

## 30V Input, 100mA Current Limit, Micropower Linear Regulator

**UM1431S-xx SOT23-3**  
**UM1431S5-xx/UM1441S -xx SOT23-5**  
**UM1431Y-xx/UM1431B-xx SOT89-3**  
**UM1441Y-xx SOT89-5**

### General Description

The UM1431/1441 series are high input voltage low quiescent current regulators implemented in CMOS technology. It can accept input voltage as high as 30V with 100mA output current limit. The output voltages are selectable in 100mV steps within a range of 2.0V to 6.0V. 100mA output current limiting is built in to provide protection for the regulators against fault conditions. CMOS technology ensures low voltage drop and low quiescent current.

With a chip enable control pin, the UM1441 can turn off the output and greatly reduce the power consumption by setting the enable pin low.

The UM1431 is available in SOT23-3, SOT23-5 and SOT89-3 packages. The UM1441 is available in SOT23-5 and SOT89-5 packages.

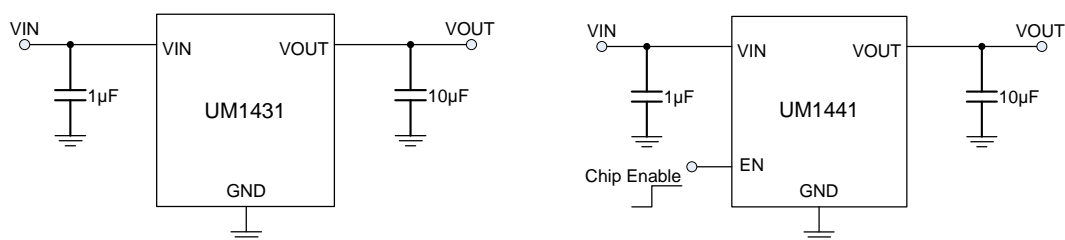
### Applications

- Communication Equipment
- Audio/Video Equipment
- Industrial Control
- Infotainment

### Features

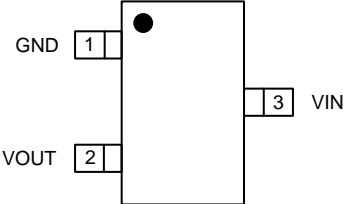
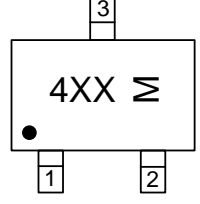
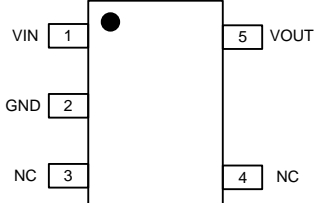
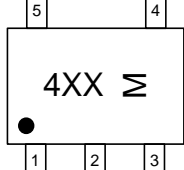
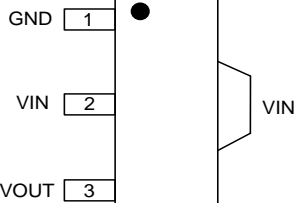
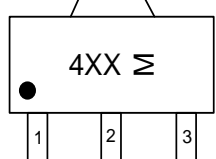
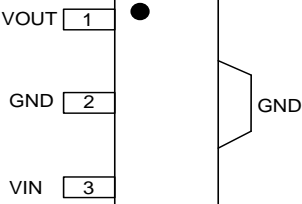
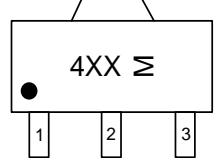
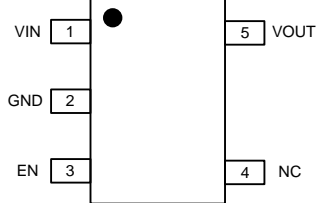
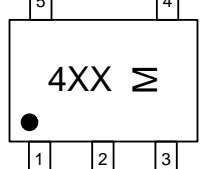
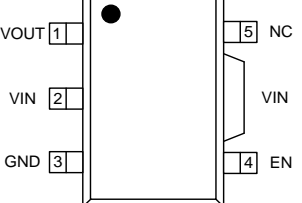
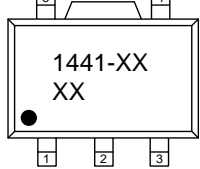
- Input Voltage Range: 3.6V to 30V
- 100mA Output Current Limit
- $\pm 3\%$  Voltage Accuracy at 30mA
- Low Dropout Voltage:  
250mV (Typical) at 30mA
- Low Quiescent Current:  
5.8 $\mu$ A @  $V_{IN}=30V$  (Typical)
- Available Fixed Output Voltage from 2.0V to 6.0V with 0.1V Step
- With Enable Control (UM1441S-xx, UM1441Y-xx)
- Output Current Limit
- UM1431: Low Profile SOT23-3, SOT23-5 and SOT89-3 Packages  
UM1441: Low Profile SOT23-5 and SOT89-5 Packages

### Typical Application Circuit



## Pin Configurations

## Top View

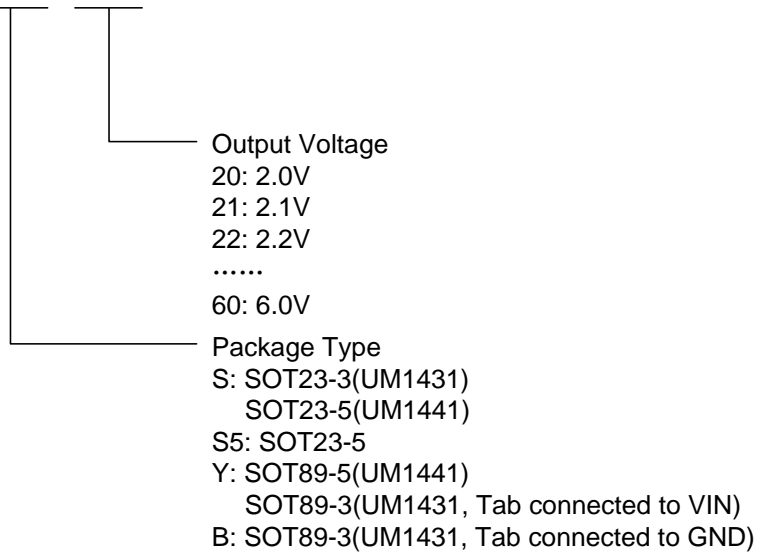
|  |   |
|--|---|
|  <p><b>UM1431S-xx SOT23-3</b></p>   |  <p><b>M: Month Code</b><br/><b>UM1431S-xx</b><br/><b>SOT23-3</b></p>   |
|  <p><b>UM1431S5-xx SOT23-5</b></p>  |  <p><b>M: Month Code</b><br/><b>UM1431S5-xx</b><br/><b>SOT23-5</b></p>  |
|  <p><b>UM1431Y-xx SOT89-3</b></p>  |  <p><b>M: Month Code</b><br/><b>UM1431Y-xx</b><br/><b>SOT89-3</b></p>  |
|  <p><b>UM1431B-xx SOT89-3</b></p> |  <p><b>M: Month Code</b><br/><b>UM1431B-xx</b><br/><b>SOT89-3</b></p> |
|  <p><b>UM1441S-xx SOT23-5</b></p> |  <p><b>M: Month Code</b><br/><b>UM1441S-xx</b><br/><b>SOT23-5</b></p> |
|  <p><b>UM1441Y-xx SOT89-5</b></p> |  <p><b>XX: Week Code</b><br/><b>UM1441Y-xx</b><br/><b>SOT89-5</b></p> |

**Pin Description**

| Pin Name | Pin Function                                      |
|----------|---|
| EN       | Enable Input: High=Activate LDO, Low=Shutdown LDO |
| GND      | Ground  |
| VIN      | Supply Input                                      |
| VOUT     | Voltage Regulated Output                          |
| NC       | Not Connected                                     |

