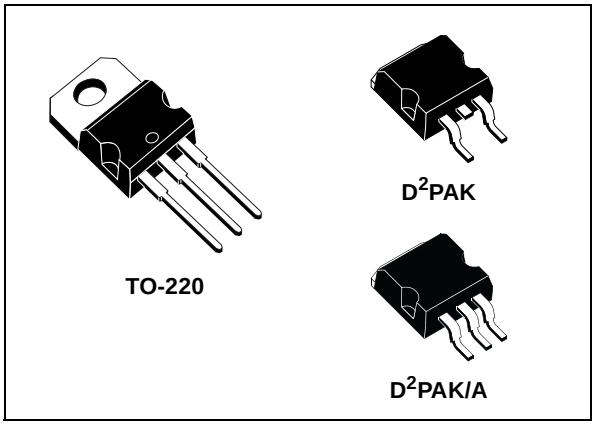
LD1084 SERIES

5A LOW DROP POSITIVE VOLTAGE REGULATOR ADJUSTABLE AND FIXED

- TYPICAL DROPOUT 1.3V (AT 5A)
- THREE TERMINAL ADJUSTABLE OR FIXED OUTPUT VOLTAGE 1.5, 1.8V, 2.5V, 2.85V, 3.3V, 3.6V, 5V, 8V, 9V, 12V.
- GUARANTEED OUTPUT CURRENT UP TO 5A
- OUPUT TOLERANCE ±1% AT 25°C AND ±2% IN FULL TEMPERATURE RANGE
- INTERNAL POWER AND THERMAL LIMIT
- WIDE OPERATING TEMPERATURE RANGE -40°C TO 125°C
- PACKAGE AVAILABLE: TO-220, D^2PAK, D^2PAK/A
- PINOUT COMPATIBILITY WITH STANDARD ADJUSTABLE VREG



DESCRIPTION

The LD1084 is a LOW DROP Voltage Regulator able to provide up to 5A of Output Current. Dropout is guaranteed at a maximum of 1.5V at the maximum output current, decreasing at lower loads. The LD1084 is pin to pin compatible with the older 3-terminal adjustable regulators, but has better performances in term of drop and output tolerance.

A 2.85V output version is suitable for SCSI-2 active termination. Unlike PNP regulators, where a part of the output current is wasted as quiescent current, the LD1084 quiescent current flows into the load, so increase efficiency. Only a 10µF minimum capacitor is need for stability.
The device is supplied in TO-220, D^2PAK and D^2PAK/A. On chip trimming allows the regulator to reach a very tight output voltage tolerance, within ±1% at 25°C.

Figure 1: Schematic Diagram

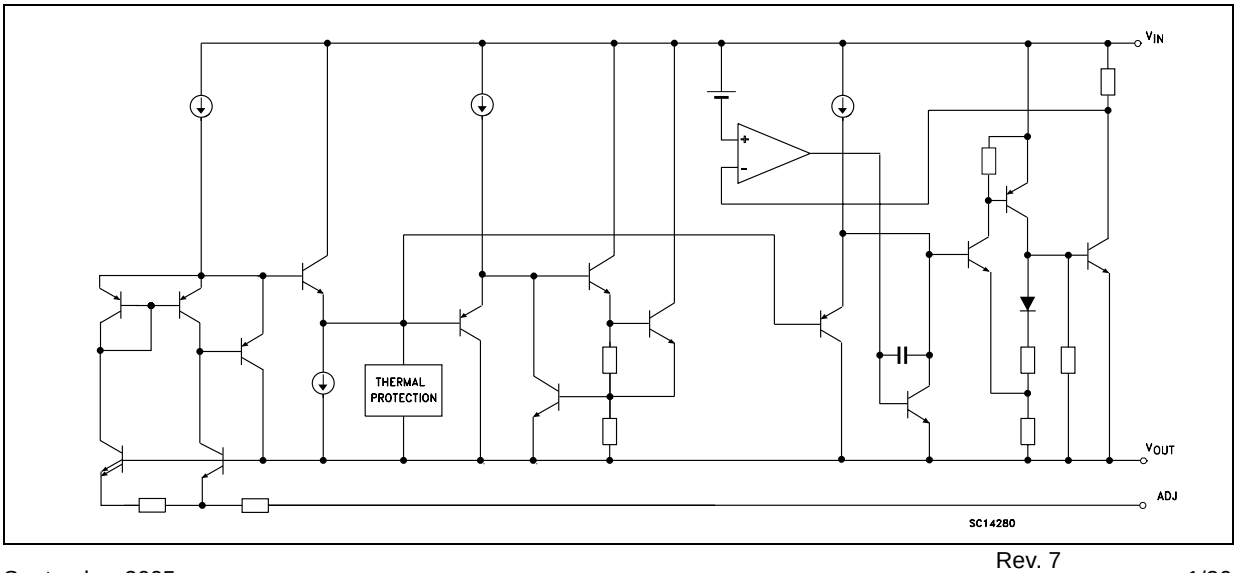


Figure 2: Application Circuits

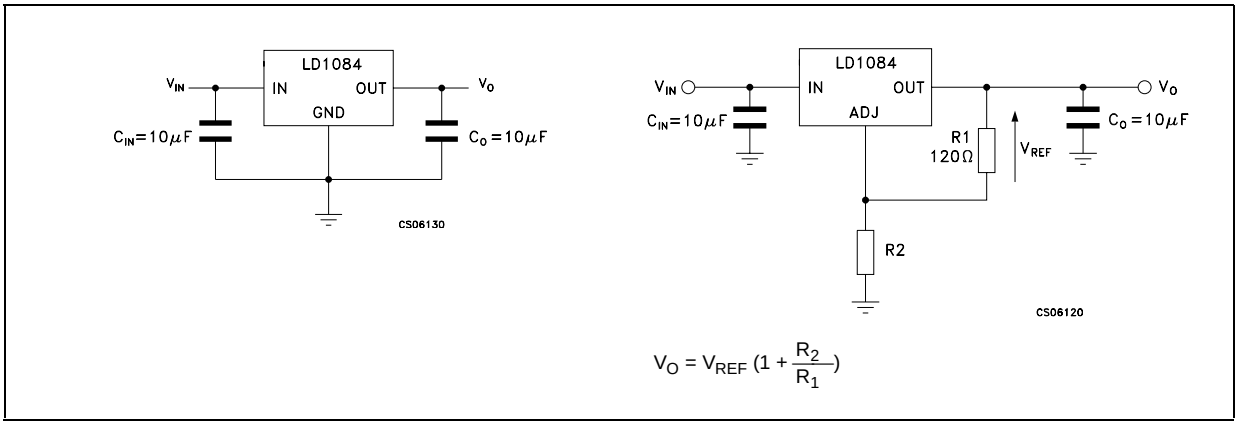


Figure 3: Pin Connection (top view)

