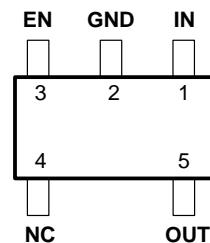


- 50-mA Low-Dropout Regulator
- Fixed Output Voltage Options: 5 V, 3.8 V, 3.3 V, 3.2 V, and 3 V
- Dropout Typically 120 mV at 50 mA
- Thermal Protection
- Less Than 1- μ A Quiescent Current in Shutdown
- -40°C to 125°C Operating Junction Temperature Range
- 5-Pin SOT-23 Package
- ESD Protection Verified to 1.5 kV Human Body Model (HBM) per MIL-STD-883C

DBV PACKAGE
(TOP VIEW)



NC – No internal connection

description

The TPS760xx is a 50 mA, low dropout (LDO) voltage regulator designed specifically for battery-powered applications. A proprietary BiCMOS fabrication process allows the TPS760xx to provide outstanding performance in all specifications critical to battery-powered operation.

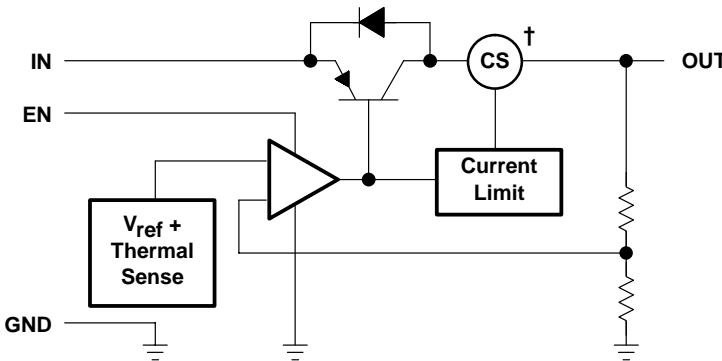
The TPS760xx is available in a space-saving SOT-23 package and operates over a junction temperature range of -40°C to 125°C .

AVAILABLE OPTIONS

| T _J | VOLTAGE | PACKAGE | PART NUMBER | SYMBOL |
|--|---------|---------|--------------|--------|
| -40°C to 125°C | 3 V | SOT-23 | TPS76030DBVR | PAGI |
| | 3.2 V | | TPS76032DBVR | PAOI |
| | 3.3 V | | TPS76033DBVR | PAHI |
| | 3.8 V | | TPS76038DBVR | PAJI |
| | 5 V | | TPS76050DBVR | PANI |

NOTE: The DBV package is available taped and reeled only.

functional block diagram



† Current sense



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

TPS76030, TPS76032, TPS76033, TPS76038, TPS76050 LOW-POWER 50-mA LOW-DROPOUT LINEAR REGULATORS

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Terminal Functions

| TERMINAL NAME | NO. | I/O | DESCRIPTION |
|------------------|-----|-----|--------------------------|
| EN | 3 | I | Enable input |
| GND | 2 | | Ground |
| IN | 1 | I | Input voltage |
| NC | 4 | | No connection |
| OUT | 5 | O | Regulated output voltage |

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)[†]

| | |
|---|------------------------------|
| Input voltage range, V_I [‡] | –0.3 V to 16 V |
| Voltage range at EN | –0.3 V to $V_I + 0.3$ V |
| Peak output current | internally limited |
| Continuous total dissipation | See Dissipation Rating Table |
| Operating junction temperature range, T_J | –40°C to 150°C |
| Storage temperature range, T_{stg} | –65°C to 150°C |
| ESD rating, HBM | 1.5 kV |

[†] 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.

[‡] All voltages are with respect to device GND pin.

DISSIPATION RATING TABLE

| BOARD | PACKAGE | $R_{\theta JC}$ | $R_{\theta JA}$ | DERATING FACTOR ABOVE $T_A = 25^\circ C$ | $T_A \leq 25^\circ C$ POWER RATING | $T_A = 70^\circ C$ POWER RATING | $T_A = 85^\circ C$ POWER RATING |
|---------------------|---------|-----------------|-----------------|---|---------------------------------------|------------------------------------|------------------------------------|
| Low K [§] | DBV | 65.8 °C/W | 259 °C/W | 3.9 mW/°C | 386 mW | 212 mW | 154 mW |
| High K [¶] | DBV | 65.8 °C/W | 180 °C/W | 5.6 mW/°C | 555 mW | 305 mW | 222 mW |

[§] The JEDEC Low K (1s) board design used to derive this data was a 3 inch x 3 inch, two layer board with 2 ounce copper traces on top of the board.

[¶] The JEDEC High K (2s2p) board design used to derive this data was a 3 inch x 3 inch, multilayer board with 1 ounce internal power and ground planes and 2 ounce copper traces on top and bottom of the board.

recommended operating conditions

| | | MIN | NOM | MAX | UNIT |
|---------------------------------------|----------|-----|-----|-----|------|
| Input voltage, V_I | TPS76030 | 3.2 | 16 | | V |
| | TPS76032 | 3.4 | 16 | | |
| | TPS76033 | 3.5 | 16 | | |
| | TPS76038 | 4 | 16 | | |
| | TPS76050 | 5.2 | 16 | | |
| Continuous output current, I_O | | 0 | 50 | | mA |
| Operating junction temperature, T_J | | –40 | 125 | | °C |

**TPS76030, TPS76032, TPS76033, TPS76038, TPS76050
LOW-POWER 50-mA LOW-DROPOUT LINEAR REGULATORS**

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**electrical characteristics over recommended operating free-air temperature range,
 $V_I = V_{O(nom)} + 1 \text{ V}$, $I_O = 1 \text{ mA}$, $EN = V_I$, $C_O = 2.2 \mu\text{F}$ (unless otherwise noted)**