**Naming Information**

UM1431/1441 □ □ - □ □



**Ordering Information**

| Part Number | Output Voltage | Packaging Type | Marking Code | Shipping Qty                 |
|-------------|----------------|----------------|--------------|------------------------------|
| UM1431S-20  | 2.0V           | SOT23-3        | 4KA          | 3000pcs/7Inch<br>Tape & Reel |
| UM1431S-21  | 2.1V           |                | 4KB          |                              |
| UM1431S-22  | 2.2V           |                | 4K2          |                              |
| UM1431S-23  | 2.3V           |                | 4K3          |                              |
| UM1431S-24  | 2.4V           |                | 4K4          |                              |
| UM1431S-25  | 2.5V           |                | 4K5          |                              |
| UM1431S-26  | 2.6V           |                | 4K6          |                              |
| UM1431S-27  | 2.7V           |                | 4K7          |                              |
| UM1431S-28  | 2.8V           |                | 4K8          |                              |
| UM1431S-29  | 2.9V           |                | 4K9          |                              |
| UM1431S-30  | 3.0V           |                | 4KC          |                              |
| UM1431S-31  | 3.1V           |                | 4KD          |                              |
| UM1431S-32  | 3.2V           |                | 4KE          |                              |
| UM1431S-33  | 3.3V           |                | 4KF          |                              |
| UM1431S-34  | 3.4V           |                | 4KH          |                              |
| UM1431S-35  | 3.5V           |                | 4KL          |                              |
| UM1431S-36  | 3.6V           |                | 4KM          |                              |
| UM1431S-37  | 3.7V           |                | 4KJ          |                              |
| UM1431S-38  | 3.8V           |                | 4KK          |                              |
| UM1431S-39  | 3.9V           |                | 4KN          |                              |
| UM1431S-40  | 4.0V           |                | 4KP          |                              |
| UM1431S-41  | 4.1V           |                | 4KQ          |                              |
| UM1431S-42  | 4.2V           |                | 4KR          |                              |
| UM1431S-43  | 4.3V           |                | 4KS          |                              |
| UM1431S-44  | 4.4V           |                | 4KT          |                              |
| UM1431S-45  | 4.5V           |                | 4KY          |                              |
| UM1431S-46  | 4.6V           |                | 4KU          |                              |
| UM1431S-47  | 4.7V           |                | 4KZ          |                              |
| UM1431S-48  | 4.8V           |                | 4NA          |                              |
| UM1431S-49  | 4.9V           |                | 4NB          |                              |
| UM1431S-50  | 5.0V           |                | 4NC          |                              |
| UM1431S-51  | 5.1V           |                | 4ND          |                              |
| UM1431S-52  | 5.2V           |                | 4N2          |                              |
| UM1431S-53  | 5.3V           |                | 4N3          |                              |
| UM1431S-54  | 5.4V           |                | 4N4          |                              |
| UM1431S-55  | 5.5V           |                | 4N5          |                              |
| UM1431S-56  | 5.6V           |                | 4N6          |                              |
| UM1431S-57  | 5.7V           |                | 4N7          |                              |
| UM1431S-58  | 5.8V           |                | 4N8          |                              |
| UM1431S-59  | 5.9V           |                | 4N9          |                              |
| UM1431S-60  | 6.0V           |                | 4NE          |                              |

**Ordering Information (Continued)**

| Part Number | Output Voltage | Packaging Type | Marking Code | Shipping Qty                 |
|-------------|----------------|----------------|--------------|------------------------------|
| UM1431S5-20 | 2.0V           | SOT23-5        | 4PA          | 3000pcs/7Inch<br>Tape & Reel |
| UM1431S5-21 | 2.1V           |                | 4PB          |                              |
| UM1431S5-22 | 2.2V           |                | 4P2          |                              |
| UM1431S5-23 | 2.3V           |                | 4P3          |                              |
| UM1431S5-24 | 2.4V           |                | 4P4          |                              |
| UM1431S5-25 | 2.5V           |                | 4P5          |                              |
| UM1431S5-26 | 2.6V           |                | 4P6          |                              |
| UM1431S5-27 | 2.7V           |                | 4P7          |                              |
| UM1431S5-28 | 2.8V           |                | 4P8          |                              |
| UM1431S5-29 | 2.9V           |                | 4P9          |                              |
| UM1431S5-30 | 3.0V           |                | 4PC          |                              |
| UM1431S5-31 | 3.1V           |                | 4PD          |                              |
| UM1431S5-32 | 3.2V           |                | 4PE          |                              |
| UM1431S5-33 | 3.3V           |                | 4PF          |                              |
| UM1431S5-34 | 3.4V           |                | 4PH          |                              |
| UM1431S5-35 | 3.5V           |                | 4PL          |                              |
| UM1431S5-36 | 3.6V           |                | 4PM          |                              |
| UM1431S5-37 | 3.7V           |                | 4PJ          |                              |
| UM1431S5-38 | 3.8V           |                | 4PK          |                              |
| UM1431S5-39 | 3.9V           |                | 4PN          |                              |
| UM1431S5-40 | 4.0V           |                | 4PP          |                              |
| UM1431S5-41 | 4.1V           |                | 4PQ          |                              |
| UM1431S5-42 | 4.2V           |                | 4PR          |                              |
| UM1431S5-43 | 4.3V           |                | 4PS          |                              |
| UM1431S5-44 | 4.4V           |                | 4PT          |                              |
| UM1431S5-45 | 4.5V           |                | 4PY          |                              |
| UM1431S5-46 | 4.6V           |                | 4PU          |                              |
| UM1431S5-47 | 4.7V           |                | 4PZ          |                              |
| UM1431S5-48 | 4.8V           |                | 4QA          |                              |
| UM1431S5-49 | 4.9V           |                | 4QB          |                              |
| UM1431S5-50 | 5.0V           |                | 4QC          |                              |
| UM1431S5-51 | 5.1V           |                | 4QD          |                              |
| UM1431S5-52 | 5.2V           |                | 4Q2          |                              |
| UM1431S5-53 | 5.3V           |                | 4Q3          |                              |
| UM1431S5-54 | 5.4V           |                | 4Q4          |                              |
| UM1431S5-55 | 5.5V           |                | 4Q5          |                              |
| UM1431S5-56 | 5.6V           |                | 4Q6          |                              |
| UM1431S5-57 | 5.7V           |                | 4Q7          |                              |
| UM1431S5-58 | 5.8V           |                | 4Q8          |                              |
| UM1431S5-59 | 5.9V           |                | 4Q9          |                              |
| UM1431S5-60 | 6.0V           |                | 4QE          |                              |

**Ordering Information (Continued)**

| Part Number | Output Voltage | Packaging Type                       | Marking Code | Shipping Qty                 |
|-------------|----------------|--------------------------------------|--------------|------------------------------|
| UM1431Y-20  | 2.0V           | SOT89-3<br>(Tab connected to<br>VIN) | 4RA          | 1000pcs/7Inch<br>Tape & Reel |
| UM1431Y-21  | 2.1V           |                                      | 4RB          |                              |
| UM1431Y-22  | 2.2V           |                                      | 4R2          |                              |
| UM1431Y-23  | 2.3V           |                                      | 4R3          |                              |
| UM1431Y-24  | 2.4V           |                                      | 4R4          |                              |
| UM1431Y-25  | 2.5V           |                                      | 4R5          |                              |
| UM1431Y-26  | 2.6V           |                                      | 4R6          |                              |
| UM1431Y-27  | 2.7V           |                                      | 4R7          |                              |
| UM1431Y-28  | 2.8V           |                                      | 4R8          |                              |
| UM1431Y-29  | 2.9V           |                                      | 4R9          |                              |
| UM1431Y-30  | 3.0V           |                                      | 4RC          |                              |
| UM1431Y-31  | 3.1V           |                                      | 4RD          |                              |
| UM1431Y-32  | 3.2V           |                                      | 4RE          |                              |
| UM1431Y-33  | 3.3V           |                                      | 4RF          |                              |
| UM1431Y-34  | 3.4V           |                                      | 4RH          |                              |
| UM1431Y-35  | 3.5V           |                                      | 4RL          |                              |
| UM1431Y-36  | 3.6V           |                                      | 4RM          |                              |
| UM1431Y-37  | 3.7V           |                                      | 4RJ          |                              |
| UM1431Y-38  | 3.8V           |                                      | 4RK          |                              |
| UM1431Y-39  | 3.9V           |                                      | 4RN          |                              |
| UM1431Y-40  | 4.0V           |                                      | 4RP          |                              |
| UM1431Y-41  | 4.1V           |                                      | 4RQ          |                              |
| UM1431Y-42  | 4.2V           |                                      | 4RR          |                              |
| UM1431Y-43  | 4.3V           |                                      | 4RS          |                              |
| UM1431Y-44  | 4.4V           |                                      | 4RT          |                              |
| UM1431Y-45  | 4.5V           |                                      | 4RY          |                              |
| UM1431Y-46  | 4.6V           |                                      | 4RU          |                              |
| UM1431Y-47  | 4.7V           |                                      | 4RZ          |                              |
| UM1431Y-48  | 4.8V           |                                      | 4FF          |                              |
| UM1431Y-49  | 4.9V           |                                      | 4FH          |                              |
| UM1431Y-50  | 5.0V           |                                      | 4FL          |                              |
| UM1431Y-51  | 5.1V           |                                      | 4FM          |                              |
| UM1431Y-52  | 5.2V           |                                      | 4FJ          |                              |
| UM1431Y-53  | 5.3V           |                                      | 4FK          |                              |
| UM1431Y-54  | 5.4V           |                                      | 4FN          |                              |
| UM1431Y-55  | 5.5V           |                                      | 4FP          |                              |
| UM1431Y-56  | 5.6V           |                                      | 4FQ          |                              |
| UM1431Y-57  | 5.7V           |                                      | 4FR          |                              |
| UM1431Y-58  | 5.8V           |                                      | 4FS          |                              |
| UM1431Y-59  | 5.9V           |                                      | 4FT          |                              |
| UM1431Y-60  | 6.0V           |                                      | 4FY          |                              |

