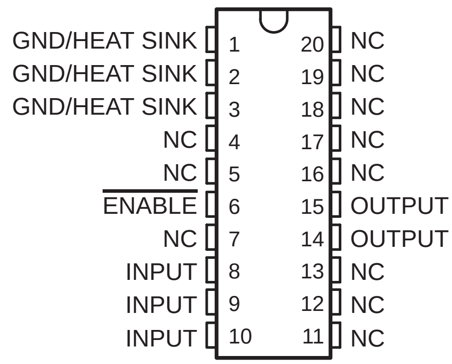
- **Very Low-Dropout Voltage . . . Less Than 400 mV at 300 mA**
- **Standby Mode Reduces Current to a Maximum of 150 μA**
- **Output Regulated to Within ±2% Over Full Temperature Range**
- **Packaged in Thin Shrink Small-Outline Package**
- **Only 10-μF Load Capacitor Required to Maintain Regulation at I_O = 300 mA**

PW PACKAGE
(TOP VIEW)



GND/HEAT SINK − These terminals have an internal connection to ground and must be grounded.
NC − No internal connection
† The PW package is only available in left-end taped and reeled (order device TL75LPxxQPWLE).

description

The TL75LPxxQ devices are low-dropout voltage regulators specifically targeted for use in portable applications. These devices generate fixed output voltages at loads of up to 300 mA with only 400-mV dropout over the full temperature range.

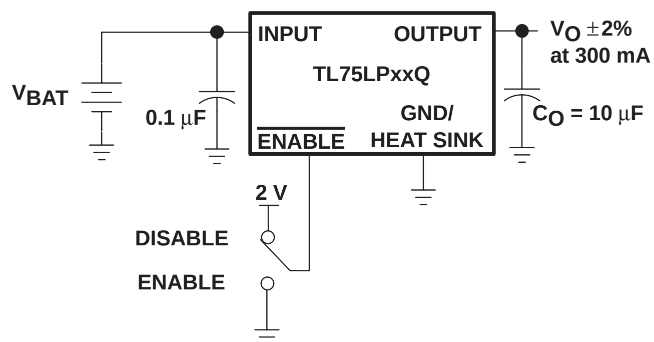
Low-dropout voltage regulators are commonly used in battery-powered systems such as analog and digital cellular phones. The TL75LPxx family of regulators feature a TTL/CMOS-compatible enable terminal, which can be used to switch the device into standby mode. This feature reduces power consumption when the instrument is not active. Less that 150 μA is required when the unit is disabled.

A concern in many new designs is conservation of board space and overall reduction in equipment size. The thin shrink small-outline package (TSSOP) minimizes board area and reduces component height. This package has a maximum height of less than 1.1 mm (compared to the 1.75 mm of a standard 8-pin SO package) and dimensions of only 6.5 mm by 4.4 mm.

All low-dropout regulators require an external capacitor at the output to maintain regulation and stability. To further reduce board area and cost, the TL75LPxx devices are designed to require a minimum capacitor of only 10 μF. This is 1/10 the typical value used by many other low-dropout regulators. To simplify the task of choosing a suitable capacitor, TI has included in this datasheet a list of recommended capacitors for use with these devices.

The TL75LPxxQ devices are characterized for operation over T_J = −40°C to 125°C.

typical application schematic

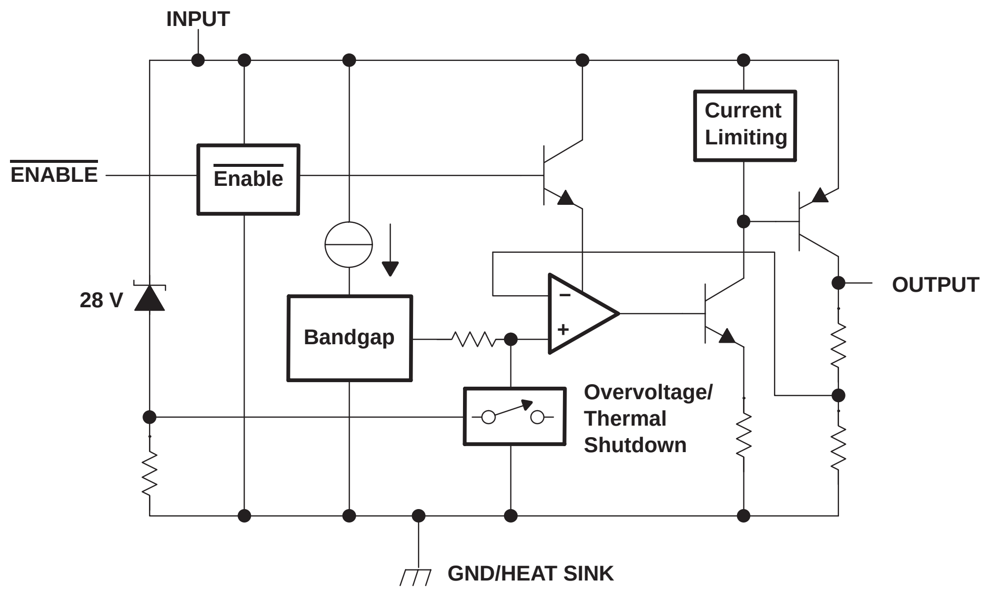


AVAILABLE OPTIONS

T_J	V_O MIN	V_O TYP	V_O MAX	PACKAGED DEVICES TSSOP (PW)	CHIP FORM (Y)
−40°C to 125°C	4.75	4.85	4.95	TL75LP48QPWLE	TL75LP48Y
	4.9	5	5.1	TL75LP05QPWLE	TL75LP05Y
	7.84	8	8.16	TL75LP08QPWLE	TL75LP08Y
	9.8	10	10.2	TL75LP10QPWLE	TL75LP10Y
	11.76	12	12.24	TL75LP12QPWLE	TL75LP12Y

