

Features

- Low Dropout Voltage: 180mV@300mA ($V_o=3.3V$)
- Output Voltage Accuracy within $\pm 2\%$
- Supply voltage range: 2.5V to 5.5V
- Quiescent Current: 65 μ A Typ.
- High PSRR: 70dB@1kHz
- Excellent Line and Load Regulation
- Fast Discharge
- Current Limiting
- Short Circuit Protection
- Low Temperature Coefficient
- Shutdown Current: 0.5 μ A
- Thermal Shutdown
- Space Saving Packages: SOT-23, SOT-89, SC70 and DFN1.6x1.6
- Pb-Free Package

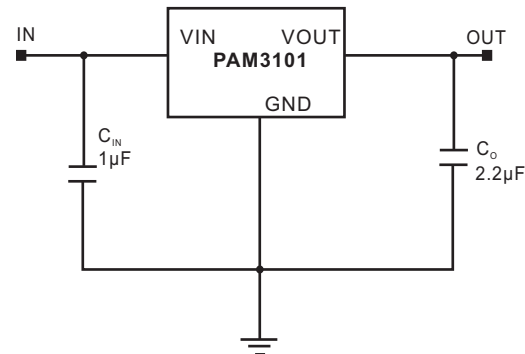
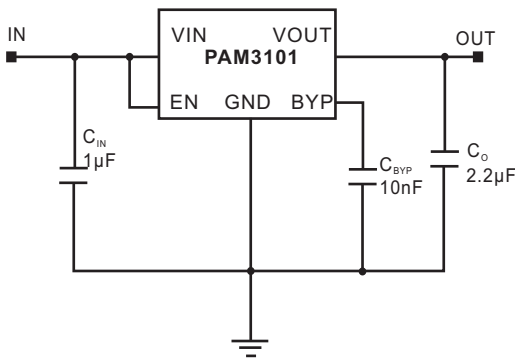
Applications

- Cellular Phones
- Bluetooth Earphones
- Digital Cameras
- Portable Electronics
- WLANs
- MP3 Players

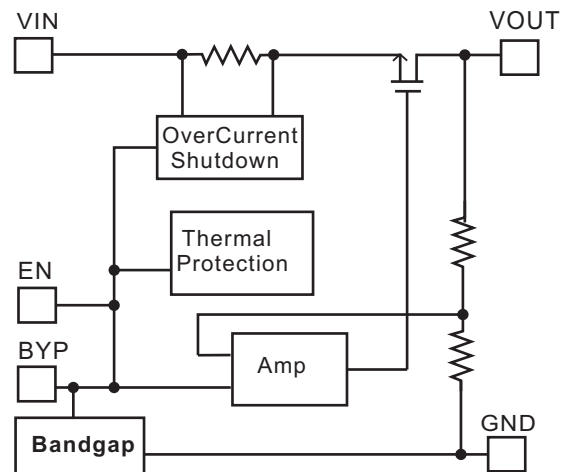
General Description

The PAM3101 series of positive voltage linear regulators feature low quiescent current (65 μ A Typ.) and low dropout voltage, making them ideal for battery powered applications. Their high PSRR make them useful in applications where AC noise on the input power supply must be suppressed. Space-saving SOT-23, SOT-89, SC70 and DFN1.6x1.6-6L packages are attractive for portable and handheld applications. They have both thermal shutdown and current limit features to prevent device failure from extreme operating conditions. They are stable with an output capacitor of 2.2 μ F or greater.

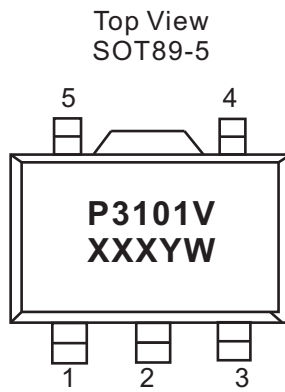
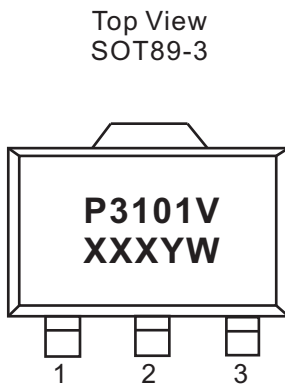
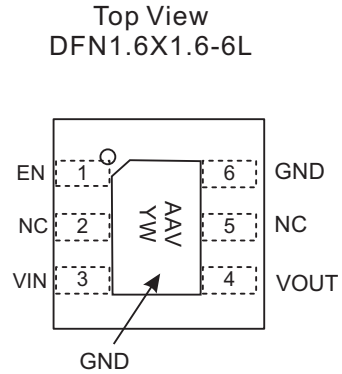
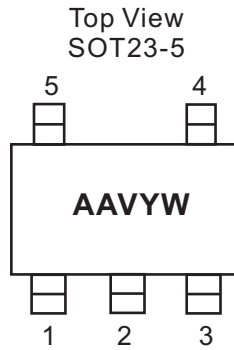
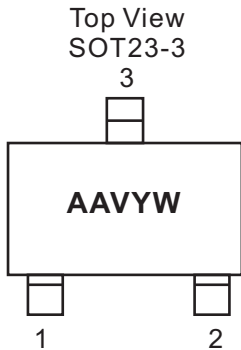
Typical Application



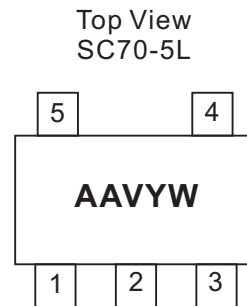
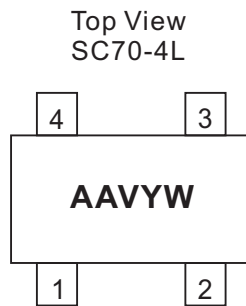
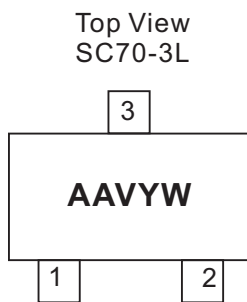
Block Diagram



Pin Configuration & Marking Information



AA: Product Code of PAM3101
 V: Voltage Code
 X: Internal Code
 Y: Year
 W: Week



Pin Configuration Available

| Pin | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------|------|------|------|------|------|-----|
| SOT23-3 | GND | VOUT | VIN | | | |
| | VIN | VOUT | GND | | | |
| | VOUT | GND | VIN | | | |
| SOT89-3 | GND | VIN | VOUT | | | |
| | VOUT | GND | VIN | | | |
| SOT23-5 | VIN | GND | EN | BYP | VOUT | |
| | VIN | GND | EN | NC | VOUT | |
| SOT89-5 | VOUT | GND | NC | EN | VIN | |
| SC70-3L | VIN | VOUT | GND | | | |
| SC70-4L | EN | GND | VOUT | VIN | | |
| SC70-5L | VIN | GND | EN | BYP | VOUT | |
| DFN1.6x1.6-6L | EN | NC | VIN | VOUT | NC | GND |

Pin Descriptions

| Name | Function |
|------|--|
| VIN | Input |
| GND | Ground |
| VOUT | Output |
| EN | Chip Enable (active high) PAM3101BABXXX----EN default floating Other part no----EN default pull high |
| BYP | Bypass Pin, need a 10nF capacitor connect to GND |
| NC | No Connection |



Absolute Maximum Ratings

These are stress ratings only and functional operation is not implied. Exposure to absolute maximum ratings for prolonged time periods may affect device reliability. All voltages are with respect to ground.

| | | | |
|--------------------------|---------------------------|--|----------------|
| Input Voltage..... | 6.0V | Lead Soldering Temperature (5sec)..... | 300°C |
| Output Current..... | 300mA | Storage Temperature..... | -65°C to 150°C |
| Output Pin Voltage | GND-0.3V to $V_{IN}+0.3V$ | ESD Rating..... | Class B |

Recommended Operating Conditions

| | | | |
|---------------------------|----------------|----------------------------|---------------|
| Supply Voltage Range..... | 2.5V to 5.5V | Operation Temperature..... | -40°C to 85°C |
| Junction Temperature..... | -40°C to 125°C | | |

Thermal Information

| Parameter | Symbol | Package | Maximum | Unit |
|---|---------------|------------|---------|------|
| Thermal Resistance (Junction to Case) | θ_{JC} | SOT-23 | 130 | °C/W |
| | | SOT-89 | 100 | |
| | | SC70 | 160 | |
| | | DFN1.6x1.6 | 65 | |
| Thermal Resistance (Junction to Ambient) | θ_{JA} | SOT-23 | 250 | °C/W |
| | | SOT-89 | 180 | |
| | | SC70 | 300 | |
| | | DFN1.6x1.6 | 175 | |
| Internal Power Dissipation (@TA=25°C) | P_D | SOT-23 | 400 | mW |
| | | SOT-89 | 550 | |
| | | SC70 | 300 | |
| | | DFN1.6x1.6 | 570 | |



