150-mA LOW-NOISE LOW-DROPOUT REGULATOR WITH SHUTDOWN

Check for Samples: LP2985

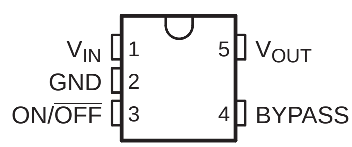
FEATURES

- **Output Tolerance of**
  - **1% (A Grade)**
  - **1.5% (Standard Grade)**
- **Ultra-Low Dropout, Typically**
  - **280 mV at Full Load of 150 mA**
  - **7 mV at 1 mA**
- **Wide V_{IN} Range: 16 V Max**
- **Low I_Q: 850 μA at Full Load at 150 mA**
- **Shutdown Current: 0.01 μA Typ**
- **Low Noise: 30 μV_{RMS} With 10-nF Bypass Capacitor**
- **Stable With Low-ESR Capacitors, Including Ceramic**
- **Overcurrent and Thermal Protection**
- **High Peak-Current Capability**
- **ESD Protection Exceeds JESD 22**
  - **2000-V Human-Body Model (A114-A)**
  - **200-V Machine Model (A115-A)**

PORTABLE APPLICATIONS

- **Cellular Phones**
- **Palmtop and Laptop Computers**
- **Personal Digital Assistants (PDAs)**
- **Digital Cameras and Camcorders**
- **CD Players**
- **MP3 Players**

DBV (SOT-23) PACKAGE
(TOP VIEW)



DESCRIPTION/ORDERING INFORMATION

The LP2985 family of fixed-output, low-dropout regulators offers exceptional, cost-effective performance for both portable and nonportable applications. Available in voltages of 1.8 V, 2.5 V, 2.8 V, 2.9 V, 3 V, 3.1 V, 3.3 V, 5 V, and 10 V, the family has an output tolerance of 1% for the A version (1.5% for the non-A version) and is capable of delivering 150-mA continuous load current. Standard regulator features, such as overcurrent and overtemperature protection, are included.

The LP2985 has a host of features that makes the regulator an ideal candidate for a variety of portable applications:

- Low dropout: A PNP pass element allows a typical dropout of 280 mV at 150-mA load current and 7 mV at 1-mA load.
- Low quiescent current: The use of a vertical PNP process allows for quiescent currents that are considerably lower than those associated with traditional lateral PNP regulators.
- Shutdown: A shutdown feature is available, allowing the regulator to consume only 0.01 μA when the ON/$\overline{OFF}$ pin is pulled low.
- Low-ESR-capacitor friendly: The regulator is stable with low-ESR capacitors, allowing the use of small, inexpensive, ceramic capacitors in cost-sensitive applications.
- Low noise: A BYPASS pin allows for low-noise operation, with a typical output noise of 30 μV_{RMS}, with the use of a 10-nF bypass capacitor.
- Small packaging: For the most space-constrained needs, the regulator is available in the SOT-23 package.

ORDERING INFORMATION(1)

T_J	PART GRADE	V_{OUT} (NOM)	PACKAGE(2)		ORDERABLE PART NUMBER	TOP-SIDE MARKING(3)
–40°C to 125°C	A grade: 1% tolerance	1.8 V	SOT-23-5 – DBV	Reel of 3000	LP2985A-18DBVR	LPT_
				Reel of 250	LP2985A-18DBVT	
				Reel of 10000	LP2985A-18DBVJ	
		2.5 V		Reel of 3000	LP2985A-25DBVR	LPU_
				Reel of 250	LP2985A-25DBVT	
		2.8 V		Reel of 3000	LP2985A-28DBVR	LPJ_
				Reel of 250	LP2985A-28DBVT	
		2.9 V		Reel of 3000	LP2985A-29DBVR	LPZ_
				Reel of 250	LP2985A-29DBVT	
		3.0 V		Reel of 3000	LP2985A-30DBVR	LRA_
				Reel of 250	LP2985A-30DBVT	
		3.1 V		Reel of 3000	LP2985A-31DBVR	PREVIEW
				Reel of 250	LP2985A-31DBVT	
		3.3 V		Reel of 3000	LP2985A-33DBVR	LPK_
				Reel of 250	LP2985A-33DBVT	
		5.0 V		Reel of 3000	LP2985A-50DBVR	LRI_
				Reel of 250	LP2985A-50DBVT	
		10.0 V		Reel of 3000	LP2985A-10DBVR	LRD_
				Reel of 250	LP2985A-10DBVT	
	Standard grade: 1.5% tolerance	1.8 V		Reel of 3000	LP2985-18DBVR	LPH_
				Reel of 250	LP2985-18DBVT	
		2.5 V		Reel of 3000	LP2985-25DBVR	LPL_
				Reel of 250	LP2985-25DBVT	
		2.8 V		Reel of 3000	LP2985-28DBVR	LPG_
				Reel of 250	LP2985-28DBVT	
		2.9 V		Reel of 3000	LP2985-29DBVR	LPM_
				Reel of 250	LP2985-29DBVT	
		3.0 V		Reel of 3000	LP2985-30DBVR	LPN_
				Reel of 250	LP2985-30DBVT	
		3.1 V		Reel of 3000	LP2985-31DBVR	PREVIEW
				Reel of 250	LP2985-31DBVT	
		3.3 V		Reel of 3000	LP2985-33DBVR	LPF_
				Reel of 250	LP2985-33DBVT	
		5.0 V		Reel of 3000	LP2985-50DBVR	LPS_
				Reel of 250	LP2985-50DBVT	
		10. 0 V		Reel of 3000	LP2985-10DBVR	LRC_
				Reel of 250	LP2985-10DBVT	

(1) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI web site at www.ti.com.
(2) Package drawings, thermal data, and symbolization are available at www.ti.com/packaging.
(3) The actual top-side marking has one additional character that designates the wafer fab/assembly site.

FUNCTIONAL BLOCK DIAGRAM

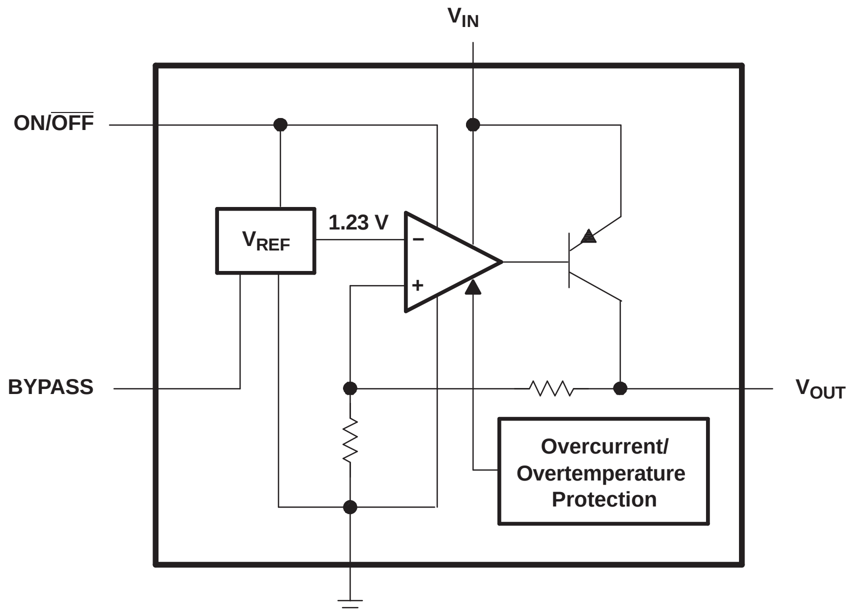
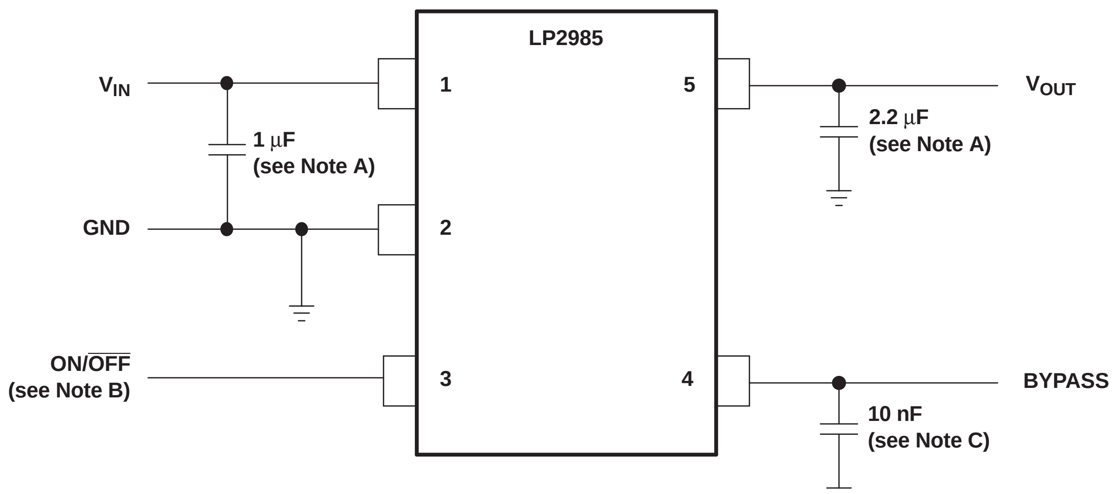


Figure 1. BASIC APPLICATION CIRCUIT



A. Minimum C_{OUT} value for stability (can be increased without limit for improved stability and transient response)

B. ON/$\overline{OFF}$ must be actively terminated. Connect to V_{IN} if shutdown feature is not used.

C. Optional BYPASS capacitor for low-noise operation

Absolute Maximum Ratings[1]

over virtual junction temperature range (unless otherwise noted)

			MIN	MAX	UNIT
V_{IN}	Continuous input voltage range[2]		–0.3	16	V
$V_{ON/\overline{OFF}}$	ON/$\overline{OFF}$ input voltage range		–0.3	16	V
	Output voltage range[3]		–0.3	9	V
I_O	Output current[4]		Internally limited (short-circuit protected)		
$θ_{JA}$	Package thermal impedance[4] [5]			206	°C/W
T_J	Operating virtual junction temperature			150	°C
T_{stg}	Storage temperature range		–65	150	°C
ESD	Electrostatic discharge protection	Human-Body Model (HBM)		2000	V
		Machine Model (MM)		200	

(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) The PNP pass transistor has a parasitic diode connected between the input and output. This diode normally is reverse biased ($V_{IN} > V_{OUT}$), but will be forward biased if the output voltage exceeds the input voltage by a diode drop (see *Application Information* for more details).
(3) If load is returned to a negative power supply in a dual-supply system, the output must be diode clamped to GND.
(4) Maximum power dissipation is a function of T_J(max), $θ_{JA}$, and T_A. The maximum allowable power dissipation at any allowable ambient temperature is $P_D = (T_J(max) – T_A)/θ_{JA}$. Operating at the absolute maximum T_J of 150°C can affect reliability.
(5) The package thermal impedance is calculated in accordance with JESD 51-7.