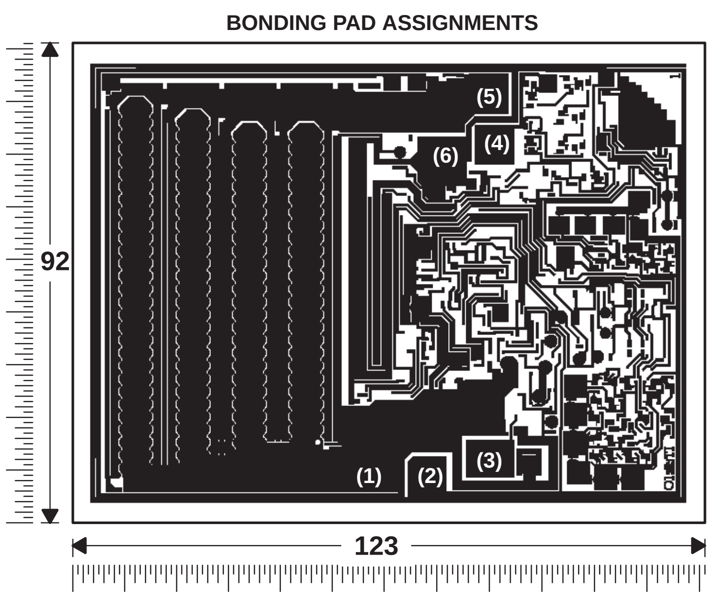
The PW package is available only in tape and reel. Chip forms are tested at 25°C.

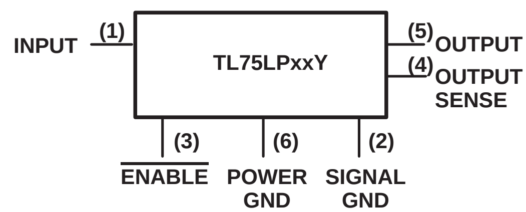
functional block diagram



TL75LPxxY chip information

This chip, when properly assembled, displays characteristics similar to the TL75LPxx. Thermal compression or ultrasonic bonding can be used on the doped aluminum bonding pads. The chip can be mounted with conductive epoxy or a gold-silicon preform.





CHIP THICKNESS: 11 MILS TYPICAL

BONDING PADS: 7 X 7 MILS MINIMUM

T_J max = 150°C

TOLERANCES ARE ±10%.

ALL DIMENSIONS ARE IN MILS.

NOTE A. NOTE: SIGNAL GND and POWER GND must be tied together as close to device as possible. OUTPUT and OUTPUT SENSE should be tied together.

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

Supply voltage, V_{CC}, (See Note 1) . . . . 25 V
Output current, I_O . . . . 400 mA
Operating virtual junction temperature range, T_J . . . . −55°C to 150°C
Continuous total power dissipation (see Note 2) . . . . See Dissipation Rating Table
Storage temperature range, T_{stg} . . . . −65°C to 150°C
Lead temperature 1,6 mm (1/16 inch) from case for 10 seconds . . . . 260°C

† 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.

NOTES: 1. All voltage values are with respect to network terminal ground.
2. Refer to Figures 1 and 2 to avoid exceeding the design maximum virtual junction temperature; these ratings should not be exceeded. Due to variation in individual device electrical characteristics and thermal resistance, the built-in thermal overload protection may be activated at power levels slightly above or below the rated dissipation.

DISSIPATION RATING TABLE

PACKAGE	POWER RATING AT	T ≤ 25°C POWER RATING	DERATING FACTOR ABOVE T = 25°C	T = 70°C POWER RATING	T = 85°C POWER RATING	T = 125°C POWER RATING
PW	T_A	828 mW	6.62 mW/°C	530 mW	431 mW	166 mW
	T_C	4032 mW	32.2 mW/°C	2583 mW	2100 mW	812 mW
	T_P‡	2475 mW	19.8 mW/°C	1584 mW	1287 mW	495 mW

‡ $R_{\theta JP}$ is the thermal resistance between the junction and the device pin. To determine the virtual junction temperature (T_J) relative to the device pin temperature, the following calculations should be used: $T_J = P_D \times R_{\theta JP} + T_P$, where P_D is the internal power dissipation of the device and T_P is the device pin temperature at the point of contact to the printed wiring board. The $R_{\theta JP}$ for the TL75LPxx series is 50.5°C/W.