Electrical Characteristic

$V_{IN}=V_O+1V$, $T_A=25^\circ C$, $C_{IN}=1\mu F$, $C_O=2.2\mu F$, unless otherwise noted

| PARAMETER | SYMBOL | Test Conditions | MIN | TYP | MAX | UNITS | |
|-------------------------------|------------|---|------------------------|------|--------|-----------------|----|
| Input Voltage | V_{IN} | | Note 1 | | 5.5 | V | |
| Output Voltage Accuracy | V_O | $I_O=1mA$ | -2 | | 2 | % | |
| Output Current | I_O | | 300 | | Note 2 | mA | |
| Dropout Voltage | V_{drop} | $I_O=300mA$ | $V_O=1.5V$ | | 1150 | 1400 | mV |
| | | | $V_O=1.8V$ | | 850 | 1100 | |
| | | | $2.5V \leq V_O < 3.3V$ | | 370 | 450 | |
| | | | $V_O \geq 3.3V$ | | 180 | 230 | |
| Ground Current | I_{GND} | $I_O=1mA$ to 300mA | | 70 | 90 | μA | |
| Quiescent Current | I_Q | $I_O=0mA$ | | 65 | 90 | μA | |
| Line Regulation | LNR | $I_O=1mA$, $V_O < 2V$, $V_{IN} = 2.8V$ to 3.8V | -0.15 | 0.1 | 0.15 | % / V | |
| | | $I_O=1mA$, $2V \leq V_O < 3.3V$, $V_{IN} = V_O + 0.5V$ to $V_O + 1V$ | -0.1 | 0.03 | 0.1 | | |
| | | $I_O=1mA$, $V_O \geq 3.3V$, $V_{IN}=V_O+0.5V$ to V_O+1V | -0.4 | 0.2 | 0.4 | | |
| Load Regulation | LDR | $I_O=1mA$ to 300mA, $V_O \geq 2V$ | -2 | 1 | 2 | % | |
| | | $I_O=1mA$ to 300mA, $V_O < 2V$ | | 30 | 60 | mV | |
| Temperature Coefficient | T_c | $I_O=1mA$ | | 40 | | ppm/ $^\circ C$ | |
| Over Temperature Shutdown | OTS | $I_O=1mA$ | | 150 | | $^\circ C$ | |
| Over Temperature Hysteresis | OTH | $I_O=1mA$ | | 30 | | $^\circ C$ | |
| Power Supply Ripple Rejection | PSRR | $I_O=100mA$ $C_{BYP}=10nF$ $V_O=3.3V$ | $f=100Hz$ | | 70 | dB | |
| | | | $f=1kHz$ | | 65 | | |
| Output Noise | V_n | $f = 10Hz$ to 100kHz, $C_{BYP}=10nF$ | | 50 | | μV_{rms} | |
| EN Input High Threshold | V_{IH} | $V_{IN}=2.5V$ to 5V | 1.5 | | | V | |
| EN Input Low Threshold | V_{IL} | $V_{IN}=2.5V$ to 5V | | | 0.3 | V | |
| Shutdown Current | I_{SD} | $V_{EN}=0V$ | | 0.01 | 1 | μA | |

Note1: The minimum input voltage ($V_{IN(MIN)}$) of the PAM3101 is determined by output voltage and dropout voltage. The minimum input voltage is defined as:

$$V_{IN(MIN)} = V_O + V_{drop}$$

$$V_{IN(MIN)} \geq 2.5V$$

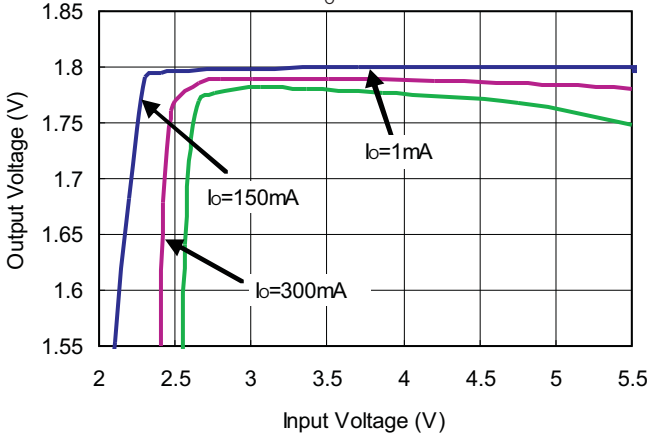
Note 2: Output current is limited by P_D , maximum $I_O = P_D / (V_{IN(MAX)} - V_O)$.

Typical Performance Characteristics

$T_A=25^\circ\text{C}$, $V_{EN}=V_{IN}$, $C_{IN}=1\mu\text{F}$, $C_O=2.2\mu\text{F}$, $C_{BYP}=10\text{nF}$, unless otherwise noted.