Recommended Operating Conditions

		MIN	MAX	UNIT
V_{IN}	Supply input voltage	2.2[1]	16	V
$V_{ON/\overline{OFF}}$	ON/$\overline{OFF}$ input voltage	0	V_{IN}	V
I_{OUT}	Output current		150	mA
T_J	Virtual junction temperature	–40	125	°C

(1) Recommended minimum V_{IN} is the greater of 2.5 V or $V_{OUT(max)}$ + rated dropout voltage (max) for operating I_L.

Electrical Characteristics

at specified virtual junction temperature range, $V_{IN} = V_{OUT(NOM)} + 1$ V, $V_{ON/\overline{OFF}} = 2$ V, $C_{IN} = 1$ µF, $I_L = 1$ mA, $C_{OUT} = 4.7$ µF (unless otherwise noted)

PARAMETER		TEST CONDITIONS	T_J	LP2985A-xx			LP2985-xx			UNIT
				MIN	TYP	MAX	MIN	TYP	MAX	
ΔV_{OUT}	Output voltage tolerance	$I_L = 1$ mA	25°C	–1		1	–1.5		1.5	$\%V_{NOM}$
		$1 \text{ mA} \le I_L \le 50$ mA	25°C	–1.5		1.5	–2.5		2.5	
			–40°C to 125°C	–2.5		2.5	–3.5		3.5	
		$1 \text{ mA} \le I_L \le 150$ mA	25°C	–2.5		2.5	–3		3	
			–40°C to 125°C	–3.5		3.5	–4		4	
	Line regulation	$V_{IN} = [V_{OUT(NOM)} + 1 \text{ V}]$ to 16 V	25°C		0.007	0.014		0.007	0.014	%/V
			–40°C to 125°C			0.032			0.032	
$V_{IN} – V_{OUT}$	Dropout voltage (1)	$I_L = 0$	25°C		1	3		1	3	mV
			–40°C to 125°C			5			5	
		$I_L = 1$ mA	25°C		7	10		7	10	
			–40°C to 125°C			15			15	
		$I_L = 10$ mA	25°C		40	60		40	60	
			–40°C to 125°C			90			90	
		$I_L = 50$ mA	25°C		120	150		120	150	
			–40°C to 125°C			225			225	
		$I_L = 150$ mA	25°C		280	350		280	350	
			–40°C to 125°C			575			575	
I_{GND}	GND pin current	$I_L = 0$	25°C		65	95		65	95	µA
			25°C (LP2985-10)			125			125	
			–40°C to 125°C			125			125	
			–40°C to 125°C (LP2985-10)			160			160	
		$I_L = 1$ mA	25°C		75	110		75	110	
			25°C (LP2985-10)			140			140	
			–40°C to 125°C			170			170	
		$I_L = 10$ mA	25°C		120	220		120	220	
			25°C (LP2985-10)			250			250	
			–40°C to 125°C			400			400	
		$I_L = 50$ mA	25°C		350	600		350	600	
			25°C (LP2985-10)			650			650	
			–40°C to 125°C			1000			1000	
		$I_L = 150$ mA	25°C		850	1500		850	1500	
			25°C (LP2985-10)			1800			1800	
			–40°C to 125°C			2500			2500	
		$V_{ON/\overline{OFF}} < 0.3$ V (OFF)	25°C		0.01	0.8		0.01	0.8	
		$V_{ON/\overline{OFF}} < 0.15$ V (OFF)	–40°C to 105°C		0.05	2		0.05	2	
			–40°C to 125°C			5			5	
$V_{ON/\overline{OFF}}$	ON/$\overline{\text{OFF}}$ input voltage (2)	$V_{ON/\overline{OFF}}$ = HIGH → O/P ON	25°C		1.4			1.4		V
			–40°C to 125°C	1.6			1.6			
		$V_{ON/\overline{OFF}}$ = LOW → O/P OFF	25°C		0.55			0.55		
			–40°C to 125°C			0.15			0.15	
$I_{ON/\overline{OFF}}$	ON/$\overline{\text{OFF}}$ input current	$V_{ON/\overline{OFF}} = 0$	25°C		0.01			0.01		µA
			–40°C to 125°C			–2			–2	
		$V_{ON/\overline{OFF}} = 5$ V	25°C		5			5		
			–40°C to 125°C			15			15	

(1) Dropout voltage is defined as the input-to-output differential at which the output voltage drops 100 mV below the value measured with a 1-V differential.
(2) The ON/$\overline{\text{OFF}}$ input must be driven properly for reliable operation (see *Application Information*).

Electrical Characteristics (continued)

at specified virtual junction temperature range, $V_{IN} = V_{OUT(NOM)} + 1$ V, $V_{ON/\overline{OFF}} = 2$ V, $C_{IN} = 1$ µF, $I_L = 1$ mA, $C_{OUT} = 4.7$ µF (unless otherwise noted)

PARAMETER		TEST CONDITIONS	T_J	LP2985A-xx			LP2985-xx			UNIT
				MIN	TYP	MAX	MIN	TYP	MAX	
V_n	Output noise (RMS)	BW = 300 Hz to 50 kHz, $C_{OUT} = 10$ µF, $C_{BYPASS} = 10$ nF	25°C		30			30		µV
$\Delta V_{OUT}/\Delta V_{IN}$	Ripple rejection	f = 1kHz, $C_{OUT} = 10$ µF, $C_{BYPASS} = 10$ nF	25°C		45			45		dB
$I_{OUT(PK)}$	Peak output current	$V_{OUT} \geq V_{O(NOM)} - 5\%$	25°C	350			350			mA
$I_{OUT(SC)}$	Short-circuit current	$R_L = 0$ (steady state)[3]	25°C	400			400			mA

(3) See Figure 7 in *Typical Performance Characteristics*.

TYPICAL PERFORMANCE CHARACTERISTICS

C_{IN} = 1 µF, C_{OUT} = 4.7 µF, V_{IN} = $V_{OUT(NOM)}$ + 1 V, T_A = 25°C, ON/$\overline{OFF}$ pin tied to V_{IN} (unless otherwise specified)

OUTPUT VOLTAGE vs TEMPERATURE

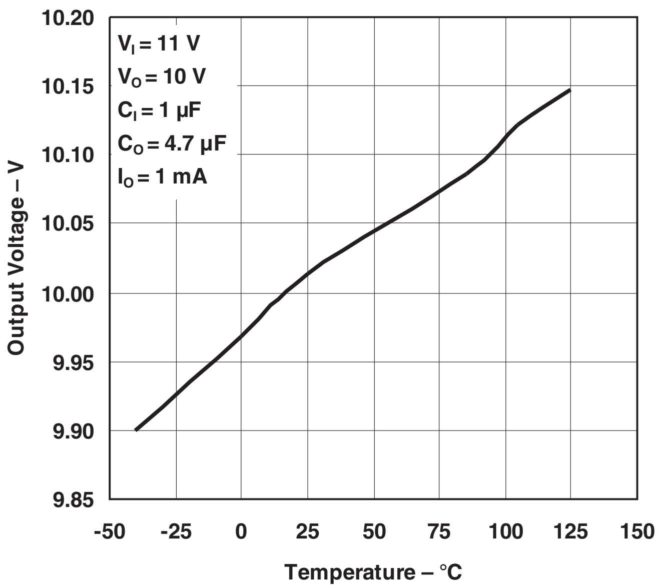


Figure 2.

OUTPUT VOLTAGE vs TEMPERATURE

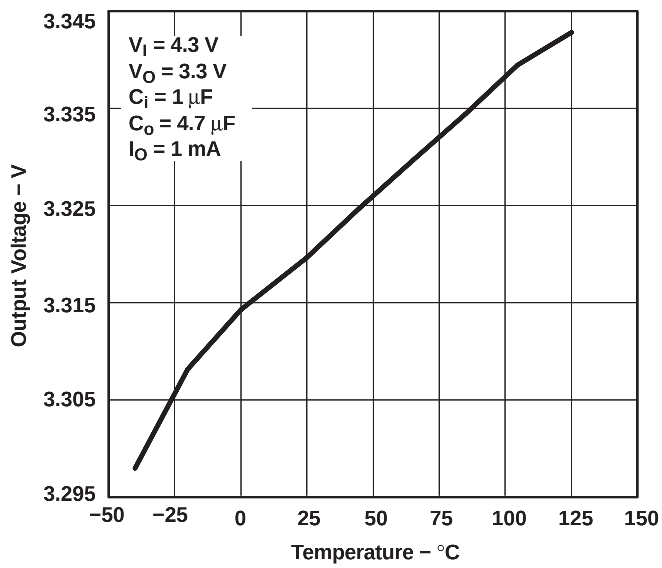


Figure 3.

DROPOUT VOLTAGE vs TEMPERATURE

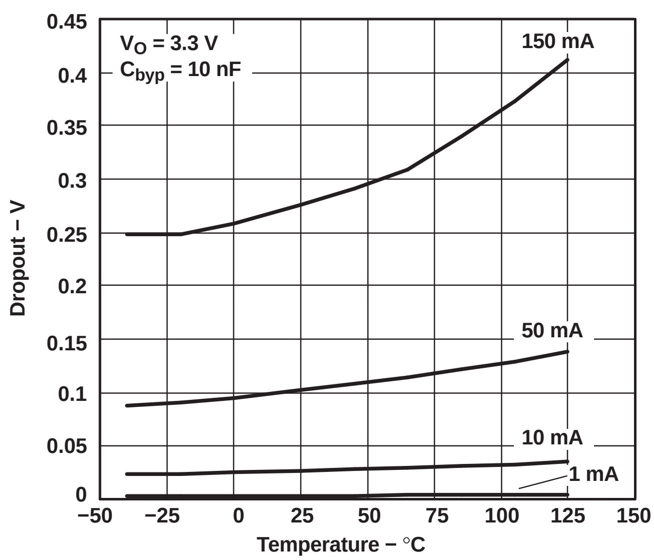


Figure 4.