MAXIMUM CONTINUOUS DISSIPATION vs FREE-AIR TEMPERATURE

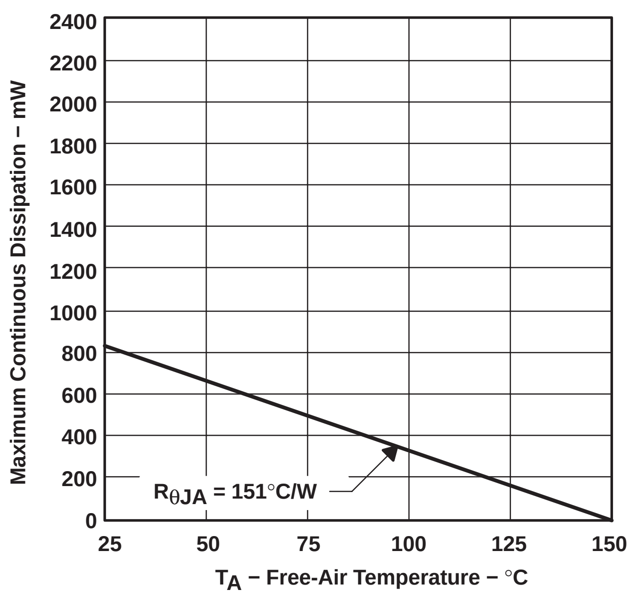


Figure 1

MAXIMUM CONTINUOUS DISSIPATION vs CASE TEMPERATURE

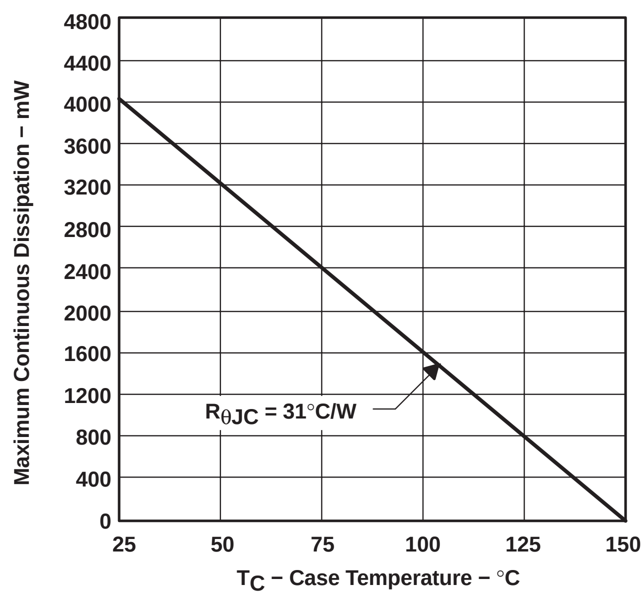


Figure 2

recommended operating conditions

		MIN	MAX	UNIT
Input voltage, V_I	TL75LP48	5.15	23.0	V
	TL75LP05	5.3	23.0	
	TL75LP08	8.4	23.0	
	TL75LP10	10.4	23.0	
	TL75LP12	12.5	23.0	
High-level input voltage, $\overline{ENABLE}$, V_{IH}		2.0	15.0	V
Low-level input voltage, $\overline{ENABLE}$, V_{IL}		0	0.8	V
Output current range, I_O		5	300	mA
Operating virtual junction temperature range, T_J		−40	125	°C

electrical characteristics over operating virtual junction temperature range, V_I = 10 V, I_O = 300 mA, $\overline{ENABLE}$ = 0 V (unless otherwise noted)

PARAMETER	TEST CONDITIONS†	TL75LP48Q MIN	TYP	MAX	UNIT
Output voltage	V_I = 5.35 V to 10 V	4.75	4.85	4.95	V
Input voltage regulation	V_I = 5.35 V to 10 V, T_J = 25°C		10	25	mV
Ripple rejection	V_I = 5.6 V to 15.6 V, f = 120 Hz, T_J = 25°C	50	55		dB
Output voltage regulation	I_O = 5 mA to 300 mA, T_J = 25°C		12	30	mV
Dropout voltage	I_O = 100 mA		0.12	0.2	V
	I_O = 200 mA		0.17	0.3	
	I_O = 300 mA		0.22	0.4	
Output noise voltage	f = 10 Hz to 100 kHz, T_J = 25°C		500		µV
Bias current	I_O = 10 mA		2.5	4	mA
	I_O = 100 mA		4	10	
	I_O = 200 mA		6	20	
	I_O = 300 mA		9	30	
High-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 0.8 V		7	25	µA
Low-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 2 V		0.05	6	µA
Standby current	$\overline{ENABLE}$ = 2 V		100	150	µA

† Pulse-testing techniques maintain the virtual junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 0.1-µF capacitor across the input and a 10-µF capacitor with equivalent series resistance within the guidelines shown in Figures 3 and 4 on the output. All measurements are taken with a tantalum electrolytic capacitor. Although not normally recommended, an aluminum electrolytic capacitor can be used. Attention must be given its ESR value, particularly at low temperatures.

electrical characteristics over operating virtual junction temperature range, V_I = 10 V, I_O = 300 mA, $\overline{ENABLE}$ = 0 V (unless otherwise noted)

PARAMETER	TEST CONDITIONS†	TL75LP05Q			UNIT
		MIN	TYP	MAX	
Output voltage	V_I = 5.5 V to 10 V	4.9	5	5.1	V
Input voltage regulation	V_I = 5.5 V to 10 V, T_J = 25°C		10	25	mV
Ripple rejection	V_I = 6 V to 16 V, f = 120 Hz, T_J = 25°C	50	55		dB
Output voltage regulation	I_O = 5 mA to 300 mA, T_J = 25°C		12	30	mV
Dropout voltage	I_O = 100 mA		0.12	0.2	V
	I_O = 200 mA		0.17	0.3	
	I_O = 300 mA		0.22	0.4	
Output noise voltage	f = 10 Hz to 100 kHz, T_J = 25°C		500		µV
Bias current	I_O = 10 mA		2.5	4	mA
	I_O = 100 mA		4	10	
	I_O = 200 mA		6	20	
	I_O = 300 mA		9	30	
High-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 0.8 V		7	25	µA
Low-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 2 V		0.05	6	µA
Standby current	$\overline{ENABLE}$ = 2 V		100	150	µA