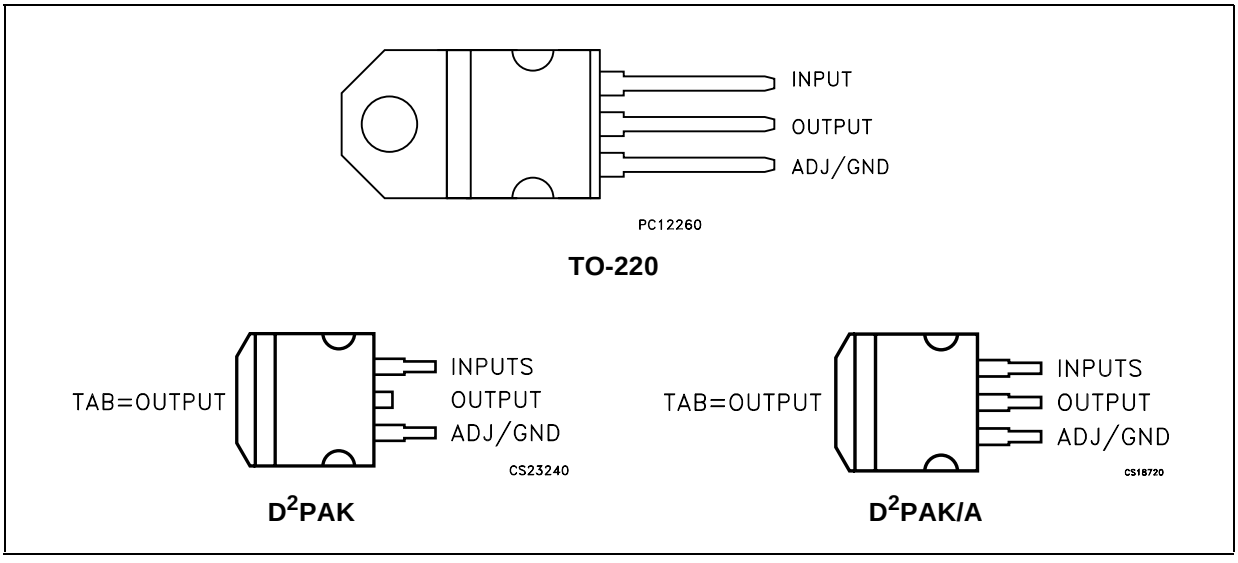


Table 1: Order Codes

TO-220	D²PAK	D²PAK/A	OUTPUT VOLTAGE
LD1084V15 (*)	LD1084D2T15R (*)	LD1084D2M15R (*)	1.5 V
LD1084V18	LD1084D2T18R	LD1084D2M18R	1.8 V
LD1084V25	LD1084D2T25R	LD1084D2M25R	2.5 V
LD1084V28 (*)	LD1084D2T28R (*)	LD1084D2M28R (*)	2.85 V
LD1084V33	LD1084D2T33R	LD1084D2M33R	3.3 V
LD1084V36	LD1084D2T36R	LD1084D2M36R	3.6 V
LD1084V50	LD1084D2T50R	LD1084D2M50R	5.0 V
LD1084V80	LD1084D2T80R	LD1084D2M80R	8.0 V
LD1084V90	LD1084D2T90R	LD1084D2M90R	9.0 V
LD1084V12	LD1084D2T12R	LD1084D2M12R	12.0 V
LD1084V	LD1084D2T-R	LD1084D2M-R	ADJ

(*) Available on request.

Table 2: Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
V_I	DC Input Voltage	30	V
I_O	Output Current	Internally Limited	mA
P_D	Power Dissipation	Internally Limited	mW
T_{stg}	Storage Temperature Range	-55 to +150	°C
T_{op}	Operating Junction Temperature Range	-40 to +125	°C

Absolute Maximum Ratings are those values beyond which damage to the device may occur. Functional operation under these condition is not implied.

Table 3: Thermal Data

Symbol	Parameter	TO-220	D^2PAK	Unit
$R_{thj\text{-}case}$	Thermal Resistance Junction-case	3	3	°C/W
$R_{thj\text{-}amb}$	Thermal Resistance Junction-ambient	50	62.5	°C/W

Table 4: Electrical Characteristics Of LD1084#15 (V_I=4.5V, $C_I = C_O$ =10µF, T_A = -40 to 125°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage	I_O = 0 mA T_J = 25°C	1.485	1.5	1.515	V
		I_O = 0 to 5A V_I = 3.1 to 30V (note 1)	1.47	1.5	1.53	V
ΔV_O	Line Regulation	I_O = 0 mA V_I = 3.1 to 18V T_J = 25°C		0.5	6	mV
		I_O = 0 mA V_I = 3.1 to 15V		0.1	6	mV
ΔV_O	Load Regulation	I_O = 0 to 5A T_J = 25°C		3	15	mV
		I_O = 0 to 5A		7	20	mV
V_d	Dropout Voltage	I_O =5 A		1.3	1.5	V
I_q	Quiescent Current	$V_I \leq 30V$		5	10	mA
I_{sc}	Short Circuit Current	$V_I - V_O$ = 5V	5.5	6.5		A
		$V_I - V_O$ = 25V	0.5	0.7		A
	Thermal Regulation	T_A = 25°C, 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	f = 120 Hz, C_O = 25 µF, I_O = 5A V_I = 6.8 ± 3V	60	75		dB
eN	RMS Output Noise Voltage (% of V_O)	T_A = 25°C f =10Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	T_A = 125°C 1000Hrs		0.5		%

NOTE 1: See short-circuit current curve for available output current at fixed dropout.

Table 5: Electrical Characteristics Of LD1084#18 (V_I=4.8V, $C_I = C_O$ =10µF, T_A = -40 to 125°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage	I_O = 0 mA T_J = 25°C	1.782	1.8	1.818	V
		I_O = 0 to 5A V_I = 3.4 to 30V (note 1)	1.764	1.8	1.836	V
ΔV_O	Line Regulation	I_O = 0 mA V_I = 3.4 to 18V T_J = 25°C		0.5	6	mV
		I_O = 0 mA V_I = 3.4 to 15V		0.1	6	mV
ΔV_O	Load Regulation	I_O = 0 to 5A T_J = 25°C		3	15	mV
		I_O = 0 to 5A		7	20	mV
V_d	Dropout Voltage	I_O =5 A		1.3	1.5	V
I_q	Quiescent Current	$V_I \leq$ 30V		5	10	mA
I_{sc}	Short Circuit Current	$V_I - V_O$ = 5V	5.5	6.5		A
		$V_I - V_O$ = 25V	0.5	0.7		A
	Thermal Regulation	T_A = 25°C, 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	f = 120 Hz, C_O = 25 µF, I_O = 5A V_I = 6.8 ± 3V	60	75		dB
eN	RMS Output Noise Voltage (% of V_O)	T_A = 25°C f =10Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	T_A = 125°C 1000Hrs		0.5		%

NOTE 1: See short-circuit current curve for available output current at fixed dropout.