| PARAMETER | | TEST CONDITIONS | MIN | TYP | MAX | UNIT | |
|-----------------------------------|----------------------------|--|------|------|------|------------------|--|
| V_O | Output voltage TPS76030 | $T_J = 25^\circ\text{C}$ | 2.96 | 3 | 3.04 | V | |
| | | $T_J = 25^\circ\text{C}$, $1 \text{ mA} < I_O < 50 \text{ mA}$ | 2.92 | | 3.04 | | |
| | | $1 \text{ mA} < I_O < 50 \text{ mA}$ | 2.91 | | 3.07 | | |
| | TPS76032 | $T_J = 25^\circ\text{C}$ | 3.16 | 3.2 | 3.24 | V | |
| | | $T_J = 25^\circ\text{C}$, $1 \text{ mA} < I_O < 50 \text{ mA}$ | 3.13 | | 3.24 | | |
| | | $1 \text{ mA} < I_O < 50 \text{ mA}$ | 3.1 | | 3.3 | | |
| | TPS76033 | $T_J = 25^\circ\text{C}$ | 3.26 | 3.3 | 3.34 | V | |
| | | $T_J = 25^\circ\text{C}$, $1 \text{ mA} < I_O < 50 \text{ mA}$ | 3.23 | | 3.34 | | |
| | | $1 \text{ mA} < I_O < 50 \text{ mA}$ | 3.2 | | 3.4 | | |
| | TPS76038 | $T_J = 25^\circ\text{C}$ | 3.76 | 3.8 | 3.84 | V | |
| | | $T_J = 25^\circ\text{C}$, $1 \text{ mA} < I_O < 50 \text{ mA}$ | 3.73 | | 3.84 | | |
| | | $1 \text{ mA} < I_O < 50 \text{ mA}$ | 3.7 | | 3.9 | | |
| | TPS76050 | $T_J = 25^\circ\text{C}$ | 4.95 | 5 | 5.05 | V | |
| | | $T_J = 25^\circ\text{C}$, $1 \text{ mA} < I_O < 50 \text{ mA}$ | 4.91 | | 5.05 | | |
| | | $1 \text{ mA} < I_O < 50 \text{ mA}$ | 4.89 | | 5.1 | | |
| $I_I(\text{standby})$ | Standby current | $EN = 0 \text{ V}$ | | | 1 | μA | |
| Quiescent current (GND current) | | $I_O = 0 \text{ mA}$, $T_J = 25^\circ\text{C}$ | 90 | 115 | | μA | |
| | | $I_O = 0 \text{ mA}$ | | | 130 | | |
| | | $I_O = 1 \text{ mA}$, $T_J = 25^\circ\text{C}$ | 100 | 130 | | | |
| | | $I_O = 1 \text{ mA}$ | | | 170 | | |
| | | $I_O = 10 \text{ mA}$, $T_J = 25^\circ\text{C}$ | 190 | 215 | | | |
| | | $I_O = 10 \text{ mA}$ | | | 260 | | |
| | | $I_O = 50 \text{ mA}$, $T_J = 25^\circ\text{C}$ | 850 | 1100 | | | |
| | | $I_O = 50 \text{ mA}$ | | | 1200 | | |
| | | | | | | | |
| Input regulation | TPS76030 | $4 \text{ V} < V_I < 16$, $I_O = 1 \text{ mA}$ | 3 | 10 | | mV | |
| | TPS76032 | $4.2 \text{ V} < V_I < 16$, $I_O = 1 \text{ mA}$ | 3 | 10 | | | |
| | TPS76033 | $4.3 \text{ V} < V_I < 16$, $I_O = 1 \text{ mA}$ | 3 | 10 | | | |
| | TPS76038 | $4.8 \text{ V} < V_I < 16$, $I_O = 1 \text{ mA}$ | 3 | 10 | | | |
| | TPS76050 | $6 \text{ V} < V_I < 16$, $I_O = 1 \text{ mA}$ | 3 | 10 | | | |
| V_n | Output noise voltage | $BW = 300 \text{ Hz to } 50 \text{ kHz}$, $C_O = 10 \mu\text{F}$, $T_J = 25^\circ\text{C}$ | 190 | | | μVrms | |
| Ripple rejection | | $f = 1 \text{ kHz}$, $C_O = 10 \mu\text{F}$, $T_J = 25^\circ\text{C}$ | 63 | | | dB | |
| Dropout voltage | | $I_O = 0 \text{ mA}$, $T_J = 25^\circ\text{C}$ | 1 | 3 | | mV | |
| | | $I_O = 0 \text{ mA}$ | | | 5 | | |
| | | $I_O = 1 \text{ mA}$, $T_J = 25^\circ\text{C}$ | 7 | 10 | | | |
| | | $I_O = 1 \text{ mA}$ | | | 15 | | |
| | | $I_O = 10 \text{ mA}$, $T_J = 25^\circ\text{C}$ | 40 | 60 | | | |
| | | $I_O = 10 \text{ mA}$ | | | 90 | | |
| | | $I_O = 50 \text{ mA}$, $T_J = 25^\circ\text{C}$ | 120 | 150 | | | |
| | | $I_O = 50 \text{ mA}$ | | | 180 | | |
| Peak output current/current limit | | | 100 | 125 | 135 | mA | |
| High level enable input | | | 2 | | | V | |
| Low level enable input | | | | | 0.8 | V | |
| I_I | Input current (EN) | $EN = 0 \text{ V}$ | -1 | 0 | 1 | μA | |
| | | $EN = V_I$ | 2.5 | 5 | | μA | |

TPS76030, TPS76032, TPS76033, TPS76038, TPS76050 LOW-POWER 50-mA LOW-DROPOUT LINEAR REGULATORS

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Table of Graphs

| | | FIGURE |
|----------|-------------------------|------------------------------------|
| V_O | Output voltage | vs Output current 1, 2, 3 |
| | | vs Free-air temperature 4, 5, 6 |
| | Ground current | vs Free-air temperature 7, 8, 9 |
| | Output noise | vs Frequency 10 |
| Z_O | Output impedance | vs Frequency 11 |
| V_{DO} | Dropout voltage | vs Free-air temperature 12 |
| | Line transient response | 13, 15 |
| | Load transient response | 14, 16 |