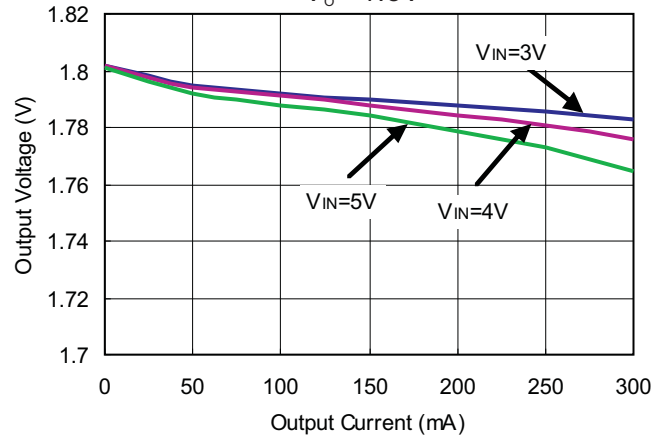
1. Output Voltage vs Input Voltage

$V_O = 1.8\text{V}$

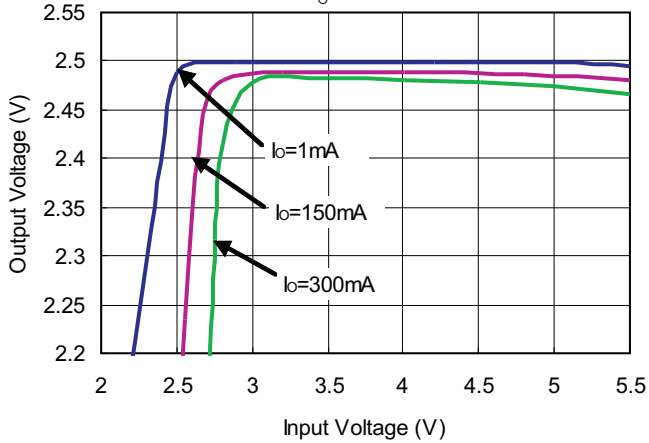


2. Output Voltage vs Output Current

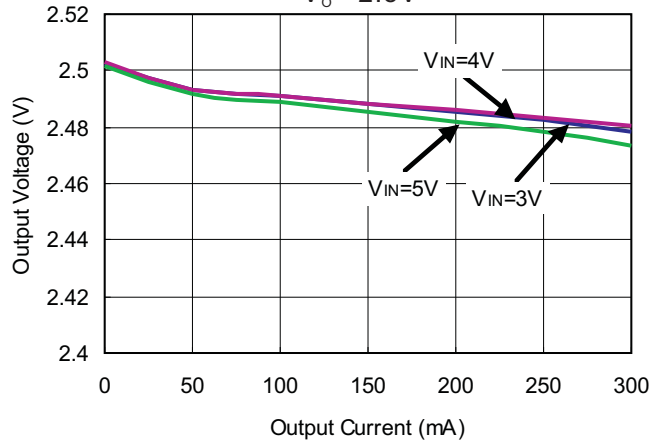
$V_O = 1.8\text{V}$



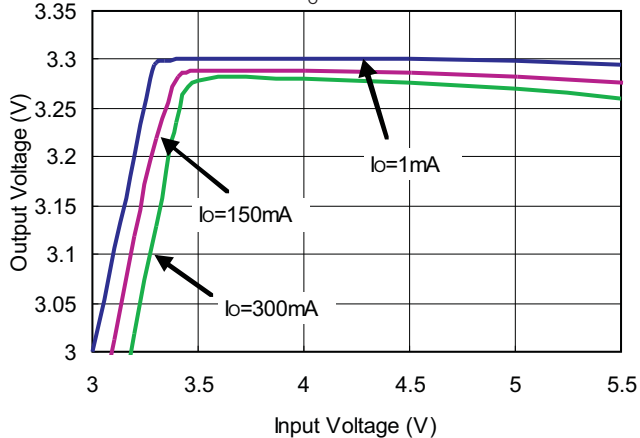
$V_O = 2.5\text{V}$



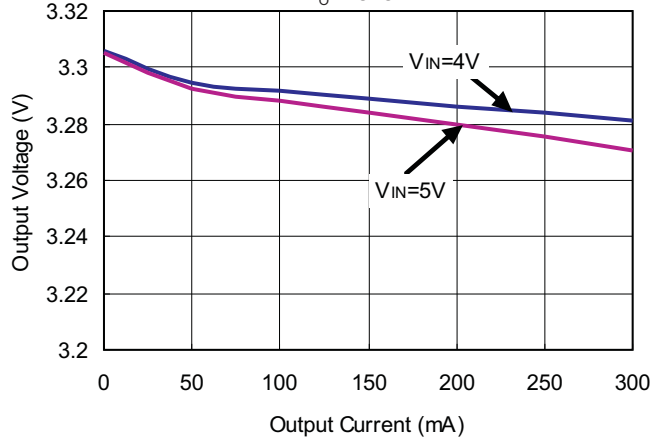
$V_O = 2.5\text{V}$



$V_O = 3.3\text{V}$

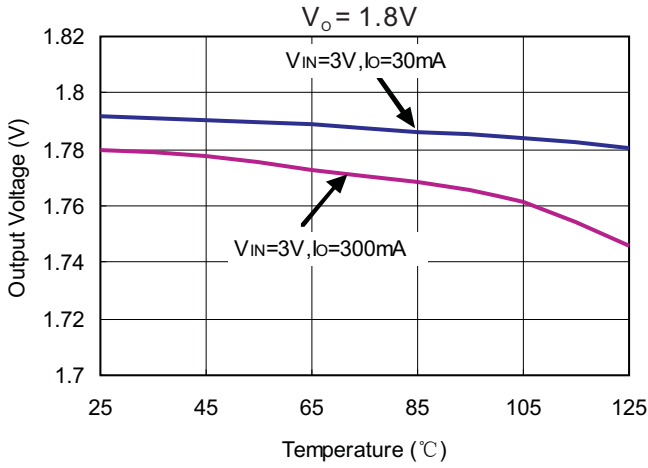


$V_O = 3.3\text{V}$

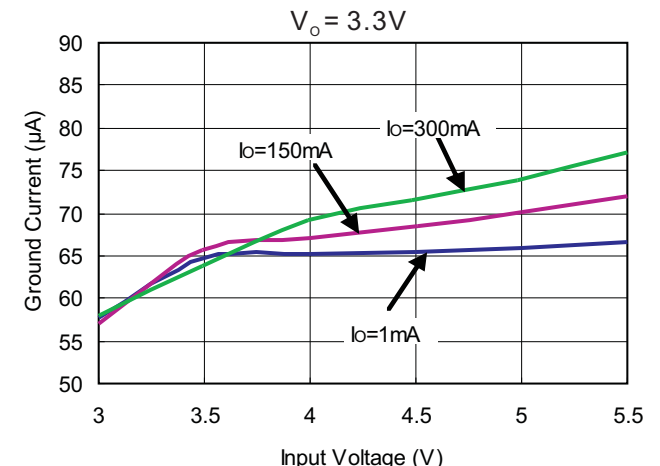
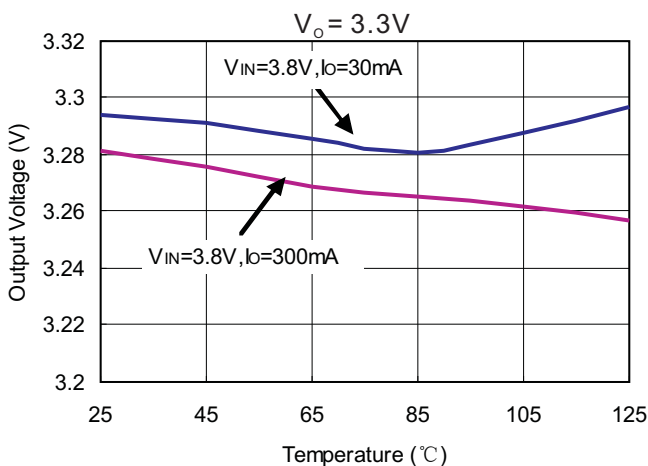
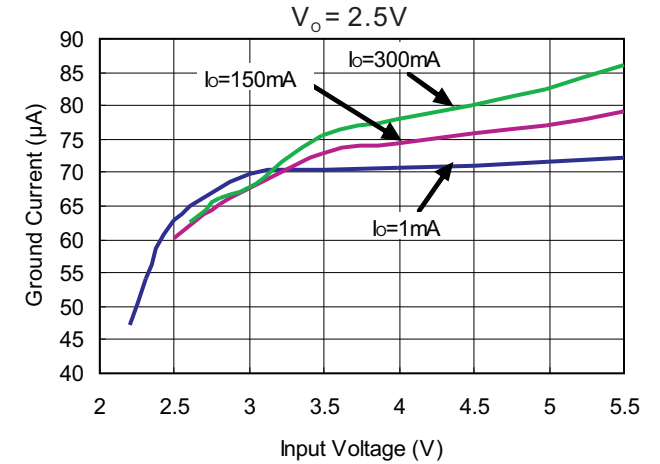
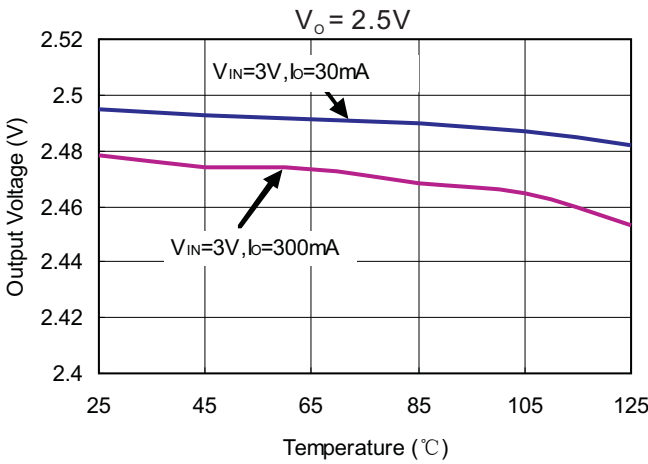
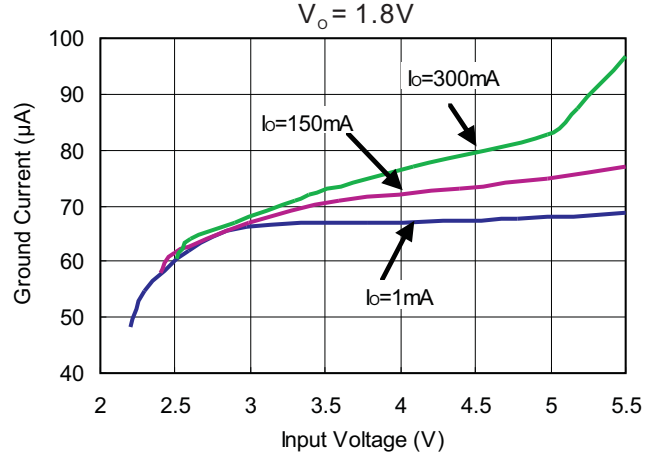


