

### GENERAL DESCRIPTION

The LW67XX series is a group 70V high accuracy LDO regulator. The 3.0 $\mu$ A power consumption makes it ideal for most HV power-saving systems. The maximum operating voltage can be as high as 70V. The LW67XX can deliver 100mA output current.

The other features include current limiting protection, short circuit protection and thermal shutdown protection.

The LW67XX is available in ESOP-8, DFN2x2-6L, SOT89-3L and TO-252 packages.

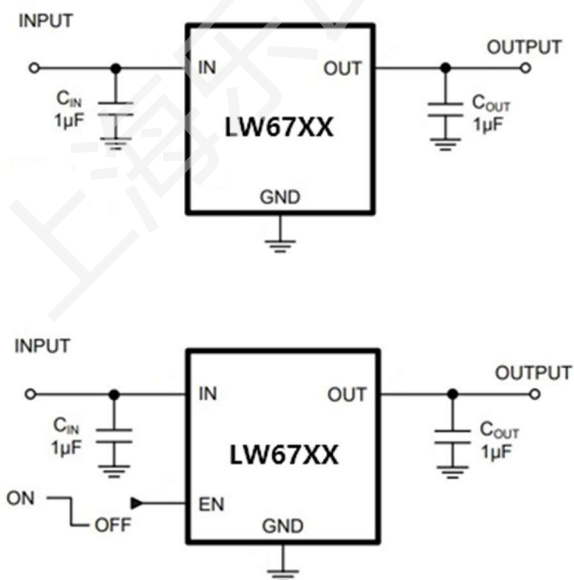
### FEATURES

- Low Power Consumption: 3.0 $\mu$ A(Typ.)
- Operating Voltage Range: from 3.5V to 70V
- Output Voltage Range: from 2.5V to 15V
- Maximum Output Current: 100mA
- Output Accuracy:  $\pm 1.0\%$  @+25 $^{\circ}$ C
- Low Dropout Voltage: 635mV@100mA/3.3V
- High PSRR: 80dB@1kHz, 10mA
- Low Temperature Coefficient
- Current Limiting Protection
- Output Short-Circuit Protection
- Over-Temperature Protection
- Fast Discharge Function
- Stable with 1 $\mu$ F Output Capacitor

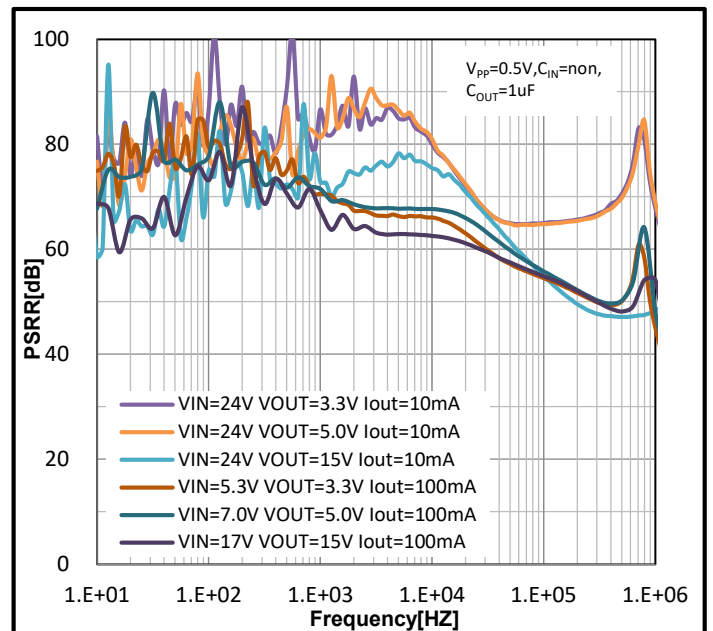
### APPLICATIONS

- Battery Supplied Systems
- Telecom Systems
- Portable Audio & Video Equipment
- Ultra-Low Power Microcontroller

### TYPICAL APPLICATION CIRCUIT



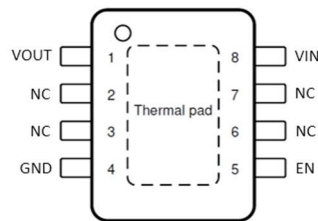
### TYPICAL PERFORMANCE CHARACTERISTICS



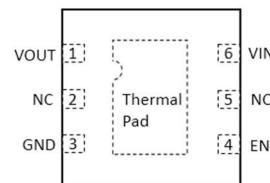
### PIN DESCRIPTION:

| PIN No      |             |                   |                           | SYMBOL | DESCRIPTION                                                                                                                                                                                                                                                                                                                                        |
|-------------|-------------|-------------------|---------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ESOP-8      | DFN2x2-6L   | SOT89-3L (Type-B) | TO-252 /SOT89-3L (Type-C) |        |                                                                                                                                                                                                                                                                                                                                                    |
| 8           | 6           | 3                 | 1                         | VIN    | Input pin. For best transient response and to minimize input impedance, use the recommended value or larger ceramic capacitor from IN to ground as listed in the Recommended Operating Conditions table and the Input and Output Capacitor Requirements section. Place the input capacitor as close to the output of the device as possible.       |
| 4           | 3           | 2、TAB             | 2、TAB                     | GND    | Ground pin.                                                                                                                                                                                                                                                                                                                                        |
| 5           | 4           | --                | --                        | EN     | Enable pin. Drive EN greater than $V_{EN(HI)}$ to turn on the regulator. Drive EN less than $V_{EN(LO)}$ to put the low-dropout regulator (LDO) into shutdown mode.                                                                                                                                                                                |
| 2,3,6,7     | 2,5         | --                | --                        | NC     | No internal connection. Ground this pin for better thermal performance.                                                                                                                                                                                                                                                                            |
| 1           | 1           | 1                 | 3                         | VOUT   | Regulated output voltage pin. Connect a low-equivalent series resistance (ESR) capacitor to this pin. For best transient response, use the nominal recommended value or larger capacitor from OUT to GND. An internal pulldown resistor prevents a charge from remaining on OUT when the regulator is in shutdown mode ( $V_{EN} < V_{EN(LOW)}$ ). |
| Thermal pad | Thermal pad | --                | --                        | Pad    | The thermal pad is electrically connected to the GND node. Connect to the GND plane for improved thermal performance.                                                                                                                                                                                                                              |

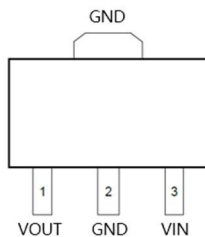
### PIN ASSIGNMENT



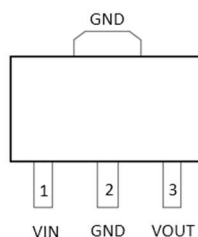
ESOP-8



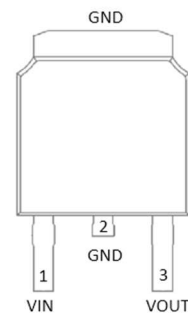
DFN2x2-6L



SOT89-3L (Type-B)



SOT89-3L (Type-C)



TO-252

**MARK INFORMATION:****TO-252/SOT89-3L****XX: VOLTAGE****Y: DATE CODE****LW67XX**  
**YYYYY****ESOP-8/ DFN2x2-6L****XX: VOLTAGE****YY: DATE CODE****LW67XX**  
**YYYYY**  
•

**ABSOLUTE MAXIMUM RATINGS** <sup>(1)</sup>:(T<sub>A</sub> =25℃, unless otherwise specified.)

| SYMBOL              | ITEM                                                  |           | RATING    | UNIT |
|---------------------|-------------------------------------------------------|-----------|-----------|------|
| V <sub>IN</sub>     | Supply Voltage                                        |           | -0.3~80   | V    |
| V <sub>EN</sub>     | EN Pin Voltage                                        |           | -0.3~80   | V    |
| V <sub>OUT</sub>    | V <sub>OUT</sub> Pin Voltage                          |           | -0.3~16   | V    |
| V <sub>(ESD)</sub>  | ESD Susceptibility, HBM <sup>(2)</sup>                |           | ±2000     | V    |
| R <sub>θJA</sub>    | Junction-to-ambient Thermal Resistance <sup>(3)</sup> | ESOP-8    | 45        | ℃/W  |
|                     |                                                       | DFN2x2-6L | 60        |      |
|                     |                                                       | SOT89-3L  | 90        |      |
|                     |                                                       | TO-252    | 35        |      |
| T <sub>J</sub>      | Junction Temperature Range                            |           | -40~150   | ℃    |
| T <sub>STG</sub>    | Storage Temperature Range                             |           | -40~150   | ℃    |
| T <sub>SOLDER</sub> | Lead Temperature (Soldering)                          |           | 260℃, 10s |      |

**Note:**

1. Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability
2. per ANSI/ESDA/JEDEC JS-001
3. Device mounted on FR-4 PCB, Refer to JESD51-3 for detailed information on the board construction

**RECOMMENDED OPERATING RANGE:**

| SYMBOL           | ITEM                           | VALUE   | UNIT |
|------------------|--------------------------------|---------|------|
| V <sub>IN</sub>  | V <sub>IN</sub> Supply Voltage | 3.5~70  | V    |
| V <sub>EN</sub>  | EN Pin Voltage                 | 0~70    | V    |
| V <sub>OUT</sub> | V <sub>OUT</sub> Pin Voltage   | 2.5~15  | V    |
| I <sub>OUT</sub> | Output Current                 | 0~100   | mA   |
| T <sub>J</sub>   | Junction Temperature Range     | -40~125 | ℃    |