† Pulse-testing techniques maintain the virtual junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 0.1-µF capacitor across the input and a 10-µF capacitor with equivalent series resistance within the guidelines shown in Figures 3 and 4 on the output. All measurements are taken with a tantalum electrolytic capacitor. Although not normally recommended, an aluminum electrolytic capacitor can be used. Attention must be given its ESR value, particularly at low temperatures.

electrical characteristics over operating virtual junction temperature range, V_I = 10 V, I_O = 300 mA, $\overline{ENABLE}$ = 0 V (unless otherwise noted)

PARAMETER	TEST CONDITIONS†	TL75LP08Q			UNIT
		MIN	TYP	MAX	
Output voltage	V_I = 8.6 V to 15 V	7.84	8	8.16	V
Input voltage regulation	V_I = 8.6 V to 15 V, T_J = 25°C		12	40	mV
Ripple rejection	V_I = 9 V to 19 V, f = 120 Hz, T_J = 25°C	50	55		dB
Output voltage regulation	I_O = 5 mA to 300 mA, T_J = 25°C		12	40	mV
Dropout voltage	I_O = 100 mA		0.12	0.2	V
	I_O = 200 mA		0.17	0.3	
	I_O = 300 mA		0.22	0.4	
Output noise voltage	f = 10 Hz to 100 kHz, T_J = 25°C		500		µV
Bias current	I_O = 10 mA		2.5	4	mA
	I_O = 100 mA		4	10	
	I_O = 200 mA		6	20	
	I_O = 300 mA		9	30	
High-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 0.8 V		7	25	µA
Low-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 2 V		0.05	6	µA
Standby current	$\overline{ENABLE}$ = 2 V		100	150	µA

† Pulse-testing techniques maintain the virtual junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 0.1-µF capacitor across the input and a 10-µF capacitor with equivalent series resistance within the guidelines shown in Figures 3 and 4 on the output. All measurements are taken with a tantalum electrolytic capacitor. Although not normally recommended, an aluminum electrolytic capacitor can be used. Attention must be given its ESR value, particularly at low temperatures.

electrical characteristics over operating virtual junction temperature range, V_I = 14 V, I_O = 300 mA, $\overline{ENABLE}$ = 0 V (unless otherwise noted)

PARAMETER	TEST CONDITIONS†			TL75LP10Q			UNIT
				MIN	TYP	MAX	
Output voltage	V_I = 10.6 V to 17 V			9.8	10	10.2	V
Input voltage regulation	V_I = 10.6 V to 17 V,	T_J = 25°C			15	43	mV
Ripple rejection	V_I = 11 V to 21 V,	f = 120 Hz,	T_J = 25°C	50	55		dB
Output voltage regulation	I_O = 5 mA to 300 mA,	T_J = 25°C			15	50	mV
Dropout voltage	I_O = 100 mA				0.12	0.2	V
	I_O = 200 mA				0.17	0.3	
	I_O = 300 mA				0.22	0.4	
Output noise voltage	f = 10 Hz to 100 kHz,	T_J = 25°C			1000		μV
Bias current	I_O = 10 mA				2.5	4	mA
	I_O = 100 mA				4	10	
	I_O = 200 mA				6	20	
	I_O = 300 mA				9	30	
High-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 0.8 V				7	25	μA
Low-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 2 V				0.05	6	μA
Standby current	$\overline{ENABLE}$ = 2 V				100	150	μA

† Pulse-testing techniques maintain the virtual junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 0.1-μF capacitor across the input and a 10-μF capacitor with equivalent series resistance within the guidelines shown in Figures 3 and 4 on the output. All measurements are taken with a tantalum electrolytic capacitor. Although not normally recommended, an aluminum electrolytic capacitor can be used. Attention must be given its ESR value, particularly at low temperatures.

electrical characteristics over operating virtual junction temperature range, V_I = 14 V, I_O = 300 mA, $\overline{ENABLE}$ = 0 V (unless otherwise noted)

PARAMETER	TEST CONDITIONS†			TL75LP12Q			UNIT
				MIN	TYP	MAX	
Output voltage	V_I = 12.7 V to 18 V			11.76	12	12.24	V
Input voltage regulation	V_I = 12.7 V to 18 V,	T_J = 25°C			15	43	mV
Ripple rejection	V_I = 13 V to 23 V,	f = 120 Hz,	T_J = 25°C	50	55		dB
Output voltage regulation	I_O = 5 mA to 300 mA,	T_J = 25°C			15	60	mV
Dropout voltage	I_O = 100 mA				0.12	0.2	V
	I_O = 200 mA				0.17	0.3	
	I_O = 300 mA				0.22	0.4	
Output noise voltage	f = 10 Hz to 100 kHz,	T_J = 25°C			1000		μV
Bias current	I_O = 10 mA				2.5	4	mA
	I_O = 100 mA				4	10	
	I_O = 200 mA				6	20	
	I_O = 300 mA				9	30	
High-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 0.8 V				7	25	μA
Low-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 2 V				0.05	6	μA
Standby current	$\overline{ENABLE}$ = 2 V				100	150	μA

† Pulse-testing techniques maintain the virtual junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 0.1-μF capacitor across the input and a 10-μF capacitor with equivalent series resistance within the guidelines shown in Figures 3 and 4 on the output. All measurements are taken with a tantalum electrolytic capacitor. Although not normally recommended, an aluminum electrolytic capacitor can be used. Attention must be given its ESR value, particularly at low temperatures.