SHORT-CIRCUIT CURRENT vs TIME

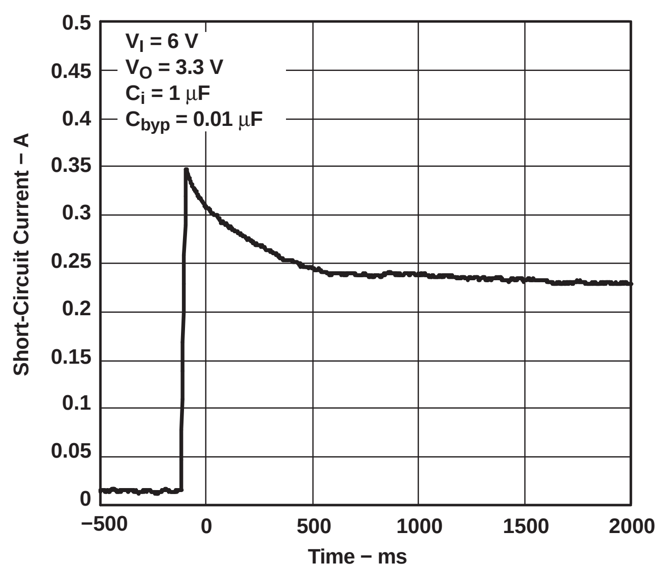


Figure 5.

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

C_{IN} = 1 µF, C_{OUT} = 4.7 µF, $V_{IN} = V_{OUT(NOM)}$ + 1 V, T_A = 25°C, ON/$\overline{OFF}$ pin tied to V_{IN} (unless otherwise specified)

SHORT-CIRCUIT CURRENT vs TIME

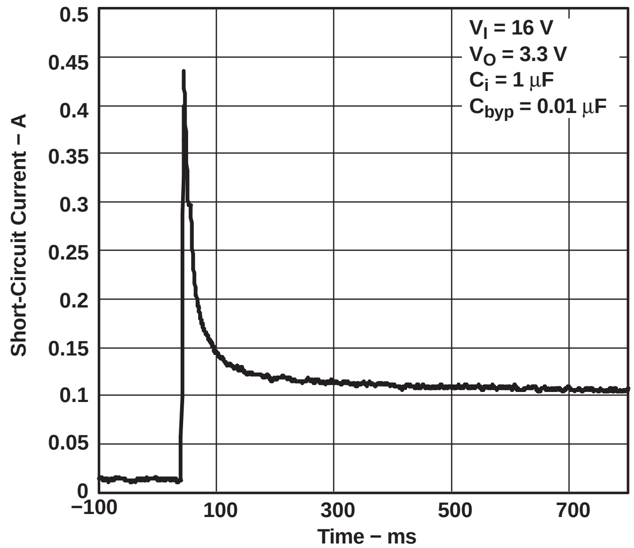


Figure 6.

SHORT-CIRCUIT CURRENT vs OUTPUT VOLTAGE

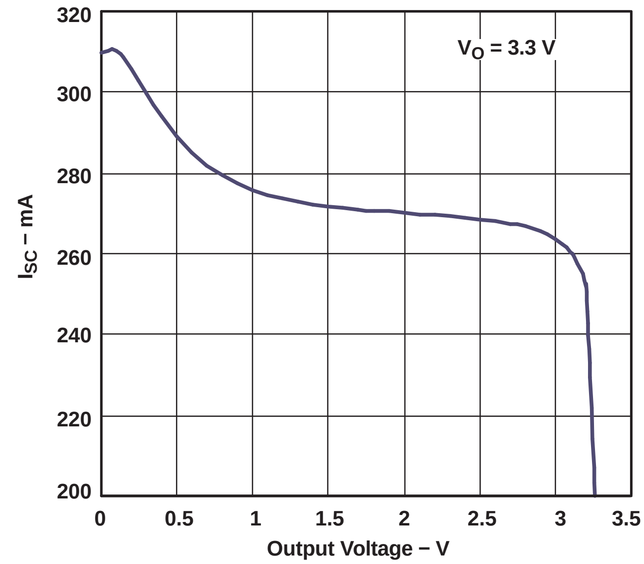


Figure 7.

GROUND-PIN CURRENT vs LOAD CURRENT

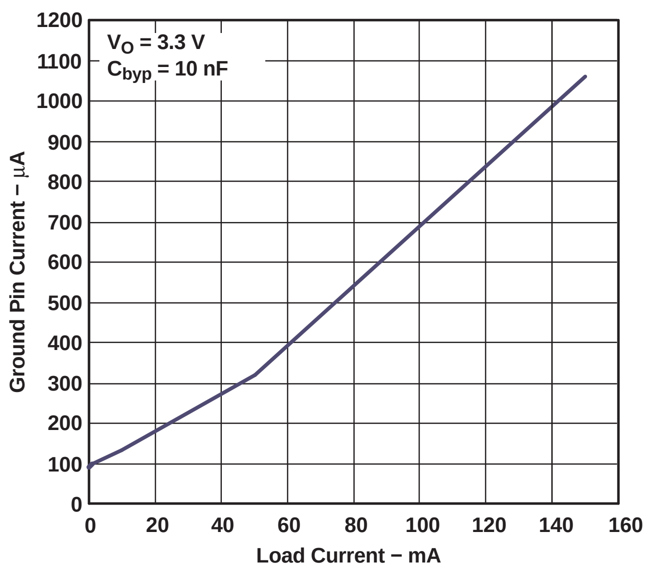


Figure 8.

RIPPLE REJECTION vs FREQUENCY

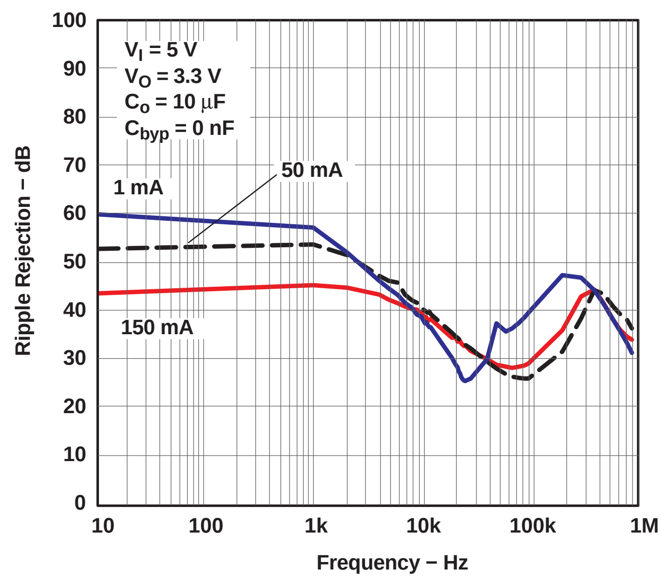


Figure 9.

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

C_{IN} = 1 µF, C_{OUT} = 4.7 µF, V_{IN} = $V_{OUT(NOM)}$ + 1 V, T_A = 25°C, ON/$\overline{OFF}$ pin tied to V_{IN} (unless otherwise specified)

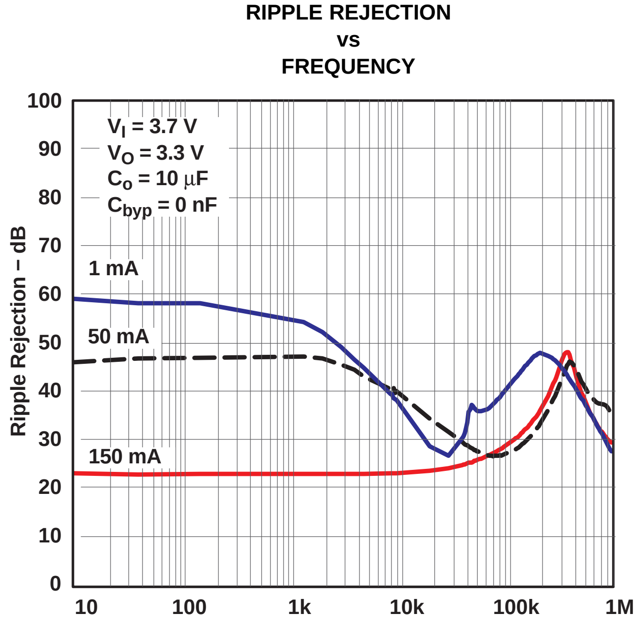


Figure 10.

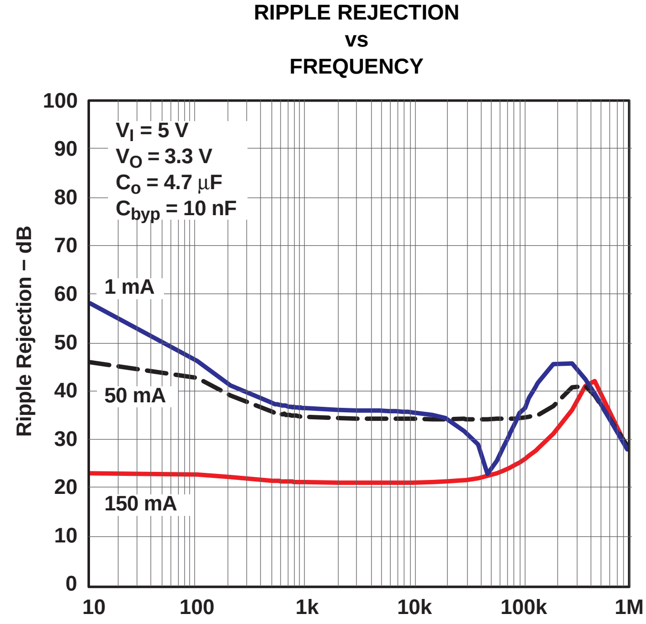


Figure 11.

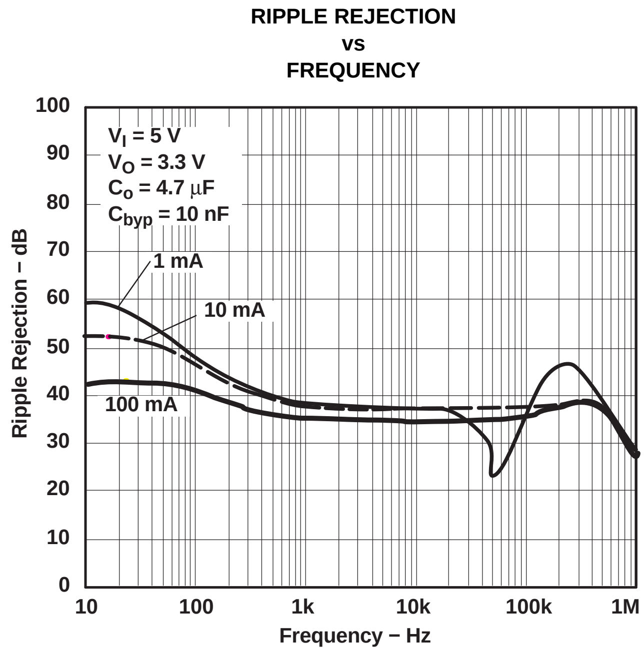


Figure 12.