Typical Performance Characteristics

3. Output Voltage vs Temperature

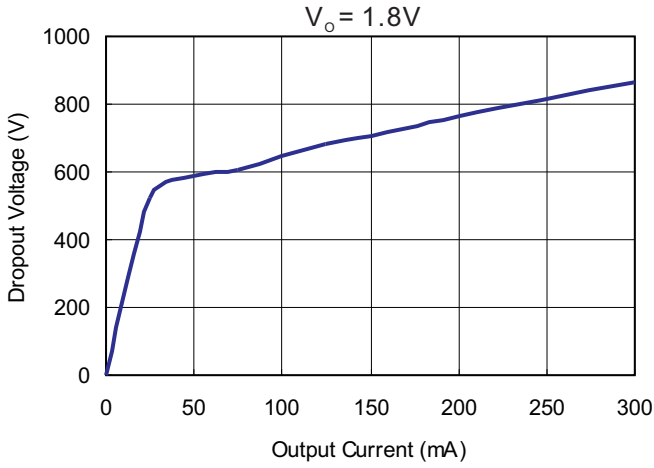


4. Ground Current vs Input Voltage

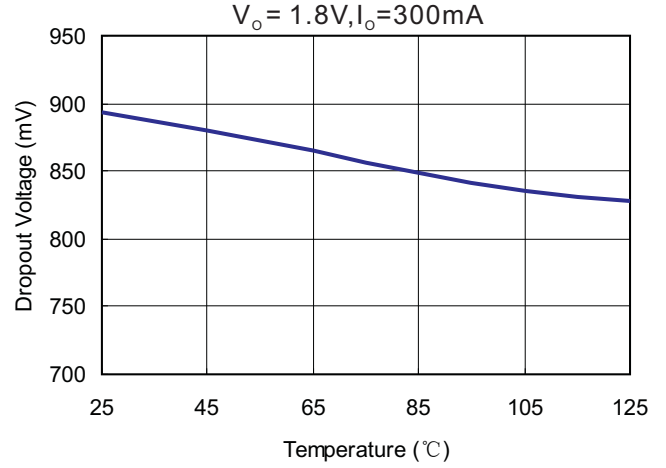


Typical Performance Characteristics

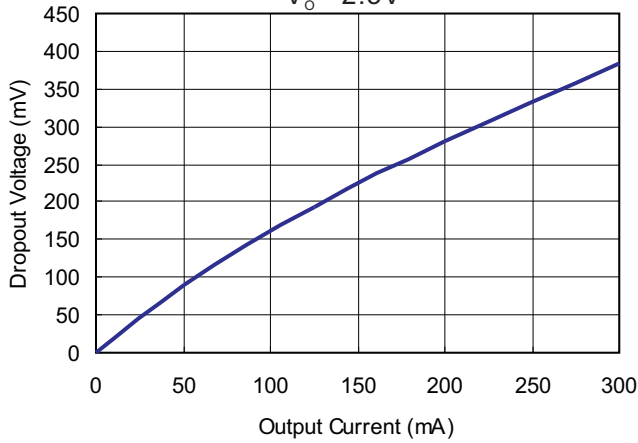
5. Dropout Voltage vs Output Current



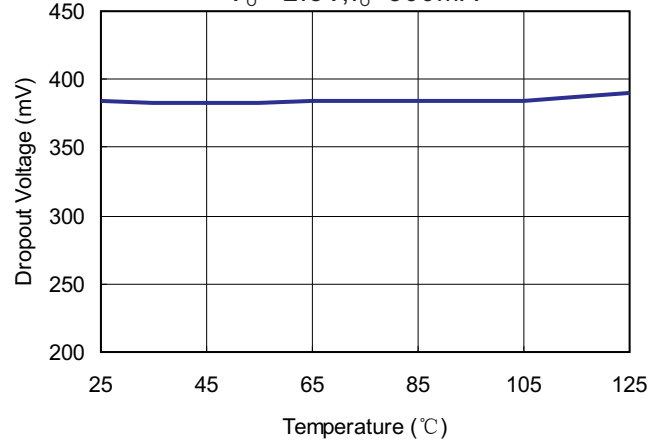
6. Dropout Voltage vs Temperature



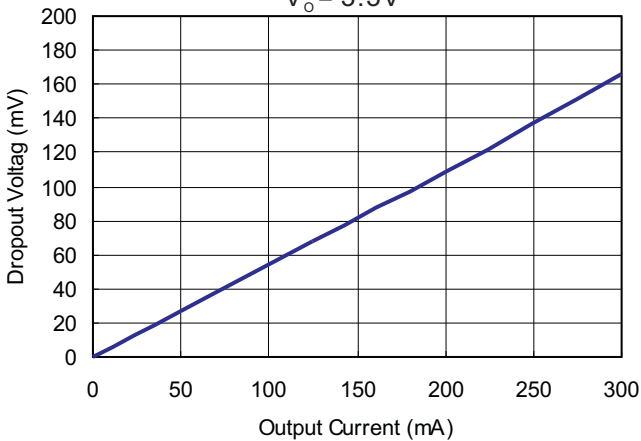
$V_o = 2.5V$



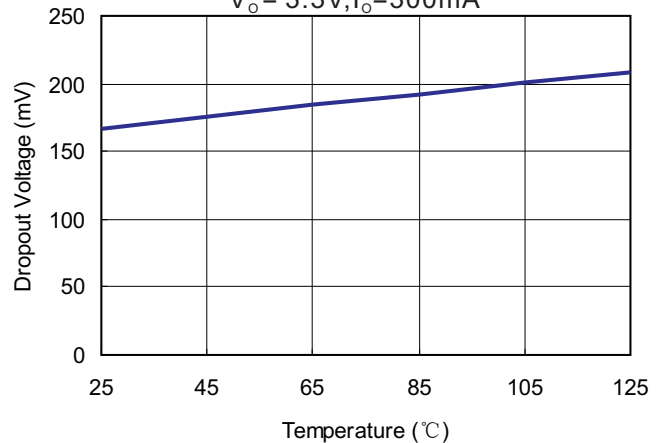
$V_o = 2.5V, I_o = 300mA$



$V_o = 3.3V$

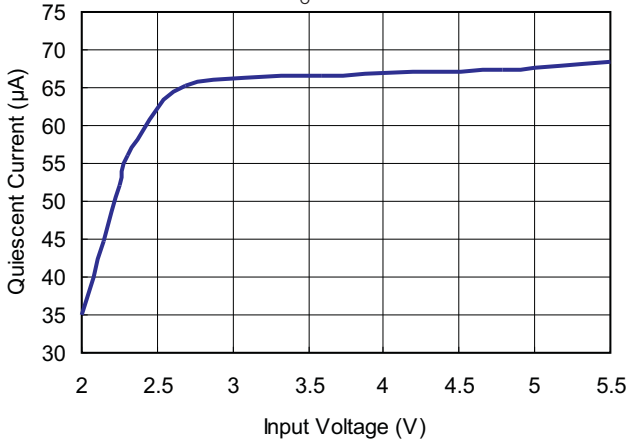


$V_o = 3.3V, I_o = 300mA$

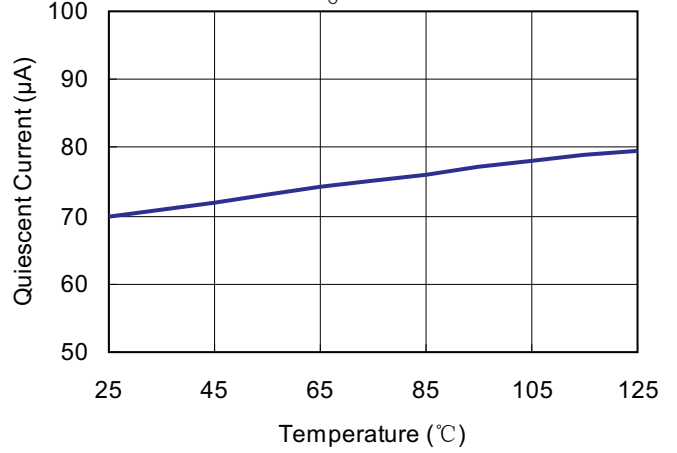


Typical Performance Characteristics

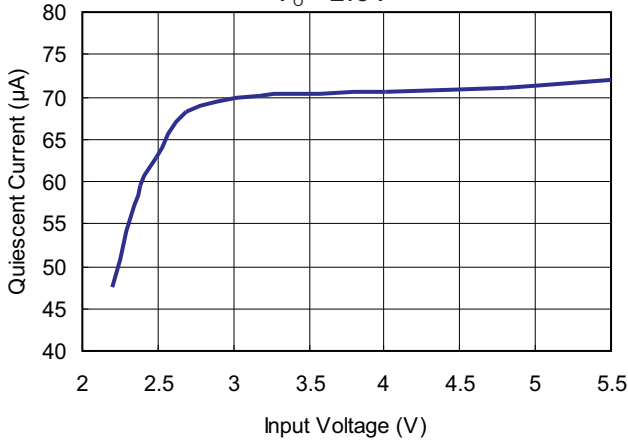
7. Quiescent Current vs Input Voltage
 $V_o = 1.8V$



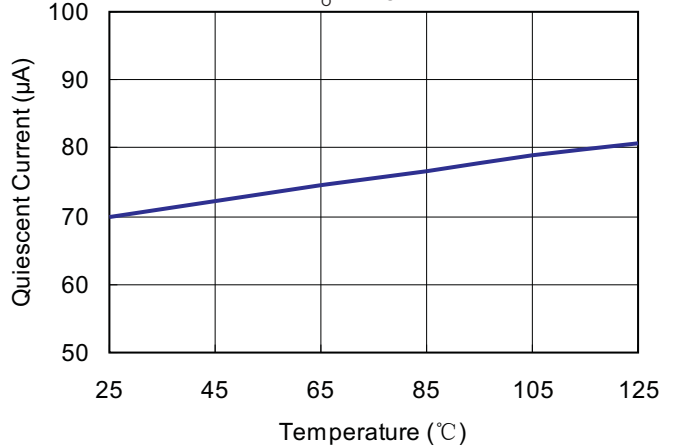
8. Quiescent Current vs Temperature
 $V_o = 1.8V$



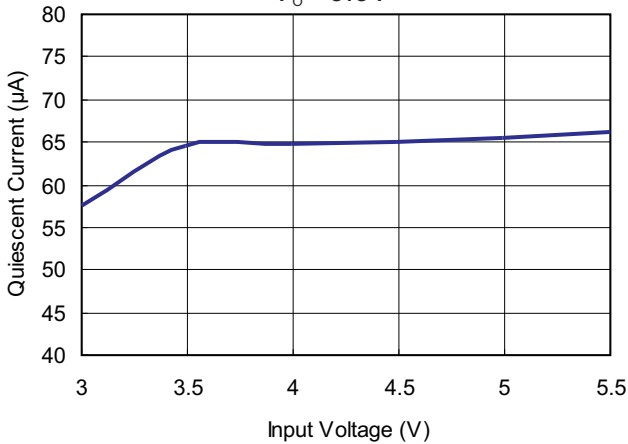
$V_o = 2.5V$



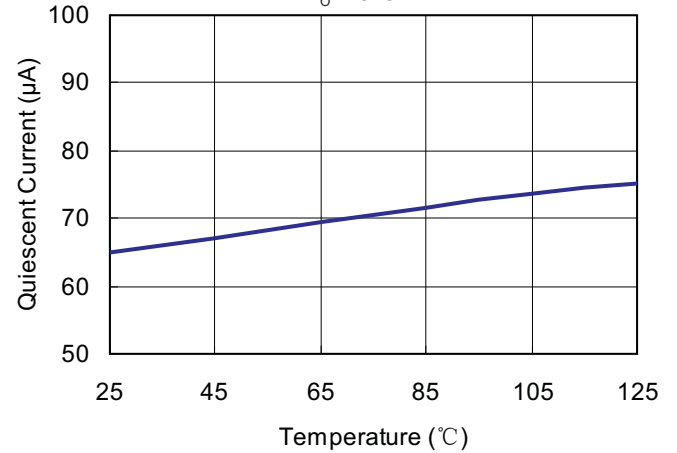
$V_o = 2.5V$



$V_o = 3.3V$

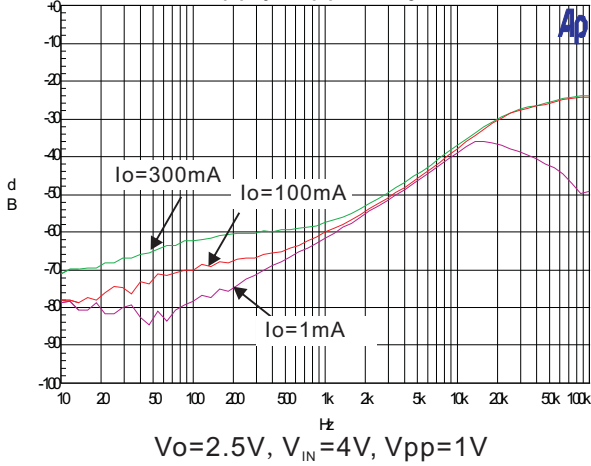


$V_o = 3.3V$

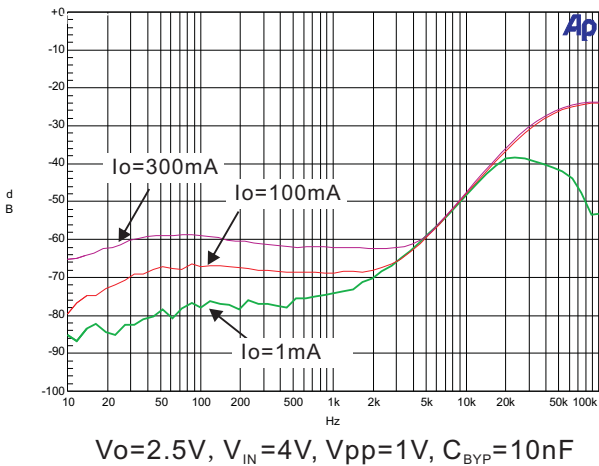
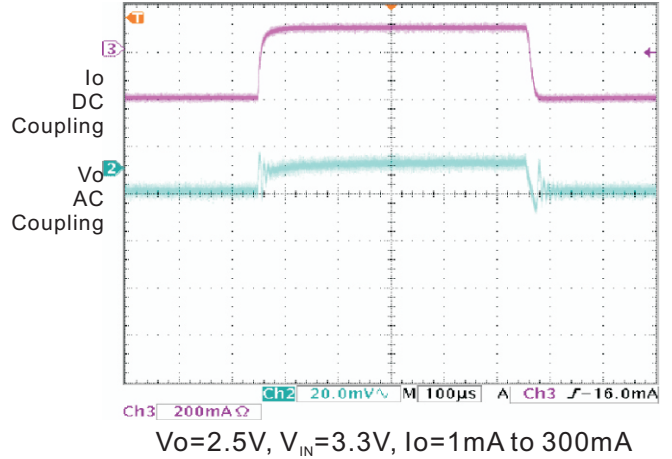