### ELECTRICAL CHARACTERISTICS:

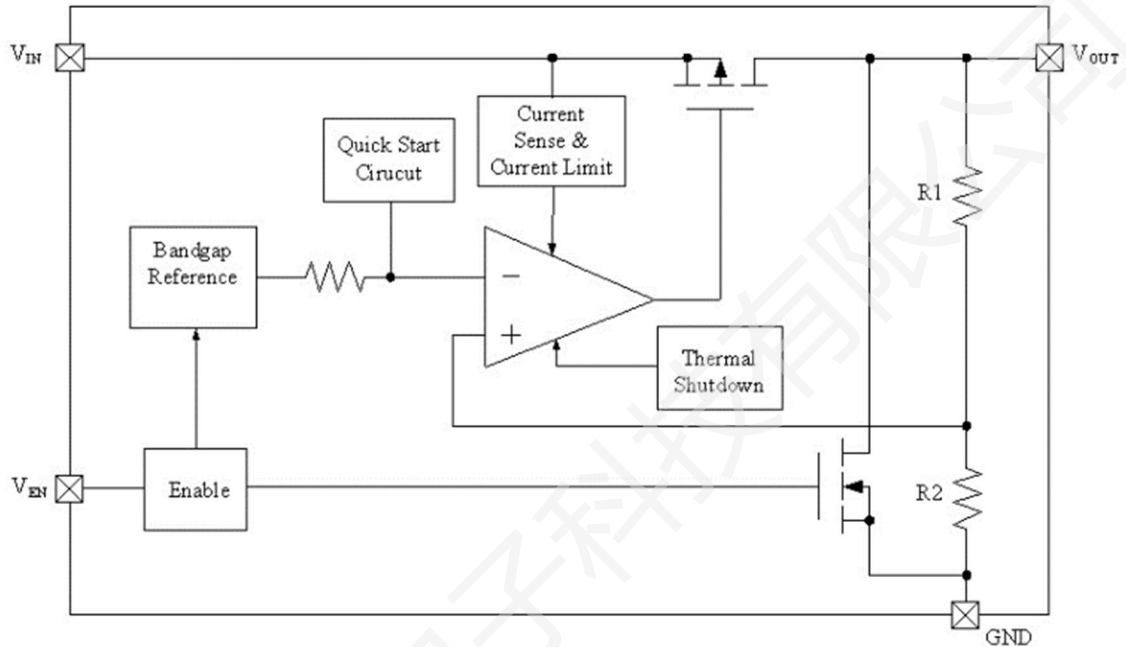
( $V_{IN}=V_{OUT(NOM)}+1V$  or  $2V$ , whichever is greater,  $C_{IN}=C_{OUT}=1\mu F$ , unless otherwise specified, typical values are at  $T_A = 25^{\circ}C$ .)

| Symbol                                                     | Parameter                          | Test Conditions                                                                       | MIN        | TYP  | MAX  | Units       |
|------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------|------------|------|------|-------------|
| $V_{IN}$                                                   | Input Voltage                      |                                                                                       | 3.5        |      | 70   | V           |
| $V_{OUT}$                                                  | Output Accuracy                    | $I_{OUT}=1mA$                                                                         | -1.0       |      | +1.0 | %           |
| $I_{LIM}$                                                  | Current Limit <sup>(1)</sup>       |                                                                                       | 100        | 150  |      | mA          |
| $I_Q$                                                      | Quiescent Current                  | $V_{IN}=V_{EN}=V_{OUT}+1V$ ,<br>No Load                                               |            | 3.0  | 5.0  | $\mu A$     |
|                                                            |                                    | $V_{OUT}\leq 6.0V$<br>$V_{OUT}> 6.0V$                                                 |            | 4.0  | 6.0  |             |
| $I_{SHD}$                                                  | Shutdown Current                   | $V_{EN}=0V$                                                                           |            | 0.35 | 1.0  | $\mu A$     |
| $V_{DROP}$                                                 | Dropout Voltage <sup>(1) (2)</sup> | $I_{OUT}=100mA$ , $V_{OUT}=3.3V$                                                      |            | 635  |      | mV          |
|                                                            |                                    | $I_{OUT}=100mA$ , $V_{OUT}=5.0V$                                                      |            | 580  |      |             |
|                                                            |                                    | $I_{OUT}=100mA$ , $V_{OUT}=15V$                                                       |            | 545  |      |             |
| $\Delta V_{OUT}/$<br>( $\Delta V_{IN}\cdot V_{OUT(NOM)}$ ) | Line Regulation                    | $V_{IN}=V_{OUT}+1V$ to $70V$ , $I_{OUT}=1mA$                                          |            | 0.01 | 0.02 | %/V         |
| $\Delta V_{OUT}$                                           | Load Regulation                    | $1mA\leq I_{OUT}\leq 100mA$                                                           |            | 30   | 60   | mV          |
| $I_{SHORT}$                                                | Short Current <sup>(1)</sup>       | $V_{OUT}=0V$                                                                          |            | 15   |      | mA          |
| $V_{ENH}$                                                  | EN High Voltage                    | $V_{IN}=3.5V$ to $70V$ , $I_{OUT}=1mA$                                                | 1.5        |      |      | V           |
| $V_{ENL}$                                                  | EN Low Voltage                     |                                                                                       |            |      | 0.5  | V           |
| PSRR                                                       | Power Supply Rejection Ratio       | $V_{IN}=4.3V$ , $V_{OUT}=3.3V$ ,<br>$V_{PP}=0.5V$ , $C_{IN}=None$ ,<br>$I_{OUT}=10mA$ | $f=217Hz$  | 83   |      | dB          |
|                                                            |                                    |                                                                                       | $f=1KHz$   | 80   |      |             |
|                                                            |                                    |                                                                                       | $f=10KHz$  | 71   |      |             |
|                                                            |                                    |                                                                                       | $f=100KHz$ | 58   |      |             |
| $T_{SD}$                                                   | Thermal Shutdown                   | Temperature rising                                                                    |            | 160  |      | $^{\circ}C$ |
| $\Delta T_{SD}$                                            | TSD Hysteresis                     | Temperature falling                                                                   |            | 30   |      | $^{\circ}C$ |
| $R_{DSCHG}$                                                | Output Discharge Resistance        | $V_{IN}=12V$ , $V_{EN}=0V$                                                            |            | 80   |      | $\Omega$    |

### NOTES:

1. Guaranteed by design
2. The dropout voltage is defined as  $V_{IN} - V_{OUT}$ , when  $V_{OUT}=95\%\cdot V_{OUT(NOM)}$

### SIMPLIFIED BLOCK DIAGRAM:



### DETAIL OPERATION DESCRIPTION:

The LW67XX Series is a low power consumption low drop-out voltage regulator. It consists of a current limiter circuit, a driver transistor, a precision reference voltage and an error correction circuit, and is compatible with low ESR ceramic capacitors. The current limiter's fold-back circuit operates as a short circuit protection as well as the output current limiter.

#### **Current Limiting and Short-Circuit Protection**

The current limit circuitry prevents damage to the MOSFET switch and the hub downstream port but can deliver load current up to the current limit threshold of typically 100mA through the switch. When a heavy load or short circuit is applied to an enabled switch, a large transient current may flow until the current limit circuitry responds. Once this current limit threshold is exceeded the device enters constant current mode until the thermal shutdown occurs or the fault is removed.

### TYPICAL OPERATING CHARACTERISTICS:

(Tested under  $T_A = 25^\circ\text{C}$ ,  $C_{IN}=C_{OUT}=1\mu\text{F}$ , unless otherwise specified)

