –                               | –                    |      |
| R <sub>flat</sub>  | On Resistance Flatness (Note 3, 4, 6)               | I <sub>A</sub> = –30 mA, 0 ≤ V <sub>Bn</sub> ≤ V <sub>CC</sub> | 5.0                 | –                      | 6.0   | –                    | –                               | –                    | Ω    |
|                    |                                                     | I <sub>A</sub> = –24 mA, 0 ≤ V <sub>Bn</sub> ≤ V <sub>CC</sub> | 3.3                 | –                      | 12.0  | –                    | –                               | –                    |      |
|                    |                                                     | I <sub>A</sub> = –8 mA, 0 ≤ V <sub>Bn</sub> ≤ V <sub>CC</sub>  | 2.5                 | –                      | 28.0  | –                    | –                               | –                    |      |
|                    |                                                     | I <sub>A</sub> = –4 mA, 0 ≤ V <sub>Bn</sub> ≤ V <sub>CC</sub>  | 1.8                 | –                      | 125   | –                    | –                               | –                    |      |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

3. Measured by the voltage drop between A and B pins at the indicated current through the switch. On resistance is determined by the lower of the voltages on the two (A or B Ports).
4. Parameter is characterized, but not tested in production.
5. ΔR<sub>ON</sub> = R<sub>ON</sub> max – R<sub>ON</sub> minimum measured at identical V<sub>CC</sub>, temperature, and voltage levels.
6. Flatness is defined as the difference between the maximum and minimum value of on resistance over the specified range of conditions.
7. Guaranteed by design.

AC ELECTRICAL CHARACTERISTICS

| Symbol                                 | Parameter                                                  | Conditions                                                                                             | V <sub>CC</sub> (V) | T <sub>A</sub> = +25°C |       |      | T <sub>A</sub> = -40°C to +85°C |      | Unit | Figure Number          |
|----------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------|------------------------|-------|------|---------------------------------|------|------|------------------------|
|                                        |                                                            |                                                                                                        |                     | Min.                   | Typ.  | Max. | Min.                            | Max. |      |                        |
| t <sub>PHL</sub> ,<br>t <sub>PLH</sub> | Propagation Delay<br>Bus-to-Bus (Note 8)                   | V <sub>I</sub> = OPEN                                                                                  | 1.65–1.95           | –                      | –     | 3.5  | –                               | 3.5  | ns   | Figure 12<br>Figure 13 |
|                                        |                                                            |                                                                                                        | 2.3–2.7             | –                      | –     | 1.2  | –                               | 1.2  |      |                        |
|                                        |                                                            |                                                                                                        | 3.0–3.6             | –                      | –     | 0.8  | –                               | 0.8  |      |                        |
|                                        |                                                            |                                                                                                        | 4.5–5.5             | –                      | –     | 0.3  | –                               | 0.3  |      |                        |
| t <sub>PZL</sub> ,<br>t <sub>PZH</sub> | Output Enable Time<br>Turn-On Time (A to B <sub>n</sub> )  | V <sub>I</sub> = 2 x V <sub>CC</sub> for t <sub>PZL</sub><br>V <sub>I</sub> = 0 V for t <sub>PZH</sub> | 1.65–1.95           | 7.0                    | –     | 23.0 | 7.0                             | 24.0 | ns   | Figure 12<br>Figure 13 |
|                                        |                                                            |                                                                                                        | 2.3–2.7             | 3.5                    | –     | 13.0 | 3.5                             | 14.0 |      |                        |
|                                        |                                                            |                                                                                                        | 3.0–3.6             | 2.5                    | –     | 6.9  | 2.5                             | 7.6  |      |                        |
|                                        |                                                            |                                                                                                        | 4.5–5.5             | 1.7                    | –     | 5.2  | 1.7                             | 5.7  |      |                        |
| t <sub>PLZ</sub> ,<br>t <sub>PHZ</sub> | Output Disable Time<br>Turn-Off Time<br>(A Port to B Port) | V <sub>I</sub> = 2 x V <sub>CC</sub> for t <sub>PLZ</sub><br>V <sub>I</sub> = 0 V for t <sub>PHZ</sub> | 1.65–1.95           | 3.0                    | –     | 12.5 | 3.0                             | 13.0 | ns   | Figure 12<br>Figure 13 |
|                                        |                                                            |                                                                                                        | 2.3–2.7             | 2.0                    | –     | 7.0  | 2.0                             | 7.5  |      |                        |
|                                        |                                                            |                                                                                                        | 3.0–3.6             | 1.5                    | –     | 5.0  | 1.5                             | 5.3  |      |                        |
|                                        |                                                            |                                                                                                        | 4.5–5.5             | 0.8                    | –     | 3.5  | 0.8                             | 3.8  |      |                        |
| t <sub>B-M</sub>                       | Break-Before-Make<br>Time (Note 9)                         |                                                                                                        | 1.65–1.95           | 0.5                    | –     | –    | 0.5                             | –    | ns   | Figure 14              |
|                                        |                                                            |                                                                                                        | 2.3–2.7             | 0.5                    | –     | –    | 0.5                             | –    |      |                        |
|                                        |                                                            |                                                                                                        | 3.0–3.6             | 0.5                    | –     | –    | 0.5                             | –    |      |                        |
|                                        |                                                            |                                                                                                        | 4.5–5.5             | 0.5                    | –     | –    | 0.5                             | –    |      |                        |
| Q                                      | Charge Injection<br>(Note 9)                               | C <sub>L</sub> = 0.1 nF,<br>V <sub>GEN</sub> = 0 V                                                     | 5.0                 | –                      | 7.0   | –    | –                               | –    | pC   | Figure 15              |
|                                        |                                                            | R <sub>GEN</sub> = 0 Ω                                                                                 | 3.3                 | –                      | 3.0   | –    | –                               | –    |      |                        |
| OIRR                                   | Off Isolation (Note 10)                                    | R <sub>L</sub> = 50 Ω, f = 10 MHz                                                                      | 1.65–5.5            | –                      | –57.0 | –    | –                               | –    | dB   | Figure 16              |
| Xtalk                                  | Crosstalk                                                  | R <sub>L</sub> = 50 Ω, f = 10 MHz                                                                      | 1.65–5.5            | –                      | –54.0 | –    | –                               | –    | dB   | Figure 17              |
| BW                                     | –3dB Bandwidth                                             | R <sub>L</sub> = 50 Ω                                                                                  | 1.65–5.5            | –                      | 250   | –    | –                               | –    | MHz  | Figure 20              |
| THD                                    | Total Harmonic<br>Distortion (Note 9)                      | R <sub>L</sub> = 600 Ω, 0.5 V <sub>PP</sub> ,<br>f = 600 Hz to 20 KHz                                  | 5.0                 | –                      | .011  | –    | –                               | –    | %    | –                      |