Typical Performance Characteristics

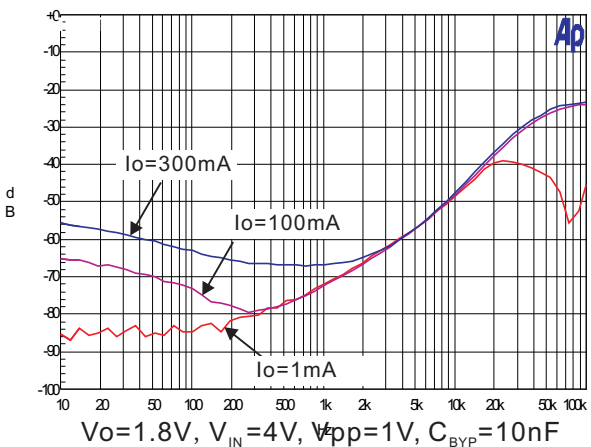
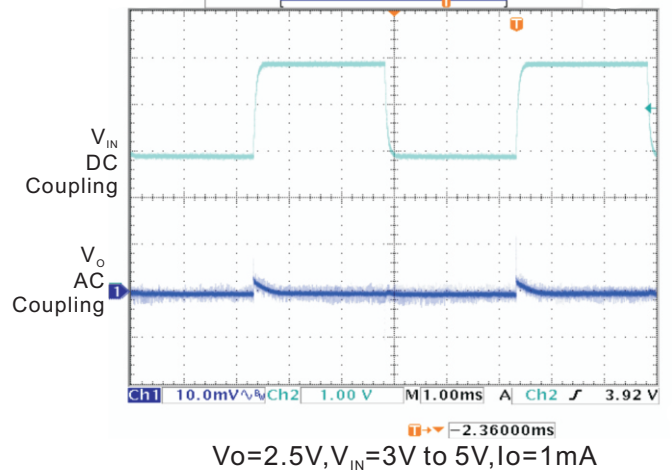
9. Power Supply Ripple Rejection



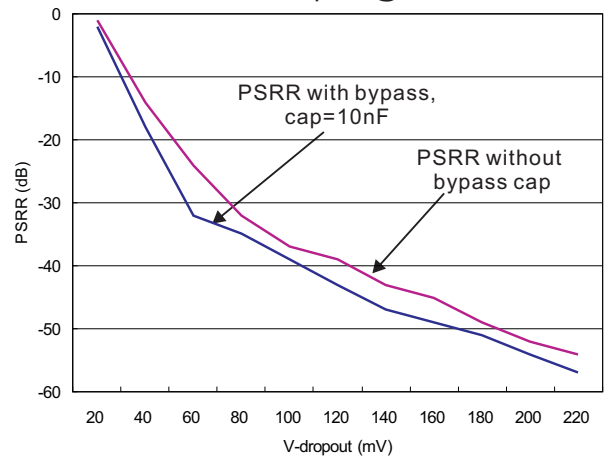
10. Load Transient Response



11. Line Transient Response

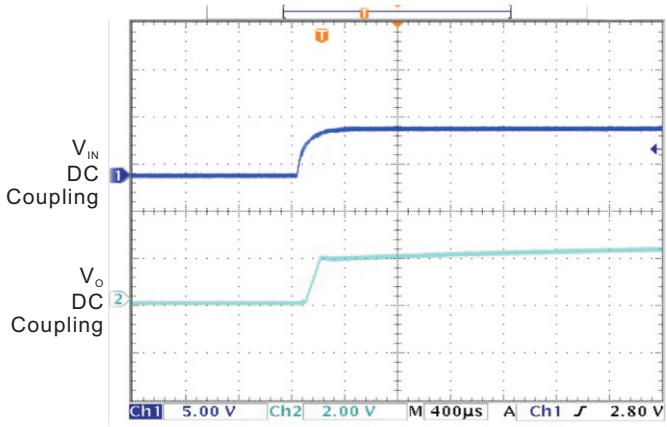


12. PSRR vs V-dropout@Vout=3.28V



Typical Performance Characteristics

13. Turn-on Response



Application Information

Capacitor Selection and Regulator Stability

Similar to any low dropout regulator, the external capacitors used with the PAM3101 must be carefully selected for regulator stability and performance.

A capacitor C_{IN} of more than $1\mu\text{F}$ can be employed in the input pin, while there is no upper limit for the capacitance of C_{IN} . Please note that the distance between C_{IN} and the input pin of the PAM3101 should not exceed 0.5 inch. Ceramic capacitors are suitable for the PAM3101. Capacitors with larger values and lower ESR (equivalent series resistance) provide better PSRR and line-transient response.

The PAM3101 is designed specifically to work with low ESR ceramic output capacitors in order to save space and improve performance. Using an output ceramic capacitor whose value is $>2.2\mu\text{F}$ with $\text{ESR} > 5\text{m}\Omega$ ensures stability.

A 10nF bypass capacitor connected to BYP pin is suggested for suppressing output noise. The capacitor, in series connection with an internal 200k Ω resistor, forms a low-pass filter for noise reduction. Increasing the capacitance will slightly decrease the output noise, but increase the start-up time.

Load Transient Considerations

Curve 10 of the PAM3101 load-transient response on page 10 shows two components of the output response: a DC shift from the output impedance due to the load current change and transient response. The DC shift is quite small due to excellent load regulation of the PAM3101. The transient spike, resulting from a step change

in the load current from 1mA to 300mA, is 20mV. The ESR of the output capacitor is critical to the transient spike. A larger capacitance along with smaller ESR results in a smaller spike.

Shutdown Input Operation

The PAM3101 is shut down by pulling the EN input low, and is turned on by tying the EN input to VIN.

Internal P-Channel Pass Transistor

The PAM3101 features a 0.75 Ω P-Channel MOSFET device as a pass transistor. The P-MOS pass transistor enables the PAM3101 to consume only 65 μA of ground current during low dropout, light-load, or heavy-load operations. This feature increases the battery operation life time.

Input-Output (Dropout) Voltage

A regulator's minimum input-output voltage difference (or dropout voltage) determines the lowest usable supply voltage. The PAM3101 has a typical 300mV dropout voltage. In battery-powered systems, this will determine the useful end-of-life battery voltage.

Current Limit and Short Circuit Protection

The PAM3101 features a current limit, which monitors and controls the gate voltage of the pass transistor. The output current can be limited to 400mA by regulating the gate voltage. The PAM3101 also has a built-in short circuit current limit.

Thermal considerations

Thermal protection limits power dissipation in the PAM3101. When the junction temperature exceeds 150°C, the OTP (Over Temperature Protection) starts the thermal shutdown and turns the pass transistor off. The pass transistor resumes operation after the junction temperature drops below 120°C.

For continuous operation, the junction temperature should be maintained below 125°C. The power dissipation is defined as:

$$P_D = (V_{IN} - V_{OUT}) * I_O + V_{IN} * I_{GND}$$

The maximum power dissipation depends on the thermal resistance of IC package, PCB layout, the rate of surrounding airflow and temperature difference between junction and ambient. The maximum power dissipation can be calculated by the following formula:

$$P_{D(MAX)} = (T_{J(MAX)} - T_A) / \theta_{JA}$$

Where $T_{J(MAX)}$ is the maximum allowable junction temperature 125°C, T_A is the ambient temperature and θ_{JA} is the thermal resistance from the junction to the ambient.

For example, as θ_{JA} is 250°C/W for the SOT-23 package and 180°C/W for the SOT-89 package

based on the standard JEDEC 51-3 for a single-layer thermal test board, the maximum power dissipation at $T_A=25^\circ\text{C}$ can be calculated by following formula:

$$P_{D(MAX)} = (125^\circ\text{C} - 25^\circ\text{C}) / 250 = 0.4\text{W} \quad \text{SOT-23}$$

$$P_{D(MAX)} = (125^\circ\text{C} - 25^\circ\text{C}) / 180 = 0.55\text{W} \quad \text{SOT-89}$$

It is also useful to calculate the junction temperature of the PAM3101 under a set of specific conditions. For example, suppose the input voltage $V_{IN}=3.3\text{V}$, the output current $I_O=300\text{mA}$ and the case temperature $T_A=40^\circ\text{C}$ measured by a thermocouple during operation, the power dissipation for the $V_O=2.8\text{V}$ version of the PAM3101 can be calculated as:

$$P_D = (3.3\text{V} - 2.8\text{V}) * 300\text{mA} + 3.3\text{V} * 70\mu\text{A} \cong 150\text{mW}$$

And the junction temperature, T_J , can be calculated as follows:

$$T_J = T_A + P_D * \theta_{JA}$$

$$T_J = 40^\circ\text{C} + 0.15\text{W} * 250^\circ\text{C}/\text{W}$$

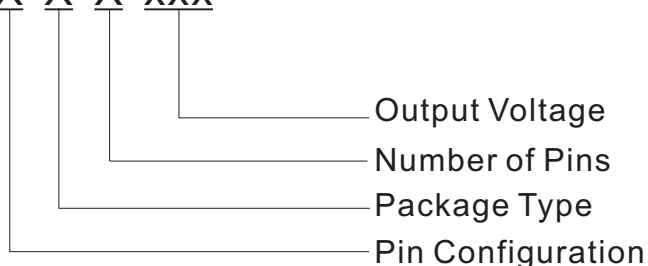
$$= 40^\circ\text{C} + 37.5^\circ\text{C}$$

$$= 77.5^\circ\text{C} < T_{J(MAX)} = 125^\circ\text{C}$$

For this operating condition, T_J is lower than the absolute maximum operating junction temperature, 125°C, so it is safe to use the PAM3101 in this configuration.