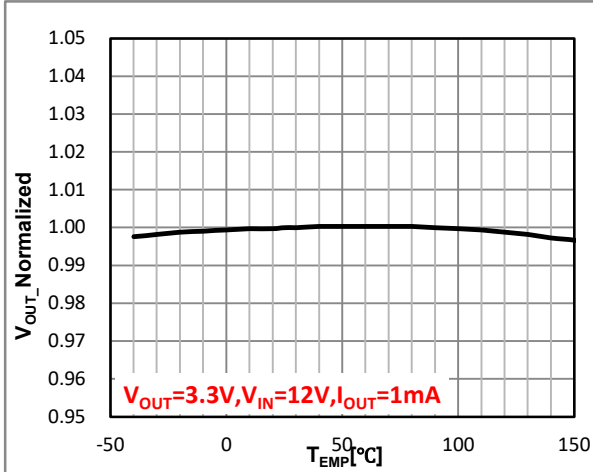


Figure 1.  $V_{OUT}$  vs Temperature

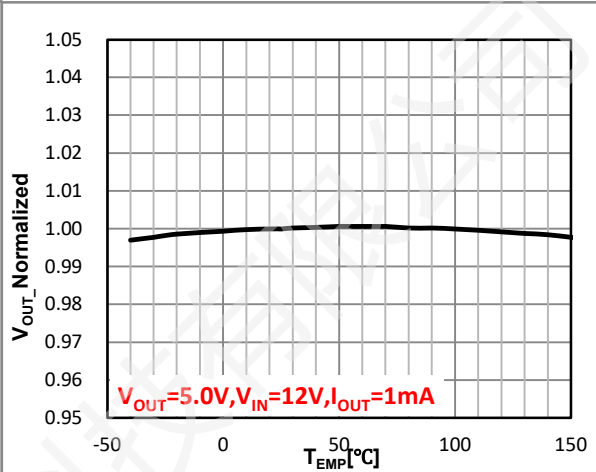


Figure 2.  $V_{OUT}$  vs Temperature

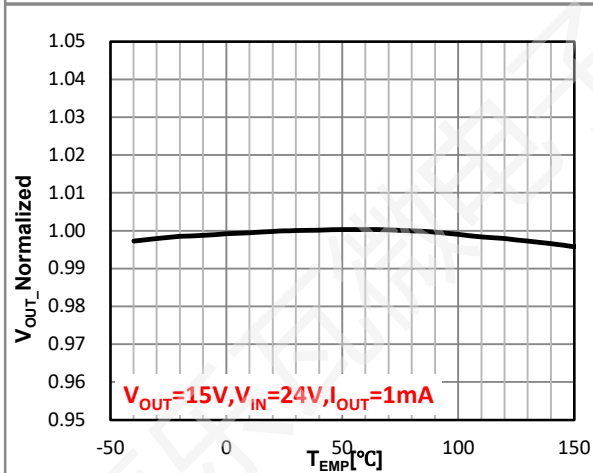


Figure 3.  $V_{OUT}$  vs Temperature

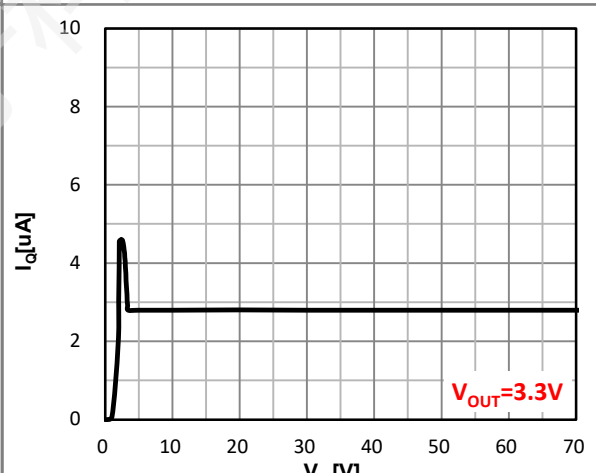


Figure 4.  $I_Q$  vs  $V_{IN}$

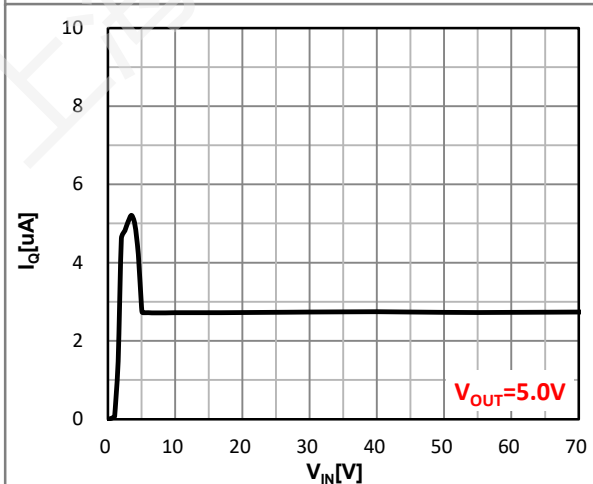


Figure 5.  $I_Q$  vs  $V_{IN}$

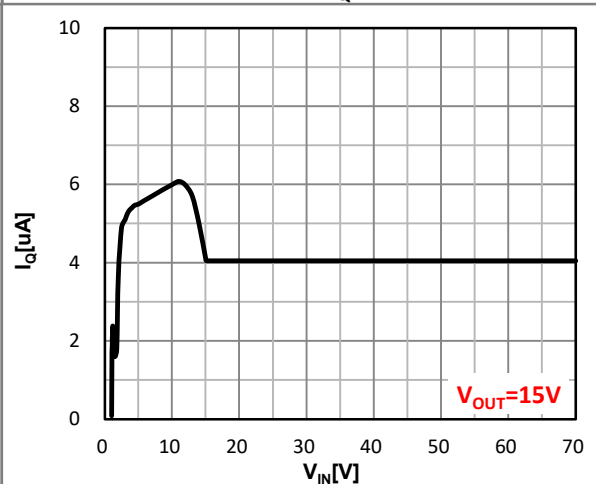


Figure 6.  $I_Q$  vs  $V_{IN}$

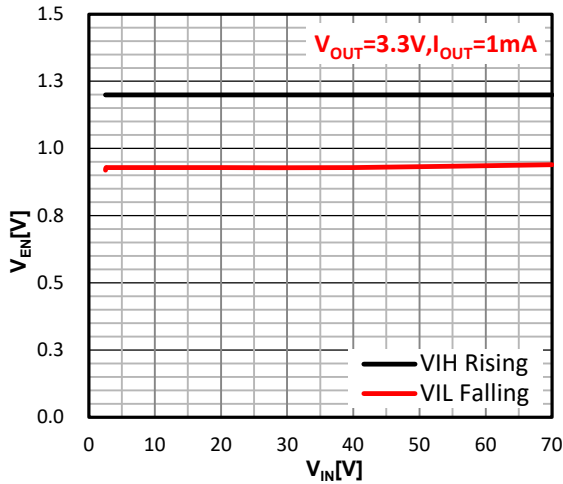


Figure 7.  $V_{EN}$  VS  $V_{IN}$

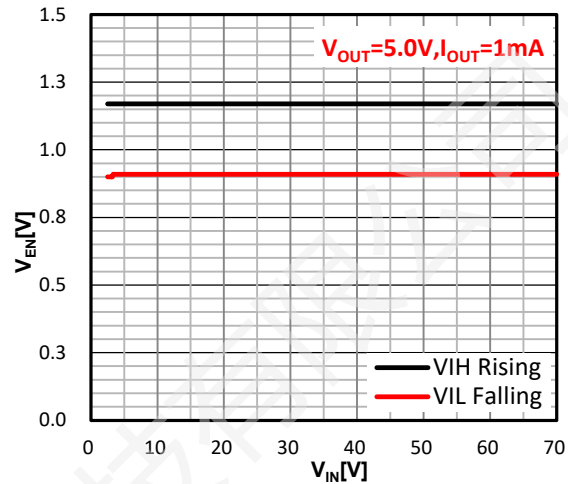


Figure 8.  $V_{EN}$  VS  $V_{IN}$

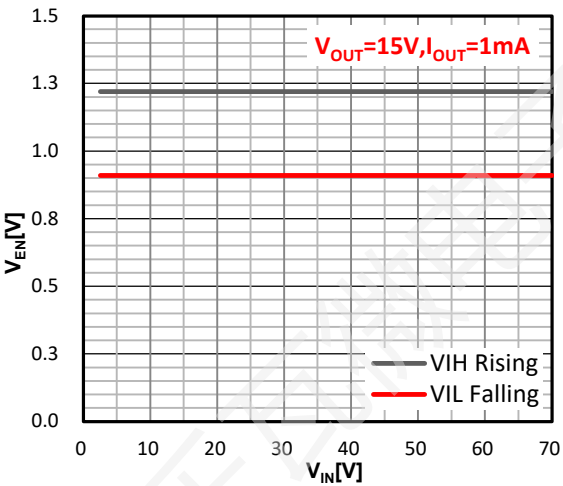


Figure 9.  $V_{EN}$  VS  $V_{IN}$