**Ordering Information (Continued)**

| Part Number | Output Voltage | Packaging Type                       | Marking Code | Shipping Qty                 |
|-------------|----------------|--------------------------------------|--------------|------------------------------|
| UM1431B-20  | 2.0V           | SOT89-3<br>(Tab connected to<br>GND) | 4SA          | 1000pcs/7Inch<br>Tape & Reel |
| UM1431B-21  | 2.1V           |                                      | 4SB          |                              |
| UM1431B-22  | 2.2V           |                                      | 4S2          |                              |
| UM1431B-23  | 2.3V           |                                      | 4S3          |                              |
| UM1431B-24  | 2.4V           |                                      | 4S4          |                              |
| UM1431B-25  | 2.5V           |                                      | 4S5          |                              |
| UM1431B-26  | 2.6V           |                                      | 4S6          |                              |
| UM1431B-27  | 2.7V           |                                      | 4S7          |                              |
| UM1431B-28  | 2.8V           |                                      | 4S8          |                              |
| UM1431B-29  | 2.9V           |                                      | 4S9          |                              |
| UM1431B-30  | 3.0V           |                                      | 4SC          |                              |
| UM1431B-31  | 3.1V           |                                      | 4SD          |                              |
| UM1431B-32  | 3.2V           |                                      | 4SE          |                              |
| UM1431B-33  | 3.3V           |                                      | 4SF          |                              |
| UM1431B-34  | 3.4V           |                                      | 4SH          |                              |
| UM1431B-35  | 3.5V           |                                      | 4SL          |                              |
| UM1431B-36  | 3.6V           |                                      | 4SM          |                              |
| UM1431B-37  | 3.7V           |                                      | 4SJ          |                              |
| UM1431B-38  | 3.8V           |                                      | 4SK          |                              |
| UM1431B-39  | 3.9V           |                                      | 4SN          |                              |
| UM1431B-40  | 4.0V           |                                      | 4SP          |                              |
| UM1431B-41  | 4.1V           |                                      | 4SQ          |                              |
| UM1431B-42  | 4.2V           |                                      | 4SR          |                              |
| UM1431B-43  | 4.3V           |                                      | 4SS          |                              |
| UM1431B-44  | 4.4V           |                                      | 4ST          |                              |
| UM1431B-45  | 4.5V           |                                      | 4SY          |                              |
| UM1431B-46  | 4.6V           |                                      | 4SU          |                              |
| UM1431B-47  | 4.7V           |                                      | 4SZ          |                              |
| UM1431B-48  | 4.8V           |                                      | 4JF          |                              |
| UM1431B-49  | 4.9V           |                                      | 4JH          |                              |
| UM1431B-50  | 5.0V           |                                      | 4JL          |                              |
| UM1431B-51  | 5.1V           |                                      | 4JM          |                              |
| UM1431B-52  | 5.2V           |                                      | 4JJ          |                              |
| UM1431B-53  | 5.3V           |                                      | 4JK          |                              |
| UM1431B-54  | 5.4V           |                                      | 4JN          |                              |
| UM1431B-55  | 5.5V           |                                      | 4JP          |                              |
| UM1431B-56  | 5.6V           |                                      | 4JQ          |                              |
| UM1431B-57  | 5.7V           |                                      | 4JR          |                              |
| UM1431B-58  | 5.8V           |                                      | 4JS          |                              |
| UM1431B-59  | 5.9V           |                                      | 4JT          |                              |
| UM1431B-60  | 6.0V           |                                      | 4JY          |                              |

**Ordering Information (Continued)**

| Part Number | Output Voltage | Packaging Type | Marking Code | Shipping Qty                 |
|-------------|----------------|----------------|--------------|------------------------------|
| UM1441S-20  | 2.0V           | SOT23-5        | 4TA          | 3000pcs/7Inch<br>Tape & Reel |
| UM1441S-21  | 2.1V           |                | 4TB          |                              |
| UM1441S-22  | 2.2V           |                | 4T2          |                              |
| UM1441S-23  | 2.3V           |                | 4T3          |                              |
| UM1441S-24  | 2.4V           |                | 4T4          |                              |
| UM1441S-25  | 2.5V           |                | 4T5          |                              |
| UM1441S-26  | 2.6V           |                | 4T6          |                              |
| UM1441S-27  | 2.7V           |                | 4T7          |                              |
| UM1441S-28  | 2.8V           |                | 4T8          |                              |
| UM1441S-29  | 2.9V           |                | 4T9          |                              |
| UM1441S-30  | 3.0V           |                | 4TC          |                              |
| UM1441S-31  | 3.1V           |                | 4TD          |                              |
| UM1441S-32  | 3.2V           |                | 4TE          |                              |
| UM1441S-33  | 3.3V           |                | 4TF          |                              |
| UM1441S-34  | 3.4V           |                | 4TH          |                              |
| UM1441S-35  | 3.5V           |                | 4TL          |                              |
| UM1441S-36  | 3.6V           |                | 4TM          |                              |
| UM1441S-37  | 3.7V           |                | 4TJ          |                              |
| UM1441S-38  | 3.8V           |                | 4TK          |                              |
| UM1441S-39  | 3.9V           |                | 4TN          |                              |
| UM1441S-40  | 4.0V           |                | 4TP          |                              |
| UM1441S-41  | 4.1V           |                | 4TQ          |                              |
| UM1441S-42  | 4.2V           |                | 4TR          |                              |
| UM1441S-43  | 4.3V           |                | 4TS          |                              |
| UM1441S-44  | 4.4V           |                | 4TT          |                              |
| UM1441S-45  | 4.5V           |                | 4TY          |                              |
| UM1441S-46  | 4.6V           |                | 4TU          |                              |
| UM1441S-47  | 4.7V           |                | 4TZ          |                              |
| UM1441S-48  | 4.8V           |                | 4QF          |                              |
| UM1441S-49  | 4.9V           |                | 4QH          |                              |
| UM1441S-50  | 5.0V           |                | 4QL          |                              |
| UM1441S-51  | 5.1V           |                | 4QM          |                              |
| UM1441S-52  | 5.2V           |                | 4QJ          |                              |
| UM1441S-53  | 5.3V           |                | 4QK          |                              |
| UM1441S-54  | 5.4V           |                | 4QN          |                              |
| UM1441S-55  | 5.5V           |                | 4QP          |                              |
| UM1441S-56  | 5.6V           |                | 4QQ          |                              |
| UM1441S-57  | 5.7V           |                | 4QR          |                              |
| UM1441S-58  | 5.8V           |                | 4QS          |                              |
| UM1441S-59  | 5.9V           |                | 4QT          |                              |
| UM1441S-60  | 6.0V           |                | 4QY          |                              |