8. This parameter is guaranteed by design but not tested. The bus switch contributes no propagation delay other than the RC delay of the on resistance of the switch and the 50 pF load capacitance, when driven by an ideal voltage source (zero output impedance).

9. Guaranteed by design.

10. Off Isolation = 20 log<sub>10</sub> [V<sub>A</sub> / V<sub>Bn</sub>].

**CAPATICANCE** (T<sub>A</sub> = 25°C, f = 1 MHz Capacitance is characterized, but not tested in production.)

| Symbol              | Parameter                                 | Conditions              | Typ. | Max. | Unit | Figure Number |
|---------------------|-------------------------------------------|-------------------------|------|------|------|---------------|
| C <sub>IN</sub>     | Control Pin Input Capacitance             | V <sub>CC</sub> = 0 V   | 2.3  | –    | pF   | –             |
| C <sub>IO-B</sub>   | B Port Off Capacitance                    | V <sub>CC</sub> = 5.0 V | 6.5  | –    | pF   | Figure 18     |
| C <sub>IOA-ON</sub> | A Port Capacitance When Switch Is Enabled | V <sub>CC</sub> = 5.0 V | 18.5 | –    | pF   | Figure 19     |

TYPICAL PERFORMANCE CHARACTERISTICS

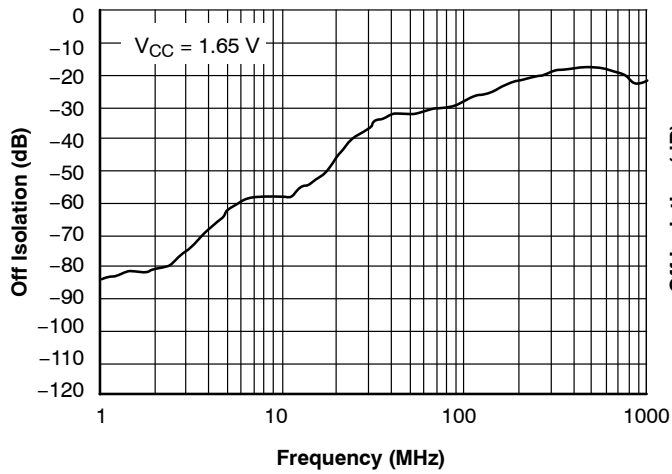


Figure 6. Off Isolation,  $V_{CC} = 1.65\text{ V}$

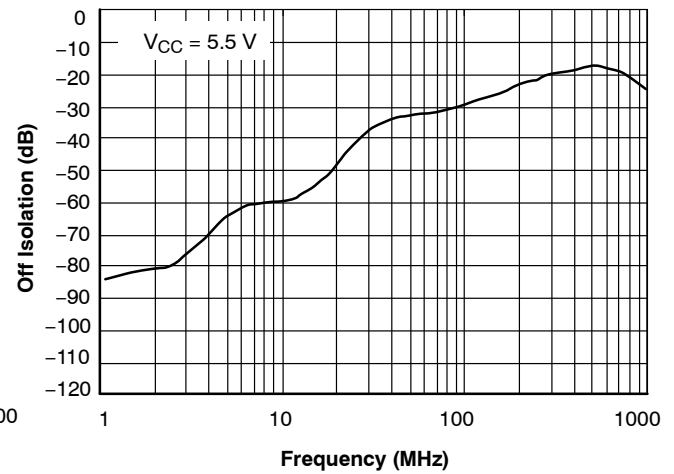


Figure 7. Off Isolation,  $V_{CC} = 5.5\text{ V}$

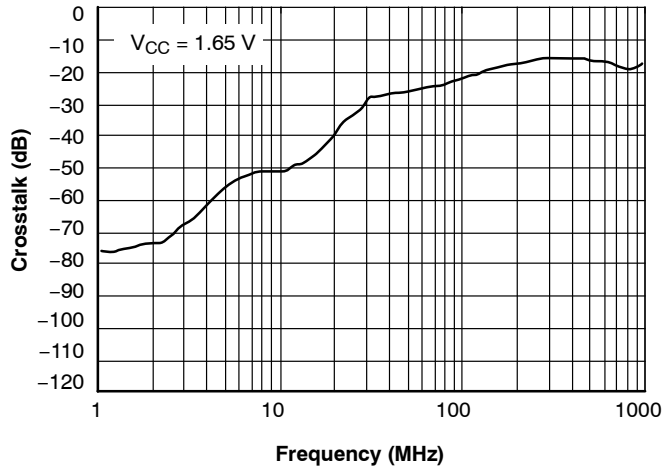


Figure 8. Crosstalk,  $V_{CC} = 1.65\text{ V}$

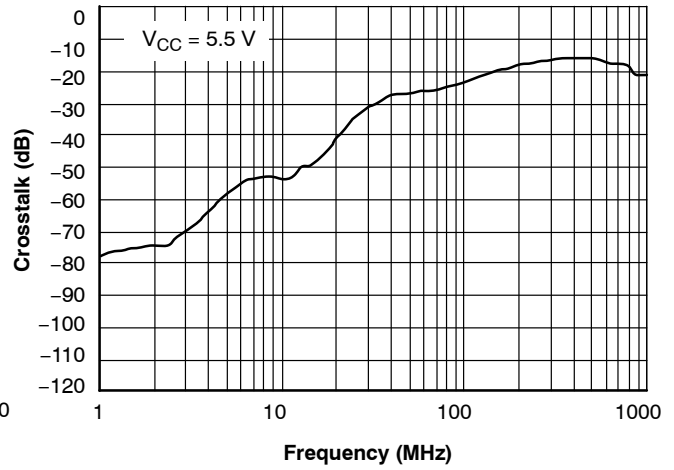


Figure 9. Crosstalk,  $V_{CC} = 5.5\text{ V}$

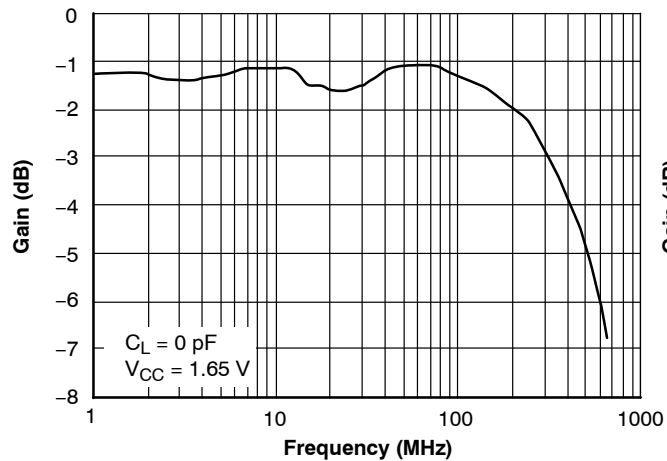


Figure 10. Bandwidth,  $V_{CC} = 1.65\text{ V}$

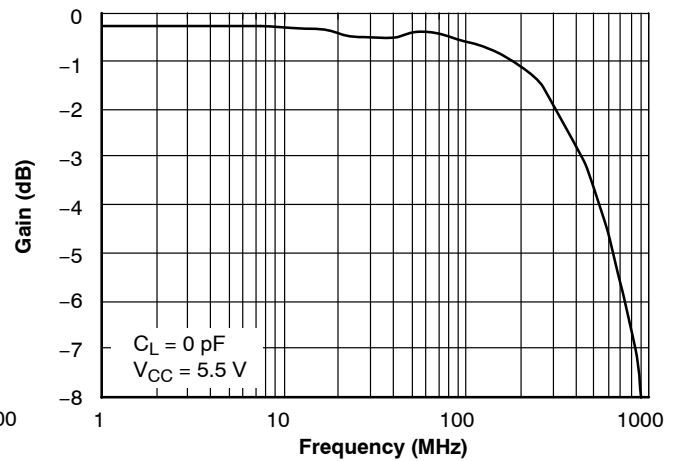
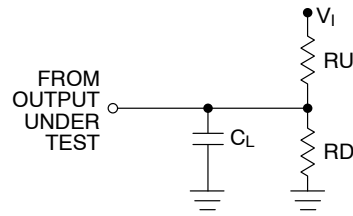


Figure 11. Bandwidth,  $V_{CC} = 5.5\text{ V}$

## AC LOADING AND WAVEFORMS



NOTE: Input driven by  $50\ \Omega$  source terminated in  $50\ \Omega$ .  $C_L$  includes load and stray capacitance. Input PRR = 1.0 MHz,  $t_W = 500\text{ ns}$ .