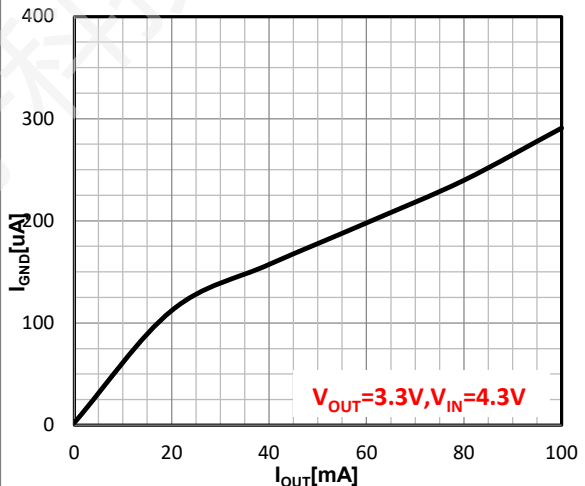


Figure 10.  $I_{GND}$  vs  $I_{OUT}$

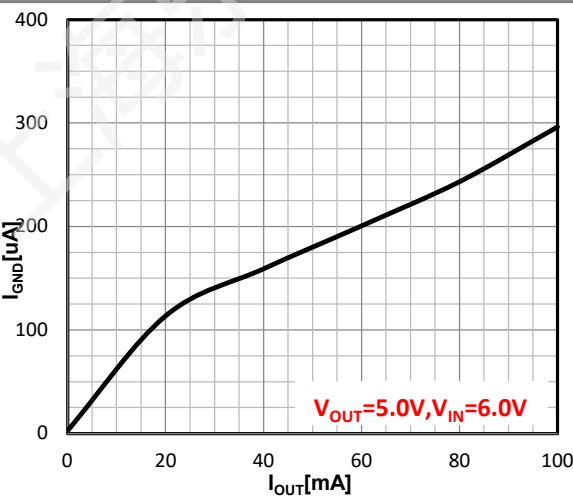


Figure 11.  $I_{GND}$  vs  $I_{OUT}$

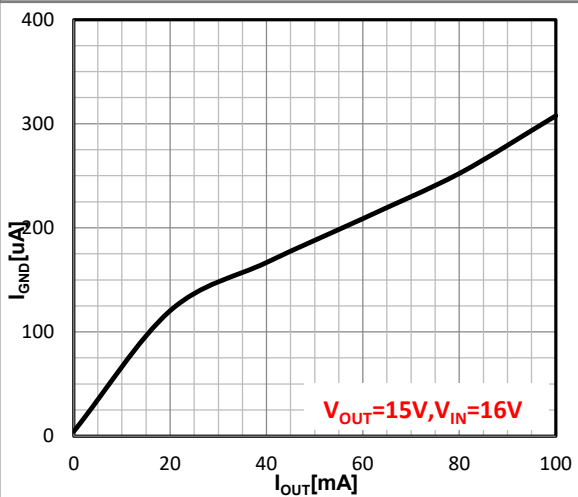


Figure 12.  $I_{GND}$  vs  $I_{OUT}$



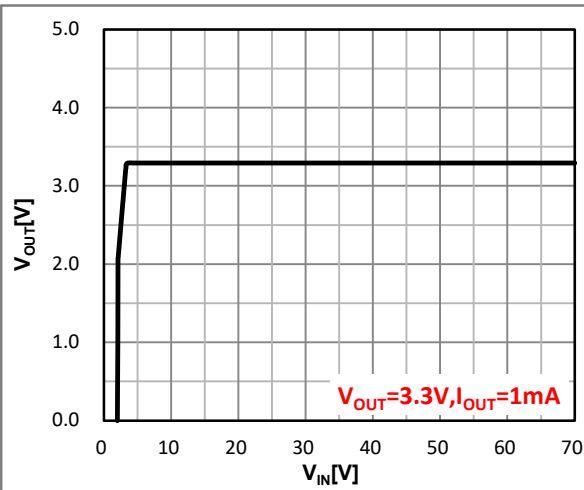


Figure 13.  $V_{OUT}$  vs  $V_{IN}$

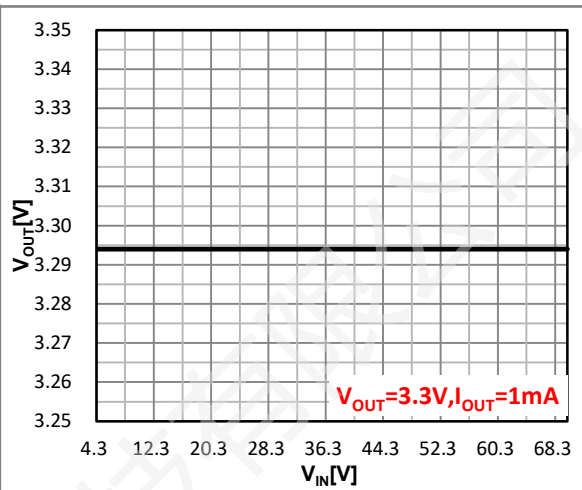


Figure 14. Line Regulation

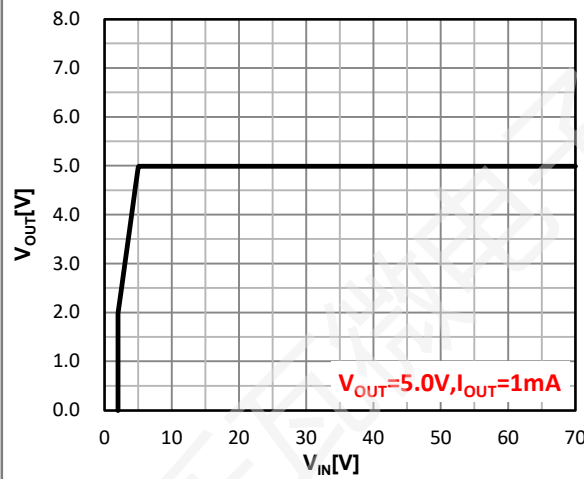


Figure 15.  $V_{OUT}$  vs  $V_{IN}$

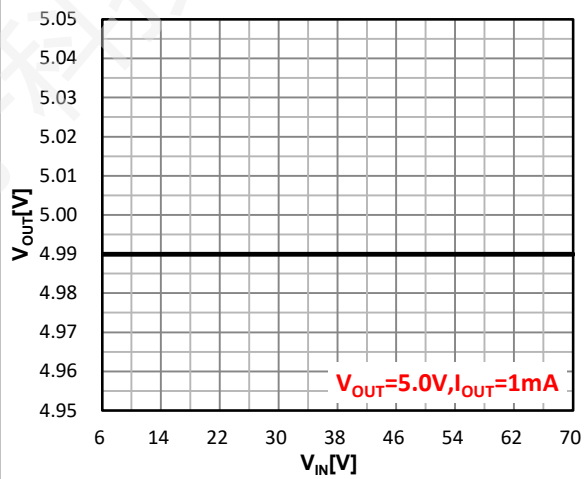


Figure 16. Line Regulation

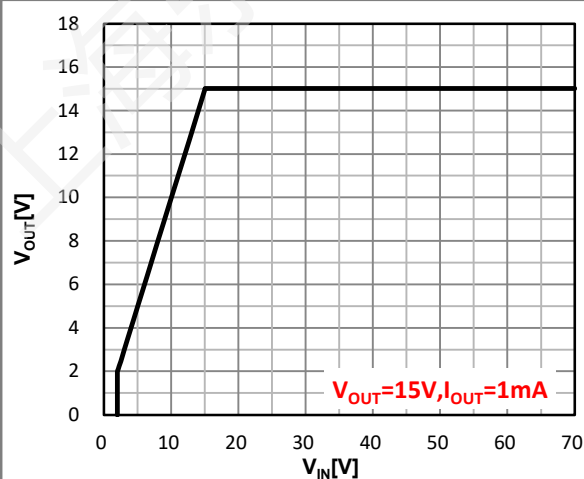


Figure 17.  $V_{OUT}$  vs  $V_{IN}$

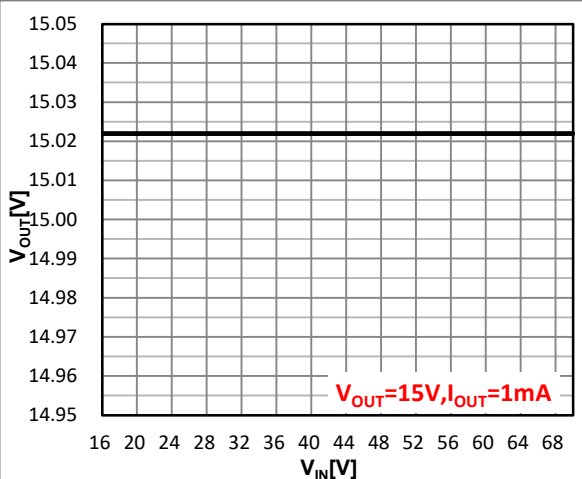


Figure 18. Line Regulation