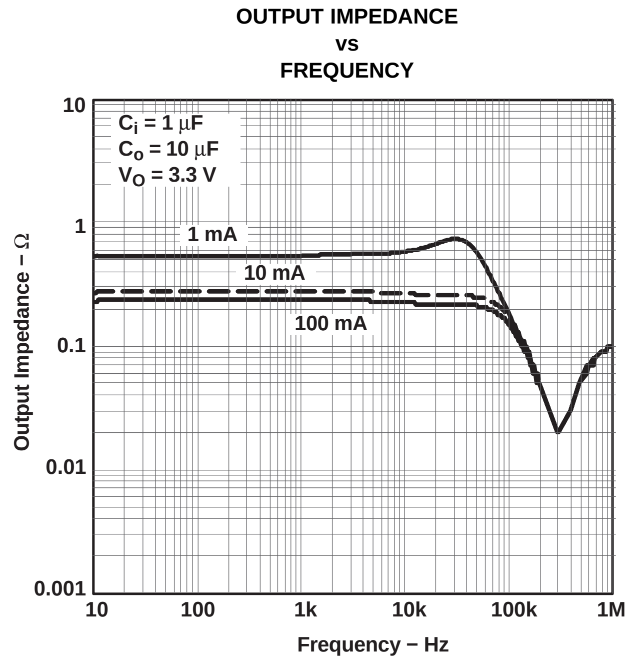


Figure 13.

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

C_{IN} = 1 μF, C_{OUT} = 4.7 μF, V_{IN} = $V_{OUT(NOM)}$ + 1 V, T_A = 25°C, ON/$\overline{\text{OFF}}$ pin tied to V_{IN} (unless otherwise specified)

OUTPUT IMPEDANCE vs FREQUENCY

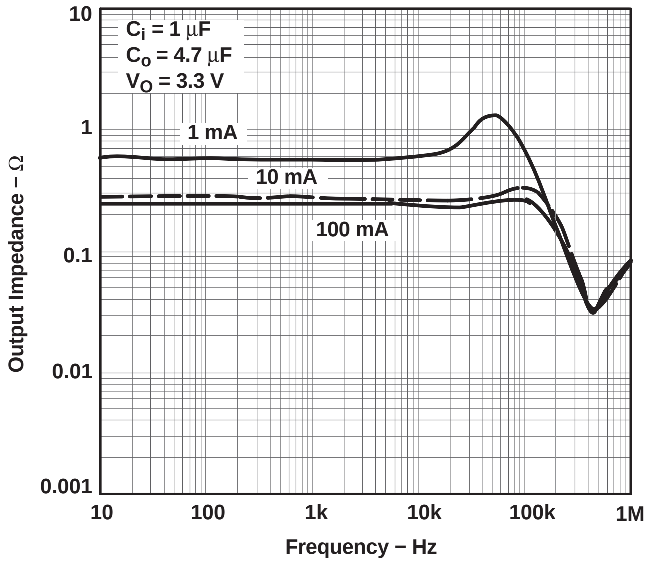


Figure 14.

OUTPUT NOISE DENSITY vs FREQUENCY

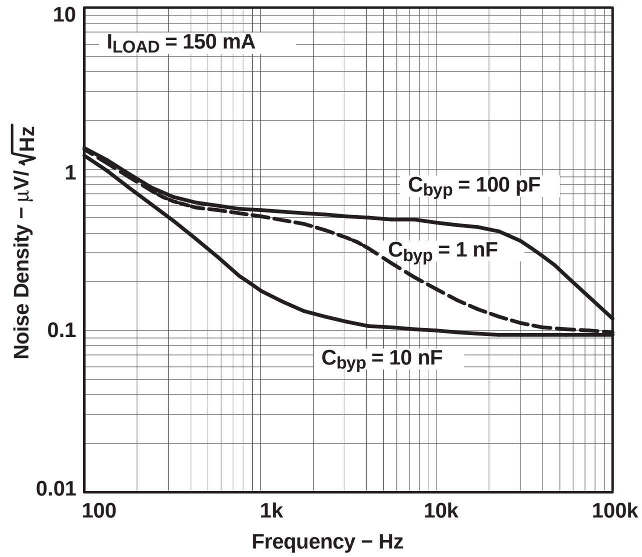


Figure 15.

OUTPUT NOISE DENSITY vs FREQUENCY

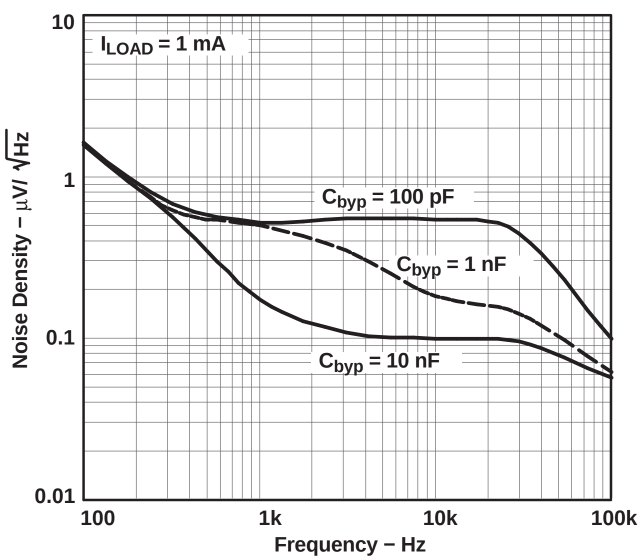


Figure 16.

INPUT CURRENT vs INPUT VOLTAGE

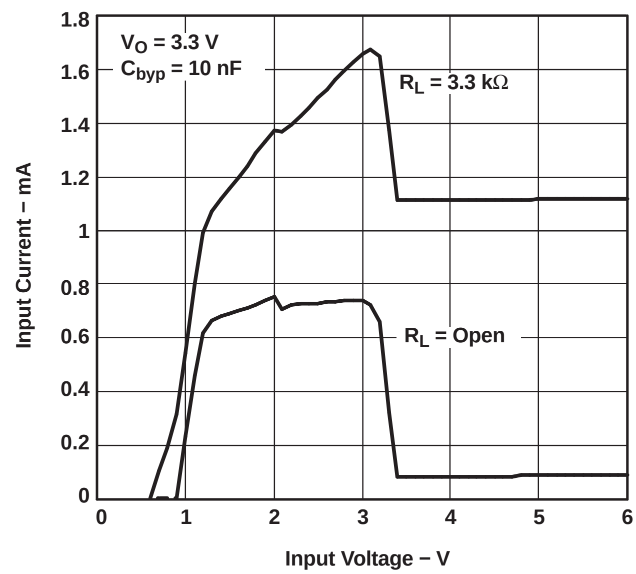


Figure 17.

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

C_{IN} = 1 µF, C_{OUT} = 4.7 µF, V_{IN} = $V_{OUT(NOM)}$ + 1 V, T_A = 25°C, ON/$\overline{OFF}$ pin tied to V_{IN} (unless otherwise specified)

GROUND-PIN CURRENT vs TEMPERATURE

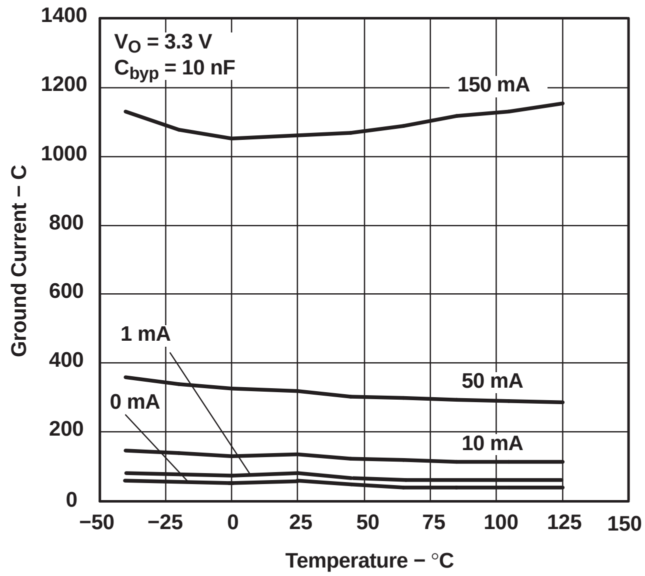


Figure 18.

LOAD TRANSIENT RESPONSE

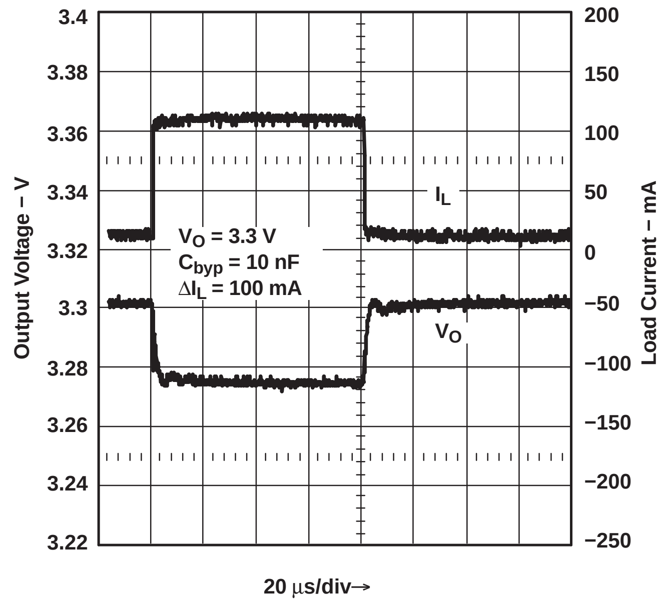


Figure 19.