Table 6: Electrical Characteristics Of LD1084#25 (V_I=5.5V, $C_I = C_O$ =10µF, T_A = -40 to 125°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage	I_O = 0 mA T_J = 25°C	2.475	2.5	2.525	V
		I_O = 0 to 5A V_I = 4.1 to 30V (note 1)	2.45	2.5	2.55	V
ΔV_O	Line Regulation	I_O = 0 mA V_I = 4.1 to 18V T_J = 25°C		0.5	6	mV
		I_O = 0 mA V_I = 4.1 to 18V		0.1	6	mV
ΔV_O	Load Regulation	I_O = 0 to 5A T_J = 25°C		3	15	mV
		I_O = 0 to 5A		7	20	mV
V_d	Dropout Voltage	I_O =5 A		1.3	1.5	V
I_q	Quiescent Current	$V_I \leq$ 30V		5	10	mA
I_{sc}	Short Circuit Current	$V_I - V_O$ = 5V	5.5	6.5		A
		$V_I - V_O$ = 25V	0.5	0.7		A
	Thermal Regulation	T_A = 25°C, 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	f = 120 Hz, C_O = 25 µF, I_O = 5A V_I = 7.5 ± 3V	60	72		dB
eN	RMS Output Noise Voltage (% of V_O)	T_A = 25°C f =10Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	T_A = 125°C 1000Hrs		0.5		%

NOTE 1: See short-circuit current curve for available output current at fixed dropout.

Table 7: Electrical Characteristics Of LD1084#285 (V_I=5.85V, $C_I = C_O$ =10µF, T_A = -40 to 125°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage	I_O = 0 mA T_J = 25°C	2.821	2.85	2.879	V
		I_O = 0 to 5A V_I = 4.5 to 30V (note 1)	2.793	2.85	2.907	V
ΔV_O	Line Regulation	I_O = 0 mA V_I = 4.5 to 18V T_J = 25°C		0.5	6	mV
		I_O = 0 mA V_I = 4.5 to 18V		0.1	6	mV
ΔV_O	Load Regulation	I_O = 0 to 5A T_J = 25°C		3	15	mV
		I_O = 0 to 5A		7	20	mV
V_d	Dropout Voltage	I_O =5 A		1.3	1.5	V
I_q	Quiescent Current	$V_I \leq$ 30V		5	10	mA
I_{sc}	Short Circuit Current	$V_I - V_O$ = 5V	5.5	6.5		A
		$V_I - V_O$ = 25V	0.5	0.7		A
	Thermal Regulation	T_A = 25°C, 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	f = 120 Hz, C_O = 25 µF, I_O = 5A V_I = 7.85 ± 3V	60	72		dB
eN	RMS Output Noise Voltage (% of V_O)	T_A = 25°C f =10Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	T_A = 125°C 1000Hrs		0.5		%

NOTE 1: See short-circuit current curve for available output current at fixed dropout.

Table 8: Electrical Characteristics Of LD1084#33 (V_I=6.3V, $C_I = C_O$ =10µF, T_A = -40 to 125°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage	I_O = 0 mA T_J = 25°C	3.267	3.3	3.333	V
		I_O = 0 to 5A V_I = 4.9 to 30V (note 1)	3.234	3.35	3.366	V
ΔV_O	Line Regulation	I_O = 0 mA V_I = 4.9 to 18V T_J = 25°C		0.5	6	mV
		I_O = 0 mA V_I = 4.9 to 18V		0.1	6	mV
ΔV_O	Load Regulation	I_O = 0 to 5A T_J = 25°C		3	15	mV
		I_O = 0 to 5A		7	20	mV
V_d	Dropout Voltage	I_O =5 A		1.3	1.5	V
I_q	Quiescent Current	$V_I \leq$ 30V		5	10	mA
I_{sc}	Short Circuit Current	$V_I - V_O$ = 5V	5.5	6.5		A
		$V_I - V_O$ = 25V	0.5	0.7		A
	Thermal Regulation	T_A = 25°C, 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	f = 120 Hz, C_O = 25 µF, I_O = 5A V_I = 8.3 ± 3V	60	72		dB
eN	RMS Output Noise Voltage (% of V_O)	T_A = 25°C f =10Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	T_A = 125°C 1000Hrs		0.5		%

NOTE 1: See short-circuit current curve for available output current at fixed dropout.

Table 9: Electrical Characteristics Of LD1084#36 (V_I=6.6V, C_I = C_O =10µF, T_A = -40 to 125°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage	I_O = 0 mA T_J = 25°C	3.564	3.6	3.636	V
		I_O = 0 to 5A V_I = 5.2 to 30V (note 1)	3.528	3.6	3.672	V
ΔV_O	Line Regulation	I_O = 0 mA V_I = 5.2 to 18V T_J = 25°C		0.5	10	mV
		I_O = 0 mA V_I = 5.2 to 18V		0.1	10	mV
ΔV_O	Load Regulation	I_O = 0 to 5A T_J = 25°C		3	15	mV
		I_O = 0 to 5A		7	20	mV
V_d	Dropout Voltage	I_O =5 A		1.3	1.5	V
I_q	Quiescent Current	$V_I \leq$ 30V		5	10	mA
I_{sc}	Short Circuit Current	V_I - V_O = 5V	5.5	6.5		A
		V_I - V_O = 25V	0.5	0.7		A
	Thermal Regulation	T_A = 25°C, 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	f = 120 Hz, C_O = 25 µF, I_O = 5A V_I = 8.6 ± 3V	60	72		dB
eN	RMS Output Noise Voltage (% of V_O)	T_A = 25°C f =10Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	T_A = 125°C 1000Hrs		0.5		%

NOTE 1: See short-circuit current curve for available output current at fixed dropout.

Table 10: Electrical Characteristics Of LD1084#5 (V_I=8V, C_I = C_O =10µF, T_A = -40 to 125°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage	I_O = 0 mA T_J = 25°C	4.95	5	5.05	V
		I_O = 0 to 5A V_I = 6.6 to 30V (note 1)	4.9	5	5.1	V
ΔV_O	Line Regulation	I_O = 0 mA V_I = 6.6 to 20V T_J = 25°C		0.5	10	mV
		I_O = 0 mA V_I = 6.6 to 20V		1	10	mV
ΔV_O	Load Regulation	I_O = 0 to 5A T_J = 25°C		5	20	mV
		I_O = 0 to 5A		10	35	mV
V_d	Dropout Voltage	I_O =5 A		1.3	1.5	V
I_q	Quiescent Current	$V_I \leq$ 30V		5	10	mA
I_{sc}	Short Circuit Current	V_I - V_O = 5V	5.5	6.5		A
		V_I - V_O = 25V	0.5	0.7		A
	Thermal Regulation	T_A = 25°C, 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	f = 120 Hz, C_O = 25 µF, I_O = 5A V_I = 10 ± 3V	60	72		dB
eN	RMS Output Noise Voltage (% of V_O)	T_A = 25°C f =10Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	T_A = 125°C 1000Hrs		0.5		%

NOTE 1: See short-circuit current curve for available output current at fixed dropout.