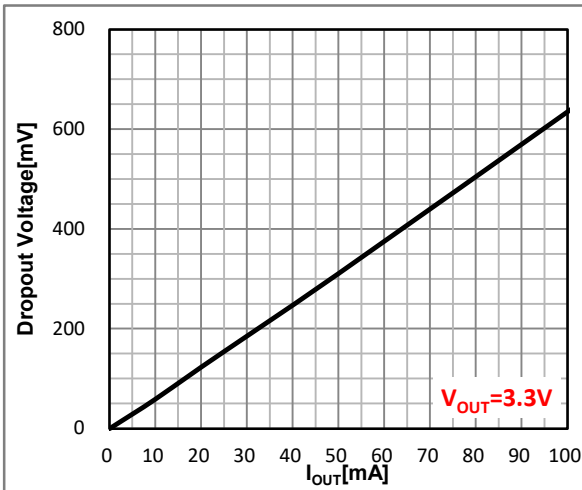


Figure 19. Dropout Voltage VS  $I_{OUT}$

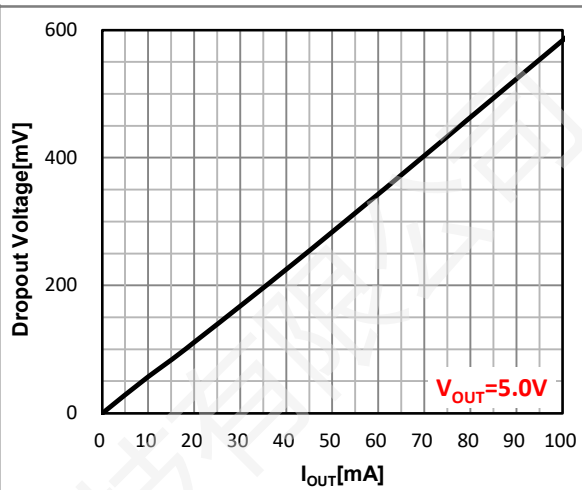


Figure 20. Dropout Voltage VS  $I_{OUT}$

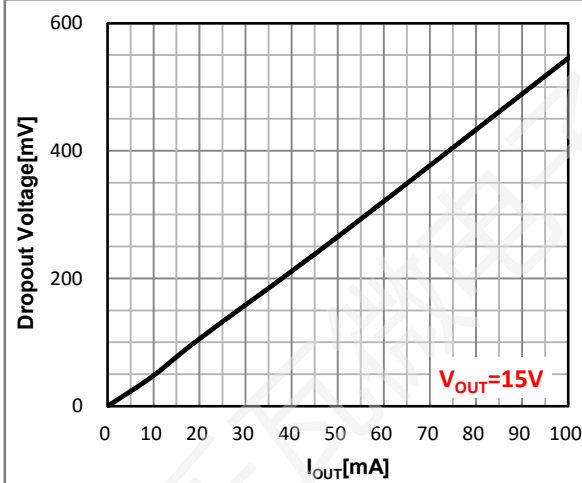


Figure 21. Dropout Voltage VS  $I_{OUT}$

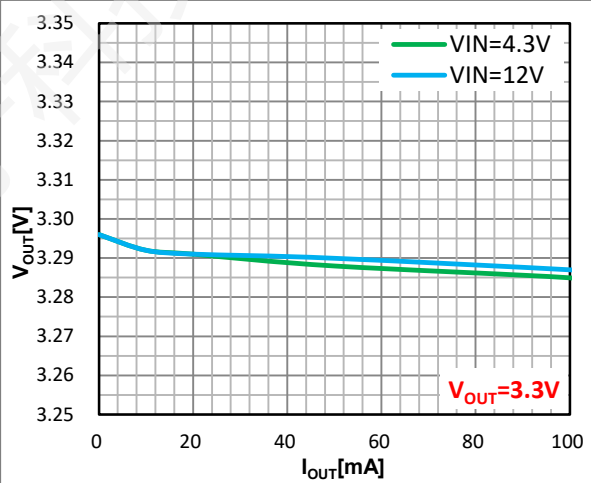


Figure 22. Load Regulation

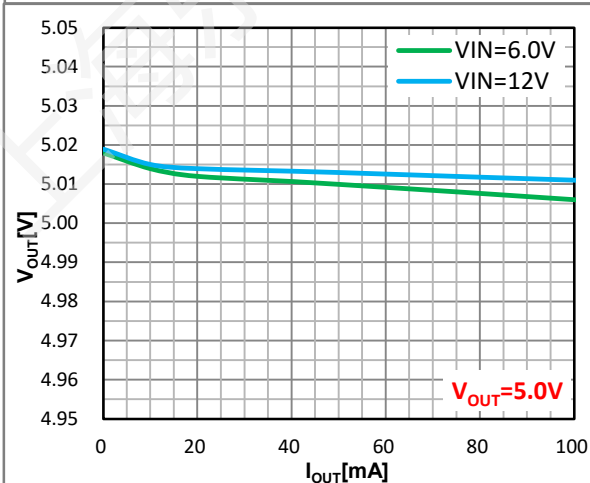


Figure 23. Load Regulation

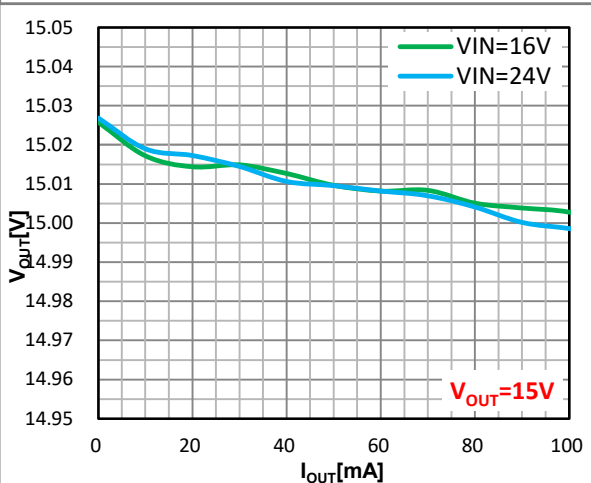
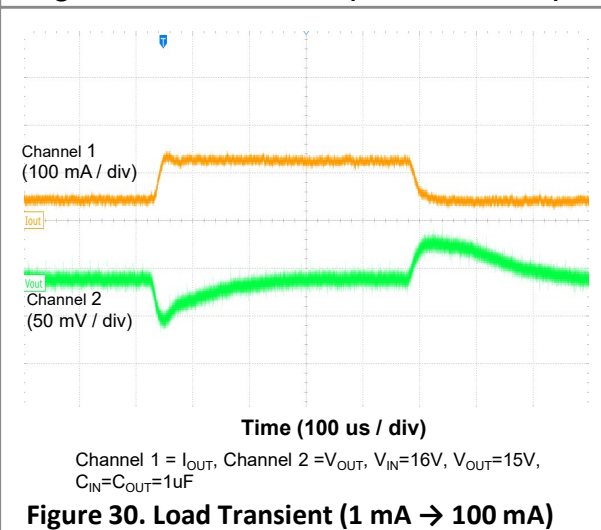
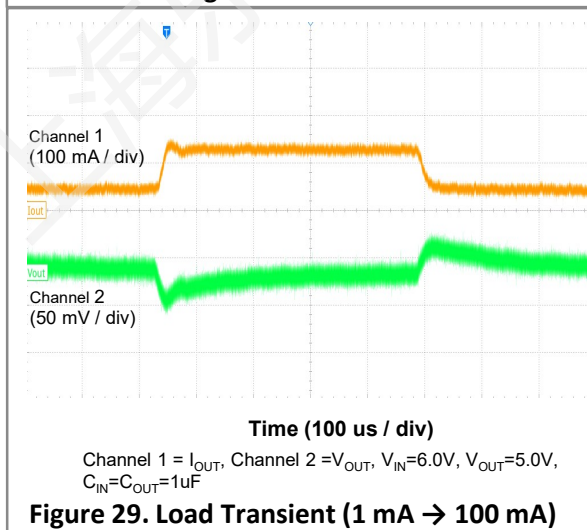
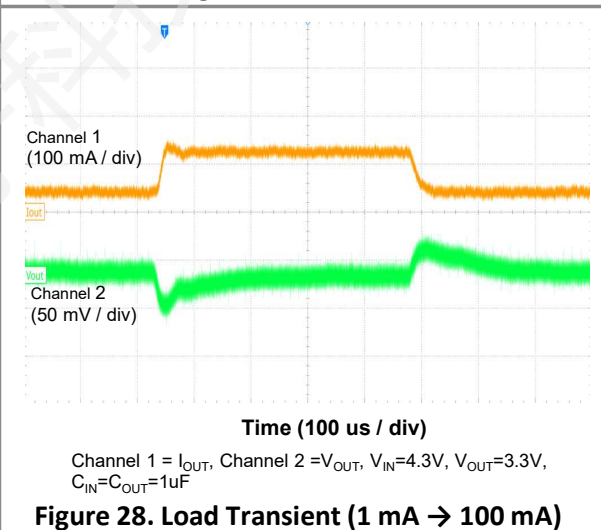
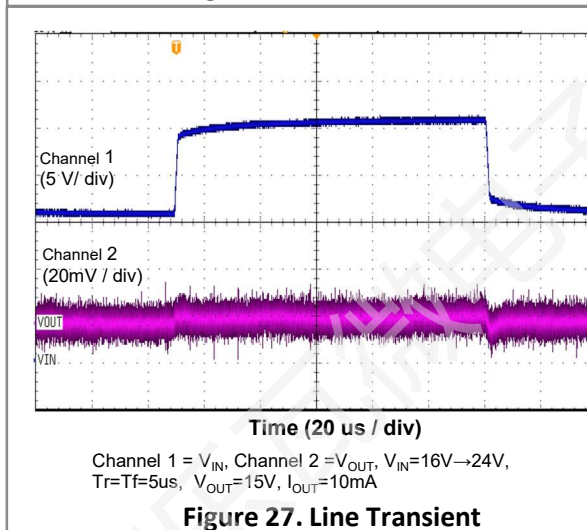
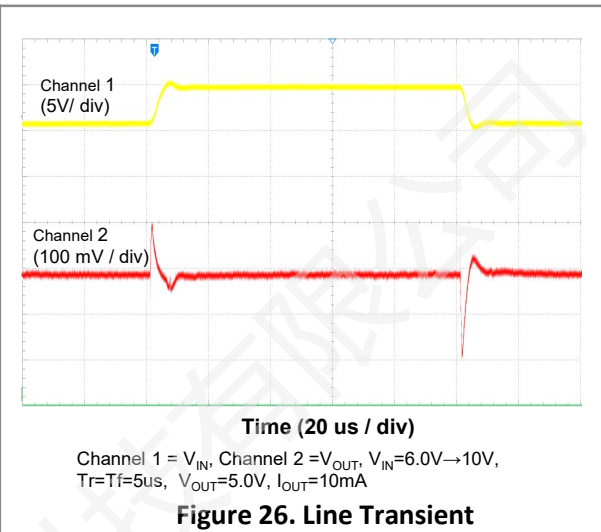
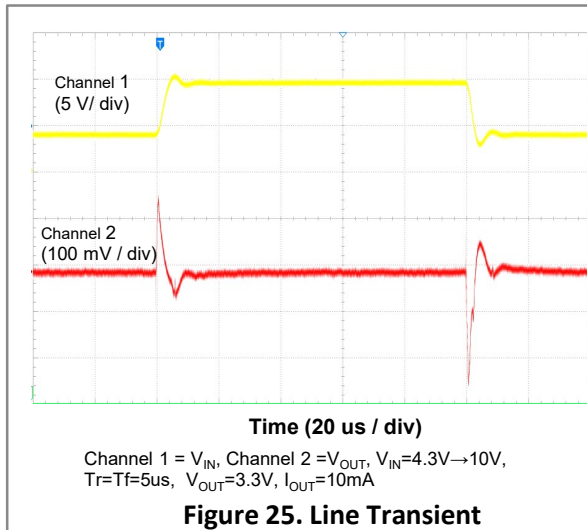
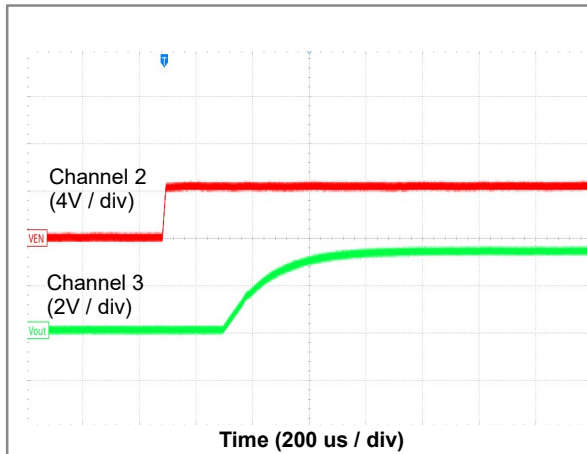