**Ordering Information (Continued)**

| Part Number | Output Voltage | Packaging Type | Marking Code | Shipping Qty                 |
|-------------|----------------|----------------|--------------|------------------------------|
| UM1441Y-20  | 2.0V           | SOT89-5        | 1441-20      | 1000pcs/7Inch<br>Tape & Reel |
| UM1441Y-21  | 2.1V           |                | 1441-21      |                              |
| UM1441Y-22  | 2.2V           |                | 1441-22      |                              |
| UM1441Y-23  | 2.3V           |                | 1441-23      |                              |
| UM1441Y-24  | 2.4V           |                | 1441-24      |                              |
| UM1441Y-25  | 2.5V           |                | 1441-25      |                              |
| UM1441Y-26  | 2.6V           |                | 1441-26      |                              |
| UM1441Y-27  | 2.7V           |                | 1441-27      |                              |
| UM1441Y-28  | 2.8V           |                | 1441-28      |                              |
| UM1441Y-29  | 2.9V           |                | 1441-29      |                              |
| UM1441Y-30  | 3.0V           |                | 1441-30      |                              |
| UM1441Y-31  | 3.1V           |                | 1441-31      |                              |
| UM1441Y-32  | 3.2V           |                | 1441-32      |                              |
| UM1441Y-33  | 3.3V           |                | 1441-33      |                              |
| UM1441Y-34  | 3.4V           |                | 1441-34      |                              |
| UM1441Y-35  | 3.5V           |                | 1441-35      |                              |
| UM1441Y-36  | 3.6V           |                | 1441-36      |                              |
| UM1441Y-37  | 3.7V           |                | 1441-37      |                              |
| UM1441Y-38  | 3.8V           |                | 1441-38      |                              |
| UM1441Y-39  | 3.9V           |                | 1441-39      |                              |
| UM1441Y-40  | 4.0V           |                | 1441-40      |                              |
| UM1441Y-41  | 4.1V           |                | 1441-41      |                              |
| UM1441Y-42  | 4.2V           |                | 1441-42      |                              |
| UM1441Y-43  | 4.3V           |                | 1441-43      |                              |
| UM1441Y-44  | 4.4V           |                | 1441-44      |                              |
| UM1441Y-45  | 4.5V           |                | 1441-45      |                              |
| UM1441Y-46  | 4.6V           |                | 1441-46      |                              |
| UM1441Y-47  | 4.7V           |                | 1441-47      |                              |
| UM1441Y-48  | 4.8V           |                | 1441-48      |                              |
| UM1441Y-49  | 4.9V           |                | 1441-49      |                              |
| UM1441Y-50  | 5.0V           |                | 1441-50      |                              |
| UM1441Y-51  | 5.1V           |                | 1441-51      |                              |
| UM1441Y-52  | 5.2V           |                | 1441-52      |                              |
| UM1441Y-53  | 5.3V           |                | 1441-53      |                              |
| UM1441Y-54  | 5.4V           |                | 1441-54      |                              |
| UM1441Y-55  | 5.5V           |                | 1441-55      |                              |
| UM1441Y-56  | 5.6V           |                | 1441-56      |                              |
| UM1441Y-57  | 5.7V           |                | 1441-57      |                              |
| UM1441Y-58  | 5.8V           |                | 1441-58      |                              |
| UM1441Y-59  | 5.9V           |                | 1441-59      |                              |
| UM1441Y-60  | 6.0V           |                | 1441-60      |                              |

**Absolute Maximum Ratings (Note 1)**

| Symbol                      | Parameter                                   |         | Value       | Unit |
|-----------------------------|---|---------|-------------|------|
| V <sub>IN</sub>             | Supply Voltage on VIN Pin                   |         | -0.3 to +33 | V    |
| V <sub>OUT</sub>            | Voltage on VOUT Pin                         |         | -0.3 to +33 | V    |
| T <sub>J</sub>              | Operating Junction Temperature (Notes 2, 3) |         | -40 to +125 | °C   |
| T <sub>STG</sub>            | Storage Temperature Range                   |         | -65 to +150 | °C   |
| T <sub>L</sub>              | Lead Temperature for Soldering 10 Seconds   |         | +260        | °C   |
| P <sub>D</sub><br>(Notes 4) | Power Dissipation@25°C                      | SOT23-3 | 0.40        | W    |
|                             |   | SOT89-3 | 1.0         |      |
|                             |   | SOT23-5 | 0.43        |      |
|                             |   | SOT89-5 | 1.20        |      |
| θ <sub>JA</sub>             | Package Thermal Resistance                  | SOT23-3 | 250         | °C/W |
|                             |   | SOT89-3 | 100         |      |
|                             |   | SOT23-5 | 230         |      |
|                             |   | SOT89-5 | 83          |      |

Note 1: Absolute Maximum Ratings are those values beyond which the life of a device may be impaired.

Note 2: The UM1431/1441 is tested and specified under pulse load conditions such that  $T_J \approx T_A$ . Specifications over the -40°C to 125°C operating junction temperature range are assured by design, characterization and correlation with statistical process controls.

Note 3: This IC includes over temperature protection that is intended to protect the device during momentary overload conditions. Junction temperature will exceed 125°C when over temperature protection is active. Continuous operation above the specified maximum operating junction temperature may impair device reliability.

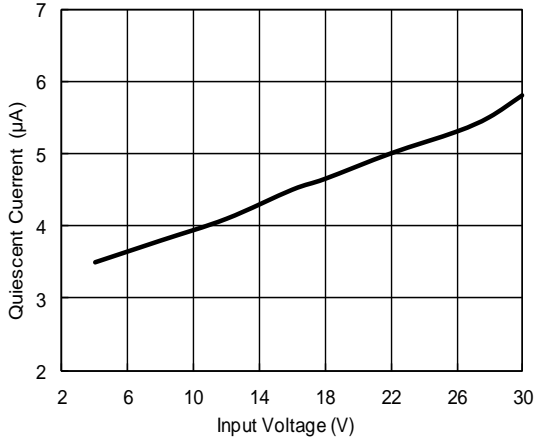
Note 4: The maximum allowable power dissipation of any T<sub>A</sub> (ambient temperature) is  $P_{D\text{MAX}} = (T_{J\text{MAX}} - T_A) / \theta_{JA}$ . Exceeding the maximum allowable power dissipation will result in excessive die temperature and the regulator will go into thermal shutdown.

**Electrical Characteristics**
 $V_{IN}=V_{OUT}+1V, C_{IN}=1\mu F, C_{OUT}=10\mu F, T_A=25^\circ C.$ 

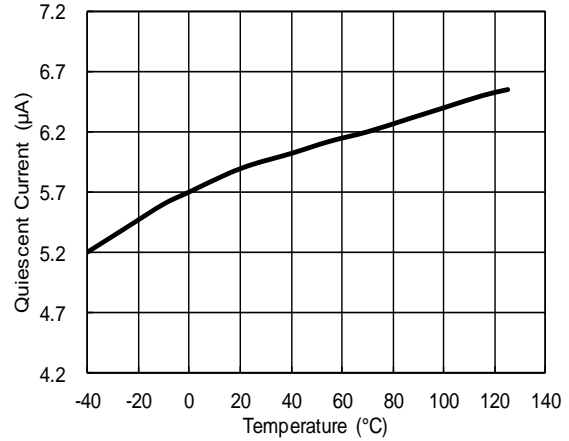
| Symbol          | Parameter                              | Test Conditions  | Min     | Typ  | Max | Unit            |
|-----------------|--|--|---------|------|-----|-----------------|
| $V_{IN}$        | Input Voltage Range                    |  | 3.6     |      | 30  | V               |
| $V_{OUT}$       | Output Voltage Range                   |  | 2.0     |      | 6.0 | V               |
| $I_Q$           | Operating Quiescent Current            | $I_{OUT}=0mA, V_{IN}=30V$  |         | 5.8  | 8.0 | $\mu A$         |
|                 |  | $V_{IN}=30V, I_{OUT}=30mA$   |         | 70   |     |                 |
| $I_{SHDN}$      | Shutdown Leakage Current               | $V_{IN}=30V$   |         | 2.2  | 3.0 | $\mu A$         |
| $I_{OUT}$       | Output Current                         |  | 30      |      |     | mA              |
|                 | Output Voltage Accuracy                | $I_{OUT}=30mA, T_A=+25^\circ C$  | -3      |      | +3  | %               |
| $\Delta V_{DO}$ | Dropout Voltage                        | $I_{OUT}=30mA$   |         | 250  | 350 | mV              |
| $I_{LIMT}$      | Output Current Limit                   | $V_{IN}\geq 2.5V$  |         | 100  |     | mA              |
| t               | Startup Time Response                  |  |         | 150  |     | $\mu s$         |
| $V_{IL}$        | Enable Input Low Voltage               |  |         |      | 0.7 | V               |
| $V_{IH}$        | Enable Input High Voltage              |  | 2.0     |      |     | V               |
| $T_C$           | Output Voltage Temperature Coefficient | $I_{OUT}=10mA$   |         | 150  |     | ppm/ $^\circ C$ |
|                 | Line Regulation                        | $V_{OUT}+1V\leq V_{IN}\leq 30V$<br>( $3.6V\leq V_{IN}$ )<br>$I_{OUT}=10mA$ |         | 0.05 |     | %/V             |
|                 | Load Regulation                        | $V_{IN}=V_{OUT}+1V$ ( $3.6V\leq V_{IN}$ )<br>$1\mu A\leq I_{OUT}\leq 30mA$ |         | 15   |     | mV              |
|                 | Output Voltage Noise                   | 10Hz to 100kHz<br>$C_{IN}=1\mu F, I_{OUT}=100mA$<br>$V_{OUT}=2.0V$         |         | 450  |     | $\mu V_{RMS}$   |
| PSRR            | Power Supply Ripple Rejection          | $V_{IN}=V_{OUT}+1V$<br>$I_{OUT}=100mA$<br>( $3.6V\leq V_{IN}$ )            | f=100Hz |      | 55  | dB              |
|                 |  |  | f=1kHz  |      | 45  |                 |
|                 |  |  | f=10kHz |      | 35  |                 |

