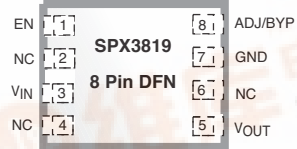




500mA, Low-Noise LDO Voltage Regulator

FEATURES

- Low Noise: 40 μ V Possible
- High Accuracy: 1%
- Reverse Battery Protection
- Low Dropout: 340mV at Full Load
- Low Quiescent Current: 90 μ A
- Zero Off-Mode Current
- Fixed Output: 1.2V, 1.5V, 1.8V, 2.5V, 3.0V, 3.1V, 3.3V, 5.0V. Adj. Output also available.
- Available in RoHS Compliant, Lead Free Packages: 5 Pin SOT-23, 8 Pin Narrow SOIC and 8 pin 2X3 DFN



APPLICATIONS

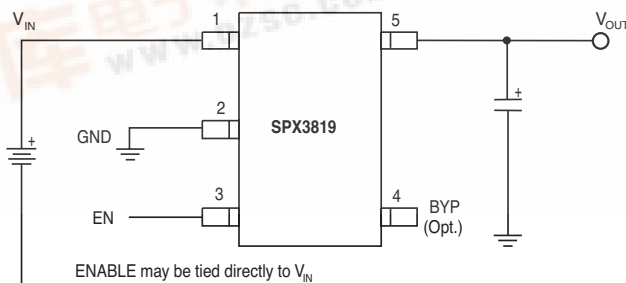
- Battery Powered Systems
- Cordless Phones
- Radio Control Systems
- Portable/Palm Top/Notebook Computers
- Portable Consumer Equipment
- Portable Instrumentation
- Bar Code Scanners
- SMPS Post Regulators

DESCRIPTION

The SPX3819 is a positive voltage regulator with a low dropout voltage and low noise output. In addition, this device offers a very low ground current of 800 μ A at 100mA output. The SPX3819 has an initial tolerance of less than 1% max and a logic compatible ON/OFF switched input. When disabled, power consumption drops to nearly zero. Other key features include reverse battery protection, current limit, and thermal shutdown. The SPX3819 includes a reference bypass pin for optimal low noise output performance. With its very low output temperature coefficient, this device also makes a superior low power voltage reference.

The SPX3819 is an excellent choice for use in battery-powered applications such as cordless telephones, radio control systems, and portable computers. It is available in several fixed voltages -- 1.2V, 1.5V, 1.8V, 2.5V, 3.0V, 3.1V, 3.3V, 5.0V -- or with an adjustable output. This device is offered in 8 pin NSOIC, 8 pin DFN and 5-pin SOT-23 packages.

TYPICAL APPLICATION CIRCUIT



TOP View



ABSOLUTE MAXIMUM RATINGS

| | |
|--|--------------------|
| Power Dissipation | Internally Limited |
| Lead Temp. (Soldering, 5 Seconds) | 260°C |
| Operating Junction Temperature Range | -40°C to +125°C |
| Input Supply Voltage | -20V to +20V |
| Enable Input Voltage | -20V to +20V |

RECOMMENDED OPERATING CONDITIONS

| | |
|--|------------------|
| Input Voltage | +2.5V to +16V |
| Operating Junction Temperature Range | -40°C to +125°C |
| Enable Input Voltage | 0.0V to V_{IN} |

ELECTRICAL CHARACTERISTICS

$T_J=25^\circ\text{C}$, $V_{OUT} + 1\text{V}$, for 1.2V Option $V_{IN}=V_{OUT} + 1.2\text{V}$ $I_L=100\mu\text{A}$, $C_L=1\mu\text{F}$, and $V_{ENABLE} \geq 2.4\text{V}$. The \blacklozenge denotes the specifications which apply over full operating temperature range -40°C to $+85^\circ\text{C}$, unless otherwise specified.