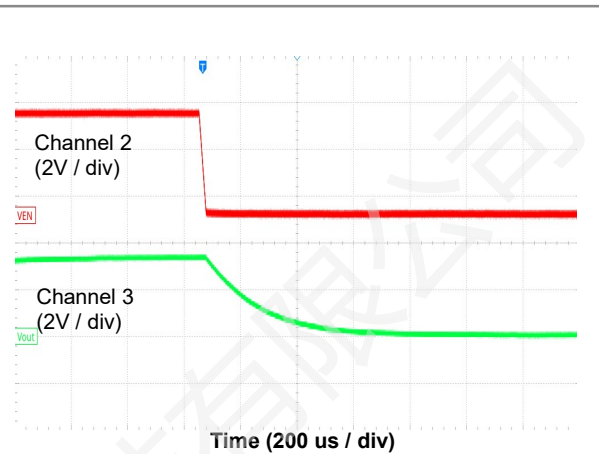
Figure 24. Load Regulation





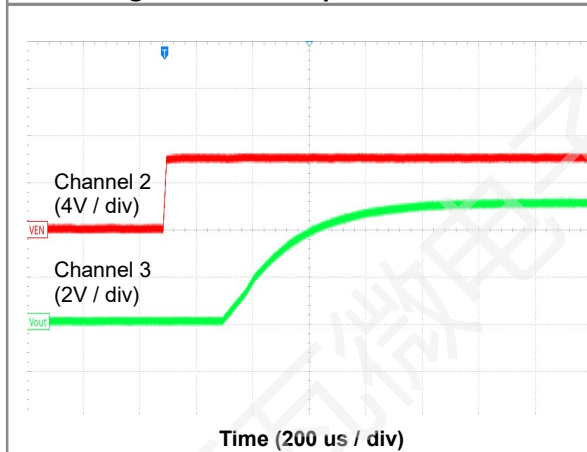
Channel 2 = EN, Channel 3 =  $V_{OUT}$ ,  $V_{IN}=4.3V$ ,  $EN=0 \rightarrow 4.3V$ ,  $V_{OUT}=3.3V$ ,  $C_{IN}=C_{OUT}=1\mu F$ , No Load

**Figure 31. Start-Up with Enable**



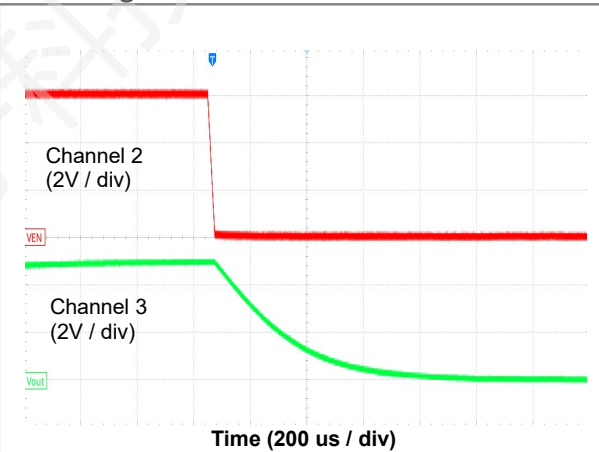
Channel 2 = EN, Channel 3 =  $V_{OUT}$ ,  $V_{IN}=4.3V$ ,  $EN=4.3 \rightarrow 0V$ ,  $V_{OUT}=3.3V$ ,  $C_{IN}=C_{OUT}=1\mu F$ , No Load

**Figure 32. Shut-Down with Enable**



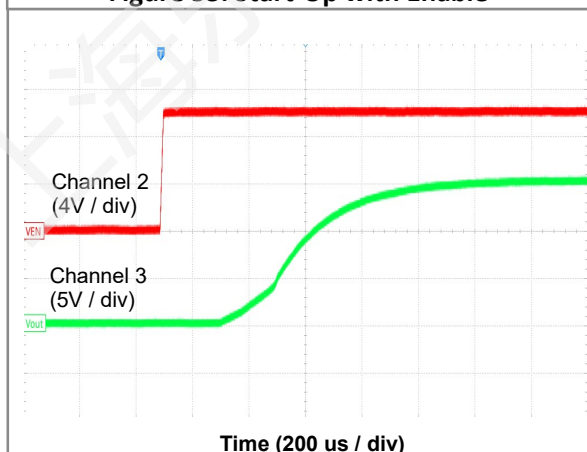
Channel 2 = EN, Channel 3 =  $V_{OUT}$ ,  $V_{IN}=6.0V$ ,  $EN=0 \rightarrow 6.0V$ ,  $V_{OUT}=5.0V$ ,  $C_{IN}=C_{OUT}=1\mu F$ , No Load

**Figure 33. Start-Up with Enable**



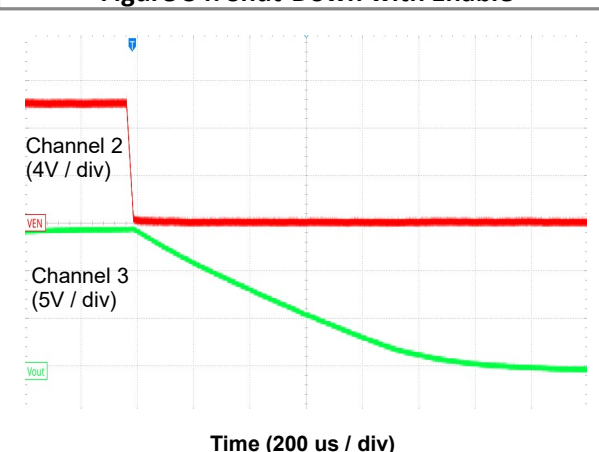
Channel 2 = EN, Channel 3 =  $V_{OUT}$ ,  $V_{IN}=6.0V$ ,  $EN=6.0 \rightarrow 0V$ ,  $V_{OUT}=5.0V$ ,  $C_{IN}=C_{OUT}=1\mu F$ , No Load

**Figure 34. Shut-Down with Enable**



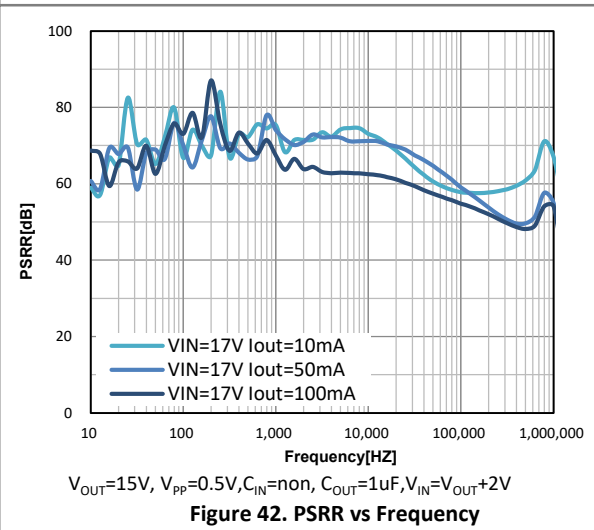
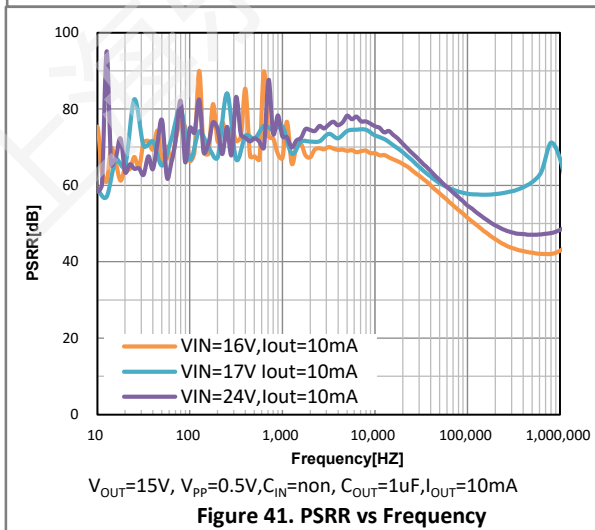
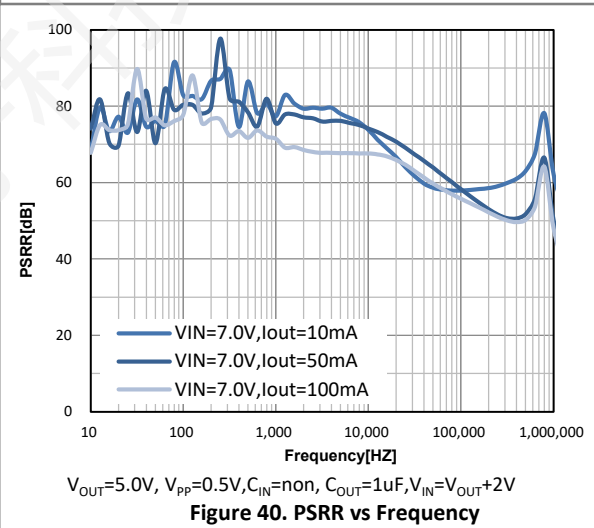
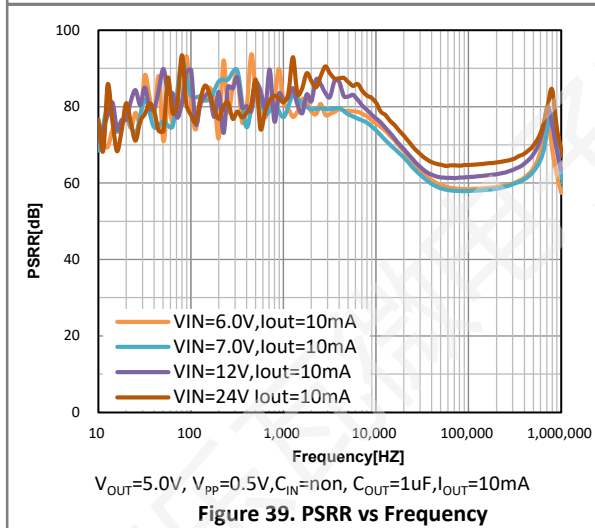
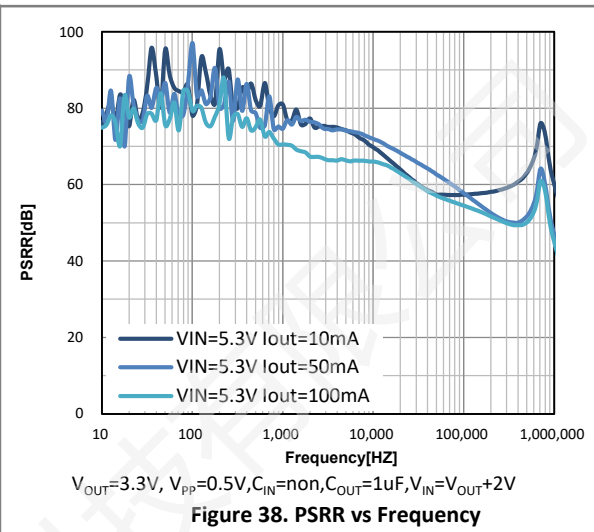
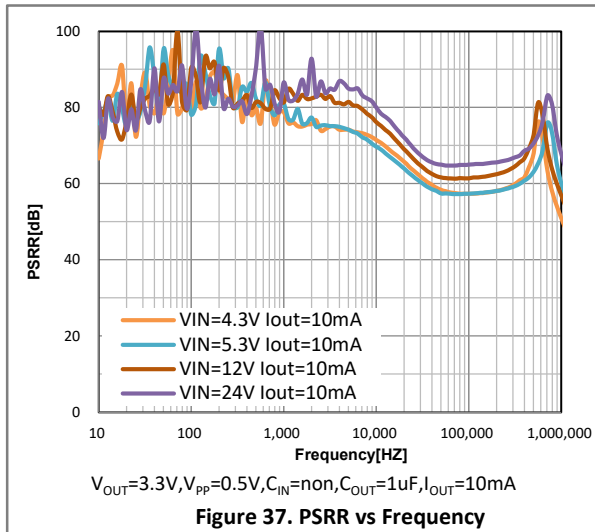
Channel 2 = EN, Channel 3 =  $V_{OUT}$ ,  $V_{IN}=16V$ ,  $EN=0 \rightarrow 10V$ ,  $V_{OUT}=15V$ ,  $C_{IN}=C_{OUT}=1\mu F$ , No Load