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TYPICAL CHARACTERISTICS

TPS76030
OUTPUT VOLTAGE
vs
OUTPUT CURRENT

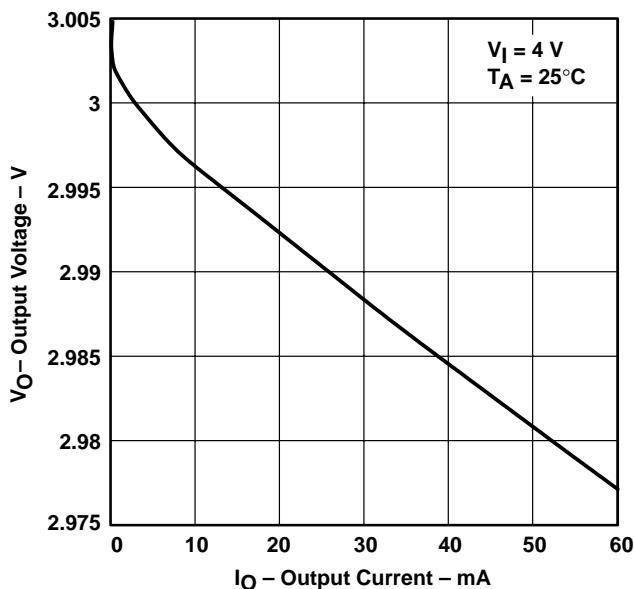


Figure 1

TPS76033
OUTPUT VOLTAGE
vs
OUTPUT CURRENT

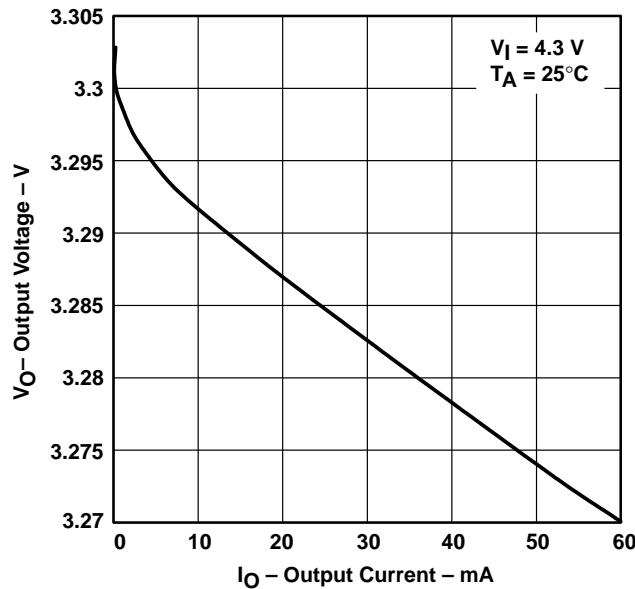


Figure 2

TPS76050
OUTPUT VOLTAGE
vs
OUTPUT CURRENT