Figure 12. AC Test Circuit

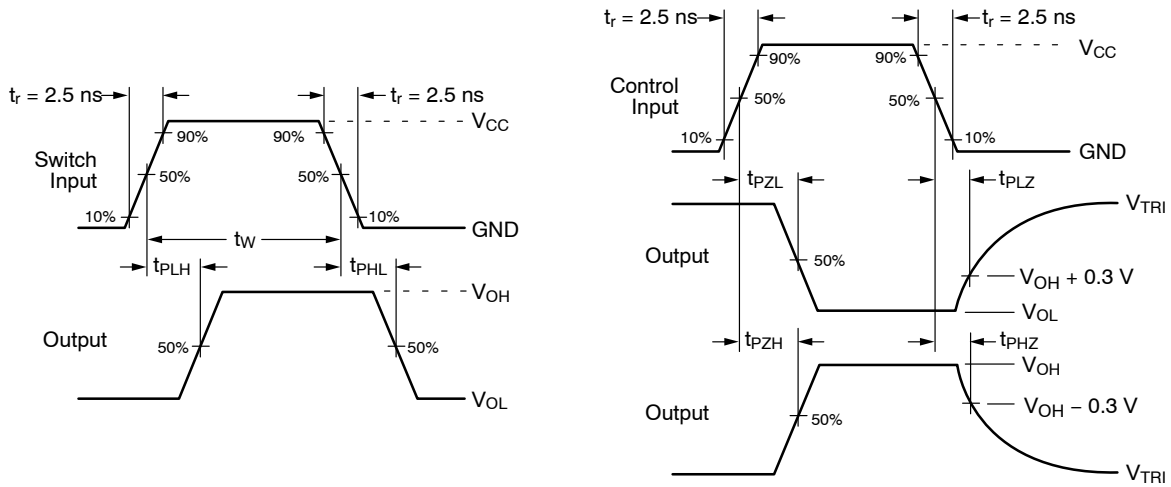


Figure 13. AC Waveforms

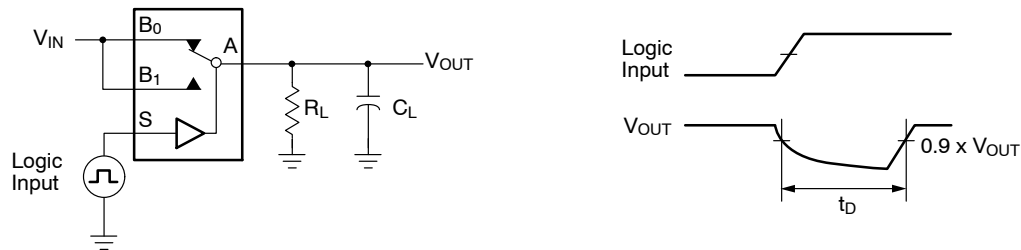


Figure 14. Break-Before-Make Interval Timing

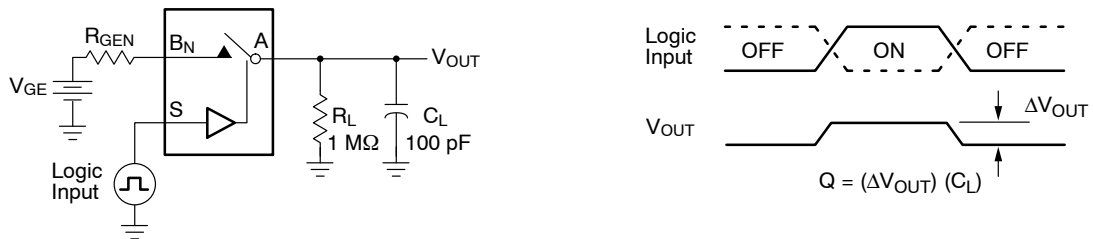


Figure 15. Charge Injection Test

AC LOADING AND WAVEFORMS (Continued)