**Figure 35. Start-Up with Enable**



Channel 2 = EN, Channel 3 =  $V_{OUT}$ ,  $V_{IN}=16V$ ,  $EN=10 \rightarrow 0V$ ,  $V_{OUT}=15V$ ,  $C_{IN}=C_{OUT}=1\mu F$ , No Load

**Figure 36. Shut-Down with Enable**



**APPLICATION INFORMATION:**

- **Input Capacitor Selection**

Like any low-dropout regulator, the external capacitors used with the LW67XX Series must be carefully selected for regulator stability and performance. Using a capacitor whose value is  $\geq 1\mu\text{F}$  on the LW67XX Series input and the amount of capacitance can be increased without limit. The input capacitor must be located a distance of not more than 0.5 inch from the input pin of the IC and returned to a clean analog ground. Any good quality ceramic or tantalum can be used for this capacitor. The capacitor with larger value and lower ESR (equivalent series resistance) provides better PSRR and line-transient response.

- **Output Capacitor Selection**

The output capacitor must meet both requirements for minimum amount of capacitance and ESR in all LDOs application. The LW67XX Series is designed specifically to work with low ESR ceramic output capacitor in space-saving and performance consideration. Using a ceramic capacitor whose value is at least  $1\mu\text{F}$  on the LW67XX Series output ensures stability. Output capacitor of larger capacitance can reduce noise and improve load transient response, stability, and PSRR. The output capacitor should be located not more than 0.5 inch from the VOUT pin of the LW67XX Series and returned to a clean analog ground.

- **Layout considerations**

To improve ac performance such as PSRR, output noise, and transient response, it is recommended that the PCB be designed with separate ground planes for VIN and VOUT, with each ground plane connected only at the GND pin of the device.

### ORDER INFORMATION:

LW67①②③④⑤⑥

| Designator | Item           | Symbol | Description       |
|------------|----------------|--------|-------------------|
| ①②         | Output Voltage | 25~A5  | e.g. 2.8V→①=2,②=8 |
| ③④⑤⑥       | Packages       | ES8H   | ESOP-8            |
|            |                | N22G   | DFN2x2-6L         |
|            |                | B89C   | SOT89-3L(Type-B)  |
|            |                | C89C   | SOT89-3L(Type-C)  |
|            |                | A52B   | TO-252            |

| Part #     | Output Voltage | Package   | Shipping               |
|------------|----------------|-----------|------------------------|
| LW6725ES8H | 2.5V           | ESOP-8    | 4000 Pcs / Tape & Reel |
| LW6730ES8H | 3.0V           |           |                        |
| LW6733ES8H | 3.3V           |           |                        |
| LW6736ES8H | 3.6V           |           |                        |
| LW6740ES8H | 4.0V           |           |                        |
| LW6750ES8H | 5.0V           |           |                        |
| LW67A2ES8H | 12V            |           |                        |
| LW67A5ES8H | 15V            |           |                        |
| LW6725N22G | 2.5V           | DFN2x2-6L | 3000 Pcs/ Tape & Reel  |
| LW6730N22G | 3.0V           |           |                        |
| LW6733N22G | 3.3V           |           |                        |
| LW6736N22G | 3.6V           |           |                        |
| LW6740N22G | 4.0V           |           |                        |
| LW6750N22G | 5.0V           |           |                        |
| LW67A2N22G | 12V            |           |                        |
| LW67A5N22G | 15V            |           |                        |



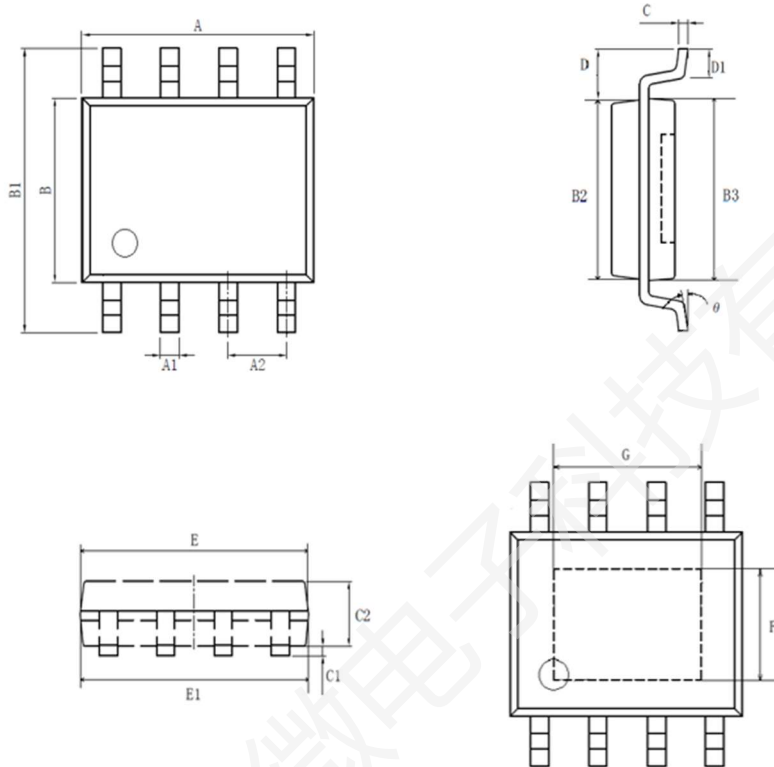
| Part #     | Output Voltage | Package          | Shipping               |
|------------|----------------|------------------|------------------------|
| LW6725B89C | 2.5V           | SOT89-3L(Type-B) | 1000 Pcs / Tape & Reel |
| LW6730B89C | 3.0V           |                  |                        |
| LW6733B89C | 3.3V           |                  |                        |
| LW6736B89C | 3.6V           |                  |                        |
| LW6740B89C | 4.0V           |                  |                        |
| LW6750B89C | 5.0V           |                  |                        |
| LW67A2B89C | 12V            |                  |                        |
| LW67A5B89C | 15V            |                  |                        |
| LW6725C89C | 2.5V           | SOT89-3L(Type-C) | 1000 Pcs / Tape & Reel |
| LW6730C89C | 3.0V           |                  |                        |
| LW6733C89C | 3.3V           |                  |                        |
| LW6736C89C | 3.6V           |                  |                        |
| LW6740C89C | 4.0V           |                  |                        |
| LW6750C89C | 5.0V           |                  |                        |
| LW67A2C89C | 12V            |                  |                        |
| LW67A5C89C | 15V            |                  |                        |
| LW6725A52B | 2.5V           | TO-252           | 2500 Pcs / Tape & Reel |
| LW6730A52B | 3.0V           |                  |                        |
| LW6733A52B | 3.3V           |                  |                        |
| LW6736A52B | 3.6V           |                  |                        |
| LW6740A52B | 4.0V           |                  |                        |
| LW6750A52B | 5.0V           |                  |                        |
| LW67A2A52B | 12V            |                  |                        |
| LW67A5A52B | 15V            |                  |                        |

If customers have special output voltage requirements, please contact us.