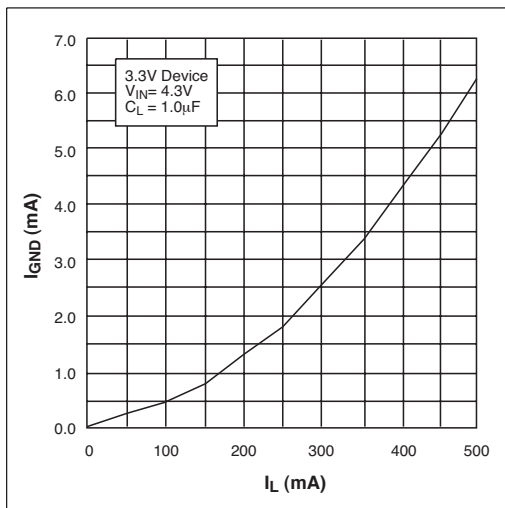
| PARAMETER | MIN | TYP | MAX | UNITS | \blacklozenge | CONDITIONS |
|---|----------|-----------|--------------|---------------------|-----------------|---|
| Output Voltage Tolerance | -1 -2 | | +1 +2 | % | \blacklozenge | |
| Output Voltage Temperature Coef. | | 57 | | ppm/°C | | |
| Line Regulation | | 0.04 | 0.1 | %/V | | $V_{IN}=V_{OUT} + 1\text{V}$ to 16V |
| Load Regulation | | 0.05 | 0.4 | % | | $I_L = 0.1\text{mA}$ to 500mA |
| Dropout Voltage ($V_{IN}-V_O$)(Note 2) | | 10 | 60 80 | mV | \blacklozenge | $I_L = 100\mu\text{A}$ |
| | | 125 | 175 250 | mV | \blacklozenge | $I_L = 50\text{mA}$ |
| | | 180 | 350 450 | mV | \blacklozenge | $I_L = 150\text{mA}$ |
| | | 340 | 550 700 | mV | \blacklozenge | $I_L = 500\text{mA}$ |
| Quiescent Current (I_{GND}) | | 0.05 | 3 8 | μA | \blacklozenge | $V_{ENABLE} \leq 0.4\text{V}$ $V_{ENABLE} \leq 0.25\text{V}$ |
| Ground Pin Current (I_{GND}) | | 90 | 150 190 | μA | \blacklozenge | $I_L = 100\mu\text{A}$ |
| | | 250 | 650 900 | μA | \blacklozenge | $I_L = 50\text{mA}$ |
| | | 1.0 | 2.0 2.5 | mA | \blacklozenge | $I_L = 150\text{mA}$ |
| | | 6.5 | 25.0 30.0 | mA | \blacklozenge | $I_L = 500\text{mA}$ |
| Ripple Rejection (PSRR) | | 70 | | dB | | |
| Current Limit (I_{LIMIT}) | | 800 | 950 | mA | \blacklozenge | $V_{OUT} = 0.0\text{V}$ |
| Output Noise (e_{NO}) | | 300 | | μV_{RMS} | | $I_L=10\text{mA}$, $C_L=1.0\mu\text{F}$, $C_{IN}=1\mu\text{F}$, (10Hz-100kHz) |
| | | 40 | | μV_{RMS} | | $I_L=10\text{mA}$, $C_L=10\mu\text{F}$, $C_{BYP}=1\mu\text{F}$, $C_{IN}=1\mu\text{F}$, (10Hz-100kHz) |
| Input Voltage Level Logic Low (V_{IL}) | | | 0.4 | V | | OFF |
| Input Voltage Level Logic High (V_{IH}) | 2 | | | V | | ON |
| ENABLE Input Current | | 0.01 3 | 2 20 | μA | | $V_{IL} \leq 0.4\text{V}$ $V_{IH} \geq 2.0\text{V}$ |
| Thermal Resistance (Note 1) | | 191 | | °C/W | \blacklozenge | SOT-23-5 / Junction to Ambient |
| | | 128.4 | | °C/W | \blacklozenge | NSOIC-8 / Junction to Ambient |
| | | 59 | | °C/W | \blacklozenge | DFN-8 / Junction to Ambient |

NOTES

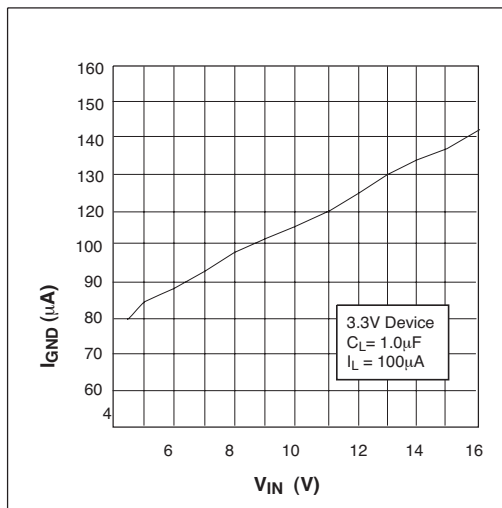
Note 1: The maximum allowable power dissipation is a function of maximum operating junction temperature, $T_{J(max)}$ the junction to ambient thermal resistance, and the ambient θ_{JA} , and the ambient temperature T_A . The maximum allowable power dissipation at any ambient temperature is given: $P_{D(max)} = (T_{J(max)} - T_A) / \theta_{JA}$, exceeding the maximum allowable power limit will result in excessive die temperature; thus, the regulator will go into thermal shutdown. The θ_{JA} of the SPX3819 is 220°C/W mounted on a PC board.

Note 2: Not applicable to output voltage 2V or less.