Typical Performance Characteristics

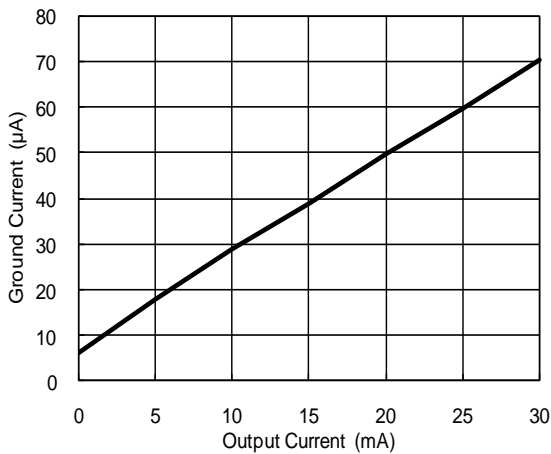
Quiescent Current vs. Input Voltage  
UM1431S-36,  $I_{OUT}=0mA$



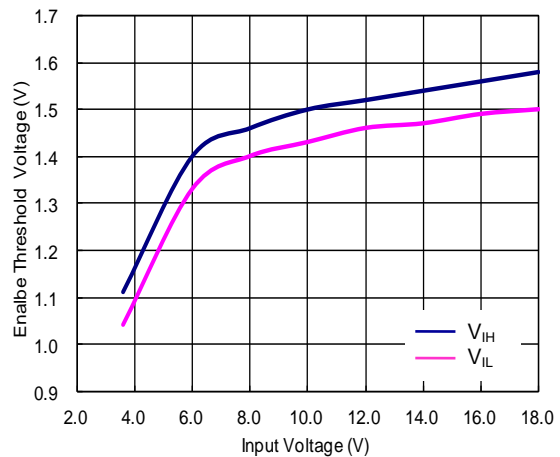
Quiescent Current vs. Temperature  
 $V_{IN}=30V, I_{OUT}=0mA$



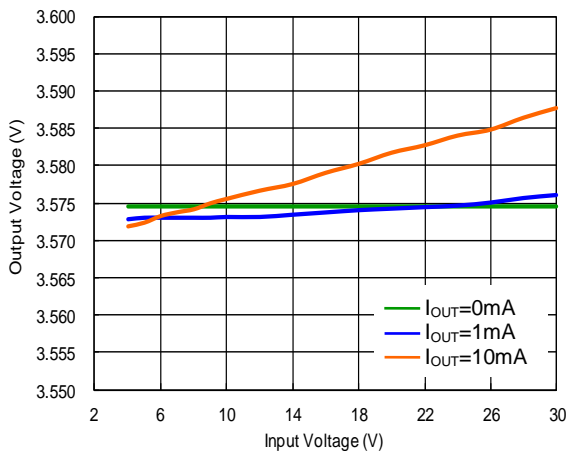
Ground Current vs. Output Current  
 $V_{IN}=30V$



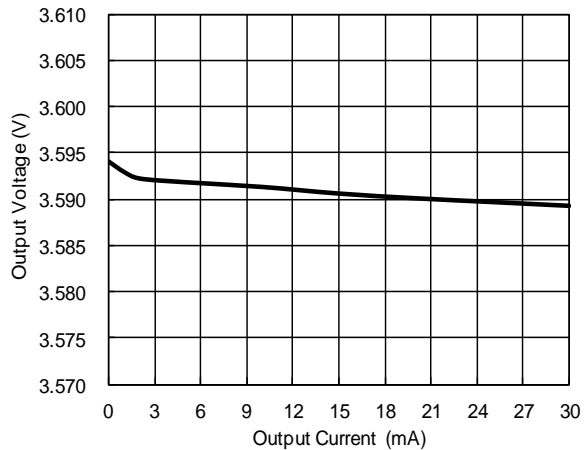
Enable Threshold Voltage vs. Input Voltage



Output Voltage vs. Input Voltage  
UM1441S-36

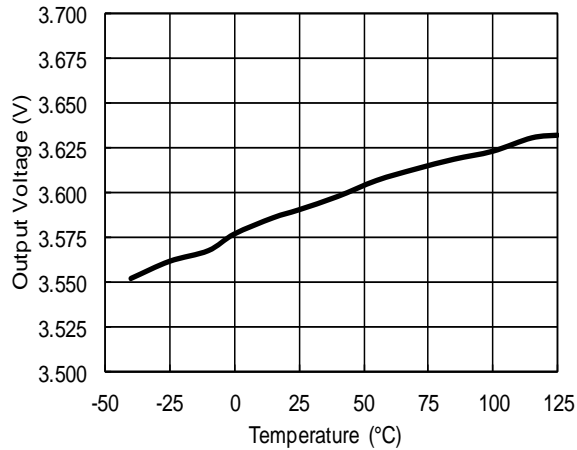


Output Voltage vs. Output Current  
UM1441S-36,  $V_{IN}=4.0V$

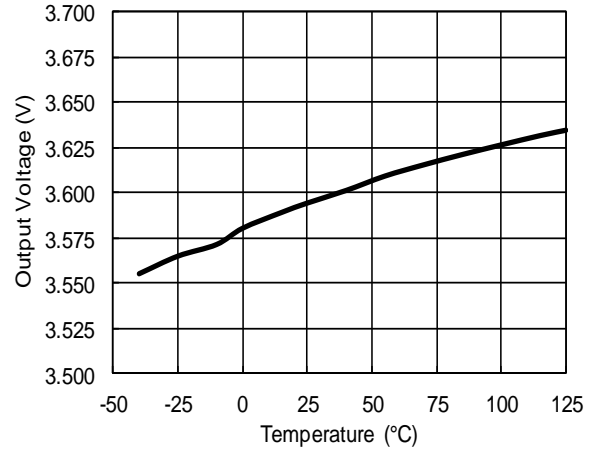


Typical Performance Characteristics (Continued)

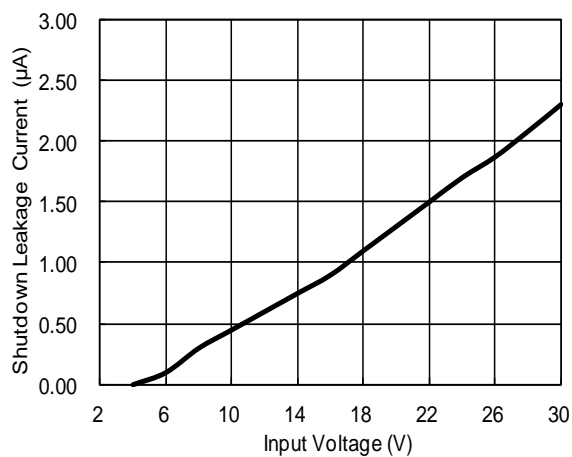
Output Voltage vs. Temperature  
 $V_{IN}=4.6V, I_{OUT}=2mA$