LOAD TRANSIENT RESPONSE

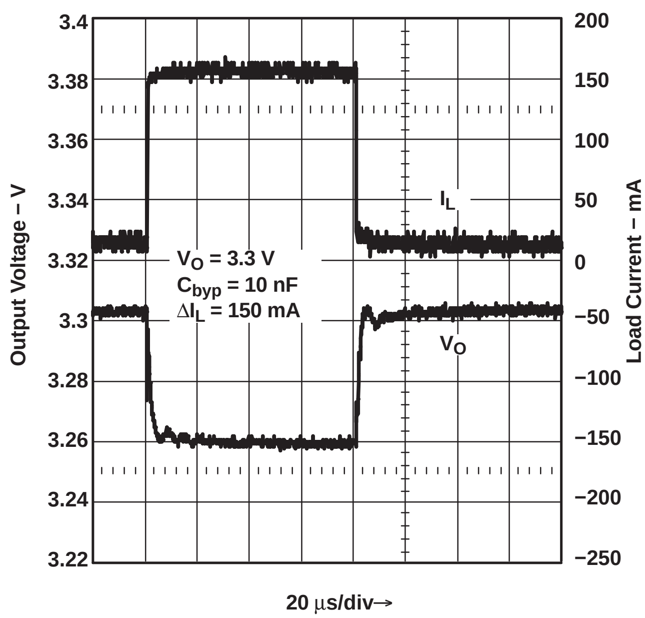


Figure 20.

LOAD TRANSIENT RESPONSE

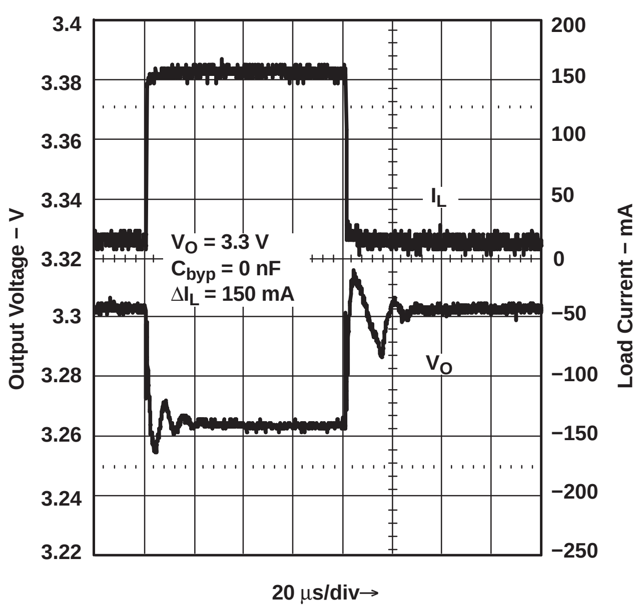


Figure 21.

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

C_{IN} = 1 µF, C_{OUT} = 4.7 µF, V_{IN} = $V_{OUT(NOM)}$ + 1 V, T_A = 25°C, ON/$\overline{OFF}$ pin tied to V_{IN} (unless otherwise specified)

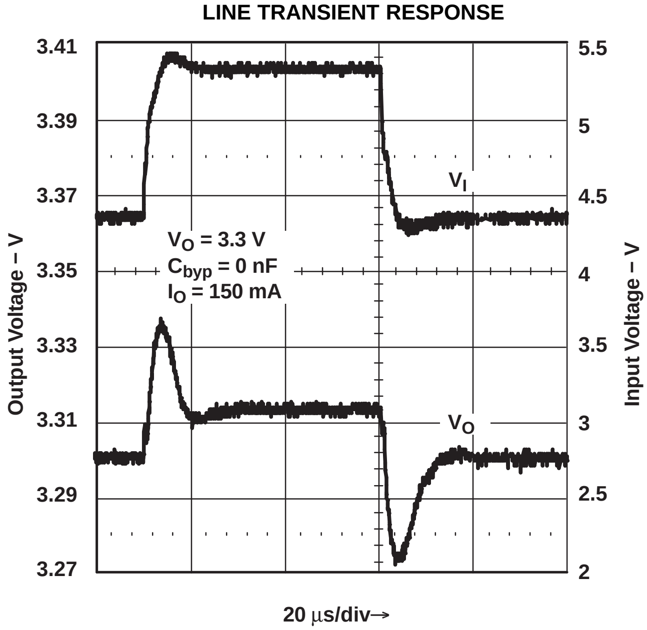


Figure 22.

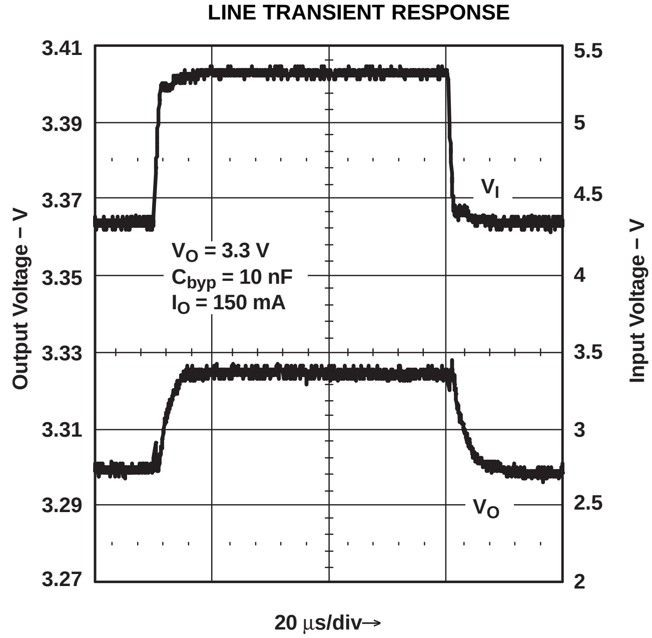


Figure 23.

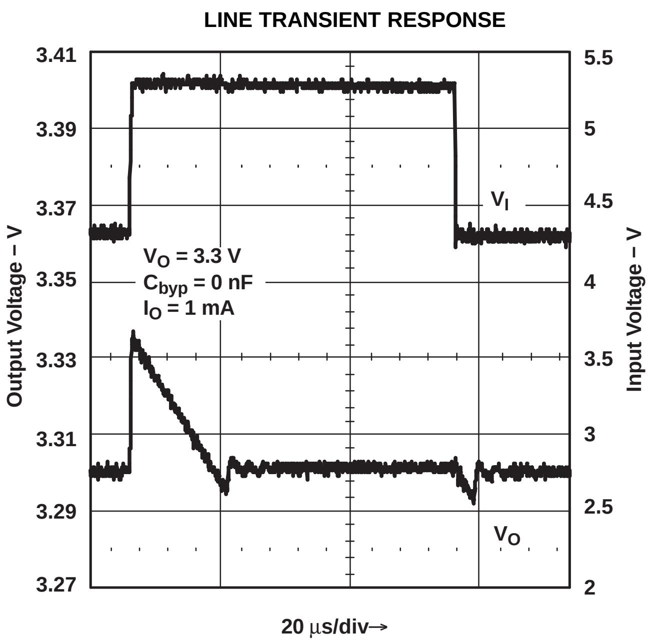


Figure 24.

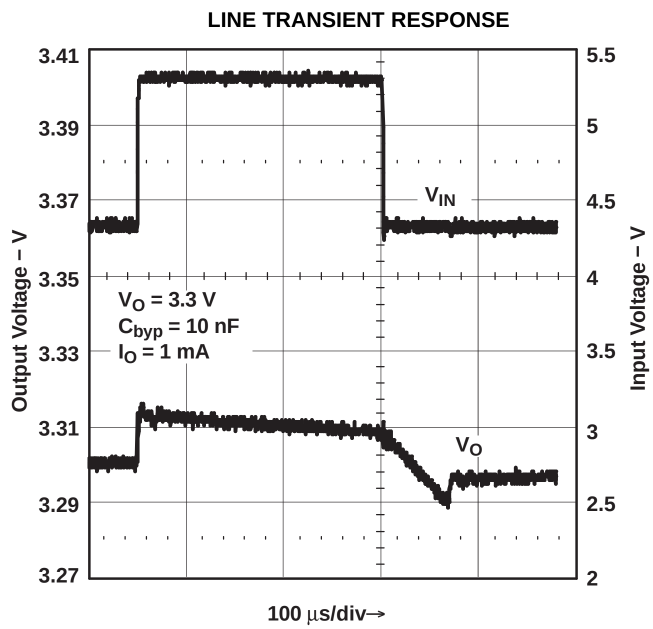


Figure 25.

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

C_{IN} = 1 μF, C_{OUT} = 4.7 μF, V_{IN} = $V_{OUT(NOM)}$ + 1 V, T_A = 25°C, ON/$\overline{OFF}$ pin tied to V_{IN} (unless otherwise specified)

TURN-ON TIME

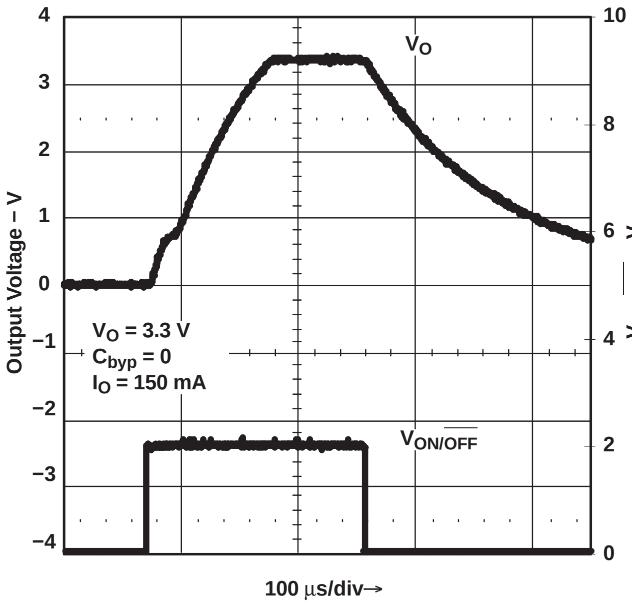


Figure 26.

TURN-ON TIME

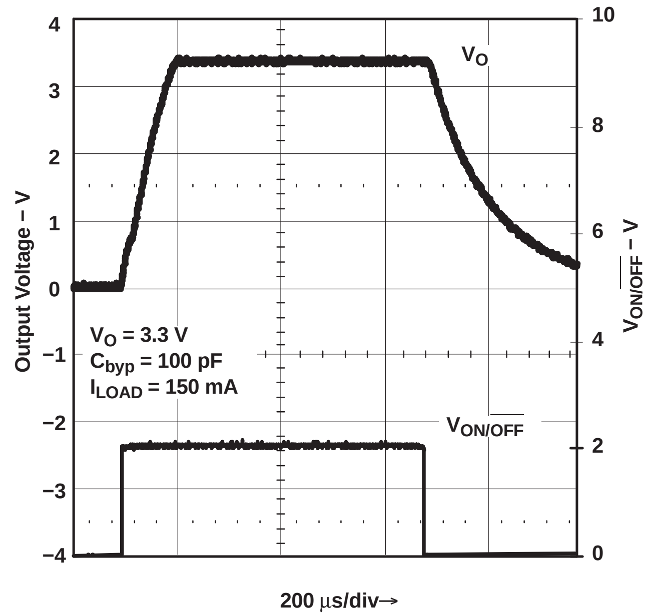


Figure 27.