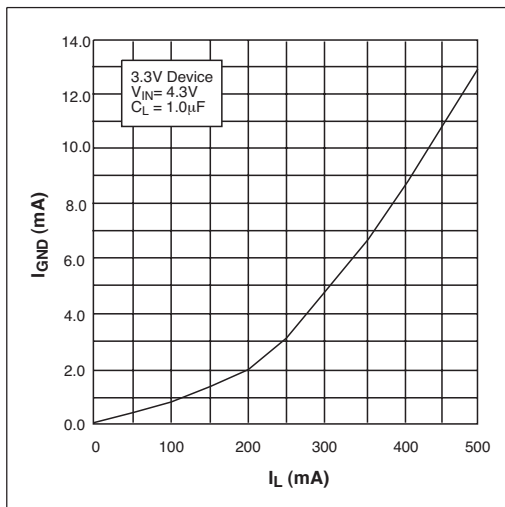
TYPICAL PERFORMANCE CHARACTERISTICS



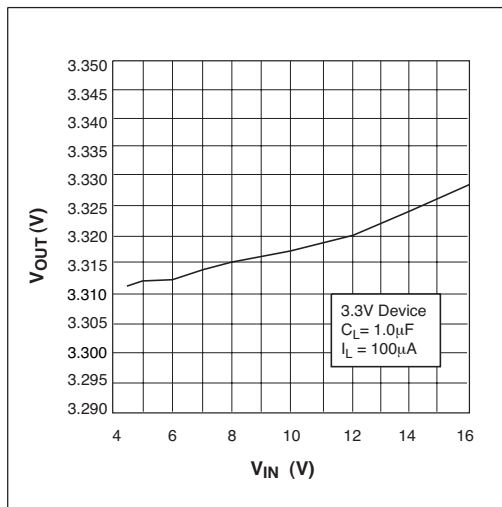
Ground Current vs Load Current



Ground Current vs Input Voltage

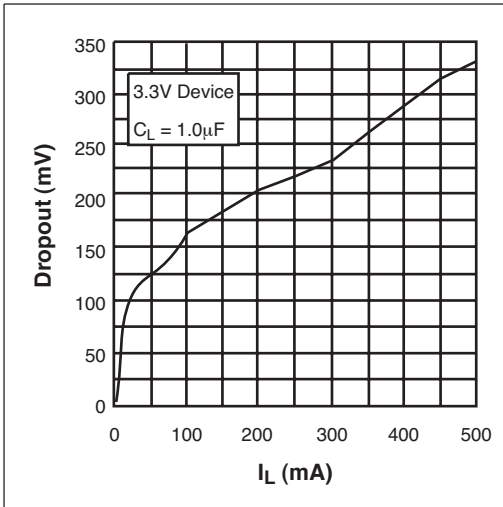


Ground Current vs Load Current in Dropout

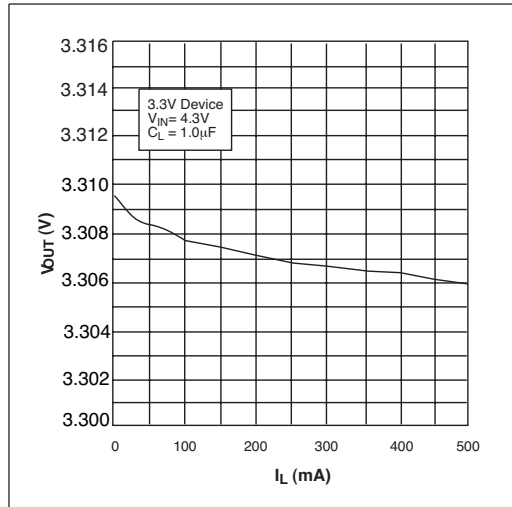


Output Voltage vs Input Voltage

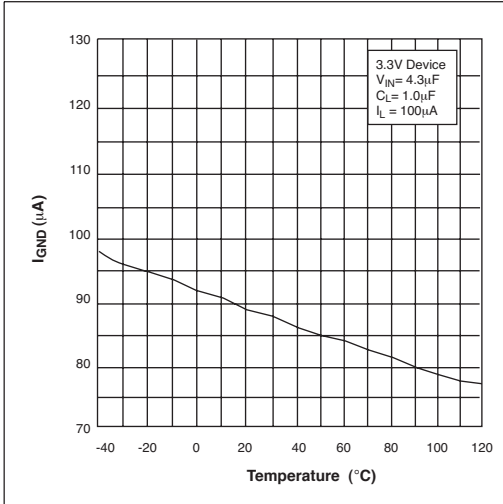
TYPICAL PERFORMANCE CHARACTERISTICS: Continued