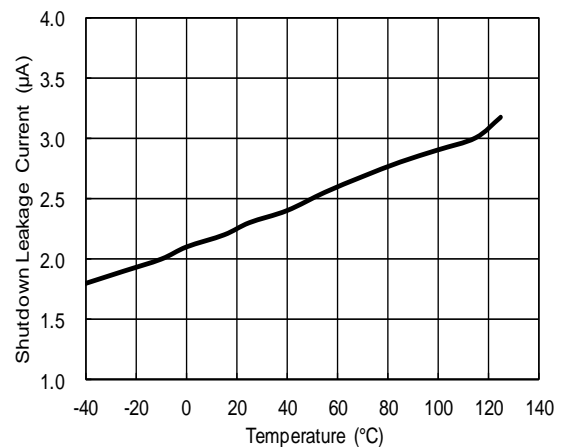
Output Voltage vs. Temperature  
 $V_{IN}=30V, I_{OUT}=2mA$



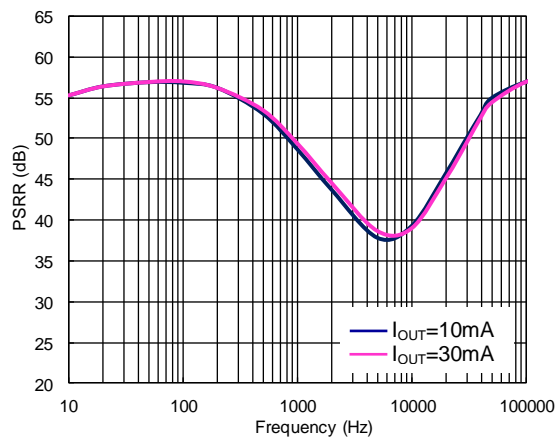
Shutdown Leakage Current vs. Input Voltage



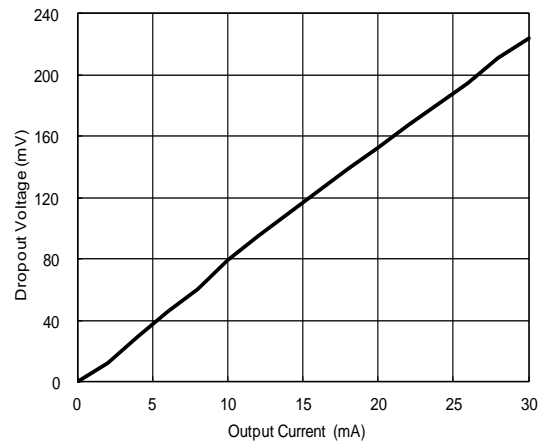
Shutdown Leakage Current vs. Temperature  
 $V_{IN}=30V, I_{OUT}=0mA$