Table 11: Electrical Characteristics Of LD1084#8 (V_I=11V, C_I = C_O =10µF, T_A = -40 to 125°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage	I_O = 0 mA T_J = 25°C	7.92	8	8.08	V
		I_O = 0 to 5A V_I = 9.6 to 30V (note 1)	7.84	8	8.16	V
ΔV_O	Line Regulation	I_O = 0 mA V_I = 9.6 to 20V T_J = 25°C		1	18	mV
		I_O = 0 mA V_I = 9.6 to 20V		2	18	mV
ΔV_O	Load Regulation	I_O = 0 to 5A T_J = 25°C		8	30	mV
		I_O = 0 to 5A		12	60	mV
V_d	Dropout Voltage	I_O =5 A		1.3	1.5	V
I_q	Quiescent Current	$V_I \leq$ 30V		5	10	mA
I_{sc}	Short Circuit Current	V_I - V_O = 5V	5.5	6.5		A
		V_I - V_O = 25V	0.5	0.7		A
	Thermal Regulation	T_A = 25°C, 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	f = 120 Hz, C_O = 25 µF, I_O = 5A V_I = 13 ± 3V	54	71		dB
eN	RMS Output Noise Voltage (% of V_O)	T_A = 25°C f =10Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	T_A = 125°C 1000Hrs		0.5		%

NOTE 1: See short-circuit current curve for available output current at fixed dropout.

Table 12: Electrical Characteristics Of LD1084#9 (V_I=12V, C_I = C_O =10µF, T_A = -40 to 125°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage	I_O = 0 mA T_J = 25°C	8.91	9	9.09	V
		I_O = 0 to 5A V_I = 10.6 to 30V (note 1)	8.82	9	9.18	V
ΔV_O	Line Regulation	I_O = 0 mA V_I = 10.6 to 20V T_J = 25°C		1	20	mV
		I_O = 0 mA V_I = 10.6 to 20V		2	20	mV
ΔV_O	Load Regulation	I_O = 0 to 5A T_J = 25°C		8	30	mV
		I_O = 0 to 5A		12	60	mV
V_d	Dropout Voltage	I_O =5 A		1.3	1.5	V
I_q	Quiescent Current	$V_I \leq$ 30V		5	10	mA
I_{sc}	Short Circuit Current	V_I - V_O = 5V	5.5	6.5		A
		V_I - V_O = 25V	0.5	0.7		A
	Thermal Regulation	T_A = 25°C, 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	f = 120 Hz, C_O = 25 µF, I_O = 5A V_I = 14 ± 3V	54	70		dB
eN	RMS Output Noise Voltage (% of V_O)	T_A = 25°C f =10Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	T_A = 125°C 1000Hrs		0.5		%

NOTE 1: See short-circuit current curve for available output current at fixed dropout.

Table 13: Electrical Characteristics Of LD1084#12 (V_I=15V, C_I = C_O =10µF, T_A = -40 to 125°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage	I_O = 0 mA T_J = 25°C	11.88	12	12.12	V
		I_O = 0 to 5A V_I = 13.6 to 30V (note 1)	11.76	12	12.24	V
ΔV_O	Line Regulation	I_O = 0 mA V_I = 13.6 to 25V T_J = 25°C		2	25	mV
		I_O = 0 mA V_I = 13.6 to 25V		4	25	mV
ΔV_O	Load Regulation	I_O = 0 to 5A T_J = 25°C		12	36	mV
		I_O = 0 to 5A		24	72	mV
V_d	Dropout Voltage	I_O =5 A		1.3	1.5	V
I_q	Quiescent Current	$V_I \leq 30V$		5	10	mA
I_{sc}	Short Circuit Current	V_I - V_O = 5V	5.5	6.5		A
		V_I - V_O = 25V	0.5	0.7		A
	Thermal Regulation	T_A = 25°C, 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	f = 120 Hz, C_O = 25 µF, I_O = 5A V_I = 17 ± 3V	54	66		dB
eN	RMS Output Noise Voltage (% of V_O)	T_A = 25°C f =10Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	T_A = 125°C 1000Hrs		0.5		%

NOTE 1: See short-circuit current curve for available output current at fixed dropout.

Table 14: Electrical Characteristics Of LD1084 (V_I=4.25V, C_I = C_O =10µF, T_A = -40 to 125°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage	I_O = 10mA T_J = 25°C	1.237	1.25	1.263	V
		I_O = 10mA to 5A V_I = 2.85 to 30V (note 1)	1.225	1.25	1.275	V
ΔV_O	Line Regulation	I_O = 10mA V_I = 2.85 to 16.5V T_J = 25°C		0.015	0.2	%
		I_O = 10mA V_I = 2.85 to 16.5V		0.035	0.2	%
ΔV_O	Load Regulation	I_O = 10mA to 5A T_J = 25°C		0.1	0.3	%
		I_O = 10mA to 5A		0.2	0.4	%
V_d	Dropout Voltage	I_O = 5A		1.3	1.5	V
$I_{O(min)}$	Minimum Load Current	V_I = 30V		3	10	mA
I_{sc}	Short Circuit Current	V_I - V_O = 5V	5.5	6.5		A
		V_I - V_O = 25V	0.5	0.7		A
	Thermal Regulation	T_A = 25°C, 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	f = 120 Hz, C_O = 25 µF, C_{ADJ} = 25 µF, I_O = 5A V_I = 6.25 ± 3V	60	72		dB
I_{ADJ}	Adjust Pin Current	V_I = 4.25V I_O = 10 mA		55	120	µA
ΔI_{ADJ}	Adjust Pin Current Change	I_O = 10mA to 5A V_I = 2.85 to 16.5V (note 1)		0.2	5	µA
eN	RMS Output Noise Voltage (% of V_O)	T_A = 25°C f =10Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	T_A = 125°C 1000Hrs		0.5		%

NOTE 1: See short-circuit current curve for available output current at fixed dropout.

TYPICAL CHARACTERISTICS (unless otherwise specified T_j = 25°C, C_I=10µF (tant.), C_O=22µF (tant.)