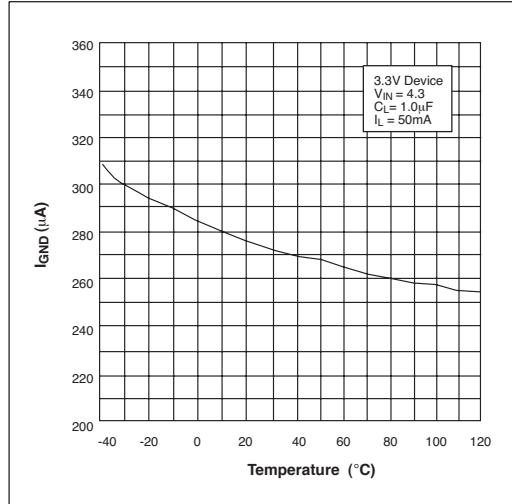
Dropout Voltage vs Load Current



Output Voltage vs Load Current

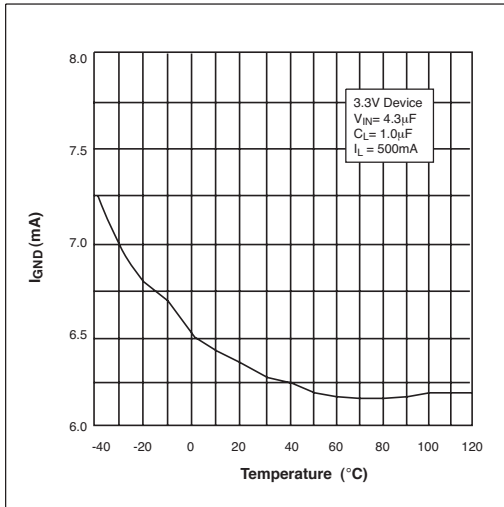


Ground Current vs Temperature with 100 μA Load

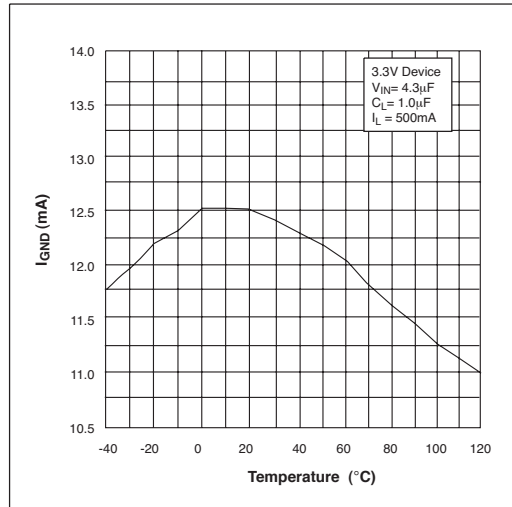


Ground Current vs Temperature with 50mA Load

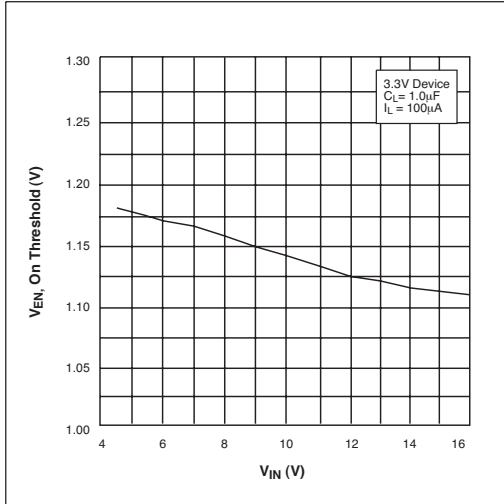
TYPICAL PERFORMANCE CHARACTERISTICS: Continued



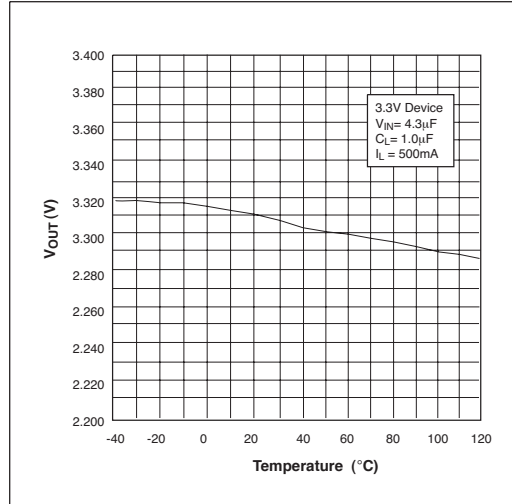
Ground Current vs Temperature with 500mA Load



Ground Current vs Temperature in Dropout

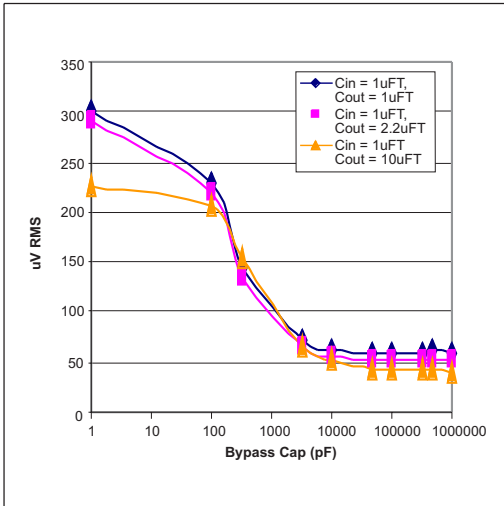


ENABLE Voltage, ON threshold, vs Input Voltage

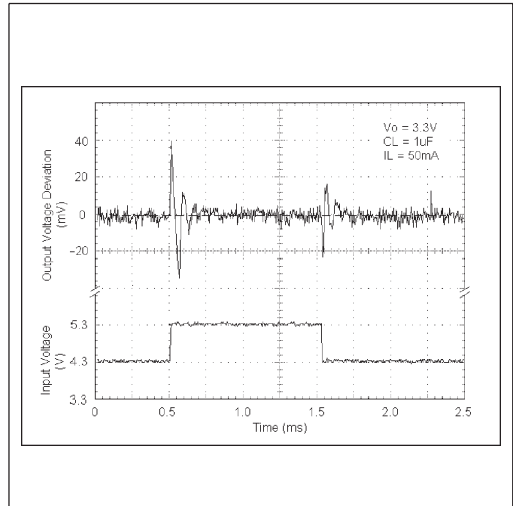


Output Voltage vs Temperature

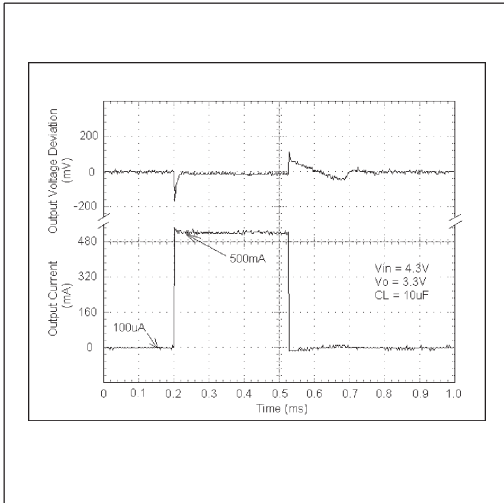
TYPICAL PERFORMANCE CHARACTERISTICS: Continued



Output Noise vs Bypass Capacitor Value $I_L = 10mA$, 10Hz - 100kHz



Line Transient Response for 3.3V Device



Load Transient Response for 3.3V Device

APPLICATION INFORMATION

The SPX3819 requires an output capacitor for device stability. Its value depends upon the application circuit. In general, linear regulator stability decreases with higher output currents. In applications where the SPX3819 is sourcing less current, a lower output capacitance may be sufficient. For example, a regulator outputting only 10mA, requires approximately half the capacitance as the same regulator sourcing 150mA.

Bench testing is the best method for determining the proper type and value of the capacitor since the high frequency characteristics of electrolytic capacitors vary widely, depending on type and manufacturer. A high quality 2.2 μ F aluminum electrolytic capacitor works in most application circuits, but the same stability often can be obtained with a 1 μ F tantalum electrolytic.