electrical characteristics at V_I = 10 V, I_O = 300 mA, $\overline{ENABLE}$ = 0 V, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†	TL75LP48Y			UNIT
		MIN	TYP	MAX	
Output voltage			4.85		V
Input voltage regulation			10		mV
Ripple rejection	f = 120 Hz		55		dB
Output voltage regulation			12		mV
Dropout voltage			0.22		V
Output noise voltage	f = 10 Hz to 100 kHz		500		µV
Bias current			9		mA
High-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 0.8 V		7		µA
Low-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 2 V		0.05		µA
Standby current	$\overline{ENABLE}$ = 2 V		100		µA

† Pulse-testing techniques maintain the virtual junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 0.1-µF capacitor across the input and a 10-µF capacitor with equivalent series resistance within the guidelines shown in Figures 3 and 4 on the output. All measurements are taken with a tantalum electrolytic capacitor. Although not normally recommended, an aluminum electrolytic capacitor can be used. Attention must be given its ESR value, particularly at low temperatures.

electrical characteristics at V_I = 10 V, I_O = 300 mA, $\overline{ENABLE}$ = 0 V, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†	TL75LP05Y			UNIT
		MIN	TYP	MAX	
Output voltage			5		V
Input voltage regulation			10		mV
Ripple rejection	f = 120 Hz		55		dB
Output voltage regulation			12		mV
Dropout voltage			0.22		V
Output noise voltage	f = 10 Hz to 100 kHz		500		µV
Bias current			9		mA
High-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 0.8 V		7		µA
Low-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 2 V		0.05		µA
Standby current	$\overline{ENABLE}$ = 2 V		100		µA

† Pulse-testing techniques maintain the virtual junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 0.1-µF capacitor across the input and a 10-µF capacitor with equivalent series resistance within the guidelines shown in Figures 3 and 4 on the output. All measurements are taken with a tantalum electrolytic capacitor. Although not normally recommended, an aluminum electrolytic capacitor can be used. Attention must be given its ESR value, particularly at low temperatures.

electrical characteristics at V_I = 10 V, I_O = 300 mA, $\overline{ENABLE}$ = 0 V, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†	TL75LP08Y MIN	TL75LP08Y TYP	TL75LP08Y MAX	UNIT
Output voltage			8		V
Input voltage regulation			12		mV
Ripple rejection	f = 120 Hz		55		dB
Output voltage regulation			12		mV
Dropout voltage			0.22		V
Output noise voltage	f = 10 Hz to 100 kHz		500		µV
Bias current			9		mA
High-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 0.8 V		7		µA
Low-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 2 V		0.05		µA
Standby current	$\overline{ENABLE}$ = 2 V		100		µA

† Pulse-testing techniques maintain the virtual junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 0.1-µF capacitor across the input and a 10-µF capacitor with equivalent series resistance within the guidelines shown in Figures 3 and 4 on the output. All measurements are taken with a tantalum electrolytic capacitor. Although not normally recommended, an aluminum electrolytic capacitor can be used. Attention must be given its ESR value, particularly at low temperatures.

electrical characteristics at V_I = 14 V, I_O = 300 mA, $\overline{ENABLE}$ = 0 V, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†	TL75LP10Y MIN	TL75LP10Y TYP	TL75LP10Y MAX	UNIT
Output voltage			10		V
Input voltage regulation			15		mV
Ripple rejection	f = 120 Hz		55		dB
Output voltage regulation			15		mV
Dropout voltage			0.22		V
Output noise voltage	f = 10 Hz to 100 kHz		1000		µV
Bias current			9		mA
High-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 0.8 V		7		µA
Low-level input current, $\overline{ENABLE}$	$\overline{ENABLE}$ = 2 V		0.05		µA
Standby current	$\overline{ENABLE}$ = 2 V		100		µA

† Pulse-testing techniques maintain the virtual junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 0.1-µF capacitor across the input and a 10-µF capacitor with equivalent series resistance within the guidelines shown in Figures 3 and 4 on the output. All measurements are taken with a tantalum electrolytic capacitor. Although not normally recommended, an aluminum electrolytic capacitor can be used. Attention must be given its ESR value, particularly at low temperatures.

electrical characteristics at V_I = 14 V, I_O = 300 mA, $\overline{\text{ENABLE}}$ = 0 V, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†	TL75LP12Y			UNIT
		MIN	TYP	MAX	
Output voltage		11.76	12	12.24	V
Input voltage regulation			15	43	mV
Ripple rejection	f = 120 Hz		55		dB
Output voltage regulation			12	60	mV
Dropout voltage			0.22	0.4	V
Output noise voltage	f = 10 Hz to 100 kHz		500		µV
Bias current			9	30	mA
High-level input current, $\overline{\text{ENABLE}}$	$\overline{\text{ENABLE}}$ = 0.8 V		7	25	µA
Low-level input current, $\overline{\text{ENABLE}}$	$\overline{\text{ENABLE}}$ = 2 V		0.05	6	µA
Standby current	$\overline{\text{ENABLE}}$ = 2 V		100	150	µA

† Pulse-testing techniques maintain the virtual junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 0.1-µF capacitor across the input and a 10-µF capacitor with equivalent series resistance within the guidelines shown in Figures 3 and 4 on the output. All measurements are taken with a tantalum electrolytic capacitor. Although not normally recommended, an aluminum electrolytic capacitor can be used. Attention must be given its ESR value, particularly at low temperatures.