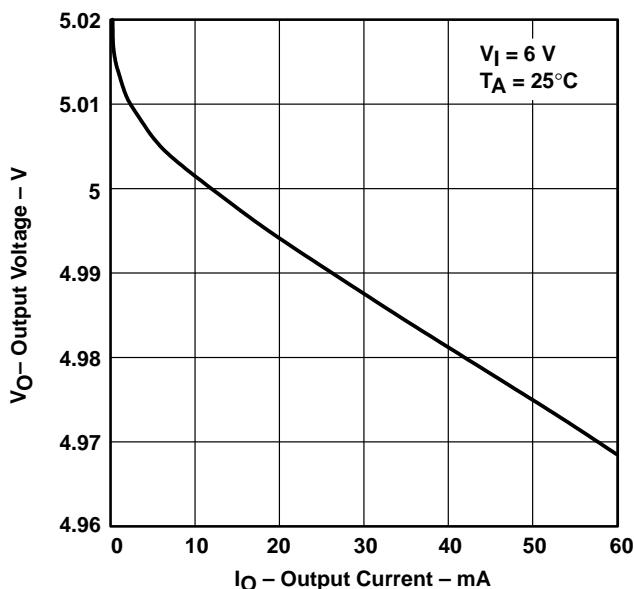


Figure 3

TPS76030
OUTPUT VOLTAGE
vs
FREE-AIR TEMPERATURE

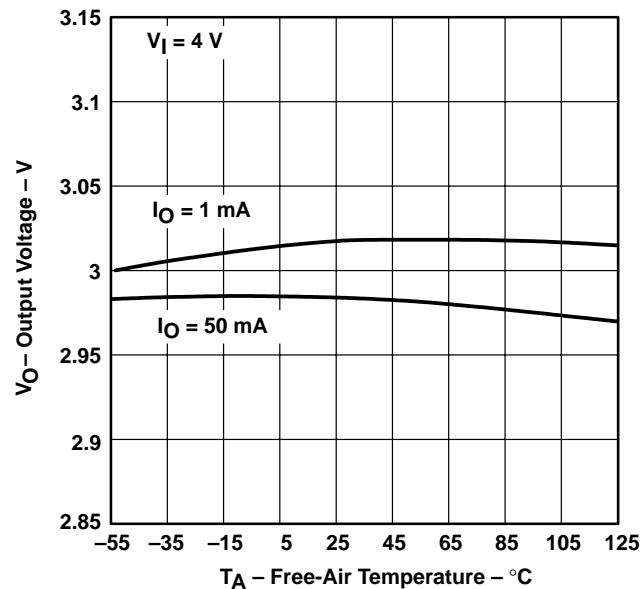
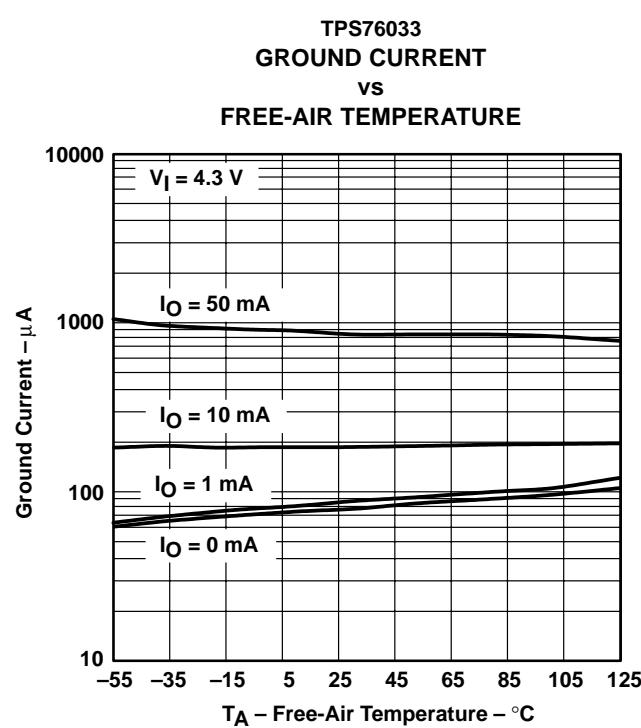
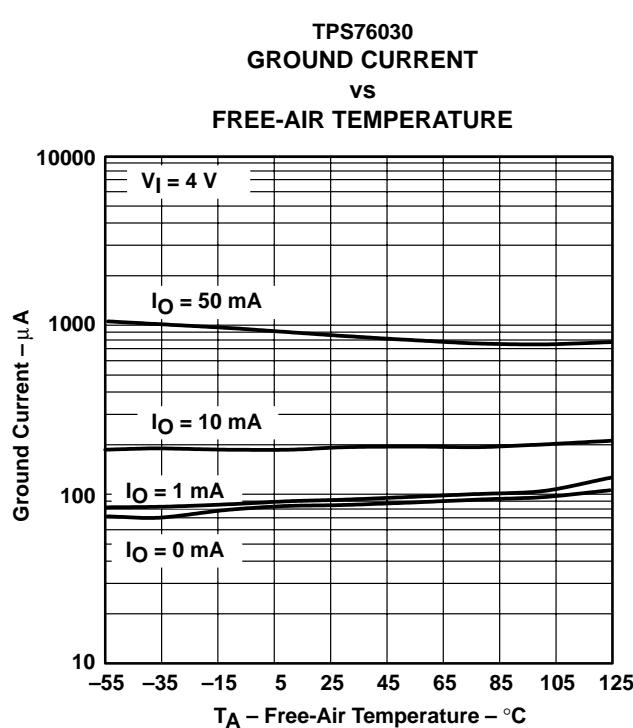
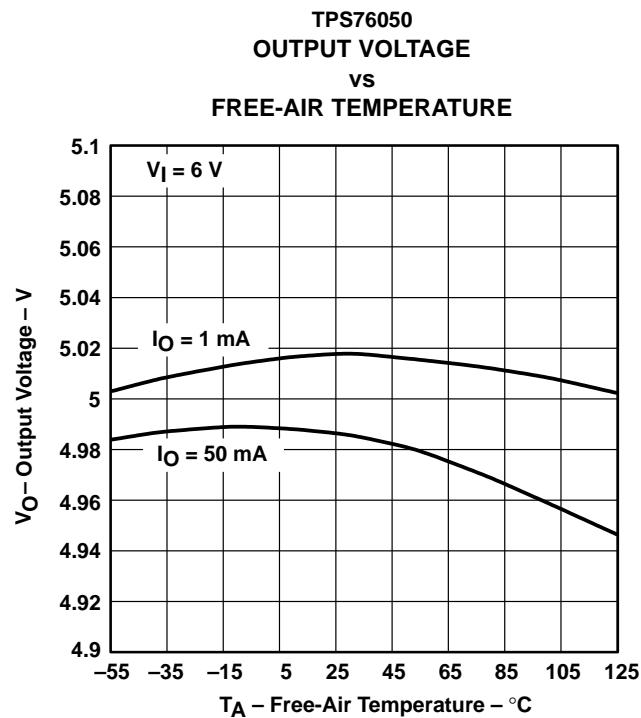
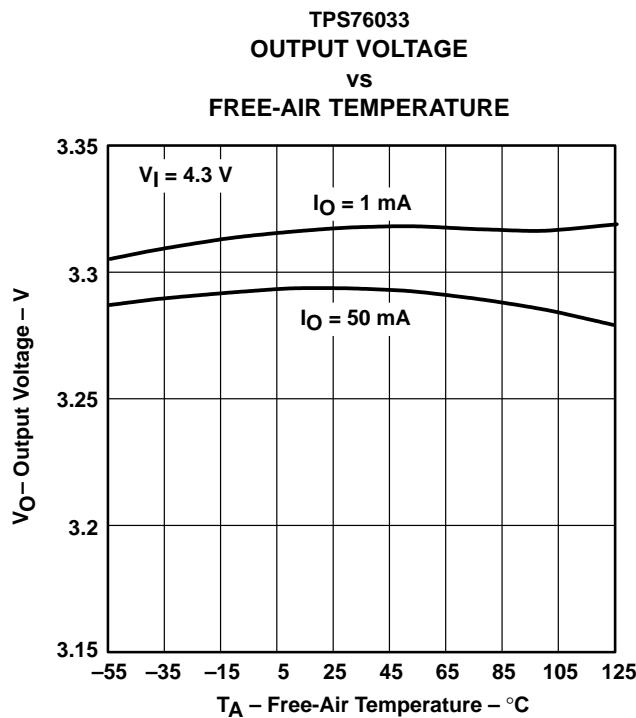