PSRR vs. Frequency

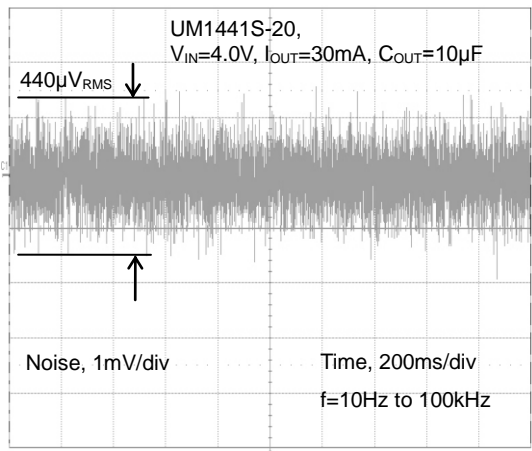


Dropout Voltage vs. Output Current  
 UM1431S5-40

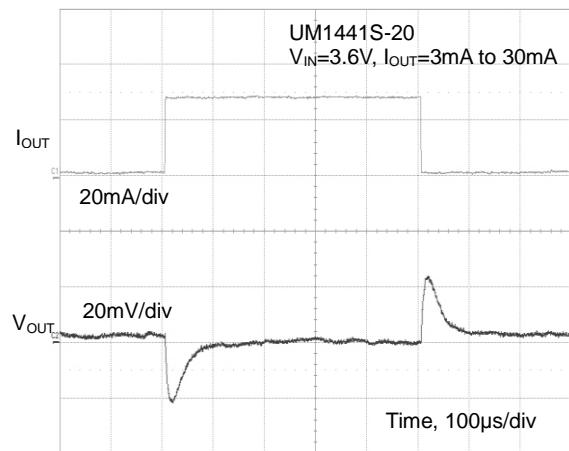


**Typical Performance Characteristics (Continued)**

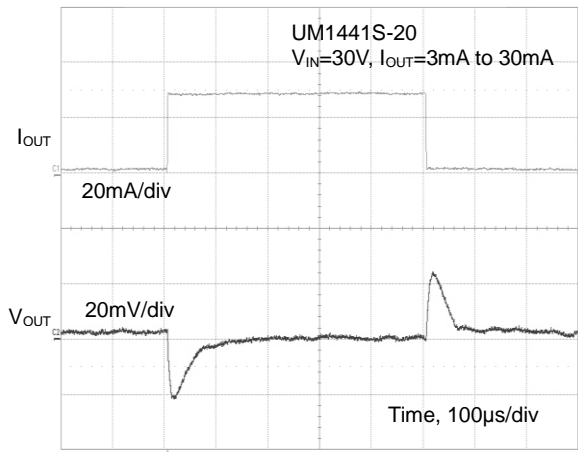
**Noise**



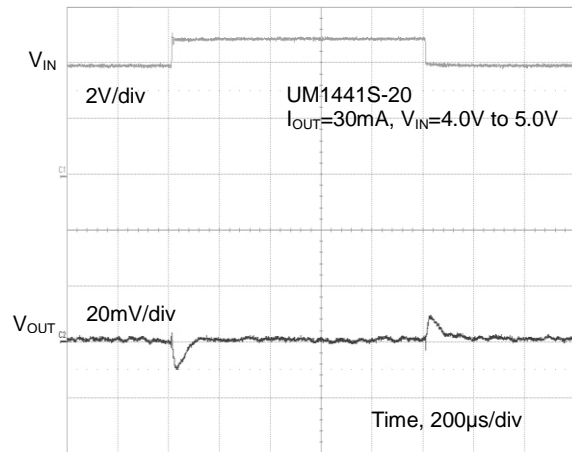
**Load Transient Response**



**Load Transient Response**



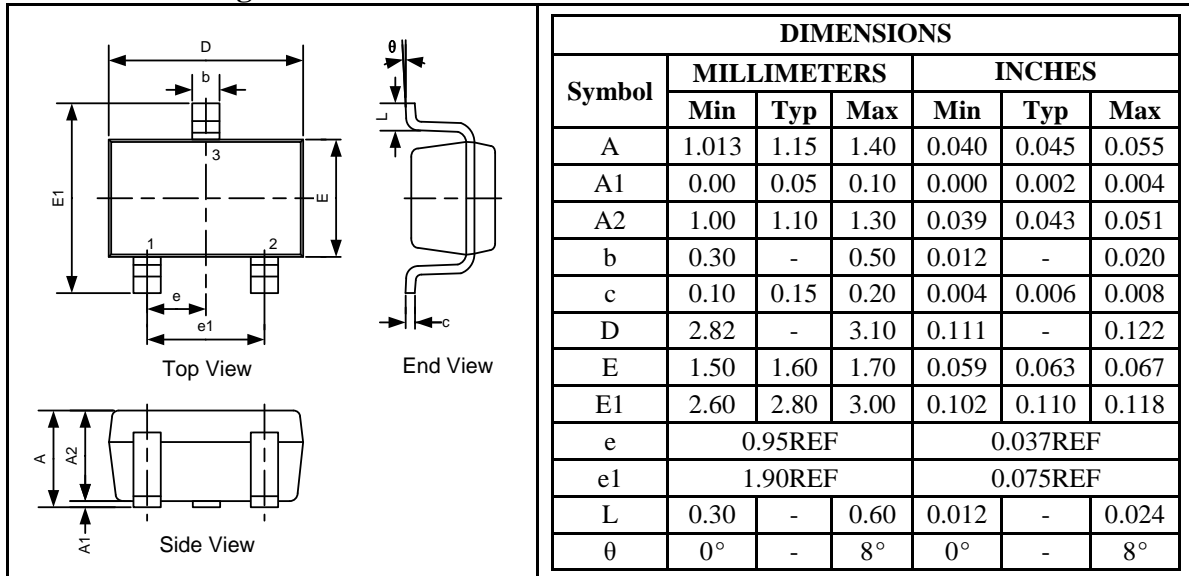
**Line Transient Response**



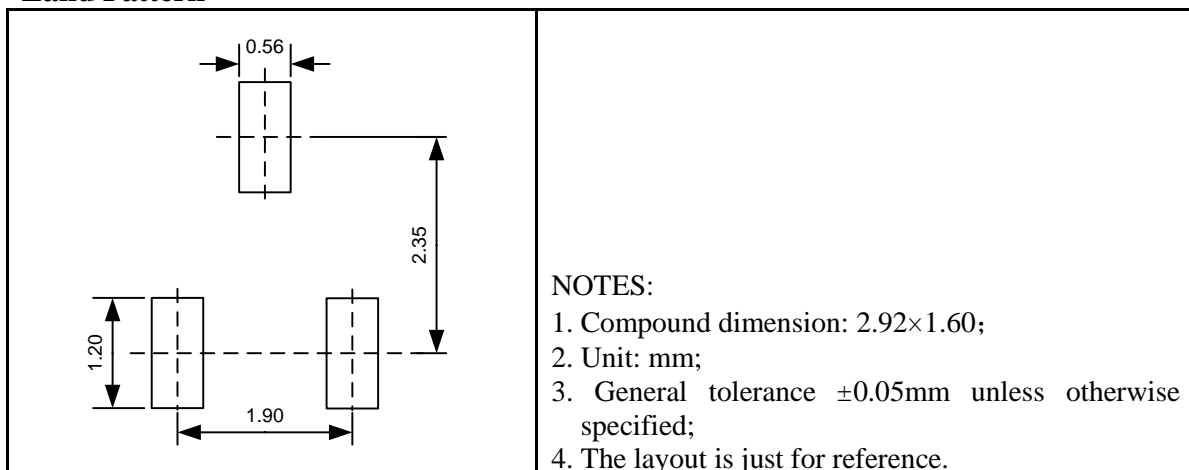
**Package Information**

**UM1431S-xx: SOT23-3**

**Outline Drawing**

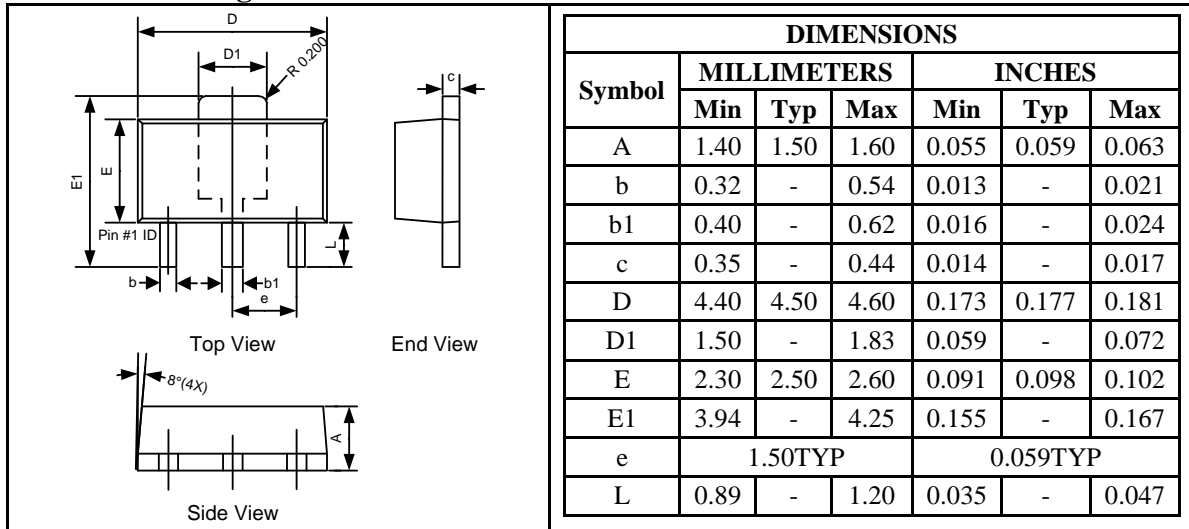
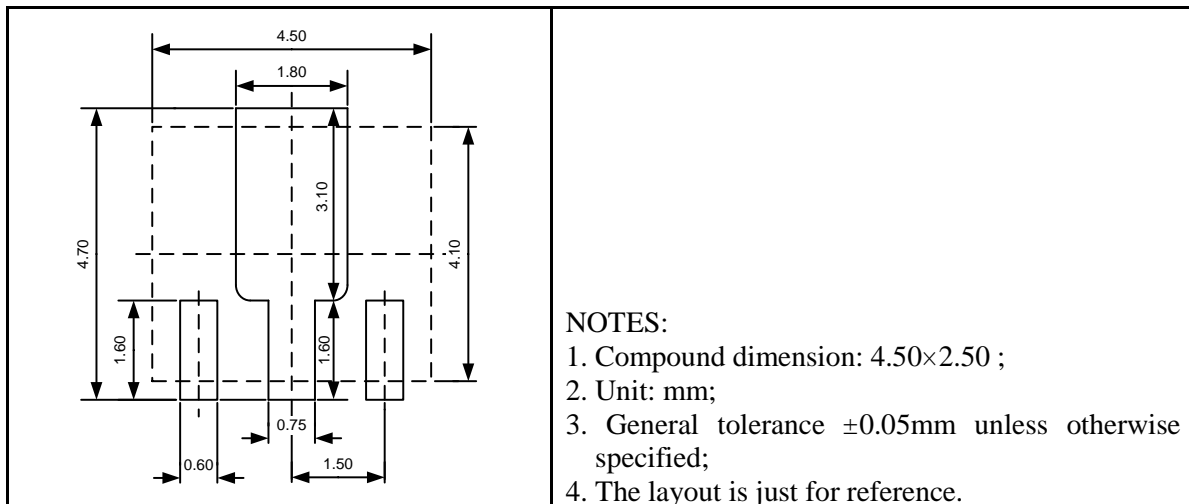
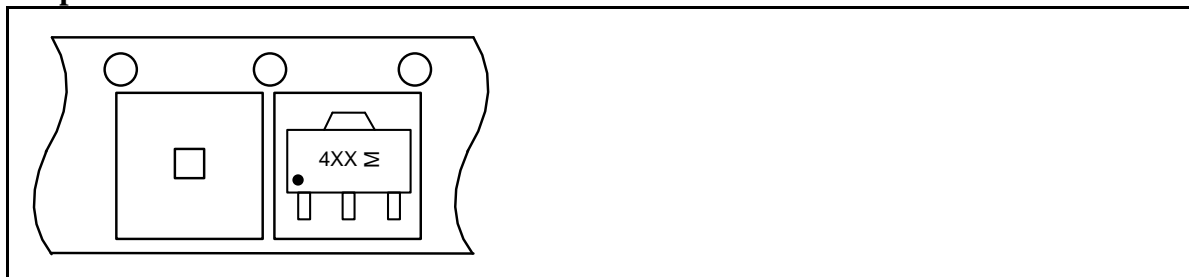