PARAMETER MEASUREMENT INFORMATION

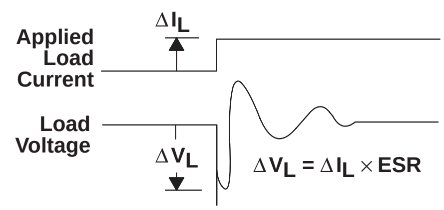
The TL75LPxx series are low-dropout voltage regulators. This means that the capacitance is important to the performance of the regulator because it is a vital part of the control loop. The capacitor value and the equivalent series resistance (ESR) both affect the control loop and must be defined for the load range and the temperature range. Figures 3 and 4 can establish the capacitance value and ESR range for optimum regulator performance.

Figure 3 shows the recommended range of ESR, measured at 120 Hz, for a given load with a 10-μF capacitor on the output. In addition, it shows a maximum ESR limit of 2 Ω and a load-dependent minimum ESR limit.

For applications with varying loads, the lightest load condition should be chosen since it is the worst case. Figure 4 shows the relationship of the reciprocal of ESR to the square root of the capacitance with a minimum capacitance limit of 10 μF and a maximum ESR limit of 2 Ω. Figure 4 establishes the amount that the minimum ESR limit of Figure 3 can be adjusted for different capacitor values. For example, when the minimum load needed is 200 mA, Figure 3 suggests an ESR range of 0.8 Ω to 2 Ω for 10 μF. Figure 4 shows that changing the capacitor from 10 μF to 400 μF can change the ESR minimum by greater than 3/0.5 (or 6). Therefore, the new minimum ESR value is 0.8/6 (or 0.13 Ω). This now allows an ESR range of 0.13 Ω to 2 Ω. This expanded ESR range is achieved by using a larger capacitor at the output. For better stability in low-current applications, it is recommended that a small resistance be placed in series with the capacitor (see Table 1) so that the ESR better approximates those in Figures 3 and 4.

Table 1. Compensations for Increased Stability at Low Currents

MANUFACTURER	CAPACITANCE	ESR TYP	PART NUMBER	ADDITIONAL RESISTANCE
AVX	15 μF	0.9 Ω	TAJB156M010S	1 Ω
KEMET	33 μF	0.6 Ω	T491D336M010AS	0.5 Ω



OUTPUT CAPACITOR
EQUIVALENT SERIES RESISTANCE
vs
LOAD CURRENT

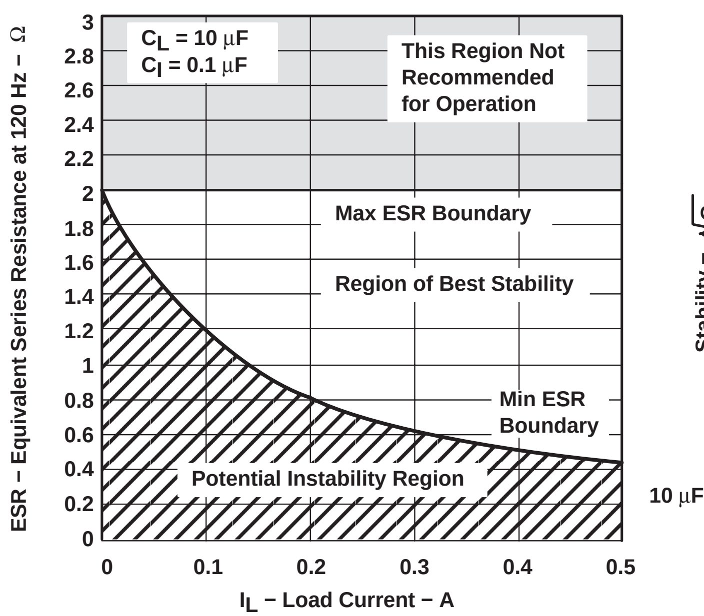


Figure 3

OUTPUT CAPACITOR
STABILITY
vs
EQUIVALENT SERIES RESISTANCE

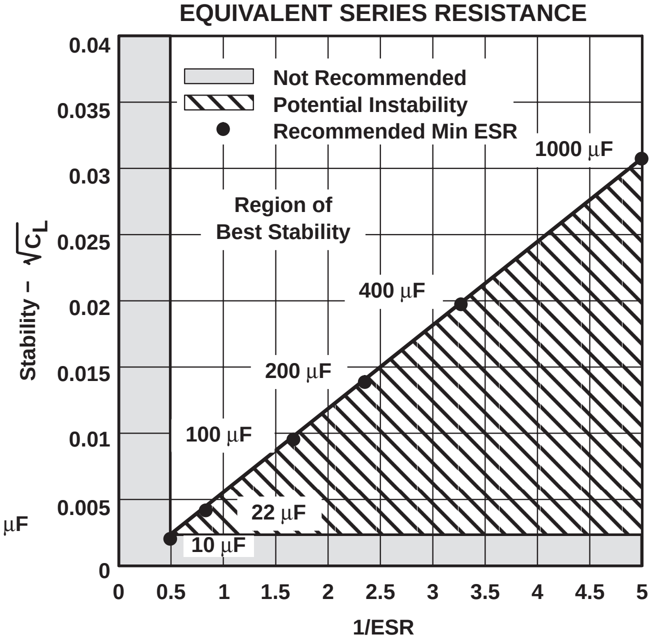


Figure 4

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TYPICAL CHARACTERISTICS

Table of Graphs

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	I_O = 100 mA	vs Input voltage	7
Dropout voltage		vs Output current	8
Quiescent current		vs Output current	9
Short-circuit protection conditions output voltage		vs Output current	10
Load transient response			11
Line transient response			12