Figure 4

TPS76030, TPS76032, TPS76033, TPS76038, TPS76050 LOW-POWER 50-mA LOW-DROPOUT LINEAR REGULATORS

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TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS

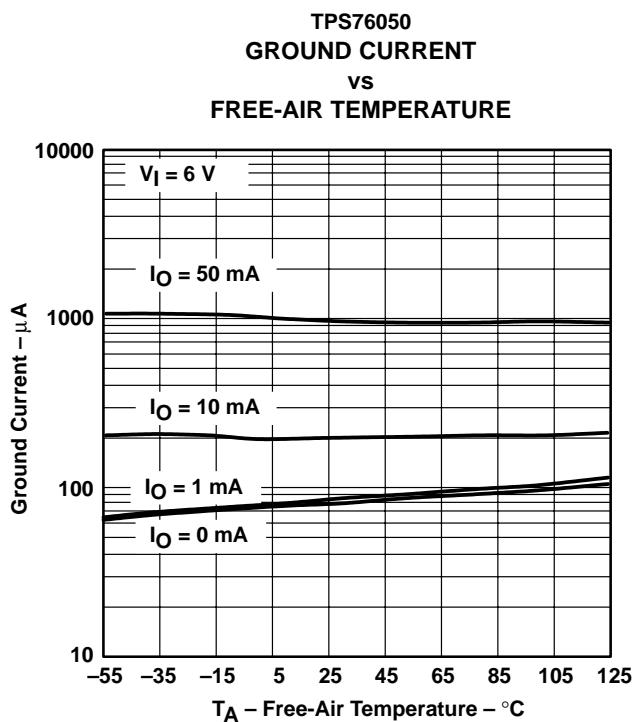


Figure 9

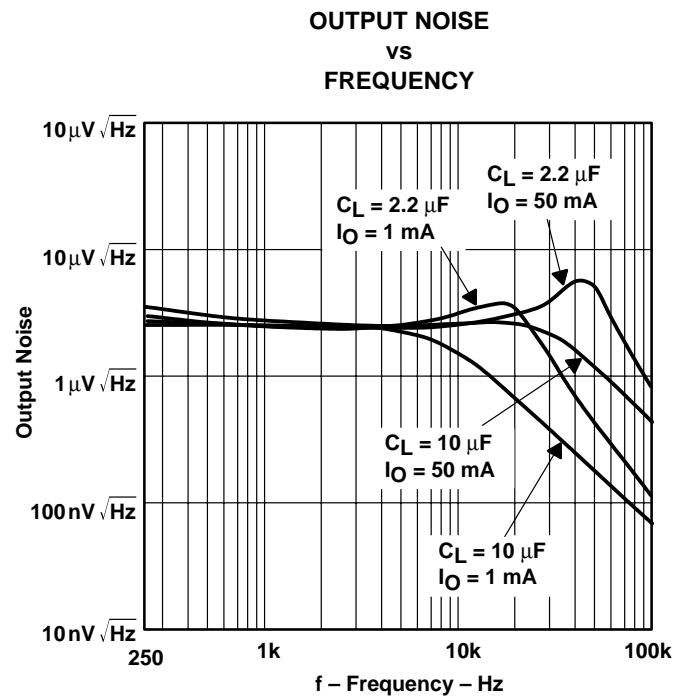


Figure 10

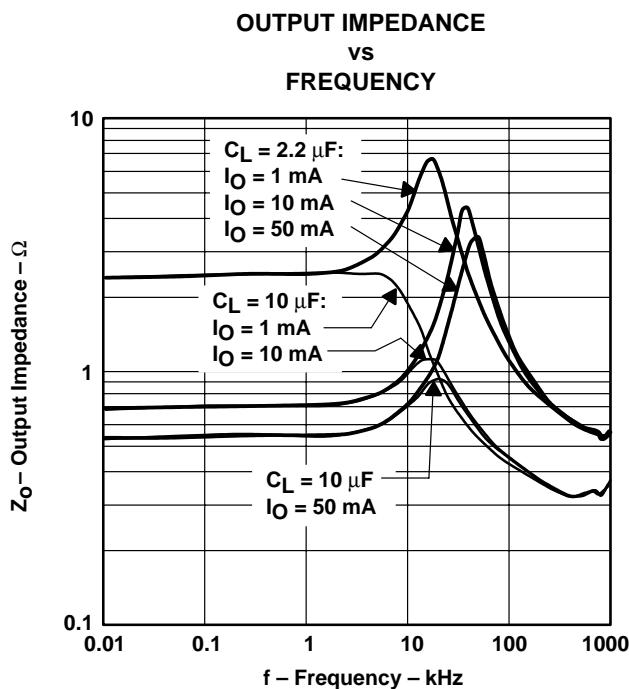


Figure 11

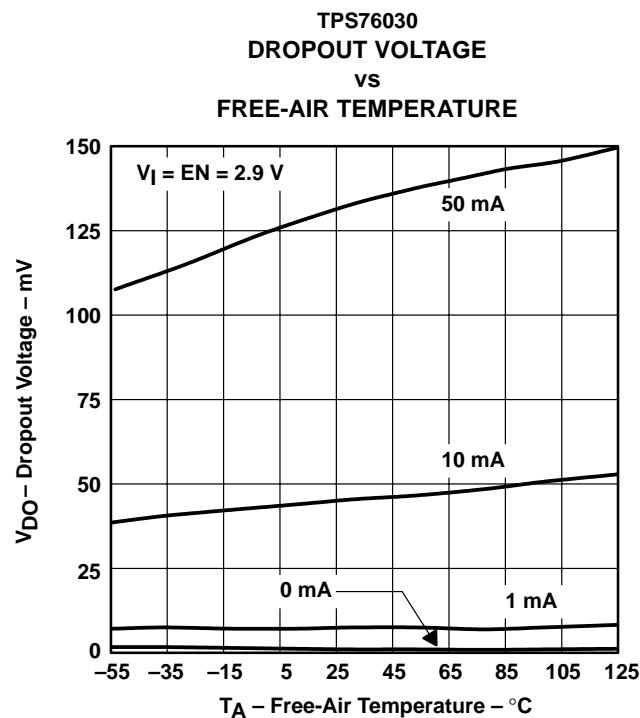


Figure 12

TPS76030, TPS76032, TPS76033, TPS76038, TPS76050 LOW-POWER 50-mA LOW-DROPOUT LINEAR REGULATORS

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TYPICAL CHARACTERISTICS

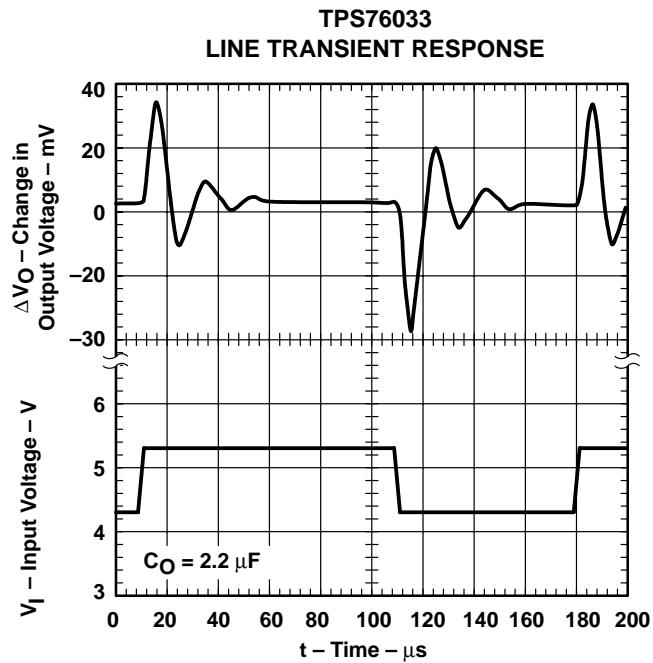


Figure 13

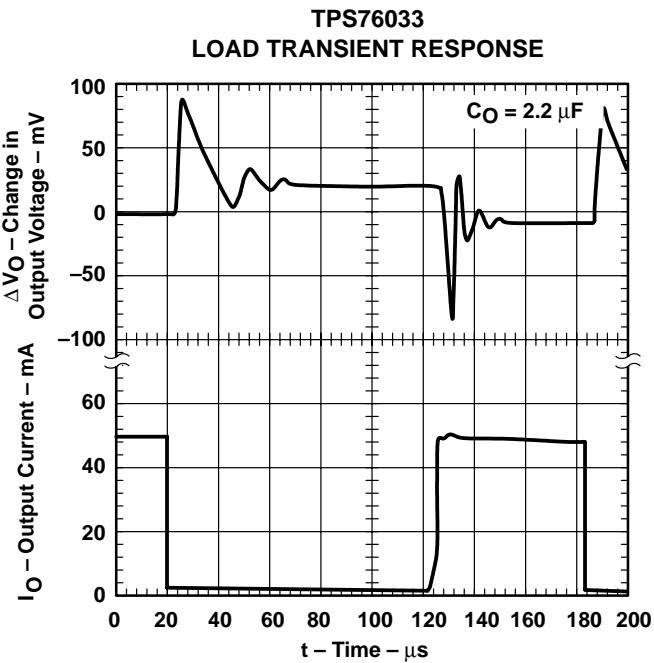


Figure 14

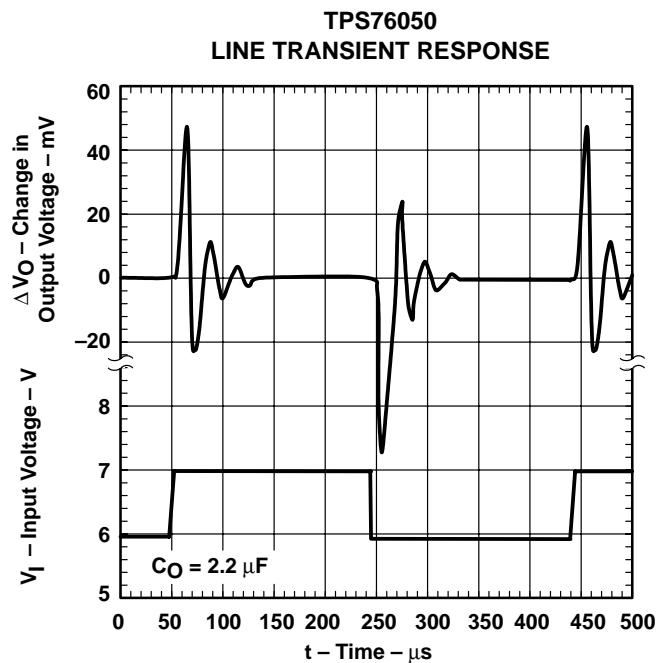


Figure 15

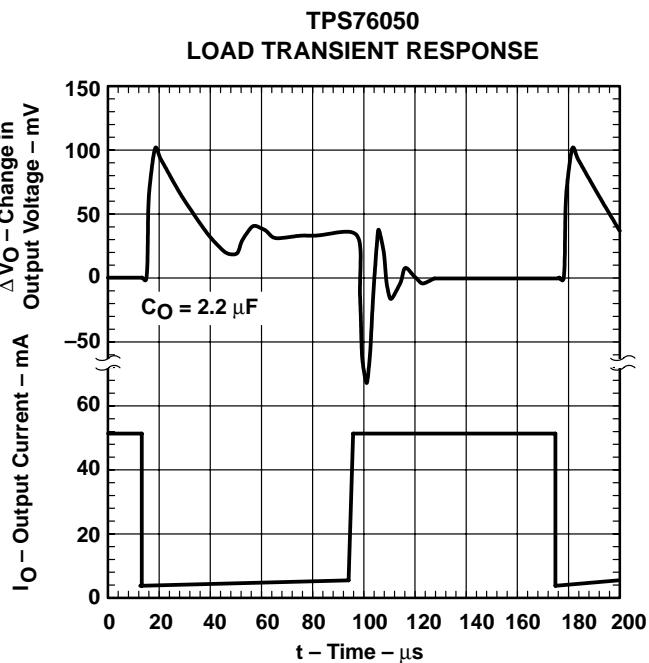


Figure 16

APPLICATION INFORMATION

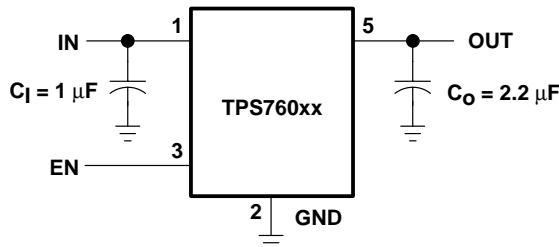


Figure 17. TPS760xx Typical Application

over current protection

The over current protection circuit forces the TPS760xx into a constant current output mode when the load is excessive or the output is shorted to ground. Normal operation resumes when the fault condition is removed. An overload or short circuit may also activate the over temperature protection if the fault condition persists.

over temperature protection

The thermal protection system shuts the TPS760xx down when the junction temperature exceeds 160°C. The device recovers and operates normally when the temperature drops below 155°C.

input capacitor

A 0.047 μ F or larger ceramic decoupling capacitor with short leads connected between IN and GND is recommended. The decoupling capacitor may be omitted if there is a 1 μ F or larger electrolytic capacitor connected between IN and GND and located reasonably close to the TPS760xx. However, the small ceramic device is desirable even when the larger capacitor is present, if there is a lot of high frequency noise present in the system.

output capacitor

Like all low dropout regulators, the TPS760xx requires an output capacitor connected between OUT and GND to stabilize the internal control loop. The minimum recommended capacitance value is 2.2 μ F and the ESR (equivalent series resistance) must be between 0.1 Ω and 20 Ω . Capacitor values of 2.5- μ F or larger are acceptable, provided the ESR is less than 20 Ω . Solid tantalum electrolytic, aluminum electrolytic, and multilayer ceramic capacitors are all suitable, provided they meet the requirements described above. Most of the commercially available 2.2- μ F surface-mount solid-tantalum capacitors, including devices from Sprague, Kemet, and Nichicon, meet the ESR requirements stated above. Multilayer ceramic capacitors should have minimum values of 2.5 μ F over the full operating temperature range of the equipment.

enable (EN)

A logic zero on the enable input shuts the TPS760xx off and reduces the supply current to less than 1 μ A. Pulling the enable input high causes normal operation to resume. If the enable feature is not used, EN should be connected to IN to keep the regulator on all of the time. The EN input must not be left floating.

reverse current path