TURN-ON TIME

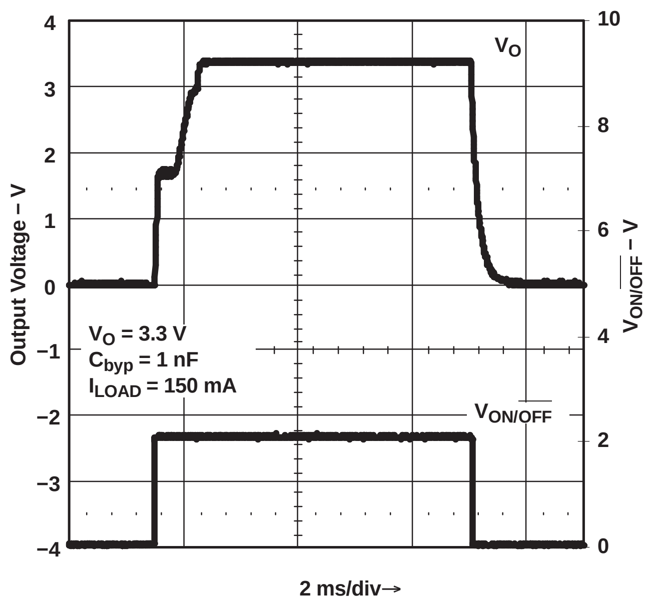


Figure 28.

TURN-ON TIME

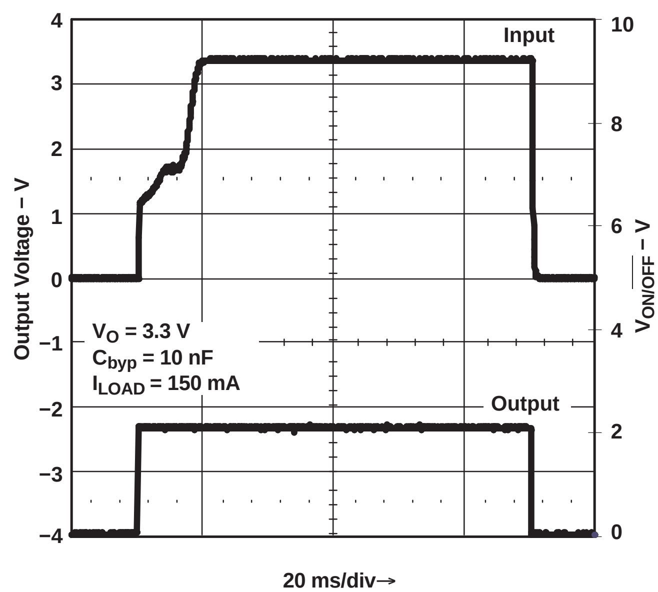


Figure 29.

APPLICATION INFORMATION

Capacitors

Input Capacitor (C_{IN})

A minimum value of 1 μF (over the entire operating temperature range) is required at the input of the LP2985. In addition, this input capacitor should be located within 1 cm of the input pin and connected to a clean analog ground. There are no equivalent series resistance (ESR) requirements for this capacitor, and the capacitance can be increased without limit.

Output Capacitor (C_{OUT})

As an advantage over other regulators, the LP2985 permits the use of low-ESR capacitors at the output, including ceramic capacitors that can have an ESR as low as 5 mΩ. Tantalum and film capacitors also can be used if size and cost are not issues. The output capacitor also should be located within 1 cm of the output pin and be returned to a clean analog ground.

As with other PNP LDOs, stability conditions require the output capacitor to have a minimum capacitance and an ESR that falls within a certain range.

- Minimum C_{OUT}: 2.2 μF (can be increased without limit to improve transient response stability margin)
- ESR range: see Figure 30 through Figure 32

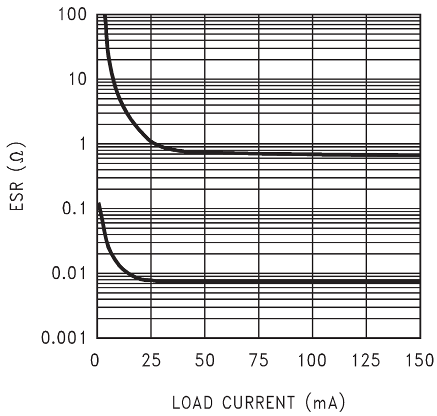


Figure 30. 2.2-μF Stable ESR Range for Output Voltage ≤2.3 V

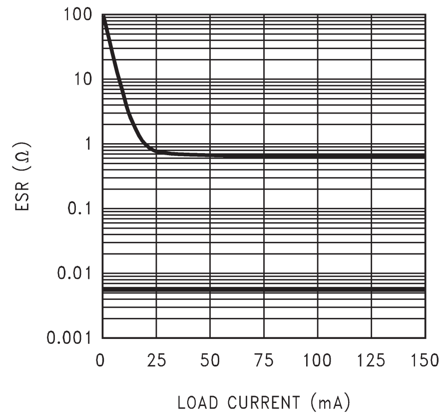


Figure 31. 4.7-μF Stable ESR Range for Output Voltage ≤2.3 V

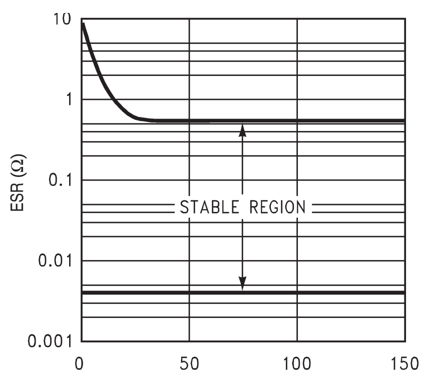


Figure 32. 2.2-μF/3.3-μF Stable ESR Range for Output Voltage ≥2.5 V

It is critical that both the minimum capacitance and ESR requirement be met *over the entire operating temperature range*. Depending on the type of capacitors used, both these parameters can vary significantly with temperature (see *capacitor characteristics*).

Noise Bypass Capacitor (C_{BYPASS})

The LP2985 allows for low-noise performance with the use of a bypass capacitor that is connected to the internal bandgap reference via the BYPASS pin. This high-impedance bandgap circuitry is biased in the microampere range and, thus, cannot be loaded significantly, otherwise, its output – and, correspondingly, the output of the regulator – changes. Thus, for best output accuracy, dc leakage current through C_{BYPASS} should be minimized as much as possible and never should exceed 100 nA.

A 10-nF capacitor is recommended for C_{BYPASS}. Ceramic and film capacitors are well suited for this purpose.

Capacitor Characteristics

Ceramics

Ceramic capacitors are ideal choices for use on the output of the LP2985 for several reasons. For capacitances in the range of 2.2 μF to 4.7 μF, ceramic capacitors have the lowest cost and the lowest ESR, making them choice candidates for filtering high-frequency noise. For instance, a typical 2.2-μF ceramic capacitor has an ESR in the range of 10 mΩ to 20 mΩ and, thus, satisfies minimum ESR requirements of the regulator.

Ceramic capacitors have one major disadvantage that must be taken into account – a poor temperature coefficient, where the capacitance can vary significantly with temperature. For instance, a large-value ceramic capacitor (≥2.2 μF) can lose more than half of its capacitance as the temperature rises from 25°C to 85°C. Thus, a 2.2-μF capacitor at 25°C drops well below the minimum C_{OUT} required for stability, as ambient temperature rises. For this reason, select an output capacitor that maintains the minimum 2.2 μF required for stability over the entire operating temperature range. Note that there are some ceramic capacitors that can maintain a ±15% capacitance tolerance over temperature.

Tantalum

Tantalum capacitors can be used at the output of the LP2985, but there are significant disadvantages that could prohibit their use:

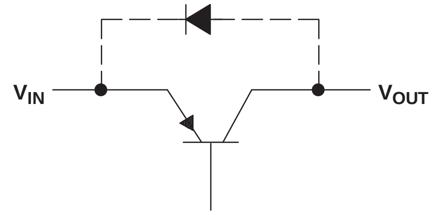
- In the 1-μF to 4.7-μF range, tantalum capacitors are more expensive than ceramics of the equivalent capacitance and voltage ratings.
- Tantalum capacitors have higher ESRs than their equivalent-sized ceramic counterparts. Thus, to meet the ESR requirements, a higher-capacitance tantalum may be required, at the expense of larger size and higher cost.
- The ESR of a tantalum capacitor increases as temperature drops, as much as double from 25°C to –40°C. Thus, ESR margins must be maintained over the temperature range to prevent regulator instability.

ON/$\overline{OFF}$ Operation

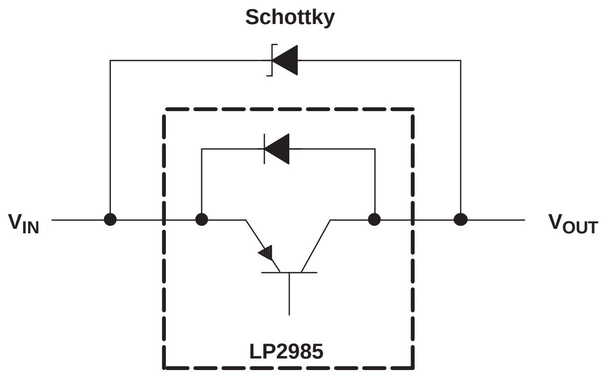
The LP2985 allows for a shutdown mode via the ON/$\overline{OFF}$ pin. Driving the pin LOW (≤0.3 V) turns the device OFF; conversely, a HIGH (≥1.6 V) turns the device ON. If the shutdown feature is not used, ON/$\overline{OFF}$ should be connected to the input to ensure that the regulator is on at all times. For proper operation, do not leave ON/$\overline{OFF}$ unconnected, and apply a signal with a slew rate of ≥40 mV/μs.

Reverse Input-Output Voltage

There is an inherent diode present across the PNP pass element of the LP2985.