With the SPX3819 adjustable version, the minimum value of output capacitance is a function of the output voltage. The value decreases with higher output voltages, since closed loop gain is increased.

Typical Applications Circuits

A 10nF capacitor on the BYP pin will significantly reduce output noise, but it may be left unconnected if the output noise is not a major

concern. The SPX3819 start-up speed is inversely proportional to the size of the BYP capacitor. Applications requiring a slow ramp-up of the output voltage should use a larger C_{BYP}. However, if a rapid turn-on is necessary, the BYP capacitor can be omitted.

The SPX3819's internal reference is available through the BYP pin.

Figure 1 represents a SPX3819 standard application circuit. The EN (enable) pin is pulled high (>2.0V) to enable the regulator.

To disable the regulator, EN < 0.4V.

The SPX3819 in *Figure 2* illustrates a typical adjustable output voltage configuration. Two resistors (R₁ and R₂) set the output voltage. The output voltage is calculated using the formula:

$$V_{OUT} = 1.235V \times \left[1 + R_1/R_2 \right]$$

R₂ must be > 10 k Ω and for best results, R₂ should be between 22 k Ω and 47k Ω .

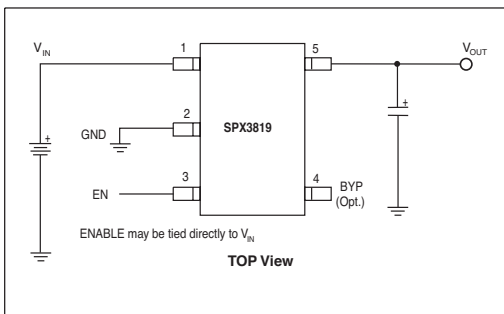


Figure 1. Standard Application Circuit

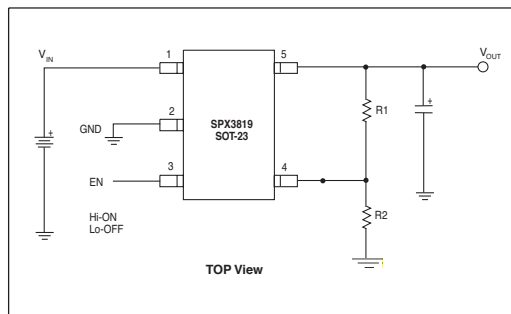
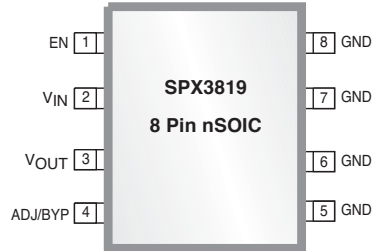
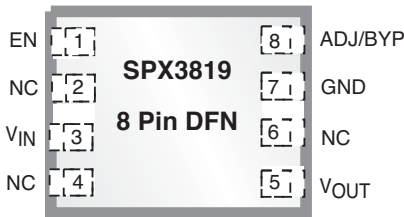


Figure 2. Typical Adjustable Output Voltage Configuration

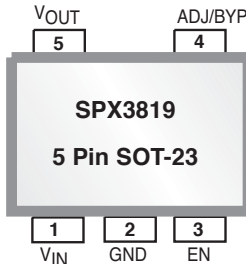
PACKAGE: PIN DESCRIPTION

| Pin # nSOIC | Pin # DFN | Pin # SOT-3 | Pin Name | Description |
|----------------|--------------|----------------|------------------|---|
| 2 | 3 | 1 | V _{IN} | Supply Input |
| 5-8 | 7 | 2 | GND | Ground |
| 3 | 5 | 5 | V _{OUT} | Regulator Output |
| 1 | 1 | 3 | EN | Enable(input). CMOS compatible control input. Logic high = enable; logic low or open = shutdown |
| 4 | 8 | 4 | ADJ/BYP | Adjust(input). Feedback input. Connect to resistive voltage-divider network |
| - | 4, 6 | - | NC | No Connect |

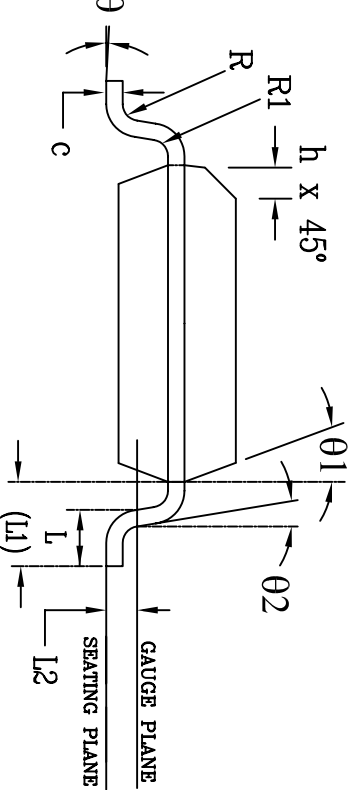
PACKAGE: PINOUTS



Note: The bottom exposed pad for the SPX3819 DFN package is connected to GND.



| | | | | | | |
|------------|----------|---|-----------|-------|---|-------|
| h | 0.25 | — | 0.50 | 0.010 | — | 0.020 |
| L | 0.40 | — | 1.27 | 0.016 | — | 0.050 |
| L1 | 1.04 REF | | 0.041 REF | | | |
| L2 | 0.25 BSC | | 0.010 BSC | | | |
| R | 0.07 | — | — | 0.003 | — | — |
| R1 | 0.07 | — | — | 0.003 | — | — |
| θ | 0° | — | 8° | 0° | — | 8° |
| $\theta 1$ | 5° | — | 15° | 5° | — | 15° |
| $\theta 2$ | 0° | — | — | 0° | — | — |
| D | 4.90 BSC | | 0.193 BSC | | | |
| N | 8 | | 8 | | | |