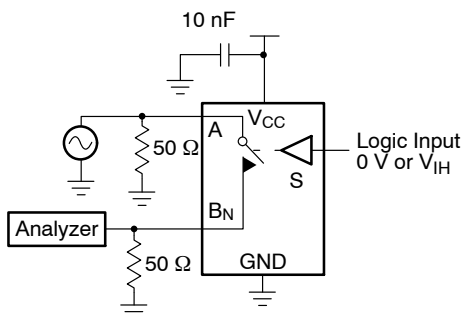


Figure 16. Off Isolation

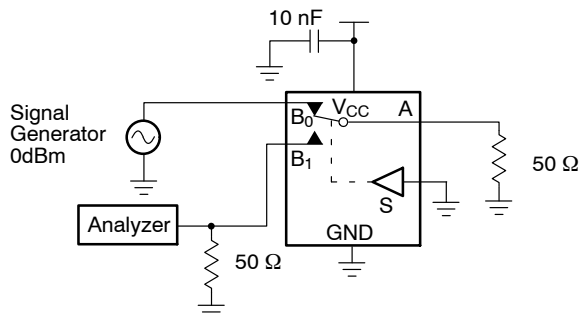


Figure 17. Crosstalk

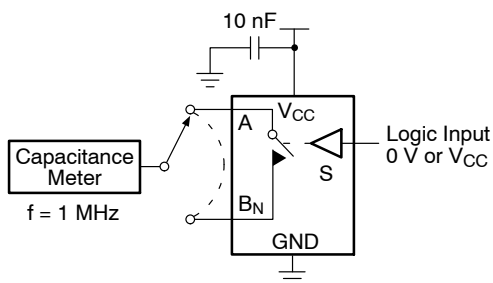


Figure 18. Channel Off Capacitance

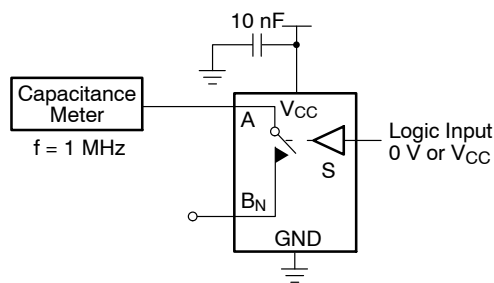


Figure 19. Channel On Capacitance

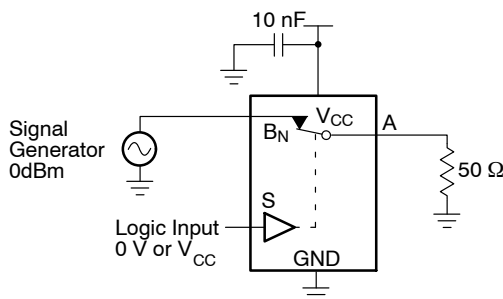


Figure 20. Bandwidth

ORDERING INFORMATION

| Part Number  | Top Mark | Eco Status | Package Description                           | Shipping <sup>†</sup> |
|--------------|----------|------------|-----------------------------------------------|-----------------------|
| NC7SB3157P6X | B7A      | RoHS       | 6-Lead, SC70, EIAJ SC88, 1.25 mm Wide Package | 3000 / Tape and Reel  |
| NC7SB3157L6X | BB       | RoHS       | 6-Lead, MicroPak 1.0 mm Wide Package          | 5000 / Tape and Reel  |