With the anode connected to the output, this diode is reverse biased during normal operation, since the input voltage is higher than the output. However, if the output is pulled higher than the input for any reason, this diode is forward biased and can cause a parasitic silicon-controlled rectifier (SCR) to latch, resulting in high current flowing from the output to the input. Thus, to prevent possible damage to the regulator in any application where the output may be pulled above the input, an external Schottky diode should be connected between the output and input. With the anode on output, this Schottky limits the reverse voltage across the output and input pins to ~0.3 V, preventing the regulator’s internal diode from forward biasing.



PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
LP2985-10DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LRCG	Samples
LP2985-10DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LRCG	Samples
LP2985-18DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPH3 ~ LPHG ~ LPHL)	Samples
LP2985-18DBVRE4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPHG	Samples
LP2985-18DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPHG	Samples
LP2985-18DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPH3 ~ LPHG ~ LPHL)	Samples
LP2985-18DBVTE4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPHG	Samples
LP2985-18DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPHG	Samples
LP2985-25DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPL3 ~ LPLG ~ LPLL)	Samples
LP2985-25DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPL3 ~ LPLG ~ LPLL)	Samples
LP2985-25DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPL3 ~ LPLG ~ LPLL)	Samples
LP2985-25DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPL3 ~ LPLG ~ LPLL)	Samples
LP2985-28DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU | CU SN	Level-1-260C-UNLIM	-40 to 125	(LPG3 ~ LPGG ~ LPGL)	Samples
LP2985-28DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU | CU SN	Level-1-260C-UNLIM	-40 to 125	(LPG3 ~ LPGG ~ LPGL)	Samples
LP2985-28DBVTE4	ACTIVE	SOT-23	DBV	5		TBD	Call TI	Call TI	-40 to 125		Samples
LP2985-28DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPGG	Samples
LP2985-29DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPM3 ~ LPMG ~ LPML)	Samples

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
LP2985-30DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPN3 ~ LPNG ~ LPNL)	Samples
LP2985-30DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPN3 ~ LPNG ~ LPNL)	Samples
LP2985-30DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPN3 ~ LPNG ~ LPNL)	Samples
LP2985-30DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPN3 ~ LPNG ~ LPNL)	Samples
LP2985-33DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPF3 ~ LPFG ~ LPFL)	Samples
LP2985-33DBVRE4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPFG	Samples
LP2985-33DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPFG	Samples
LP2985-33DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPF3 ~ LPFG ~ LPFL)	Samples
LP2985-33DBVTE4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPFG	Samples
LP2985-33DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPFG	Samples
LP2985-50DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPS3 ~ LPSG ~ LPSL)	Samples
LP2985-50DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPS3 ~ LPSG ~ LPSL)	Samples
LP2985-50DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPS3 ~ LPSG ~ LPSL)	Samples
LP2985-50DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPS3 ~ LPSG ~ LPSL)	Samples
LP2985A-10DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LRDG	Samples
LP2985A-10DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LRDG	Samples
LP2985A-18DBVJ	ACTIVE	SOT-23	DBV	5	10000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPTL	Samples
LP2985A-18DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU | CU SN	Level-1-260C-UNLIM	-40 to 125	(LPT3 ~ LPTG ~ LPTL)	Samples

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
LP2985A-18DBVRE4	ACTIVE	SOT-23	DBV	5		TBD	Call TI	Call TI	-40 to 125		Samples
LP2985A-18DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPTG	Samples
LP2985A-18DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU | CU SN	Level-1-260C-UNLIM	-40 to 125	(LPT3 ~ LPTG ~ LPTL)	Samples
LP2985A-18DBVTE4	ACTIVE	SOT-23	DBV	5		TBD	Call TI	Call TI	-40 to 125		Samples
LP2985A-25DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPU3 ~ LPUG ~ LPUL)	Samples
LP2985A-25DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPU3 ~ LPUG ~ LPUL)	Samples
LP2985A-25DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPU3 ~ LPUG ~ LPUL)	Samples
LP2985A-25DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPU3 ~ LPUG ~ LPUL)	Samples
LP2985A-28DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU | CU SN	Level-1-260C-UNLIM	-40 to 125	(LPJ3 ~ LPJG ~ LPJL)	Samples
LP2985A-28DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU | CU SN	Level-1-260C-UNLIM	-40 to 125	(LPJ3 ~ LPJG ~ LPJL)	Samples
LP2985A-29DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LPZ3 ~ LPZG ~ LPZL)	Samples
LP2985A-30DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LRA3 ~ LRAG ~ LRAL)	Samples
LP2985A-30DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LRA3 ~ LRAG ~ LRAL)	Samples
LP2985A-30DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LRA3 ~ LRAG ~ LRAL)	Samples
LP2985A-33DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU | CU SN	Level-1-260C-UNLIM	-40 to 125	(LPK3 ~ LPKG ~ LPKL)	Samples
LP2985A-33DBVRE4	ACTIVE	SOT-23	DBV	5		TBD	Call TI	Call TI	-40 to 125		Samples
LP2985A-33DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPKG	Samples
LP2985A-33DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU | CU SN	Level-1-260C-UNLIM	-40 to 125	(LPK3 ~ LPKG ~ LPKL)	Samples

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
LP2985A-33DBVTE4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPKG	Samples
LP2985A-33DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	LPKG	Samples
LP2985A-50DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LR13 ~ LR1G ~ LR1L)	Samples
LP2985A-50DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LR13 ~ LR1G ~ LR1L)	Samples
LP2985A-50DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LR13 ~ LR1G ~ LR1L)	Samples
LP2985A-50DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 125	(LR13 ~ LR1G ~ LR1L)	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) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

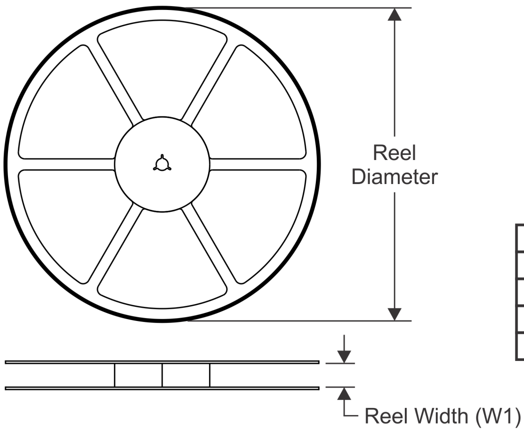
(6) Lead/Ball Finish - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead/Ball Finish values may wrap to two lines if the finish value exceeds the maximum column width.

Important Information and Disclaimer: The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

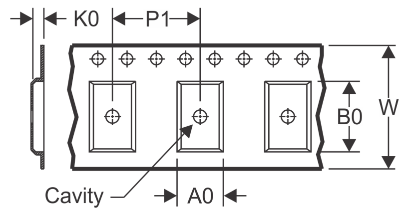
In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

TAPE AND REEL INFORMATION

REEL DIMENSIONS

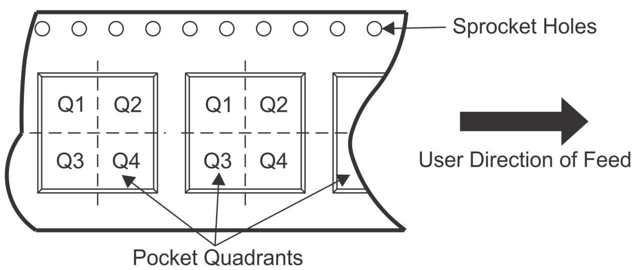


TAPE DIMENSIONS



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

QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE

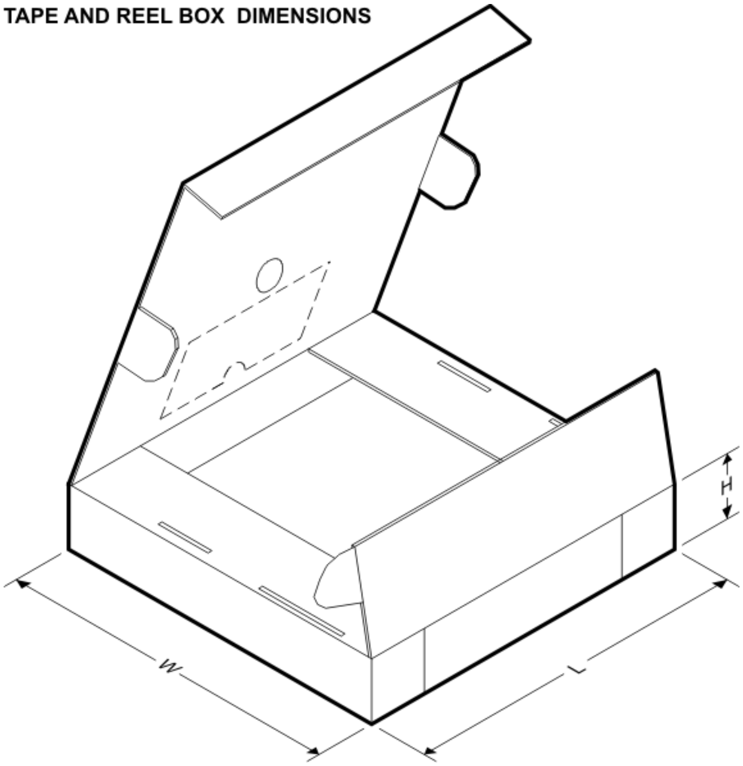


*All dimensions are nominal

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
LP2985-10DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985-10DBVT	SOT-23	DBV	5	250	178.0	9.0	3.3	3.2	1.4	4.0	8.0	Q3
LP2985-18DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985-18DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.3	3.2	1.4	4.0	8.0	Q3
LP2985-18DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985-18DBVTG4	SOT-23	DBV	5	250	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985-25DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.3	3.2	1.4	4.0	8.0	Q3
LP2985-25DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985-25DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985-28DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985-28DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985-28DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985-28DBVTG4	SOT-23	DBV	5	250	178.0	9.0	3.3	3.2	1.4	4.0	8.0	Q3
LP2985-29DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985-29DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985-30DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985-30DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985-30DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3