Front View



SIPEX CORPORATION

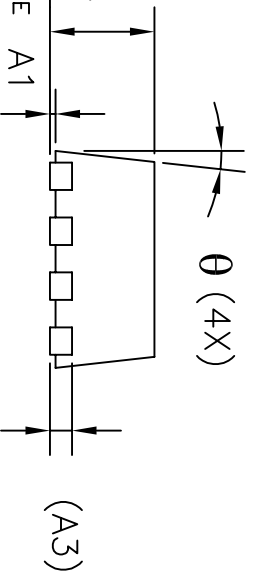
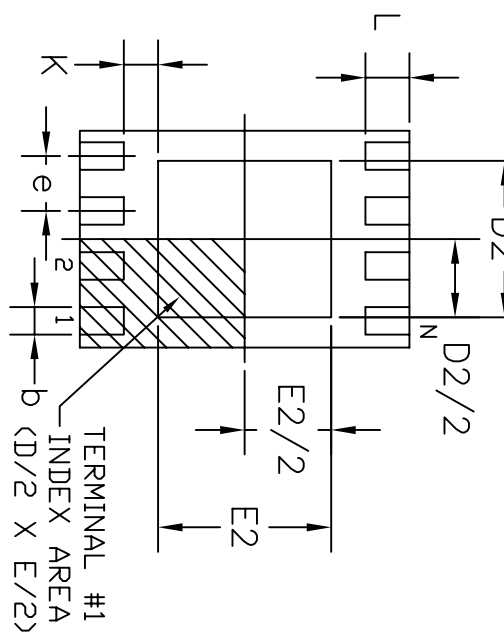
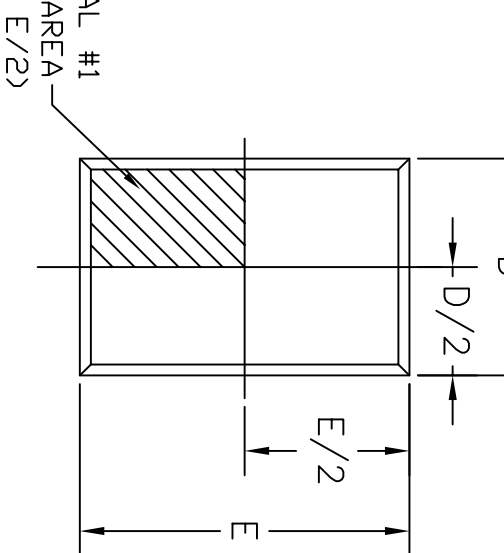
8 PIN SOICN PACKAGE OUTLINE

Packaging Approval:

Drawing No: 8-PIN SOICN

By: JL Date: 07/19/06

Revision: B Sheet: 1 OF 1



8LD 2x3 DFN JEDEC MO-229 Variation VCED-2

| SYMBOLS | DIMENSIONS IN MM (Control Unit) | | | DIMENSIONS IN INCH (Reference Unit) | | |
|---------|------------------------------------|------|------|--|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.80 | 0.90 | 1.00 | 0.032 | 0.036 | 0.039 |
| A1 | 0.00 | 0.02 | 0.05 | 0.000 | 0.001 | 0.002 |
| A3 | 0.20 REF | | | 0.008 REF | | |
| b | 0.18 | 0.25 | 0.30 | 0.007 | 0.010 | 0.012 |
| D | 2.00 BSC | | | 0.079 BSC | | |
| D2 | 1.50 | — | 1.75 | 0.059 | — | 0.069 |
| E | 3.00 BSC | | | 0.118 BSC | | |
| E2 | 1.60 | — | 1.90 | 0.063 | — | 0.075 |
| e | 0.50 BSC | | | 0.020 BSC | | |
| L | 0.30 | 0.40 | 0.50 | 0.012 | 0.016 | 0.020 |
| K | 0.20 | — | — | 0.008 | — | — |
| 0 | 0° | — | 14° | 0° | — | 14° |
| N | 8 | | | 8 | | |
| ND | 4 | | | 4 | | |