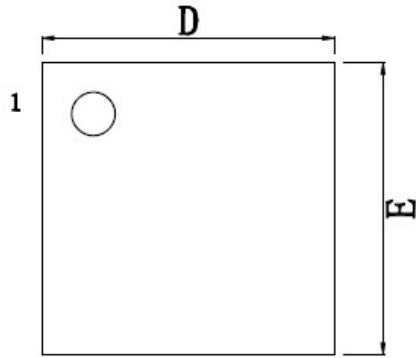
### PACKAGE OUTLINE:

#### ESOP-8 Package

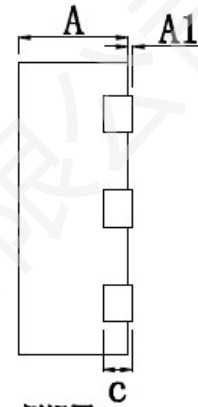


| Symbol                     | Dimensions In Millimeters |      |      |
|----------------------------|---------------------------|------|------|
|                            | Min                       | Typ  | Max  |
| <b>A</b>                   | 4.70                      | 4.90 | 5.10 |
| <b>A1</b>                  | 0.37                      | 0.42 | 0.47 |
| <b>A2</b>                  | 1.22                      | 1.27 | 1.32 |
| <b>B</b>                   | 3.70                      | 3.90 | 4.10 |
| <b>B1</b>                  | 5.80                      | 6.00 | 6.20 |
| <b>B2</b>                  | 3.75                      | 3.85 | 3.95 |
| <b>B3</b>                  | 3.80                      | 3.90 | 4.00 |
| <b>C</b>                   | 0.16                      | 0.21 | 0.26 |
| <b>C1</b>                  | 0.04                      | 0.11 | 0.18 |
| <b>C2</b>                  | 1.30                      | 1.40 | 1.50 |
| <b>D</b>                   | 0.95                      | 1.05 | 1.15 |
| <b>D1</b>                  | 0.40                      | 0.50 | 0.60 |
| <b>E</b>                   | 4.65                      | 4.85 | 5.05 |
| <b>E1</b>                  | 4.70                      | 4.90 | 5.10 |
| <b><math>\theta</math></b> | REF 8°                    |      |      |
| <b>G</b>                   | 3.20                      | 3.35 | 3.50 |
| <b>F</b>                   | 2.20                      | 2.35 | 2.50 |

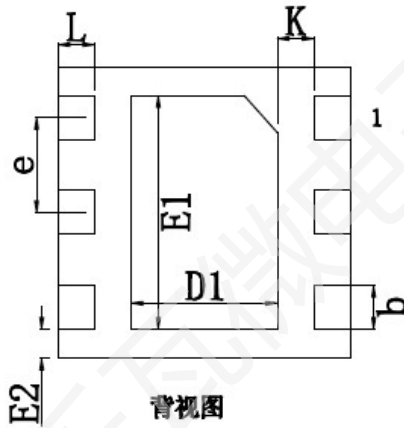
### DFN2x2-6L Package



俯视图



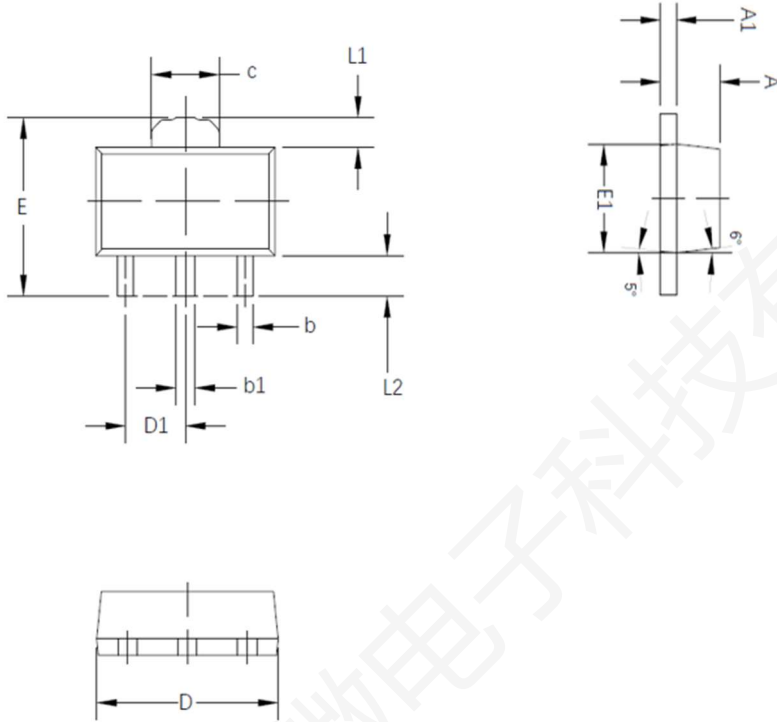
侧视图



背视图

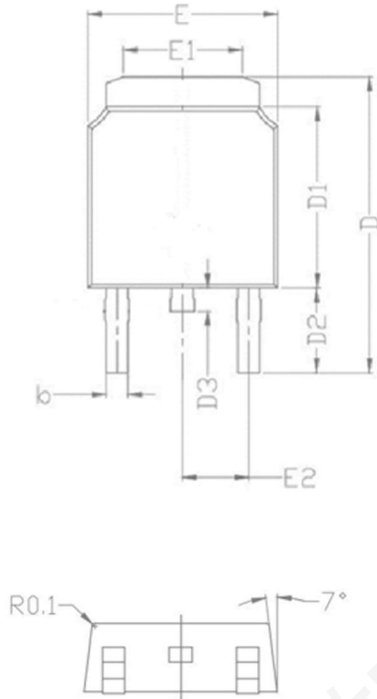
| SYMBOL | MILLMETER |      |      |
|--------|-----------|------|------|
|        | MIN       | NOM  | MAX  |
| A      | 0.70      | 0.75 | 0.80 |
| A1     | 0.00      | —    | 0.05 |
| b      | 0.25      | 0.30 | 0.35 |
| c      | 0.203 TYP |      |      |
| D      | 1.95      | 2.00 | 2.05 |
| D1     | 0.90      | 1.00 | 1.10 |
| E      | 1.95      | 2.00 | 2.05 |
| E1     | 1.55      | 1.60 | 1.65 |
| E2     | 0.20 REF  |      |      |
| e      | 0.65 BSC  |      |      |
| K      | 0.25 REF  |      |      |
| L      | 0.20      | 0.25 | 0.30 |

### SOT89-3L Package



| COMMON DIMENSION (MM) |          |       |       |
|-----------------------|----------|-------|-------|
| PKG                   | SOT89-3L |       |       |
| Symbol                | MIN      | NOM   | MAX   |
| A                     | 1.450    | 1.500 | 1.550 |
| A1                    | 0.350    | 0.400 | 0.450 |
| b                     | 0.350    | 0.430 | 0.500 |
| b1                    | 0.430    | 0.500 | 0.570 |
| C                     | 1.650    | 1.700 | 1.750 |
| D                     | 4.450    | 4.550 | 4.700 |
| D1                    | 1.470    | 1.500 | 1.550 |
| E                     | 4.100    | 4.200 | 4.300 |
| E1                    | 2.450    | 2.550 | 2.650 |
| L1                    | 0.630    | 0.700 | 0.770 |
| L2                    | 0.900    | 0.950 | 1.000 |

### TO-252 Package



| COMMON |        |        |        |
|--------|--------|--------|--------|
| PKG    | TO-252 |        |        |
| Symbol | Min    | Nom    | Max    |
| A      | 2.200  | 2.300  | 2.400  |
| A1     | 0.000  | 0.075  | 0.150  |
| A2     | 0.460  | 0.525  | 0.590  |
| A3     | 0.960  | 1.010  | 1.060  |
| b      | 0.640  | 0.720  | 0.800  |
| C      | 0.450  | 0.515  | 0.580  |
| D      | 9.800  | 10.025 | 10.350 |
| D1     | 6.000  | 6.100  | 6.200  |
| D2     | 2.850  | 2.900  | 3.100  |
| D3     | 0.490  | 0.800  | 1.000  |
| E      | 6.400  | 6.550  | 6.700  |
| E1     | 4.050  | 4.130  | 4.600  |
| E2     | 2.250  | 2.286  | 2.300  |
| L      | 1.400  | 1.550  | 1.700  |
| e      | 7°     | 8°     | 9°     |
| Q      | 0°     | 5°     | 10°    |

**Revision History:**

| Revision | Date     | Descriptions                                                        |
|----------|----------|---------------------------------------------------------------------|
| Rev 0.1  | Nov.2022 | Initial Version                                                     |
| Rev 0.2  | Sep.2023 | Adjust product definition                                           |
| Rev 1.0  | Jan.2024 | Formal Version                                                      |
| Rev 1.1  | Oct.2024 | Add Package DFN2x2-6L                                               |
| Rev 1.2  | Aug.2025 | Distinguish $I_Q$ under different conditions in Ectable             |
| Rev 1.3  | Apr.2026 | Update Eletrical Characteristcs & Package Outline                   |
| Rev 1.4  | Apr.2026 | Update Absolute Maximum Ratings & Typical Operating Characteristics |

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