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
LP2985-33DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.3	3.2	1.4	4.0	8.0	Q3
LP2985-33DBVRG4	SOT-23	DBV	5	3000	178.0	9.0	3.3	3.2	1.4	4.0	8.0	Q3
LP2985-33DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985-33DBVT	SOT-23	DBV	5	250	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985-33DBVTG4	SOT-23	DBV	5	250	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985-50DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985-50DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985-50DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-10DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985A-10DBVT	SOT-23	DBV	5	250	178.0	9.0	3.3	3.2	1.4	4.0	8.0	Q3
LP2985A-18DBVJ	SOT-23	DBV	5	10000	330.0	8.4	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-18DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985A-18DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-18DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-25DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-25DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985A-25DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-28DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985A-28DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-28DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-29DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985A-29DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-30DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-30DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985A-30DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-33DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-33DBVRG4	SOT-23	DBV	5	3000	178.0	9.0	3.3	3.2	1.4	4.0	8.0	Q3
LP2985A-33DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-33DBVTG4	SOT-23	DBV	5	250	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985A-50DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3
LP2985A-50DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
LP2985A-50DBVT	SOT-23	DBV	5	250	180.0	9.2	3.17	3.23	1.37	4.0	8.0	Q3

TAPE AND REEL BOX DIMENSIONS

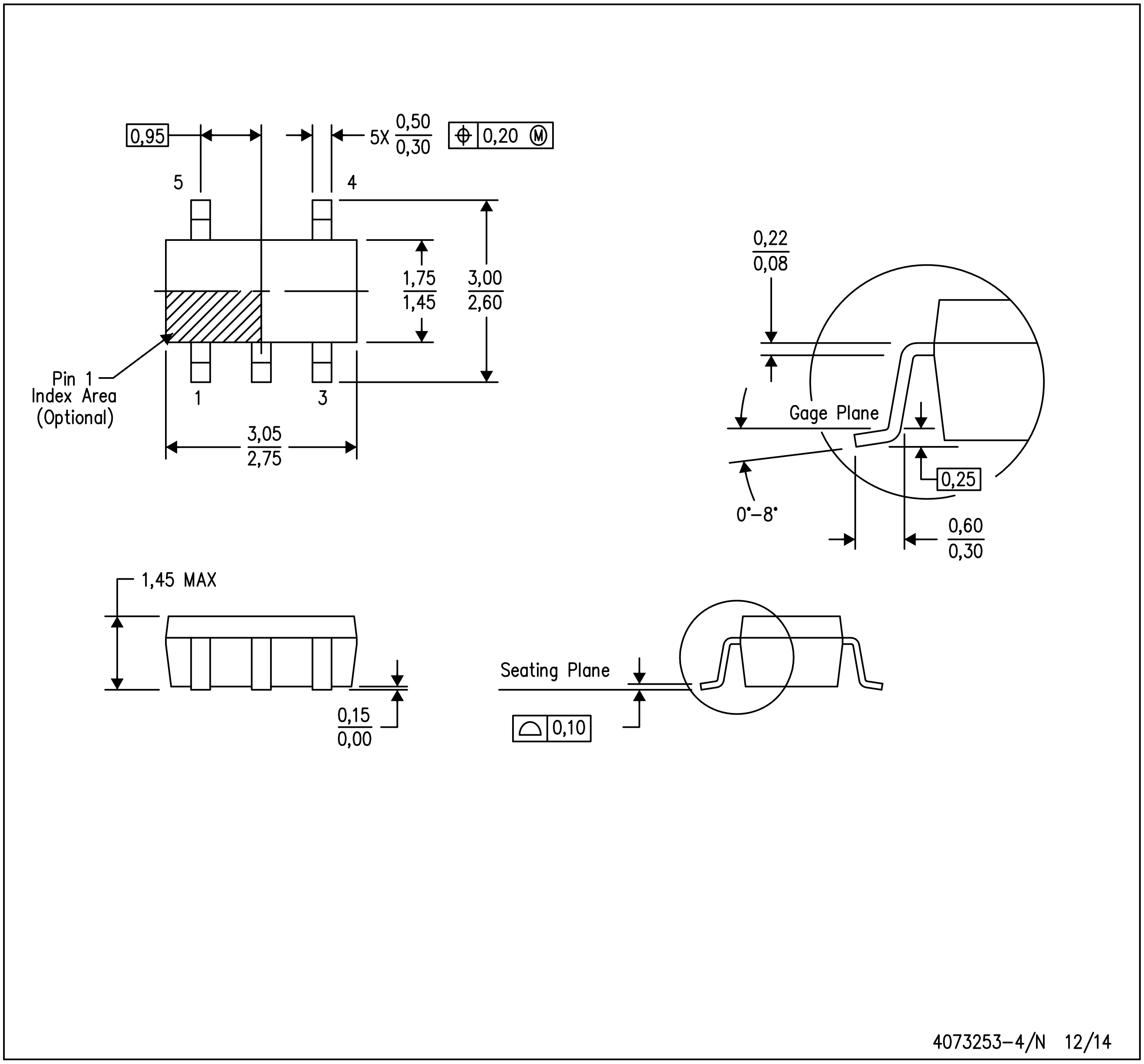


*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
LP2985-10DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985-10DBVT	SOT-23	DBV	5	250	180.0	180.0	18.0
LP2985-18DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985-18DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985-18DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0
LP2985-18DBVTG4	SOT-23	DBV	5	250	180.0	180.0	18.0
LP2985-25DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985-25DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985-25DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0
LP2985-28DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985-28DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985-28DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0
LP2985-28DBVTG4	SOT-23	DBV	5	250	180.0	180.0	18.0
LP2985-29DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985-29DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985-30DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985-30DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985-30DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0
LP2985-33DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985-33DBVRG4	SOT-23	DBV	5	3000	180.0	180.0	18.0

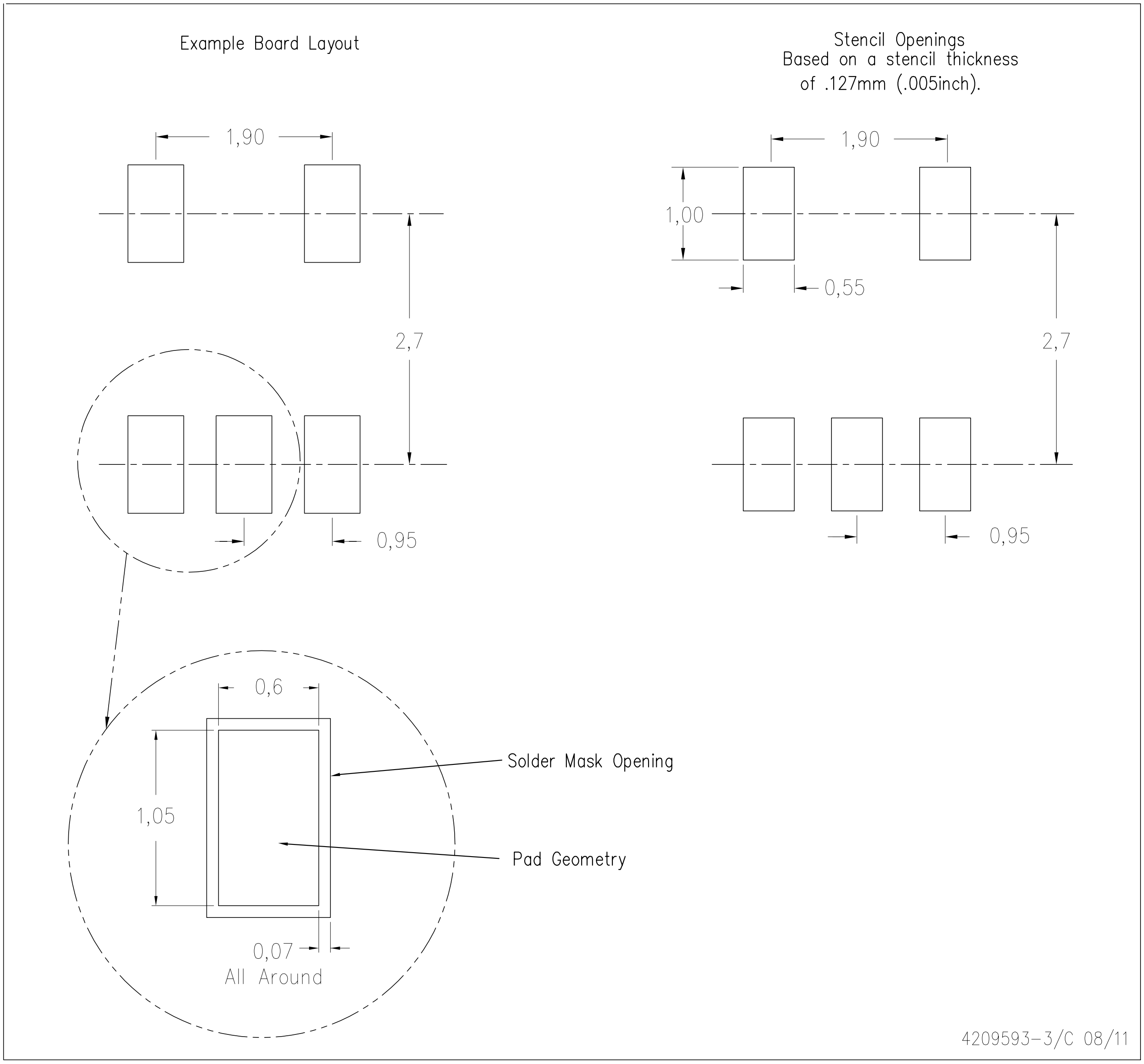
Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
LP2985-33DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0
LP2985-33DBVT	SOT-23	DBV	5	250	180.0	180.0	18.0
LP2985-33DBVTG4	SOT-23	DBV	5	250	180.0	180.0	18.0
LP2985-50DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985-50DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985-50DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0
LP2985A-10DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985A-10DBVT	SOT-23	DBV	5	250	180.0	180.0	18.0
LP2985A-18DBVJ	SOT-23	DBV	5	10000	358.0	332.0	35.0
LP2985A-18DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985A-18DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985A-18DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0
LP2985A-25DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985A-25DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985A-25DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0
LP2985A-28DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985A-28DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985A-28DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0
LP2985A-29DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985A-29DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985A-30DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985A-30DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985A-30DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0
LP2985A-33DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985A-33DBVRG4	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985A-33DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0
LP2985A-33DBVTG4	SOT-23	DBV	5	250	180.0	180.0	18.0
LP2985A-50DBVR	SOT-23	DBV	5	3000	205.0	200.0	33.0
LP2985A-50DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
LP2985A-50DBVT	SOT-23	DBV	5	250	205.0	200.0	33.0

DBV (R-PDSO-G5) PLASTIC SMALL-OUTLINE PACKAGE



NOTES: A. All linear dimensions are in millimeters.
B. This drawing is subject to change without notice.
C. Body dimensions do not include mold flash or protrusion. Mold flash and protrusion shall not exceed 0.15 per side.
D. Falls within JEDEC MO-178 Variation AA.

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.