| FSA3157L6X   | BB       | RoHS       | 6-Lead, MicroPak 1.0 mm Wide Package          | 5000 / Tape and Reel  |

DISCONTINUED (Note 11)

|            |     |      |                                               |                      |
|------------|-----|------|-----------------------------------------------|----------------------|
| FSA3157P6X | B7A | RoHS | 6-Lead, SC70, EIAJ SC88, 1.25 mm Wide Package | 3000 / Tape and Reel |
|------------|-----|------|-----------------------------------------------|----------------------|

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

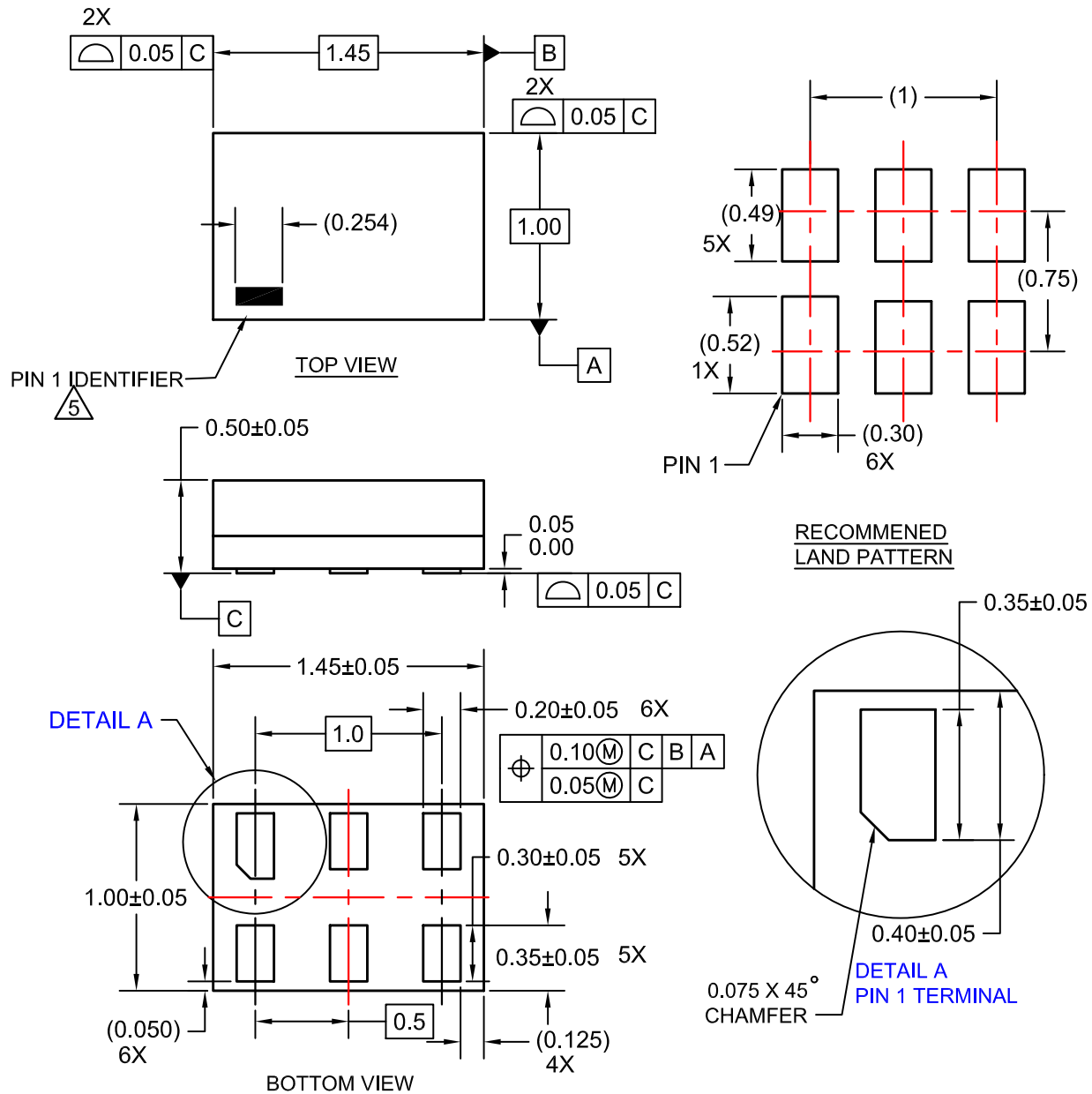
11. **DISCONTINUED:** This device is not recommended for new design. Please contact your onsemi representative for information. The most current information on this device may be available on [www.onsemi.com](http://www.onsemi.com).