Figure 4: Short Circuit Current vs Dropout Voltage

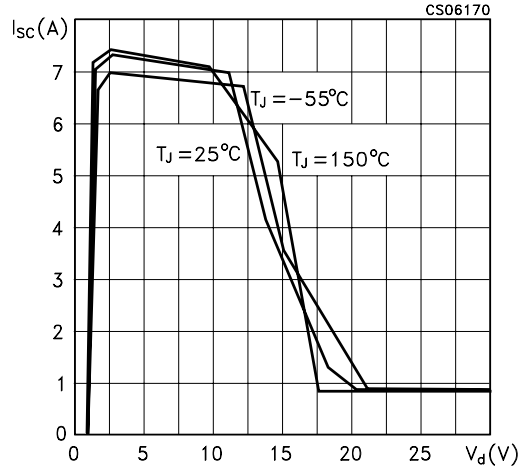


Figure 5: Line Regulation vs Temperature

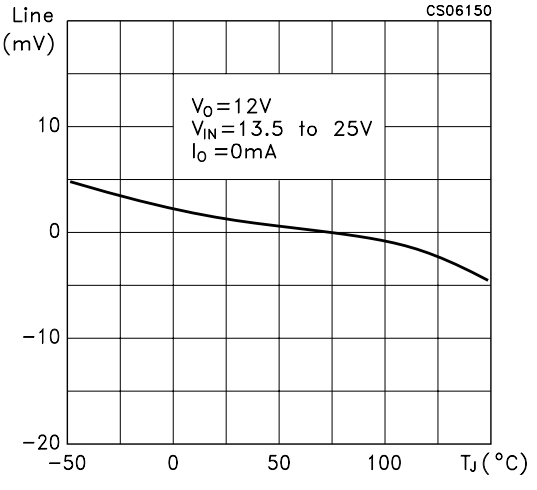


Figure 6: Quiescent Current vs Temperature

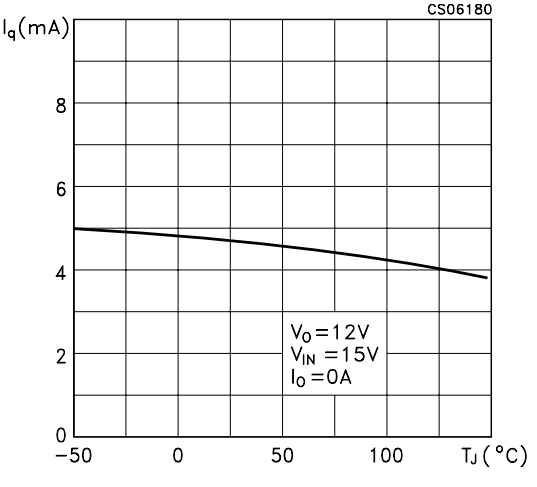


Figure 7: Output Voltage vs Temperature

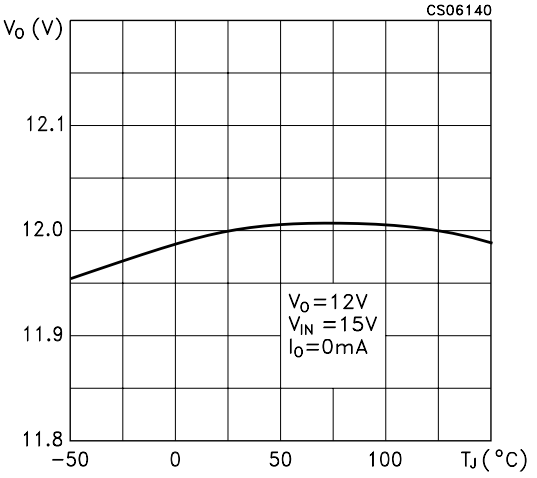


Figure 8: Load Regulation vs Temperature

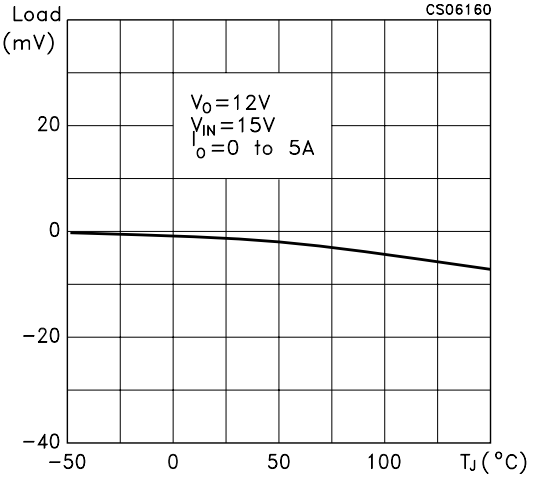


Figure 9: Quiescent Current vs Output Voltage

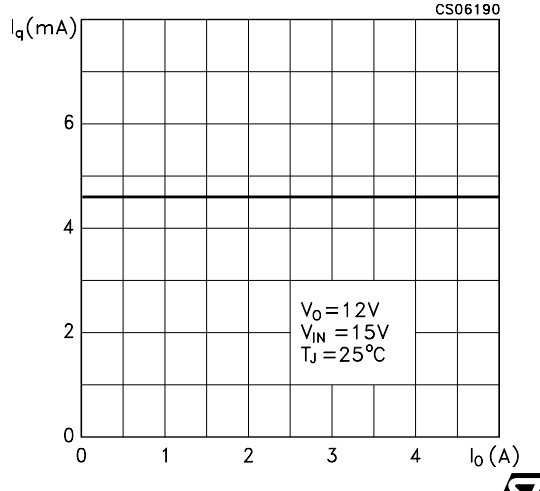


Figure 10: Quiescent Current vs Input Voltage

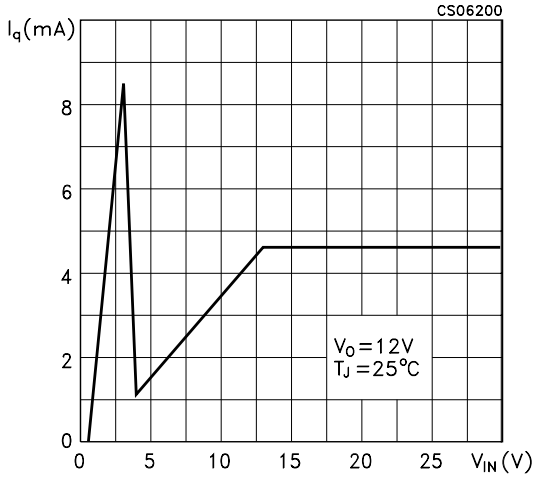


Figure 11: Dropout Voltage vs Output Current

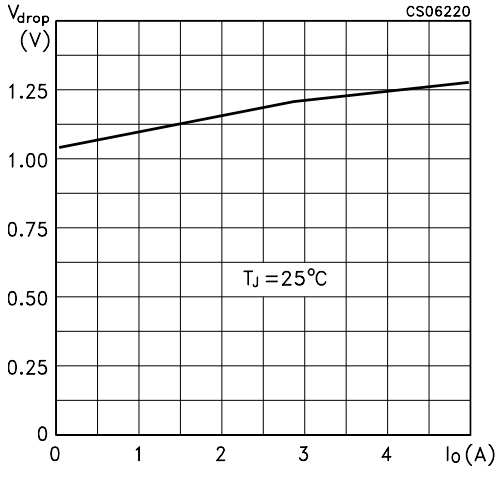