The power transistor used in the TPS760xx has an inherent diode connected between IN and OUT as shown in the functional block diagram. This diode conducts current from the OUT terminal to the IN terminal whenever IN is lower than OUT by a diode drop. This condition does not damage the TPS760xx, provided the current is limited to 100 mA.

PACKAGING INFORMATION

| Orderable Device | Status (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan (2) | Lead/Ball Finish | MSL Peak Temp (3) | Op Temp (°C) | Top-Side Markings (4) | Samples |
|------------------|---------------|--------------|--------------------|------|-------------|-------------------------|------------------|----------------------|--------------|--------------------------|-------------------------|
| TPS76030DBVR | ACTIVE | SOT-23 | DBV | 5 | 3000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAGI | Samples |
| TPS76030DBVRG4 | ACTIVE | SOT-23 | DBV | 5 | 3000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAGI | Samples |
| TPS76030DBVT | ACTIVE | SOT-23 | DBV | 5 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAGI | Samples |
| TPS76030DBVTG4 | ACTIVE | SOT-23 | DBV | 5 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAGI | Samples |
| TPS76032DBVR | ACTIVE | SOT-23 | DBV | 5 | 3000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAOI | Samples |
| TPS76032DBVRG4 | ACTIVE | SOT-23 | DBV | 5 | 3000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAOI | Samples |
| TPS76033DBVR | ACTIVE | SOT-23 | DBV | 5 | 3000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAHI | Samples |
| TPS76033DBVRG4 | ACTIVE | SOT-23 | DBV | 5 | 3000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAHI | Samples |
| TPS76033DBVT | ACTIVE | SOT-23 | DBV | 5 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAHI | Samples |
| TPS76033DBVTG4 | ACTIVE | SOT-23 | DBV | 5 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAHI | Samples |
| TPS76038DBVR | ACTIVE | SOT-23 | DBV | 5 | 3000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAJI | Samples |
| TPS76038DBVRG4 | ACTIVE | SOT-23 | DBV | 5 | 3000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAJI | Samples |
| TPS76038DBVT | ACTIVE | SOT-23 | DBV | 5 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAJI | Samples |
| TPS76038DBVTG4 | ACTIVE | SOT-23 | DBV | 5 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PAJI | Samples |
| TPS76050DBVR | ACTIVE | SOT-23 | DBV | 5 | 3000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PANI | Samples |
| TPS76050DBVRG4 | ACTIVE | SOT-23 | DBV | 5 | 3000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PANI | Samples |
| TPS76050DBVT | ACTIVE | SOT-23 | DBV | 5 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PANI | Samples |

| Orderable Device | Status (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan (2) | Lead/Ball Finish | MSL Peak Temp (3) | Op Temp (°C) | Top-Side Markings (4) | Samples |
|------------------|---------------|--------------|--------------------|------|-------------|-------------------------|------------------|----------------------|--------------|--------------------------|----------------|
| TPS76050DBVTG4 | ACTIVE | SOT-23 | DBV | 5 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM | | PANI | Samples |

(1) The marketing status values are defined as follows:

ACTIVE: Product device recommended for new designs.

LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

PREVIEW: Device has been announced but is not in production. Samples may or may not be available.

OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check <http://www.ti.com/productcontent> for the latest availability information and additional product content details.

TBD: The Pb-Free/Green conversion plan has not been defined.

Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.

Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.

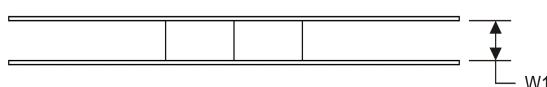
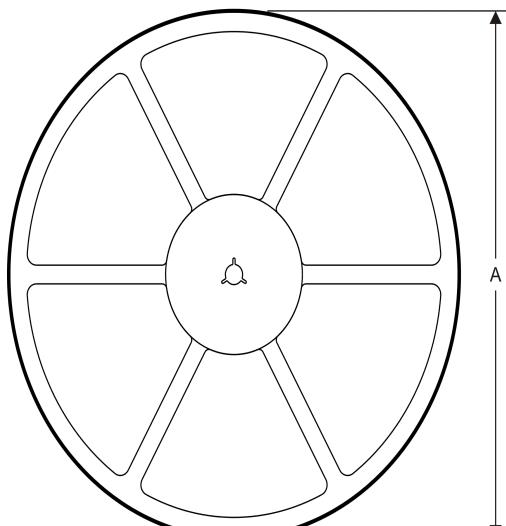
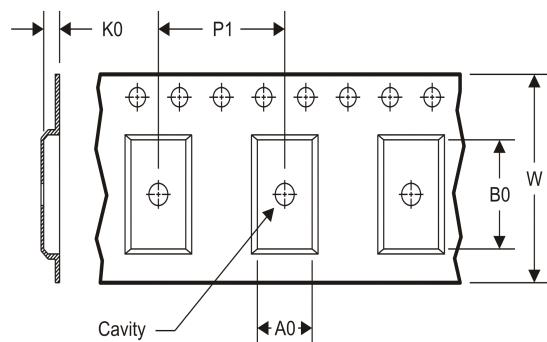
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) Only one of markings shown within the brackets will appear on the physical device.

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TAPE AND REEL INFORMATION
REEL DIMENSIONS

TAPE DIMENSIONS


| | |
|----|---|
| A0 | Dimension designed to accommodate the component width |
| B0 | Dimension designed to accommodate the component length |
| K0 | Dimension designed to accommodate the component thickness |
| W | Overall width of the carrier tape |
| P1 | Pitch between successive cavity centers |

TAPE AND REEL INFORMATION

*All dimensions are nominal

| Device | Package Type | Package Drawing | Pins | SPQ | Reel Diameter (mm) | Reel Width W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P1 (mm) | W (mm) | Pin1 Quadrant |
|--------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| TPS76030DBVR | SOT-23 | DBV | 5 | 3000 | 180.0 | 9.0 | 3.15 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS76030DBVT | SOT-23 | DBV | 5 | 250 | 180.0 | 9.0 | 3.15 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS76032DBVR | SOT-23 | DBV | 5 | 3000 | 180.0 | 9.0 | 3.15 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS76033DBVR | SOT-23 | DBV | 5 | 3000 | 178.0 | 9.0 | 3.23 | 3.17 | 1.37 | 4.0 | 8.0 | Q3 |
| TPS76033DBVT | SOT-23 | DBV | 5 | 250 | 178.0 | 9.0 | 3.23 | 3.17 | 1.37 | 4.0 | 8.0 | Q3 |
| TPS76038DBVR | SOT-23 | DBV | 5 | 3000 | 180.0 | 9.0 | 3.15 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS76038DBVT | SOT-23 | DBV | 5 | 250 | 180.0 | 9.0 | 3.15 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS76050DBVR | SOT-23 | DBV | 5 | 3000 | 178.0 | 9.0 | 3.23 | 3.17 | 1.37 | 4.0 | 8.0 | Q3 |
| TPS76050DBVT | SOT-23 | DBV | 5 | 250 | 178.0 | 9.0 | 3.23 | 3.17 | 1.37 | 4.0 | 8.0 | Q3 |