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**SIP6 1.45X1.0**  
CASE 127EB  
ISSUE O

DATE 31 AUG 2016

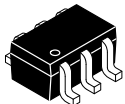


## NOTES:

1. CONFORMS TO JEDEC STANDARD MO-252 VARIATION UAAD
2. DIMENSIONS ARE IN MILLIMETERS
3. DRAWING CONFORMS TO ASME Y14.5M-2009
4. PIN ONE IDENTIFIER IS 2X LENGTH OF ANY OTHER LINE IN THE MARK CODE LAYOUT.

|                         |                      |                                                                                                                                                                                     |
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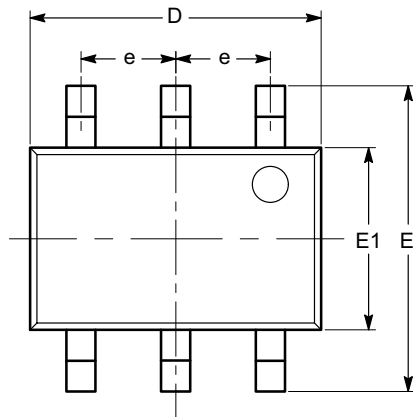
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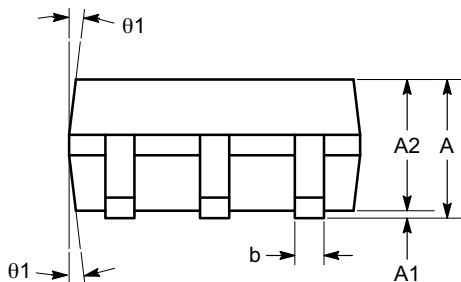
1

**SC-88 (SC-70 6 Lead), 1.25x2**  
**CASE 419AD**  
**ISSUE A**

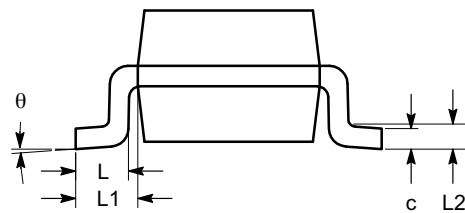
DATE 07 JUL 2010



**TOP VIEW**



**SIDE VIEW**



**END VIEW**

| SYMBOL | MIN      | NOM  | MAX  |
|--------|----------|------|------|
| A      | 0.80     |      | 1.10 |
| A1     | 0.00     |      | 0.10 |
| A2     | 0.80     |      | 1.00 |
| b      | 0.15     |      | 0.30 |
| c      | 0.10     |      | 0.18 |
| D      | 1.80     | 2.00 | 2.20 |
| E      | 1.80     | 2.10 | 2.40 |
| E1     | 1.15     | 1.25 | 1.35 |
| e      | 0.65 BSC |      |      |
| L      | 0.26     | 0.36 | 0.46 |
| L1     | 0.42 REF |      |      |
| L2     | 0.15 BSC |      |      |
| θ      | 0°       |      | 8°   |
| θ1     | 4°       |      | 10°  |

**Notes:**

- (1) All dimensions are in millimeters. Angles in degrees.
- (2) Complies with JEDEC MO-203.

|                         |                                     |                                                                                                                                                                                     |
|-------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| <b>DESCRIPTION:</b>     | <b>SC-88 (SC-70 6 LEAD), 1.25X2</b> | <b>PAGE 1 OF 1</b>                                                                                                                                                                  |

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