Ordering Information

PAM3101 X X X xxx



| Pin Configuration | | Package Type | Number of Pins | Output Voltage |
|-----------------------------------|-------------------------------|---------------|----------------|----------------|
| A Type | E Type | A: SOT-23 | A: 3 | 475: 4.75V |
| 1. GND | 1. VOUT | C: SOT-89 | K: 4 | 400: 4.0V |
| 2. VOUT | 2. GND | U: SC70 | B: 5 | 380: 3.8V |
| 3. VIN | 3. NC | K: DFN1.6X1.6 | F:6 | 330: 3.3V |
| B Type | 4.EN(EN default pull high) | | | 310: 3.1V |
| 1. VIN | 5. VIN | | | 300: 3.0V |
| 2. GND | F Type | | | 290: 2.9V |
| 3.EN (EN default floating) | 1.EN(EN default pull high) | | | 285: 2.85V |
| 4. NC | 2. NC | | | 280: 2.8V |
| 5. VOUT | 3. VIN | | | 250: 2.5V |
| C Type | 4. VOUT | | | 200: 2.0V |
| 1. VOUT | 5. NC | | | 180: 1.8V |
| 2. GND | 6. GND | | | 150: 1.5V |
| 3. VIN | G Type | | | |
| D Type | 1. VIN | | | |
| 1. VIN | 2. VOUT | | | |
| 2. GND | 3. GND | | | |
| 3.EN (EN default pull high) | H Type | | | |
| 4. BYP | 1. GND | | | |
| 5. VOUT | 2. VIN | | | |
| | 3. VOUT | | | |



Ordering Information(continued)

| Part Number | Output Voltage | Marking | Package Type | Shipping Package |
|---------------|----------------|---------|--------------|----------------------|
| PAM3101AAA475 | 4.75V | AATYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101AAA400 | 4.0V | AAMYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101AAA380 | 3.8V | AAOYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101AAA330 | 3.3V | AAKYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101AAA310 | 3.1V | AAPYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101AAA300 | 3.0V | AAJYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101AAA290 | 2.9V | AAQYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101AAA285 | 2.85V | AAIYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101AAA280 | 2.8V | AAHYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101AAA250 | 2.5V | AAGYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101AAA180 | 1.8V | AAEYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101AAA150 | 1.5V | AACYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA475 | 4.75V | AATYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA400 | 4.0V | AAMYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA380 | 3.8V | AAOYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA330 | 3.3V | AAKYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA310 | 3.1V | AAPYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA300 | 3.0V | AAJYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA290 | 2.9V | AAQYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA285 | 2.85V | AAIYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA280 | 2.8V | AAHYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA250 | 2.5V | AAGYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA180 | 1.8V | AAEYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101GAA150 | 1.5V | AACYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA475 | 4.75V | AATYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA400 | 4.0V | AAMYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA380 | 3.8V | AAOYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA330 | 3.3V | AAKYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA310 | 3.1V | AAPYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA300 | 3.0V | AAJYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA290 | 2.9V | AAQYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA285 | 2.85V | AAIYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA280 | 2.8V | AAHYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA250 | 2.5V | AAGYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA180 | 1.8V | AAEYW | SOT23-3 | 3,000Units/Tape&Reel |
| PAM3101CAA150 | 1.5V | AACYW | SOT23-3 | 3,000Units/Tape&Reel |



Ordering Information(continued)

| Part Number | Output Voltage | Marking | Package Type | Shipping Package |
|---------------|----------------|-----------------|--------------|----------------------|
| PAM3101CCA475 | 4.75V | P3101T XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101CCA400 | 4.0V | P3101M XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101CCA380 | 3.8V | P3101O XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101CCA330 | 3.3V | P3101K XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101CCA310 | 3.1V | P3101P XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101CCA300 | 3.0V | P3101J XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101CCA290 | 2.9V | P3101Q XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101CCA285 | 2.85V | P3101I XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101CCA280 | 2.8V | P3101H XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101CCA250 | 2.5V | P3101G XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101CCA180 | 1.8V | P3101E XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101CCA150 | 1.5V | P3101C XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101HCA475 | 4.75V | P3101T XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101HCA400 | 4.0V | P3101M XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101HCA380 | 3.8V | P3101O XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101HCA330 | 3.3V | P3101K XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101HCA310 | 3.1V | P3101P XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101HCA300 | 3.0V | P3101J XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101HCA290 | 2.90V | P3101Q XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101HCA285 | 2.85V | P3101I XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101HCA280 | 2.8V | P3101H XXXYW | SOT89-3 | 1,000Units/Tape&Reel |



Ordering Information(continued)

| Part Number | Output Voltage | Marking | Package Type | Shipping Package |
|---------------|----------------|-----------------|--------------|----------------------|
| PAM3101HCA250 | 2.5V | P3101G XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101HCA180 | 1.8V | P3101E XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101HCA150 | 1.5V | P3101C XXXYW | SOT89-3 | 1,000Units/Tape&Reel |
| PAM3101DAB475 | 4.75V | AATYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101DAB400 | 4.0V | AAMYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101DAB380 | 3.8V | AAOYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101DAB330 | 3.3V | AAKYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101DAB310 | 3.1V | AAPYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101DAB300 | 3.0V | AAJYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101DAB290 | 2.9V | AAQYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101DAB285 | 2.85V | AAIYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101DAB280 | 2.8V | AAHYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101DAB250 | 2.5V | AAGYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101DAB180 | 1.8V | AAEYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101DAB150 | 1.5V | AACYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101ECB475 | 4.75V | P3101T XXXYW | SOT89-5 | 1,000Units/Tape&Reel |
| PAM3101ECB400 | 4.0V | P3101M XXXYW | SOT89-5 | 1,000Units/Tape&Reel |
| PAM3101ECB380 | 3.8V | P3101O XXXYW | SOT89-5 | 1,000Units/Tape&Reel |
| PAM3101ECB330 | 3.3V | P3101K XXXYW | SOT89-5 | 1,000Units/Tape&Reel |
| PAM3101ECB310 | 3.1V | P3101P XXXYW | SOT89-5 | 1,000Units/Tape&Reel |
| PAM3101ECB300 | 3.0V | P3101J XXXYW | SOT89-5 | 1,000Units/Tape&Reel |
| PAM3101ECB290 | 2.9V | P3101Q XXXYW | SOT89-5 | 1,000Units/Tape&Reel |
| PAM3101ECB285 | 2.85V | P3101I XXXYW | SOT89-5 | 1,000Units/Tape&Reel |
| PAM3101ECB280 | 2.8V | P3101H XXXYW | SOT89-5 | 1,000Units/Tape&Reel |
| PAM3101ECB250 | 2.5V | P3101G XXXYW | SOT89-5 | 1,000Units/Tape&Reel |
| PAM3101ECB180 | 1.8V | P3101E XXXYW | SOT89-5 | 1,000Units/Tape&Reel |
| PAM3101ECB150 | 1.5V | P3101C XXXYW | SOT89-5 | 1,000Units/Tape&Reel |



Ordering Information

| Part Number | Output Voltage | Marking | Package Type | Shipping Package |
|---------------|----------------|---------|--------------|----------------------|
| PAM3101GUA475 | 4.75V | AATYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101GUA400 | 4.0V | AAMYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101GUA380 | 3.8V | AAOYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101GUA330 | 3.3V | AAKYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101GUA310 | 3.1V | AAPYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101GUA300 | 3.0V | AAJYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101GUA290 | 2.9V | AAQYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101GUA285 | 2.85V | AAIYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101GUA280 | 2.8V | AAHYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101GUA250 | 2.5V | AAGYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101GUA180 | 1.8V | AAEYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101GUA150 | 1.5V | AACYW | SC70-3L | 3,000Units/Tape&Reel |
| PAM3101DUB475 | 4.75V | AATYW | SC70-5L | 3,000Units/Tape&Reel |
| PAM3101DUB400 | 4.0V | AAMYW | SC70-5L | 3,000Units/Tape&Reel |
| PAM3101DUB380 | 3.8V | AAOYW | SC70-5L | 3,000Units/Tape&Reel |
| PAM3101DUB330 | 3.3V | AAKYW | SC70-5L | 3,000Units/Tape&Reel |
| PAM3101DUB310 | 3.1V | AAPYW | SC70-5L | 3,000Units/Tape&Reel |
| PAM3101DUB300 | 3.0V | AAJYW | SC70-5L | 3,000Units/Tape&Reel |
| PAM3101DUB290 | 2.9V | AAQYW | SC70-5L | 3,000Units/Tape&Reel |
| PAM3101DUB285 | 2.85V | AAIYW | SC70-5L | 3,000Units/Tape&Reel |
| PAM3101DUB280 | 2.8V | AAHYW | SC70-5L | 3,000Units/Tape&Reel |
| PAM3101DUB250 | 2.5V | AAGYW | SC70-5L | 3,000Units/Tape&Reel |
| PAM3101DUB180 | 1.8V | AAEYW | SC70-5L | 3,000Units/Tape&Reel |
| PAM3101DUB150 | 1.5V | AACYW | SC70-5L | 3,000Units/Tape&Reel |

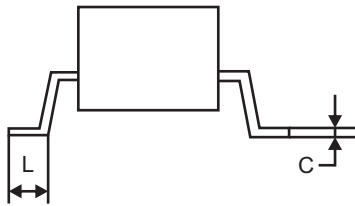
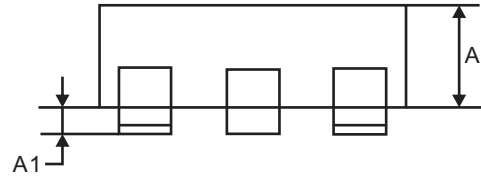
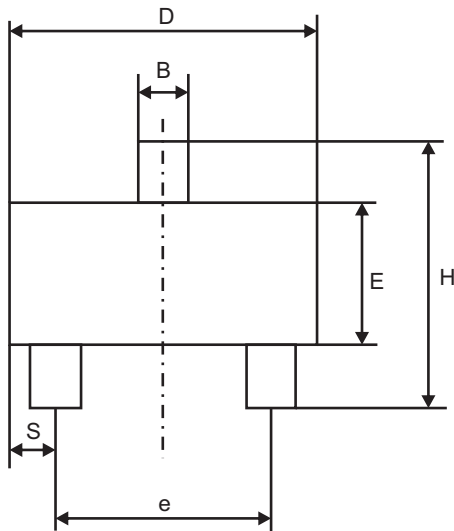