TYPICAL CHARACTERISTICS

OUTPUT VOLTAGE vs INPUT VOLTAGE

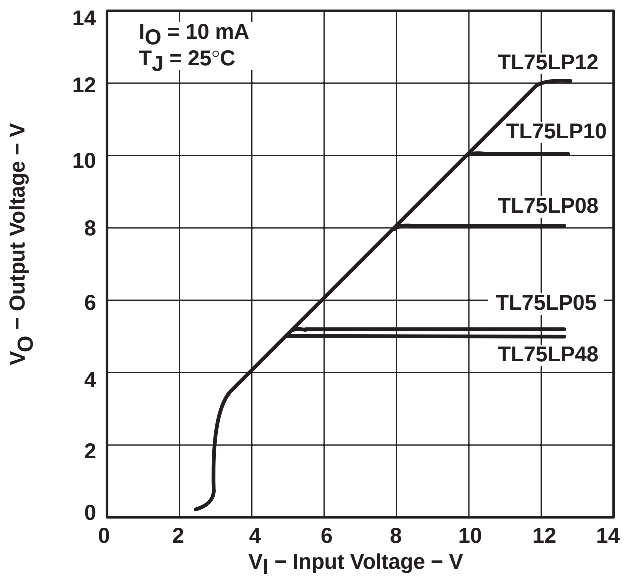

Figure 5

INPUT CURRENT vs INPUT VOLTAGE

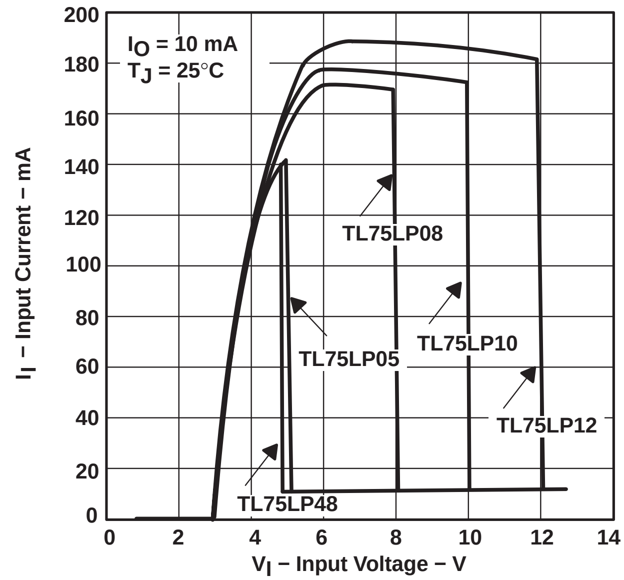

Figure 6

INPUT CURRENT vs INPUT VOLTAGE

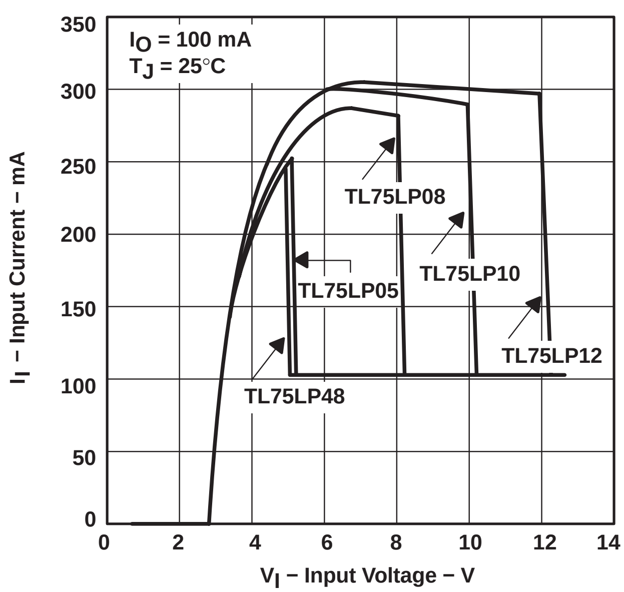

Figure 7

DROPOUT VOLTAGE vs OUTPUT CURRENT

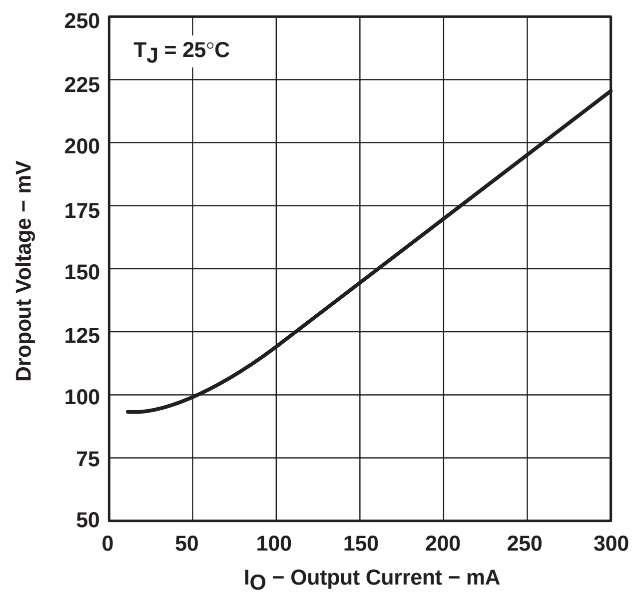

Figure 8

TYPICAL CHARACTERISTICS

QUIESCENT CURRENT vs OUTPUT CURRENT