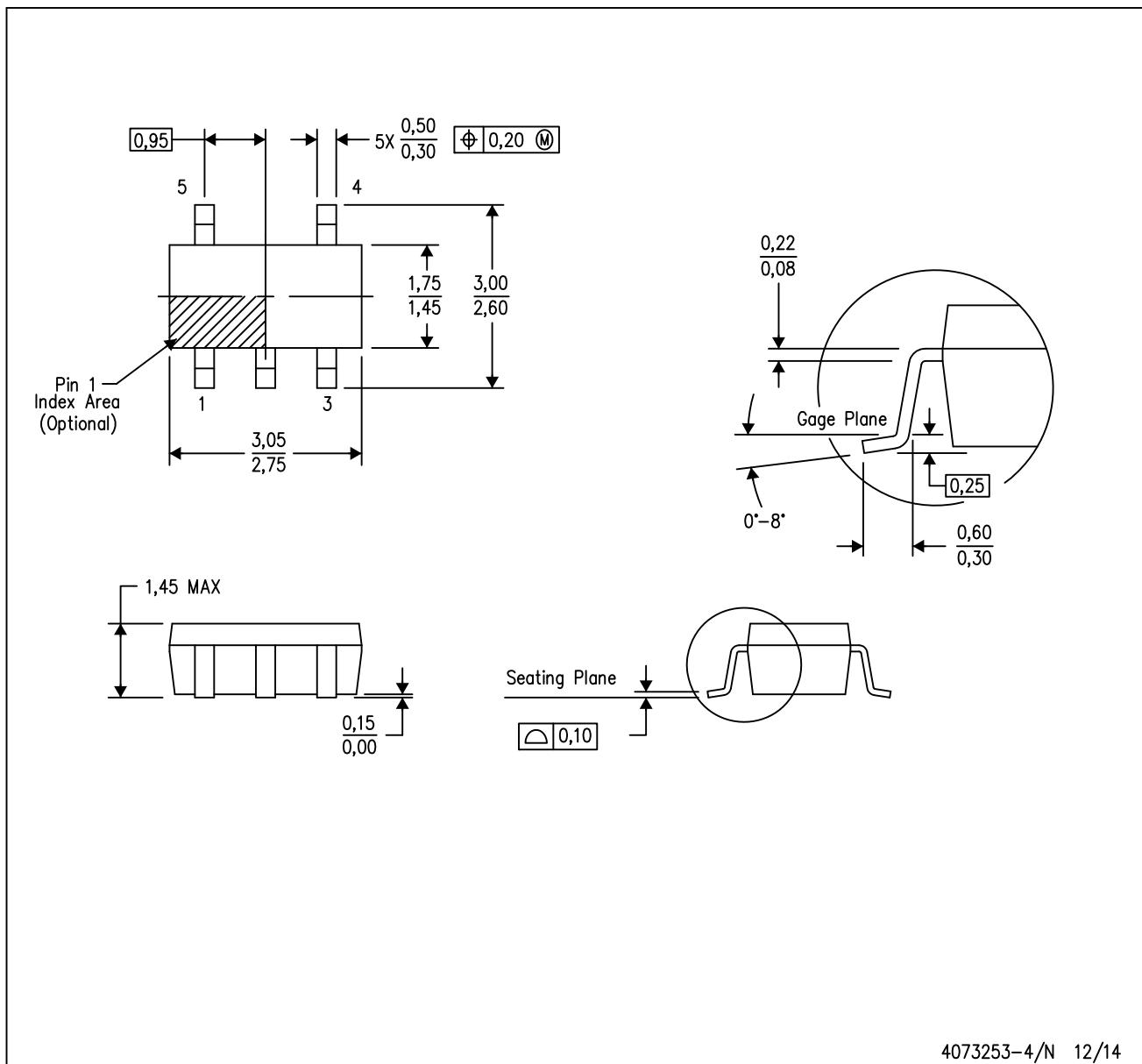
TAPE AND REEL BOX DIMENSIONS


*All dimensions are nominal

| Device | Package Type | Package Drawing | Pins | SPQ | Length (mm) | Width (mm) | Height (mm) |
|--------------|--------------|-----------------|------|------|-------------|------------|-------------|
| TPS76030DBVR | SOT-23 | DBV | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS76030DBVT | SOT-23 | DBV | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS76032DBVR | SOT-23 | DBV | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS76033DBVR | SOT-23 | DBV | 5 | 3000 | 180.0 | 180.0 | 18.0 |
| TPS76033DBVT | SOT-23 | DBV | 5 | 250 | 180.0 | 180.0 | 18.0 |
| TPS76038DBVR | SOT-23 | DBV | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS76038DBVT | SOT-23 | DBV | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS76050DBVR | SOT-23 | DBV | 5 | 3000 | 180.0 | 180.0 | 18.0 |
| TPS76050DBVT | SOT-23 | DBV | 5 | 250 | 180.0 | 180.0 | 18.0 |

DBV (R-PDSO-G5)

PLASTIC SMALL-OUTLINE PACKAGE



4073253-4/N 12/14

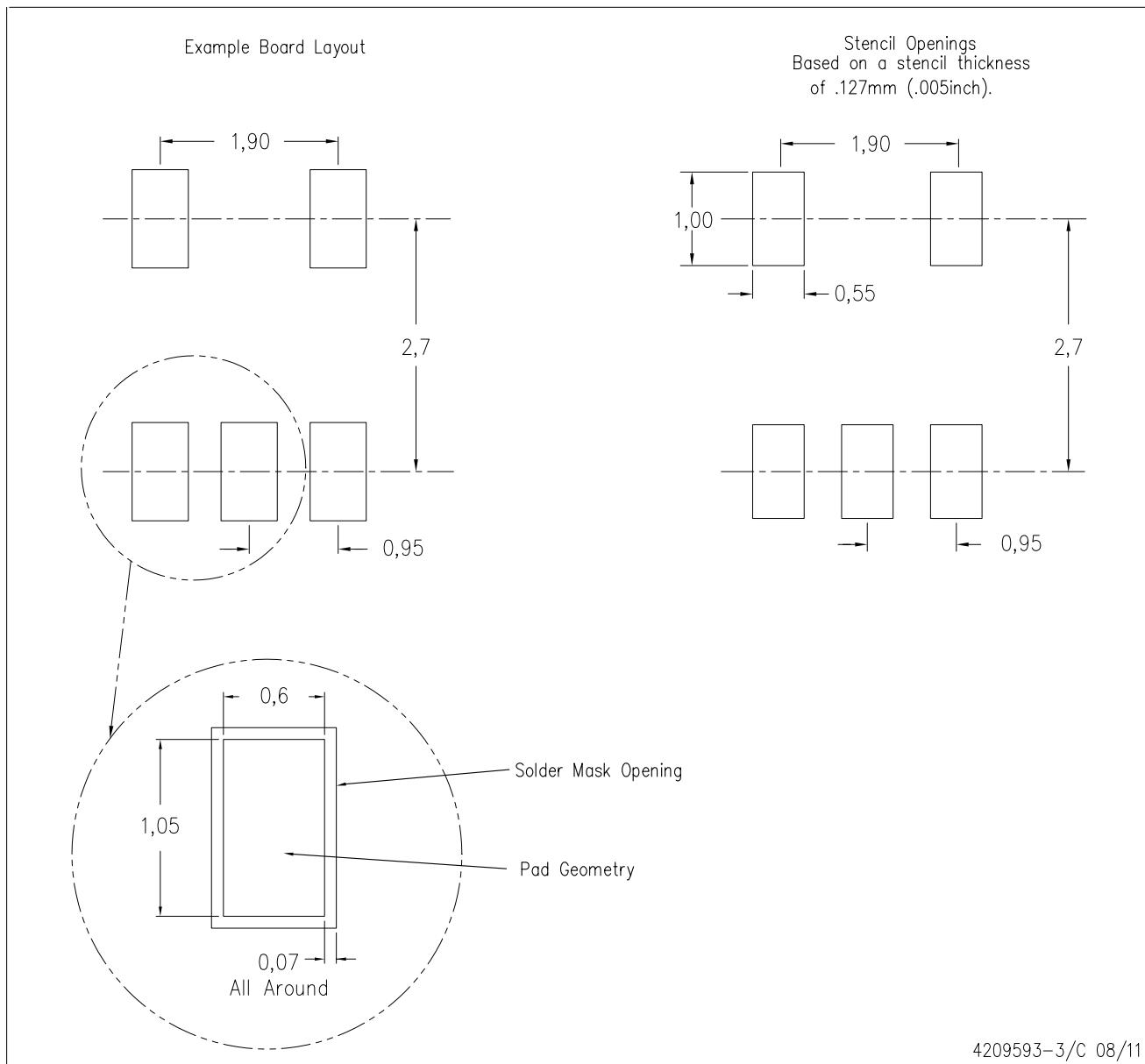
NOTES:

- All linear dimensions are in millimeters.
- This drawing is subject to change without notice.
- Body dimensions do not include mold flash or protrusion. Mold flash and protrusion shall not exceed 0,15 mm per side.
- Falls within JEDEC MO-178 Variation AA.

LAND PATTERN DATA

DBV (R-PDSO-G5)

PLASTIC SMALL OUTLINE



NOTES:

- A. All linear dimensions are in millimeters.
- B. This drawing is subject to change without notice.
- C. Customers should place a note on the circuit board fabrication drawing not to alter the center solder mask defined pad.
- D. Publication IPC-7351 is recommended for alternate designs.
- E. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Example stencil design based on a 50% volumetric metal load solder paste. Refer to IPC-7525 for other stencil recommendations.

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