Ordering Information^(continued)

| Part Number | Output Voltage | Marking | Package Type | Shipping Package |
|---------------|----------------|---------|--------------|----------------------|
| PAM3101BAB475 | 4.75V | AATYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB400 | 4.0V | AAMYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB380 | 3.8V | AAOYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB330 | 3.3V | AAKYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB310 | 3.1V | AAPYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB300 | 3.0V | AAJYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB290 | 2.9V | AAQYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB285 | 2.85V | AAIYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB280 | 2.8V | AAHYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB250 | 2.5V | AAGYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB200 | 2.0V | AAFYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB180 | 1.8V | AAEYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101BAB150 | 1.5V | AACYW | SOT23-5 | 3,000Units/Tape&Reel |
| PAM3101FKF475 | 4.75V | AATYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF400 | 4.0V | AAMYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF380 | 3.8V | AAOYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF330 | 3.3V | AAKYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF310 | 3.1V | AAPYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF300 | 3.0V | AAJYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF290 | 2.9V | AAQYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF285 | 2.85V | AAIYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF280 | 2.8V | AAHYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF250 | 2.5V | AAGYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF200 | 2.0V | AAFYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF180 | 1.8V | AAEYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |
| PAM3101FKF150 | 1.5V | AACYW | DFN1.6x1.6 | 3,000Units/Tape&Reel |

Outline Dimension

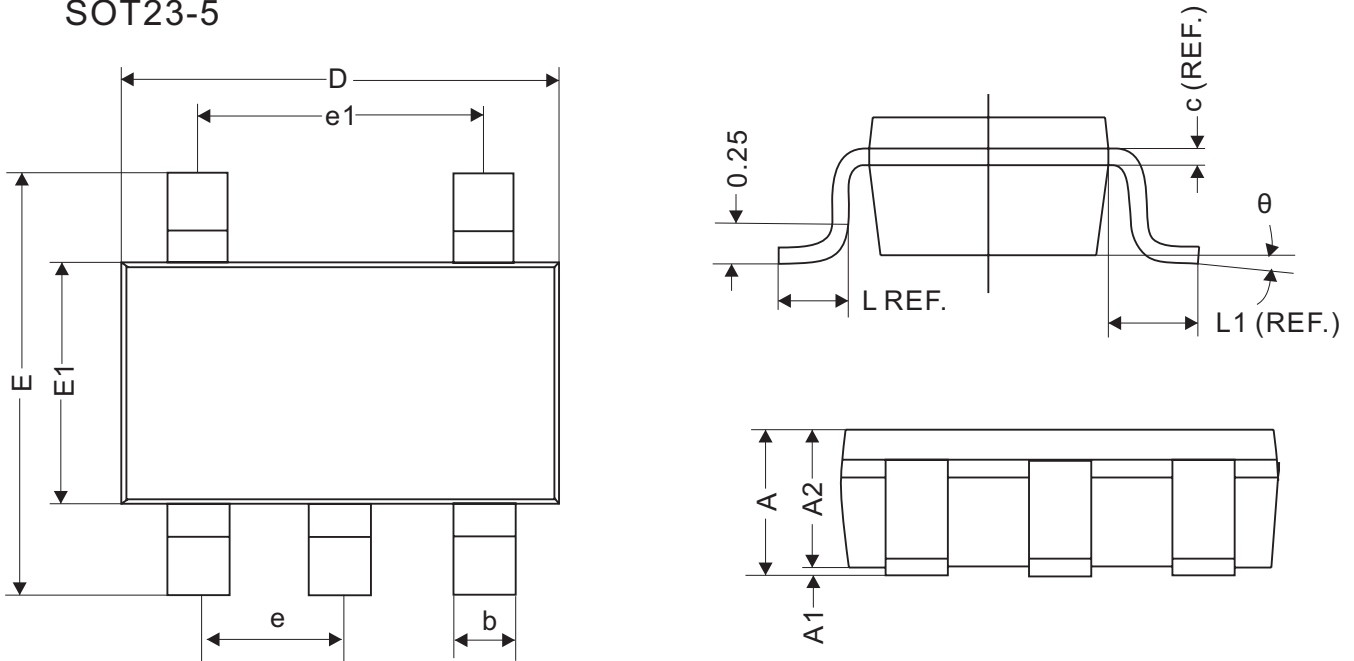
SOT23-3



| Dim | Millimeters | | |
|-----|-------------|-------|------|
| | Min. | Typ. | Max. |
| A | 1.00 | 1.15 | 1.30 |
| A1 | 0.00 | 0.05 | 0.10 |
| B | 0.35 | 0.43 | 0.51 |
| C | 0.10 | 0.175 | 0.25 |
| D | 2.70 | 2.90 | 3.10 |
| E | 1.40 | 1.60 | 1.80 |
| e | 1.90BSC | | |
| H | 2.40 | 2.70 | 3.00 |
| L | 0.37 | | |

Outline Dimension

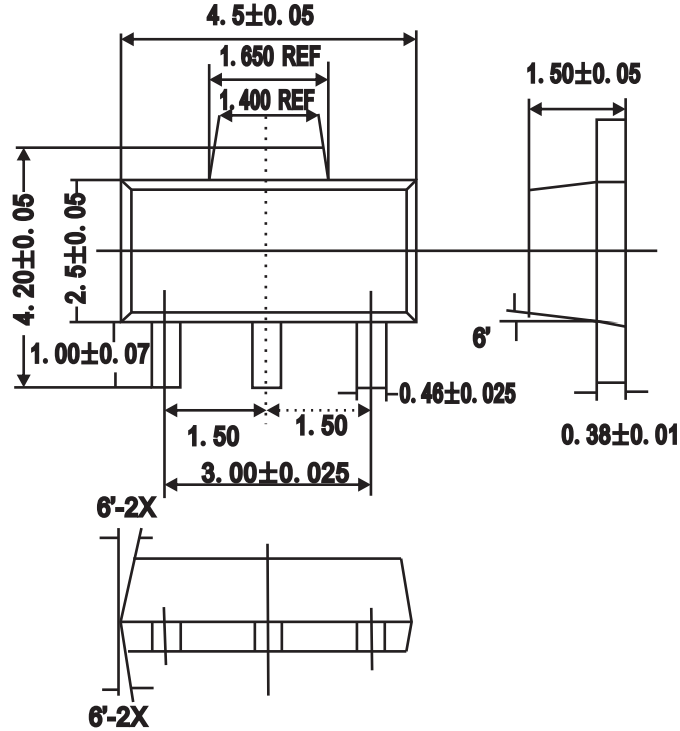
SOT23-5



| REF. | Millimeter | |
|------|------------|------|
| | Min | Max |
| A | 1.10MAX | |
| A1 | 0 | 0.10 |
| A2 | 0.70 | 1 |
| c | 0.12REF. | |
| D | 2.70 | 3.10 |
| E | 2.60 | 3.00 |
| E1 | 1.40 | 1.80 |
| L | 0.45REF. | |
| L1 | 0.60REF. | |
| θ | 0° | 10° |
| b | 0.30 | 0.50 |
| e | 0.95REF. | |
| e1 | 1.90REF. | |

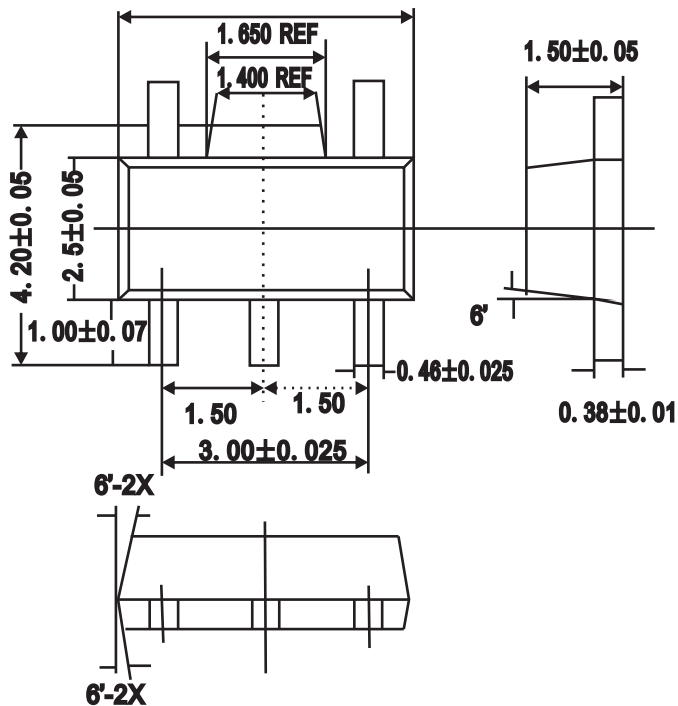
Outline Dimension

SOT89-3



(Unit: mm)