Figure 12: Supply Voltage Rejection vs Output Current

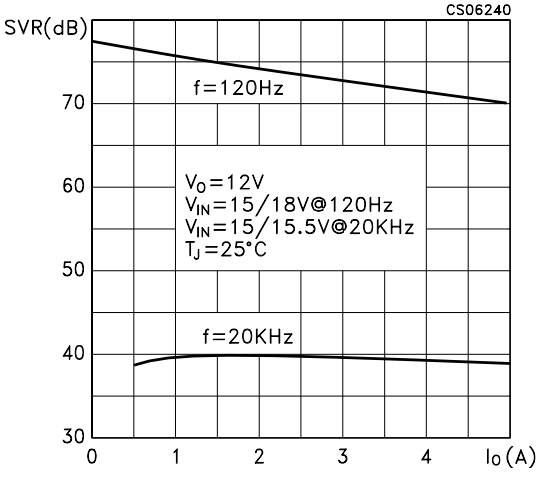


Figure 13: Dropout Voltage vs Temperature

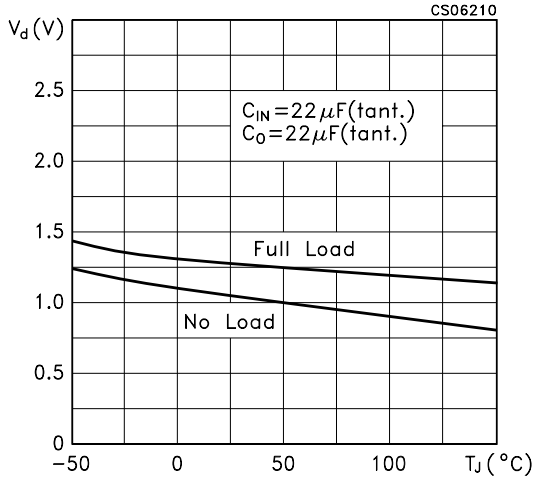


Figure 14: Supply Voltage Rejection vs Temperature

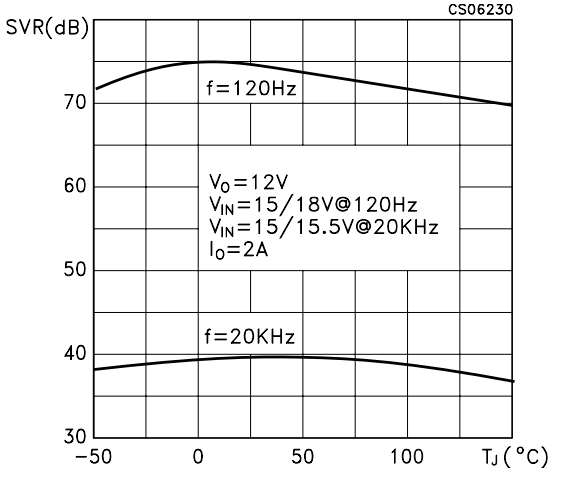


Figure 15: Supply Voltage Rejection vs Frequency

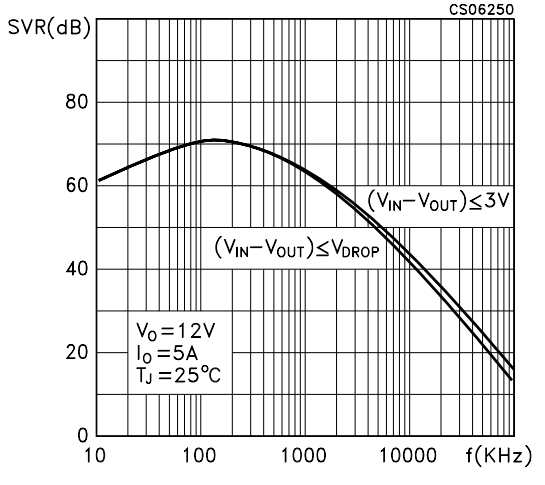


Figure 16: Adjust Pin Current vs Output Current

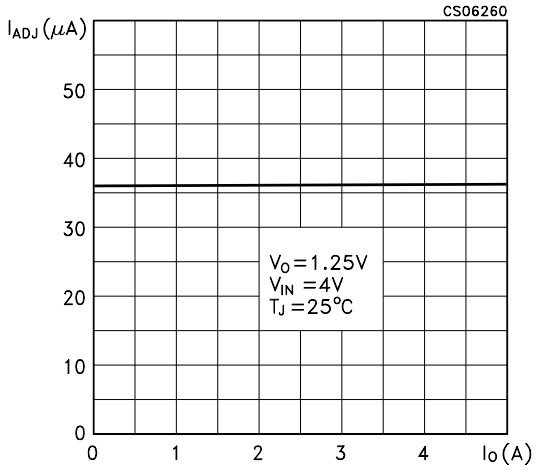


Figure 17: Reference Voltage vs Temperature

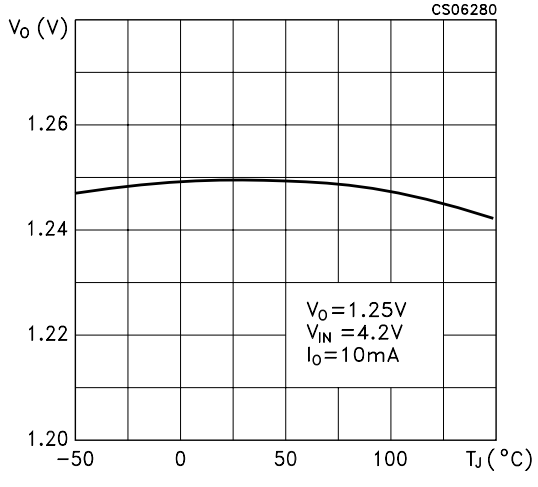


Figure 18: Load Regulation vs Temperature

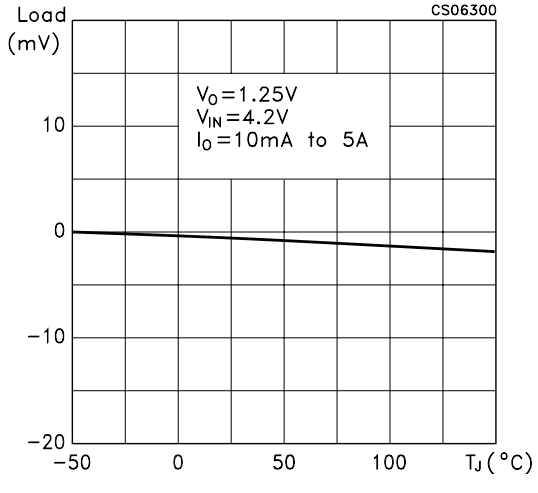


Figure 19: Adjust Pin Current vs Temperature