SIPEX CORPORATION

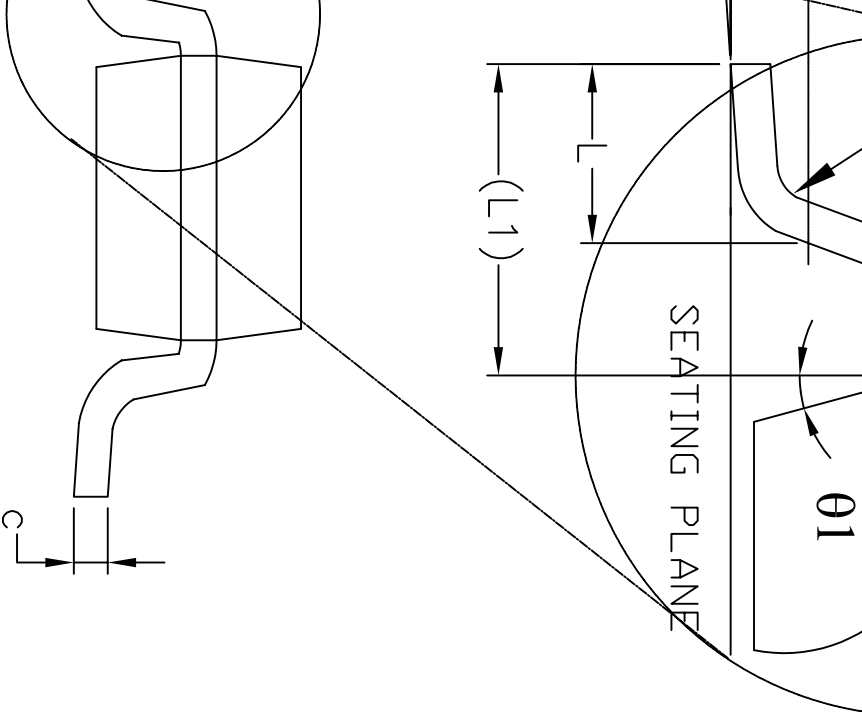
8 PIN 2x3 DFN PACKAGE OUTLINE

Packaging Approvals:

Drawing No: 8-PIN 2x3 DFN

By: JL Date: 07/17/06

Revision: B Sheet: 1 OF 1



| | | | | | | |
|---------|----------|------|------|-----------|-------|-------|
| c | 0.08 | — | 0.22 | 0.003 | — | 0.009 |
| D | 2.90 BSC | | | 0.115 BSC | | |
| E | 2.80 BSC | | | 0.111 BSC | | |
| E1 | 1.60 BSC | | | 0.063 BSC | | |
| e | 0.95 BSC | | | 0.038 BSC | | |
| e1 | 1.90 BSC | | | 0.075 BSC | | |
| L | 0.30 | 0.45 | 0.60 | 0.012 | 0.018 | 0.024 |
| L1 | 0.60 REF | | | 0.024 REF | | |
| L2 | 0.25 BSC | | | 0.010 BSC | | |
| R | 0.10 | — | — | 0.004 | — | — |
| R1 | 0.10 | — | 0.25 | 0.004 | — | 0.010 |
| theta | 0° | 4° | 8° | 0° | 4° | 8° |
| theta 1 | 5° | 10° | 15° | 5° | 10° | 15° |
| N | 5 | | | 5 | | |

Front View



SIPEX CORPORATION

5 PIN SOT-23 PACKAGE OUTLINE

Packaging Approval:

Drawing No: 5-PIN SOT-23

By: JL Date: 07/25/06

Revision: B Sheet: 1 OF 1

| Part Number | Accuracy | MSL Level | Status | Package | Pack Type | Quantity | RoHS |
|--------------------|----------|------------|--------|----------|-------------|----------|------|
| SPX3819S-L/TR | 0.01 | L1 @ 260°C | Active | NSOIC8 | Tape & Reel | 2500 | Yes |
| SPX3819S-L-1-8/TR | 0.01 | L1 @ 260°C | Active | NSOIC8 | Tape & Reel | 2500 | Yes |
| SPX3819S-L-2-5/TR | 0.01 | L1 @ 260°C | Active | NSOIC8 | Tape & Reel | 2500 | Yes |
| SPX3819S-L-3-0/TR | 0.01 | L1 @ 260°C | Active | NSOIC8 | Tape & Reel | 2500 | Yes |
| SPX3819S-L-3-1/TR | 0.01 | L1 @ 260°C | Active | NSOIC8 | Tape & Reel | 2500 | Yes |
| SPX3819S-L-3-3/TR | 0.01 | L1 @ 260°C | Active | NSOIC8 | Tape & Reel | 2500 | Yes |
| SPX3819S-L-5-0/TR | 0.01 | L1 @ 260°C | Active | NSOIC8 | Tape & Reel | 2500 | Yes |
| SPX3819S-L | 0.01 | L1 @ 260°C | Active | NSOIC8 | TUBE | 98 | Yes |
| SPX3819S-L-1-8 | 0.01 | L1 @ 260°C | Active | NSOIC8 | TUBE | 98 | Yes |
| SPX3819S-L-2-5 | 0.01 | L1 @ 260°C | Active | NSOIC8 | TUBE | 98 | Yes |
| SPX3819S-L-3-0 | 0.01 | L1 @ 260°C | Active | NSOIC8 | TUBE | 98 | Yes |
| SPX3819S-L-3-1 | 0.01 | L1 @ 260°C | Active | NSOIC8 | TUBE | 98 | Yes |
| SPX3819S-L-3-3 | 0.01 | L1 @ 260°C | Active | NSOIC8 | TUBE | 98 | Yes |
| SPX3819S-L-5-0 | 0.01 | L1 @ 260°C | Active | NSOIC8 | TUBE | 98 | Yes |
| SPX3819M5-L | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Not in Bulk | 2500 | Yes |
| SPX3819M5-L-1-2 | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Not in Bulk | 2500 | Yes |
| SPX3819M5-L-1-5 | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Not in Bulk | 2500 | Yes |
| SPX3819M5-L-1-8 | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Not in Bulk | 2500 | Yes |
| SPX3819M5-L-2-5 | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Not in Bulk | 2500 | Yes |
| SPX3819M5-L-3-0 | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Not in Bulk | 2500 | Yes |
| SPX3819M5-L-3-1 | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Not in Bulk | 2500 | Yes |
| SPX3819M5-L-3-3 | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Not in Bulk | 2500 | Yes |
| SPX3819M5-L-5-0 | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Not in Bulk | 2500 | Yes |
| SPX3819M5-L/TR | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Tape & Reel | 2500 | Yes |
| SPX3819M5-L-1-2/TR | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Tape & Reel | 2500 | Yes |
| SPX3819M5-L-1-5/TR | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Tape & Reel | 2500 | Yes |
| SPX3819M5-L-1-8/TR | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Tape & Reel | 2500 | Yes |
| SPX3819M5-L-2-5/TR | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Tape & Reel | 2500 | Yes |
| SPX3819M5-L-3-0/TR | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Tape & Reel | 2500 | Yes |
| SPX3819M5-L-3-1/TR | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Tape & Reel | 2500 | Yes |
| SPX3819M5-L-3-3/TR | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Tape & Reel | 2500 | Yes |
| SPX3819M5-L-5-0/TR | 0.01 | L1 @ 260°C | Active | SOT-23-5 | Tape & Reel | 2500 | Yes |
| SPX3819R2-L-1-2 | 0.01 | L1 @ 250°C | CF | DFN8 | Not in Bulk | 3000 | Yes |
| SPX3819R2-L-1-2/TR | 0.01 | L1 @ 250°C | CF | DFN8 | Tape & Reel | 3000 | Yes |
| SPX3819S-L-1-2/TR | 0.01 | L1 @ 260°C | CF | SOIC-8 | Tape & Reel | 2500 | Yes |
| SPX3819S-L-1-5/TR | 0.01 | L1 @ 260°C | CF | SOIC-8 | Tape & Reel | 2500 | Yes |
| SPX3819S-L-1-2 | 0.01 | L1 @ 260°C | CF | SOIC-8 | TUBE | 98 | Yes |
| SPX3819S-L-1-5 | 0.01 | L1 @ 260°C | CF | SOIC-8 | TUBE | 98 | Yes |