**Land Pattern**



**Tape and Reel Orientation**

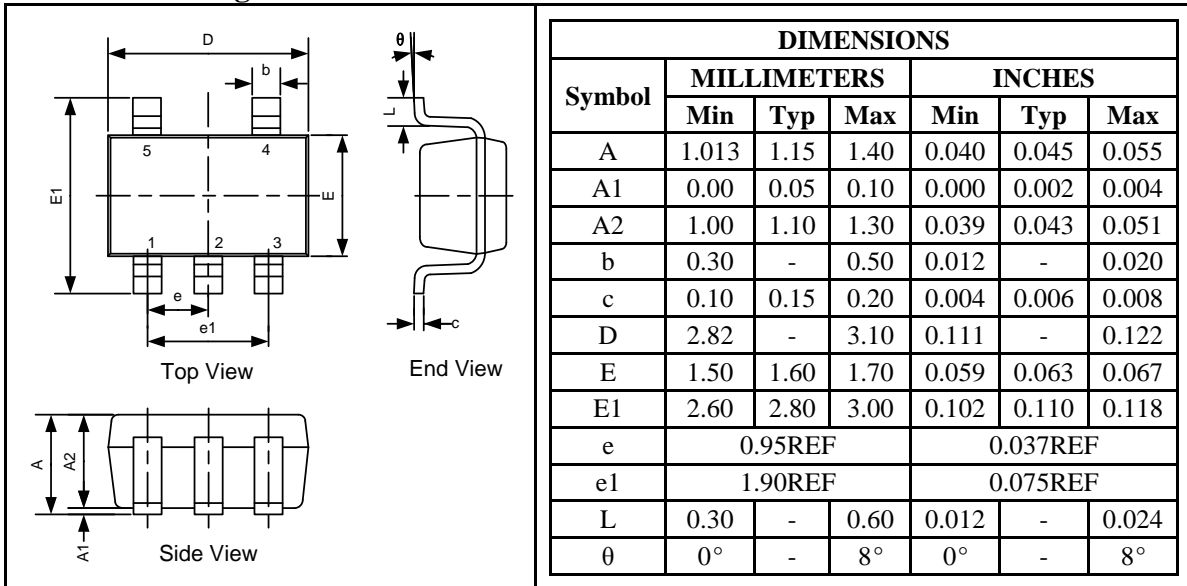


**UM1431Y-xx, UM1431B-xx: SOT89-3**
**Outline Drawing**

**Land Pattern**

**Tape and Reel Orientation**


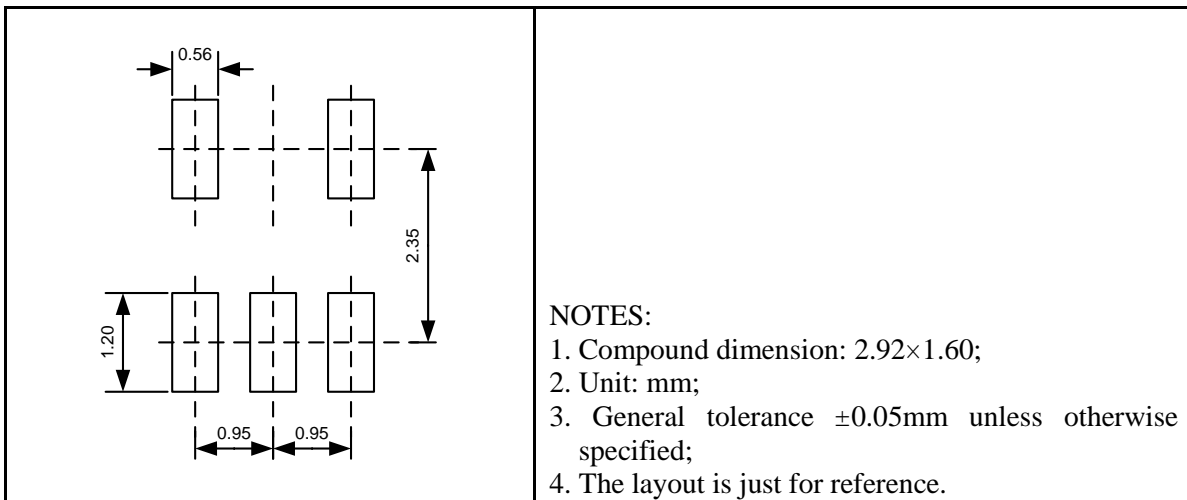


UM1431S5-xx, UM1441S-xx: SOT23-5

Outline Drawing



Land Pattern

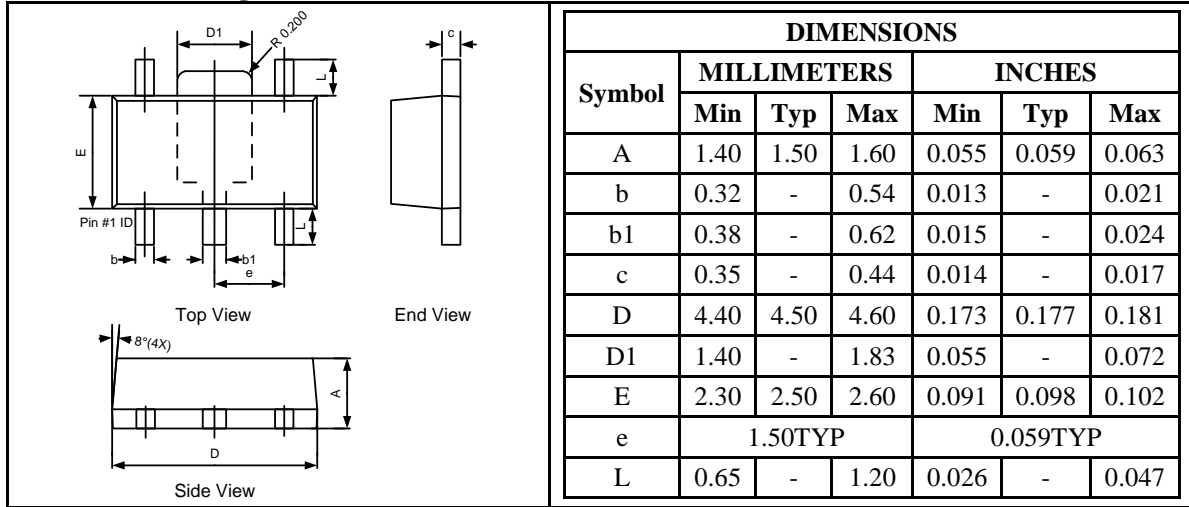


Tape and Reel Orientation

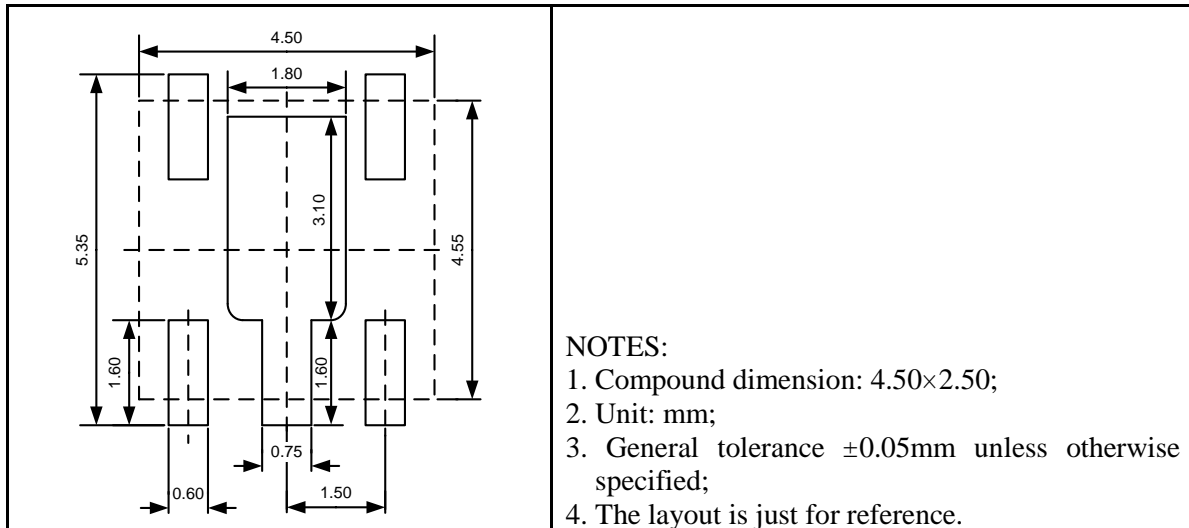


UM1441Y-xx: SOT89-5

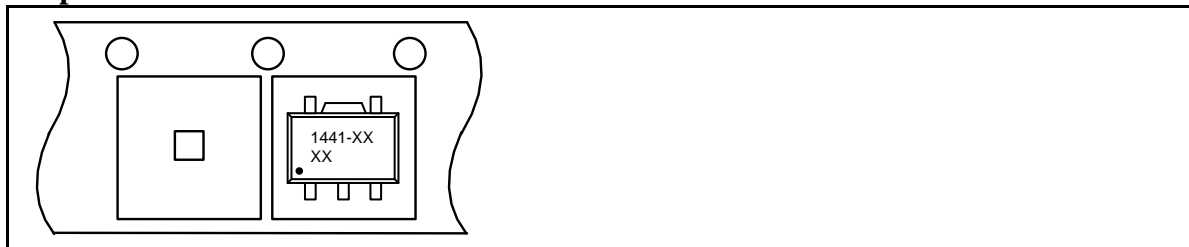
Outline Drawing



Land Pattern



Tape and Reel Orientation



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