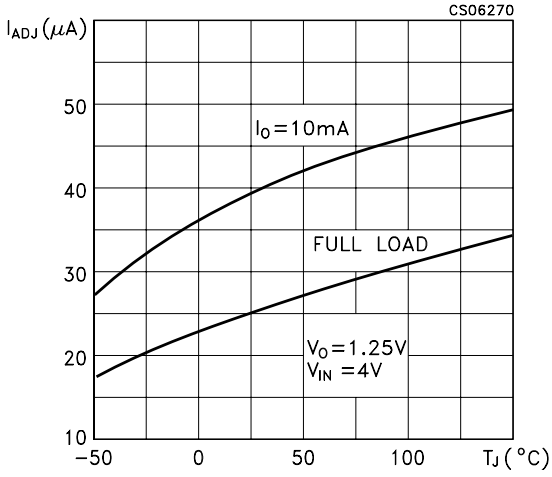


Figure 20: Line Regulation vs Temperature

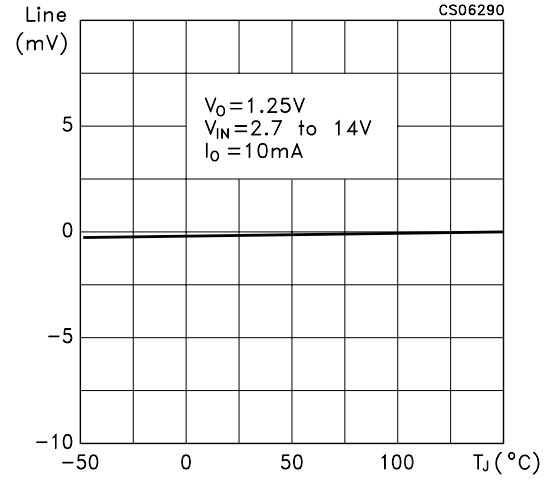


Figure 21: Minimum Load Current vs Temperature

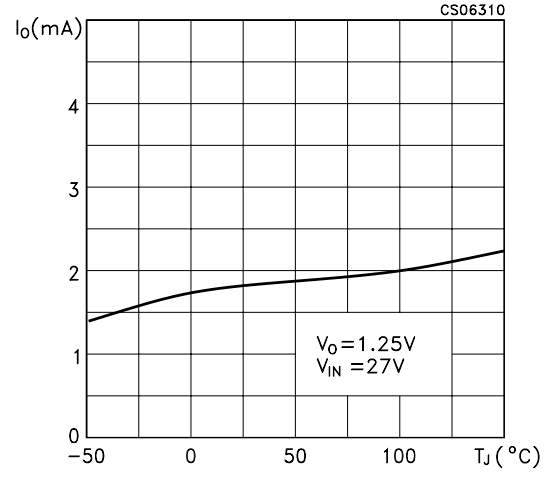


Figure 22: Supply Voltage Rejection vs Temperature

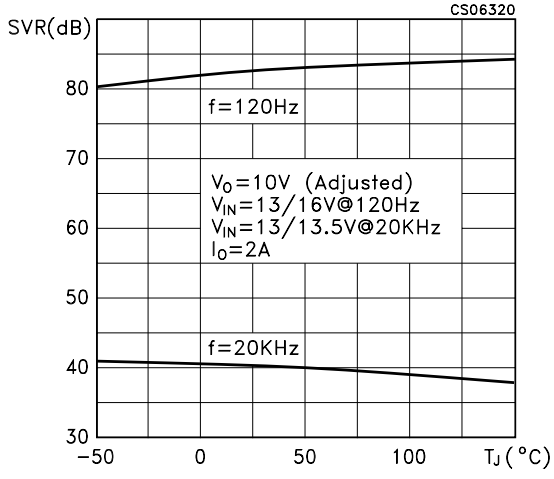


Figure 23: Supply Voltage Rejection vs Frequency

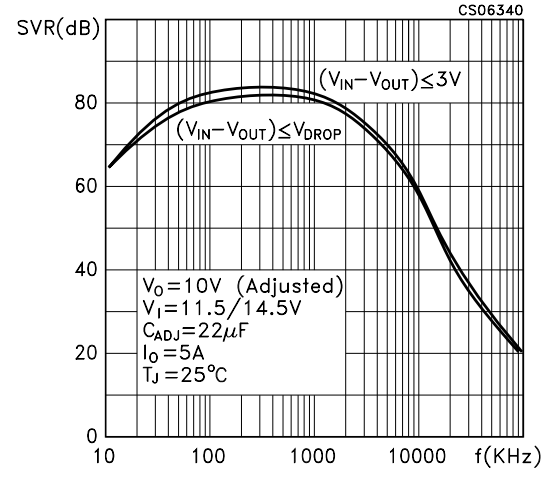


Figure 24: Stability

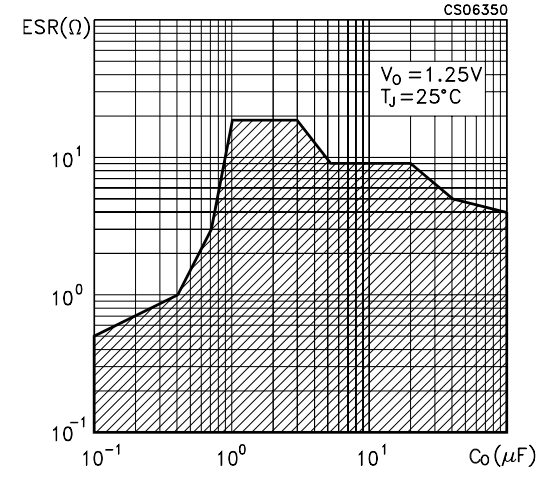


Figure 25: Supply Voltage Rejection vs Output Current

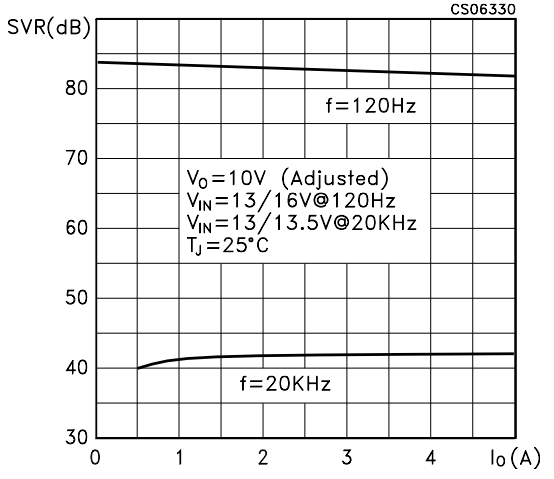


Figure 26: Stability

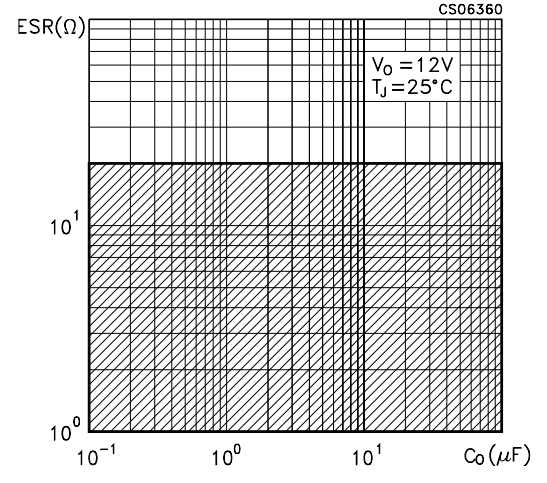
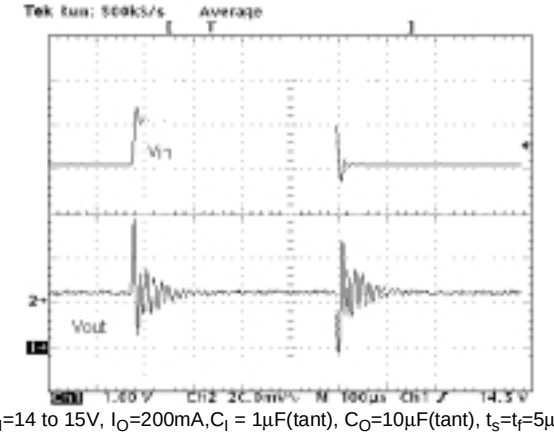
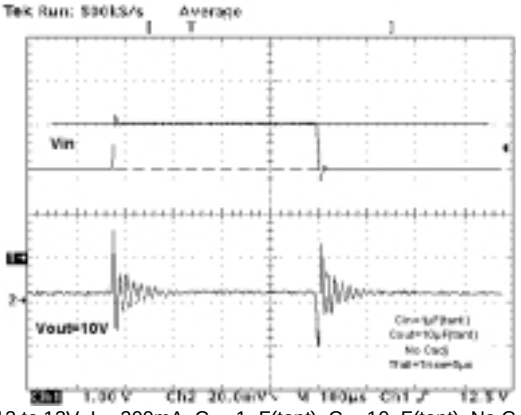