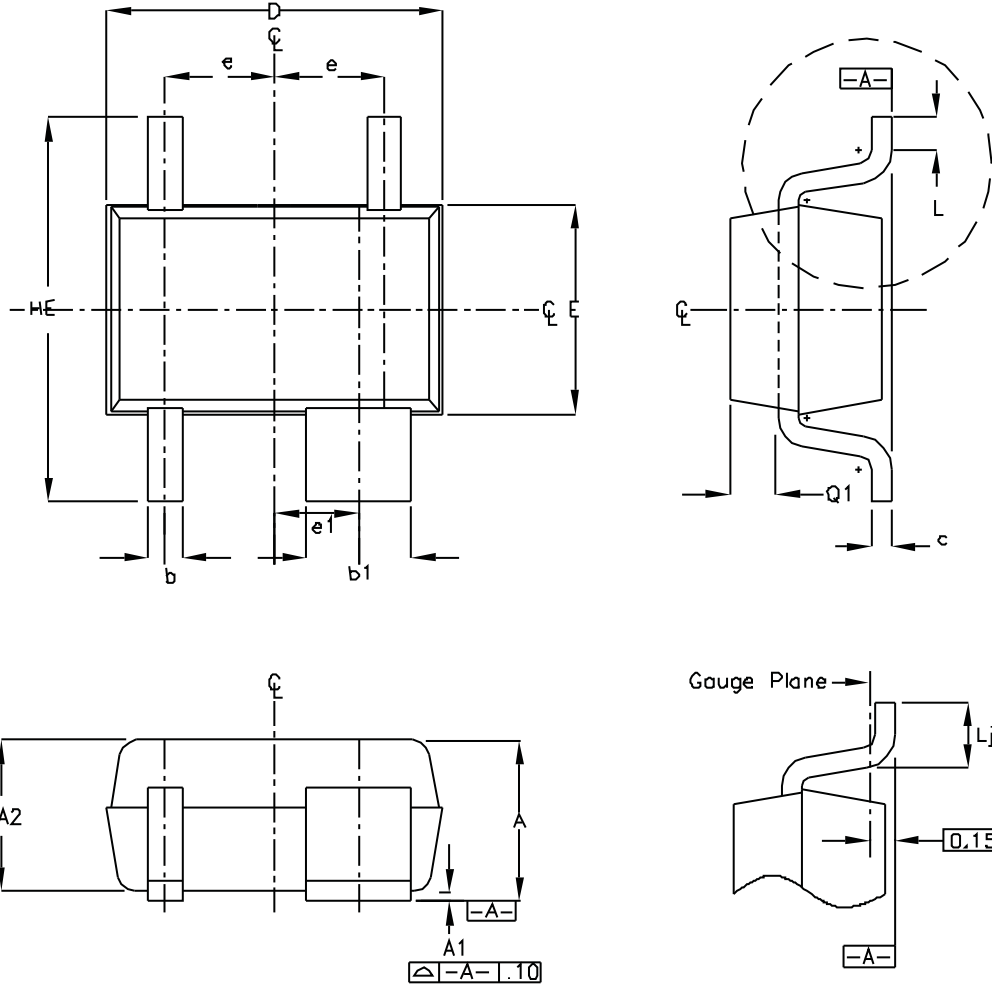
SOT89-5



(Unit: mm)

Outline Dimension

SC70-4L

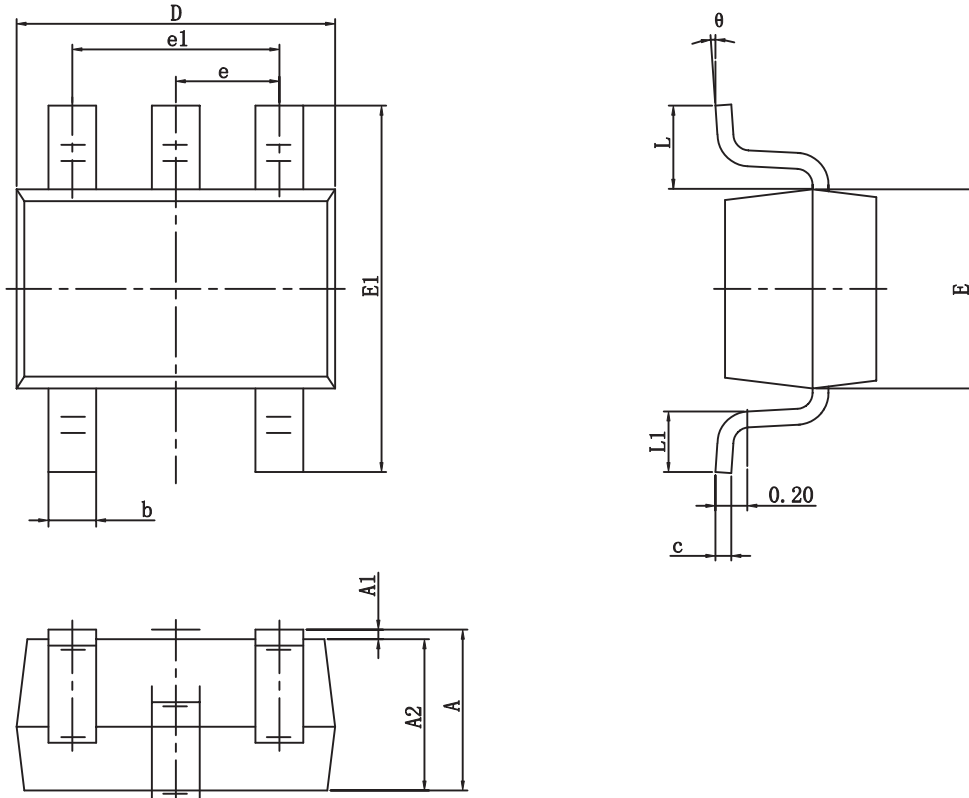


| SYMBOL | MIN | MAX |
|--------|----------|-------|
| e | 0.65 BSC | |
| $e1$ | 0.50 BSC | |
| D | 1.80 | 2.20 |
| b | 0.15 | 0.30 |
| $b1$ | 0.575 | 0.700 |
| E | 1.15 | 1.35 |
| HE | 1.80 | 2.40 |
| $Q1$ | 0.10 | 0.40 |
| $A2$ | 0.80 | 1.00 |
| $A1$ | 0.00 | 0.10 |
| A | 0.80 | 1.10 |
| c | 0.10 | 0.18 |
| L | 0.10 | 0.30 |
| Lj | 0.26 | 0.46 |

- 1) ALL DIMENSIONS ARE IN MILLIMETERS
- 2) DIMENSIONS ARE INCLUSIVE OF PLATING
- 3) DIMENSIONS ARE EXCLUSIVE OF MOLD FLASH & METAL BURR
- 4) CUSTOM LEADCOUNT VARIATION OF JEITA SC70

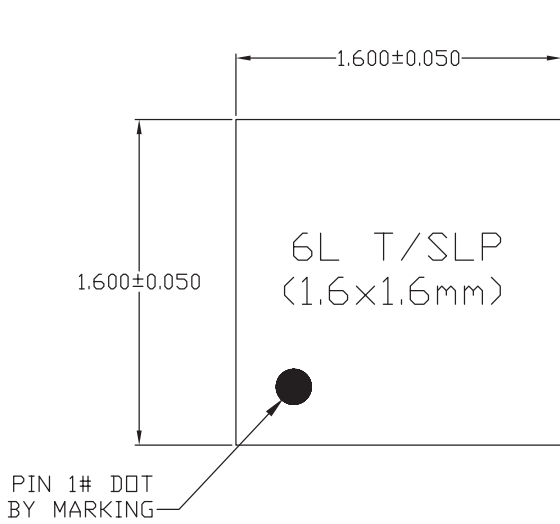
Outline Dimension

SC70-5L

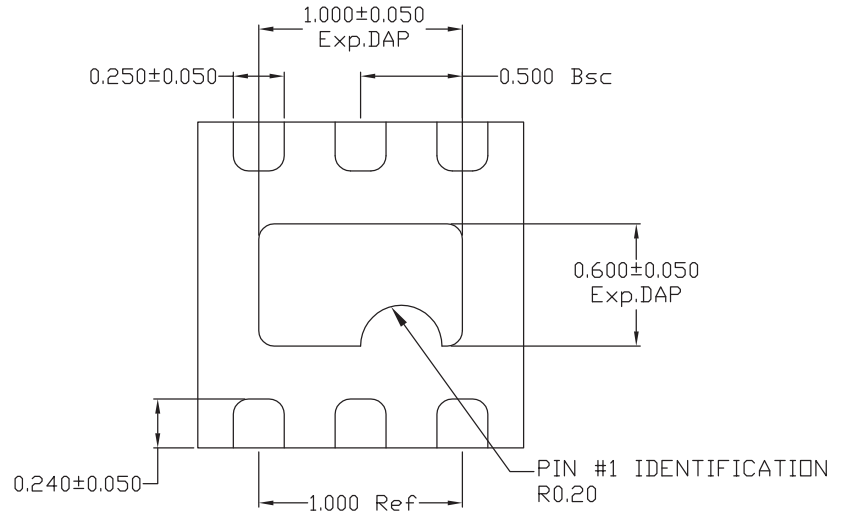


| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.100 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.000 | 0.035 | 0.039 |
| b | 0.150 | 0.350 | 0.006 | 0.014 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.000 | 2.200 | 0.079 | 0.087 |
| E | 1.150 | 1.350 | 0.045 | 0.053 |
| E1 | 2.150 | 2.450 | 0.085 | 0.096 |
| e | 0.650 TYP | | 0.026 TYP | |
| e1 | 1.200 | 1.400 | 0.047 | 0.055 |
| L | 0.525 REF | | 0.021 REF | |
| L1 | 0.260 | 0.460 | 0.010 | 0.018 |
| θ | 0 | 8 | 0 | 8 |

Outline Dimension

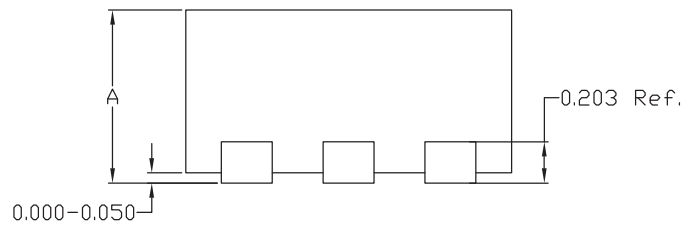


TOP VIEW



BOTTOM VIEW

| | | |
|---|------|-------|
| A | MAX. | 0.800 |
| | NCM. | 0.750 |
| | MIN. | 0.700 |



SIDE VIEW

Note: All dimensions are in Millimeters.