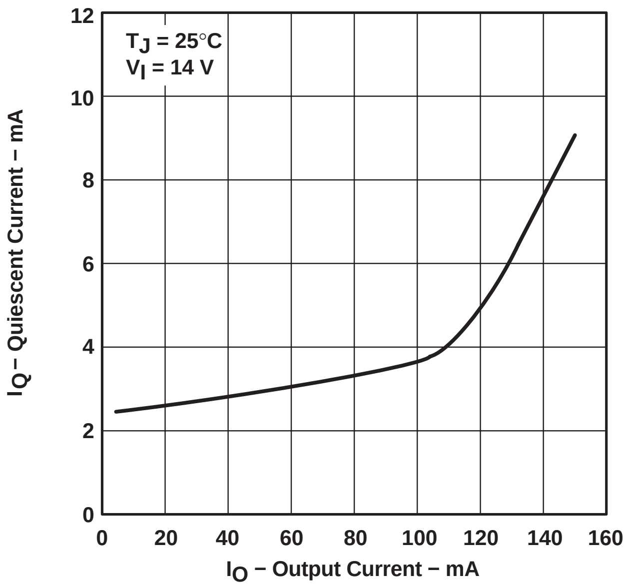

Figure 9

TL75LP05 SHORT-CIRCUIT PROTECTION CONDITIONS OUTPUT VOLTAGE vs OUTPUT CURRENT

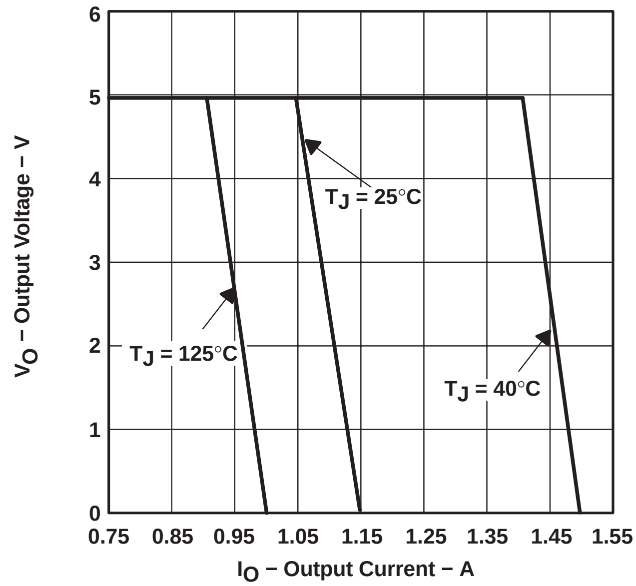

Figure 10

LOAD TRANSIENT RESPONSE

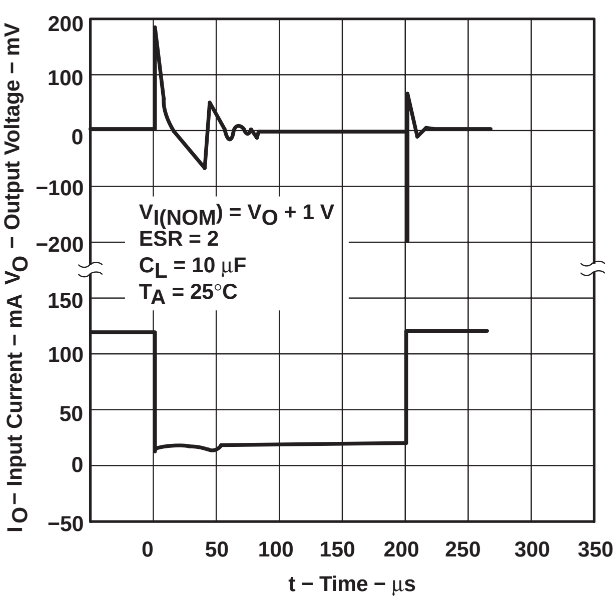

Figure 11

LINE TRANSIENT RESPONSE

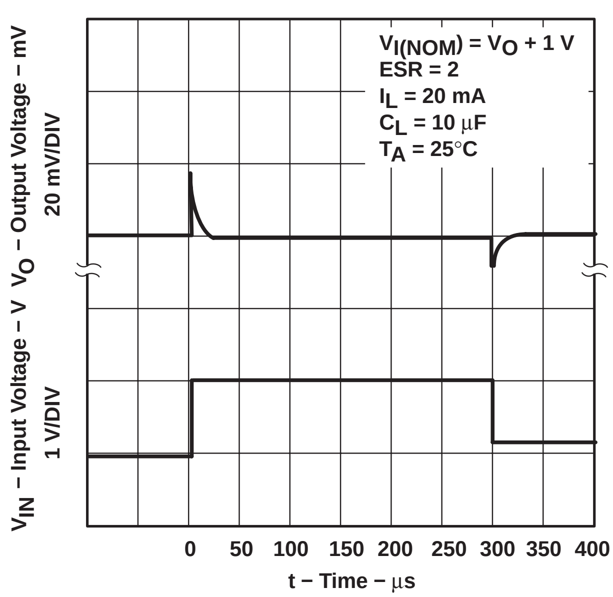

Figure 12

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