| Part Number | Accuracy | MSE Level | Status | Package | Pack Type | Quantity | RoHS |
|------------------|----------|------------|--------|----------|-------------|----------|------|
| SPX3819R2-L | 0.01 | L1 @ 250°C | EOL | DFN8 | Not in Bulk | 3000 | Yes |
| SPX3819R2-L-1-5 | 0.01 | L1 @ 250°C | EOL | DFN8 | Not in Bulk | 3000 | Yes |
| SPX3819R2-L-1-8 | 0.01 | L1 @ 250°C | EOL | DFN8 | Not in Bulk | 3000 | Yes |
| SPX3819R2-L-3-3 | 0.01 | L1 @ 250°C | EOL | DFN8 | Not in Bulk | 3000 | Yes |
| SPX3819R2-L-5-0 | 0.01 | L1 @ 250°C | EOL | DFN8 | Not in Bulk | 3000 | Yes |
| SPX3819R2-1-2 | 0.01 | L1 @ 240°C | EOL | DFN8 | Not in Bulk | 3000 | No |
| SPX3819R2-3-3 | 0.01 | L1 @ 240°C | EOL | DFN8 | Not in Bulk | 3000 | No |
| SPX3819R2-1-2/TR | 0.01 | L1 @ 240°C | EOL | DFN8 | Tape & Reel | 3000 | No |
| SPX3819S/TR | 0.01 | L1 @ 240°C | EOL | NSOIC8 | Tape & Reel | 2500 | No |
| SPX3819S-2-5/TR | 0.01 | L1 @ 240°C | EOL | NSOIC8 | Tape & Reel | 2500 | No |
| SPX3819S | 0.01 | L1 @ 240°C | EOL | NSOIC8 | TUBE | 98 | No |
| SPX3819S-2-5 | 0.01 | L1 @ 240°C | EOL | NSOIC8 | TUBE | 98 | No |
| SPX3819S-3-3/TR | 0.01 | L1 @ 240°C | EOL | SOIC-8 | Tape & Reel | 2500 | No |
| SPX3819S-1-8 | 0.01 | L1 @ 240°C | EOL | SOIC-8 | TUBE | 98 | No |
| SPX3819S-3-3 | 0.01 | L1 @ 240°C | EOL | SOIC-8 | TUBE | 98 | No |
| SPX3819S-5-0 | 0.01 | L1 @ 240°C | EOL | SOIC-8 | TUBE | 98 | No |
| SPX3819M5 | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Not in Bulk | 2500 | No |
| SPX3819M5-1-2 | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Not in Bulk | 2500 | No |
| SPX3819M5-1-5 | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Not in Bulk | 2500 | No |
| SPX3819M5-1-8 | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Not in Bulk | 2500 | No |
| SPX3819M5-2-5 | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Not in Bulk | 2500 | No |
| SPX3819M5-3-0 | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Not in Bulk | 2500 | No |
| SPX3819M5-3-1 | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Not in Bulk | 2500 | No |
| SPX3819M5-3-3 | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Not in Bulk | 2500 | No |
| SPX3819M5-5-0 | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Not in Bulk | 2500 | No |
| SPX3819M5/TR | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Tape & Reel | 2500 | No |
| SPX3819M5-1-2/TR | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Tape & Reel | 2500 | No |
| SPX3819M5-1-5/TR | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Tape & Reel | 2500 | No |
| SPX3819M5-1-8/TR | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Tape & Reel | 2500 | No |
| SPX3819M5-2-5/TR | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Tape & Reel | 2500 | No |
| SPX3819M5-3-0/TR | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Tape & Reel | 2500 | No |
| SPX3819M5-3-3/TR | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Tape & Reel | 2500 | No |
| SPX3819M5-5-0/TR | 0.01 | L1 @ 240°C | EOL | SOT-23-5 | Tape & Reel | 2500 | No |

For further assistance:

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Sipex Application Notes: <http://www.sipex.com/applicationNotes.aspx>



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