Figure 27: Line Transient



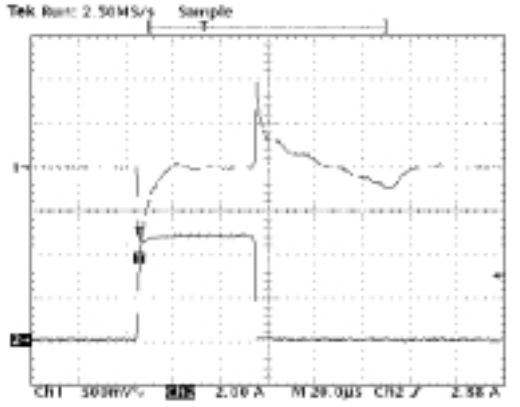
V_I=14 to 15V, I_O=200mA,C_I = 1µF(tant), C_O=10µF(tant), t_s=t_f=5µs

Figure 28: Line Transient



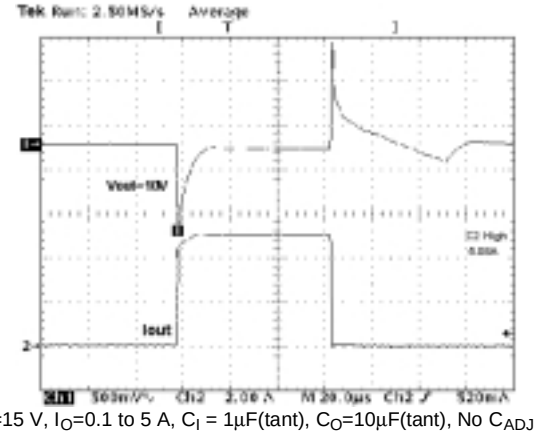
V_I=12 to 13V, I_O=200mA, C_I = 1µF(tant), C_O=10µF(tant), No C_{ADJ}
$t_s=t_f$=5µs

Figure 29: Load Transient



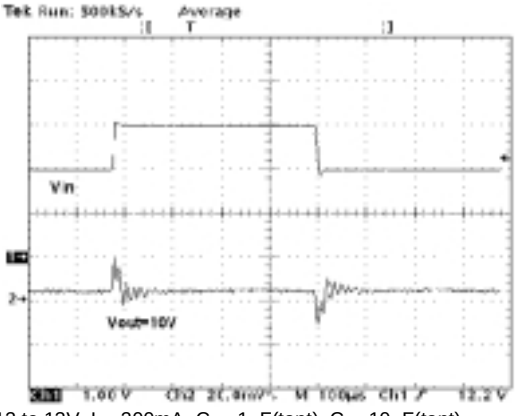
V_I=15 V, I_O=0.1 to 5 A, C_I = 1µF(tant), C_O=10µF(tant)

Figure 30: Load Transient



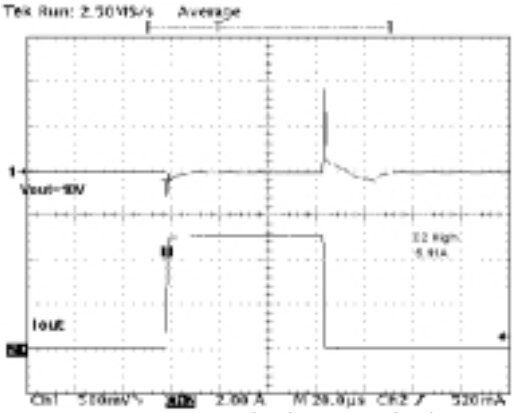
V_I=15 V, I_O=0.1 to 5 A, C_I = 1µF(tant), C_O=10µF(tant), No C_{ADJ}

Figure 31: Line Transient



V_I=12 to 13V, I_O=200mA, C_I = 1µF(tant), C_O=10µF(tant),
C_{ADJ} = 1µF $t_s=t_f$=5µs

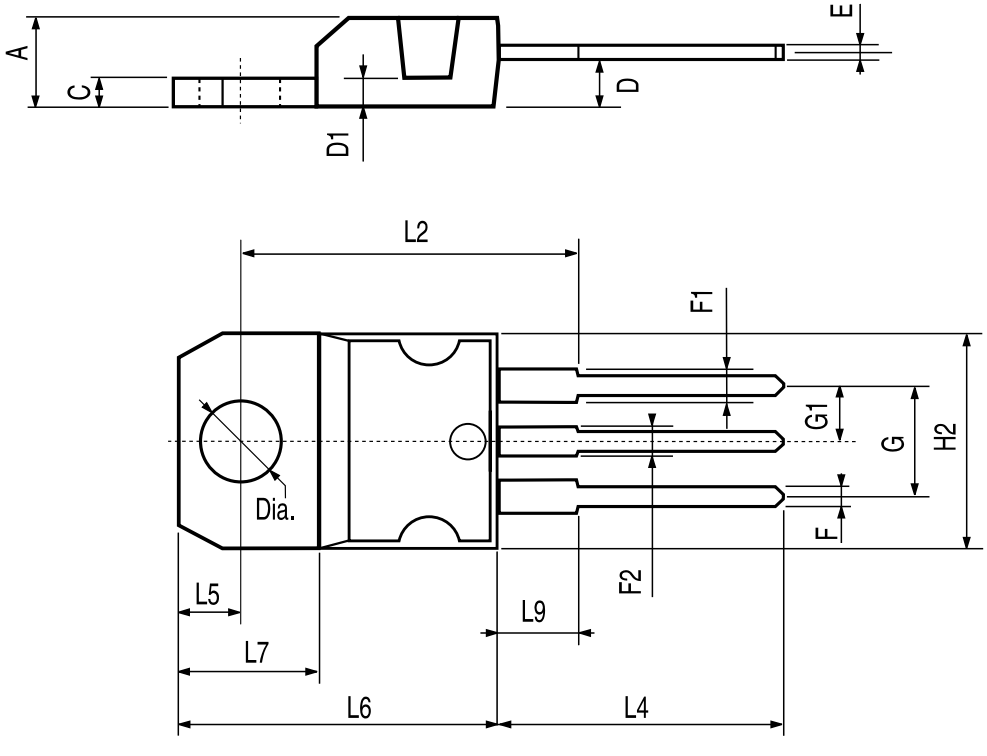
Figure 32: Load Transient



V_I=13 V, I_O=0.1 to 5 A, C_I = 1µF(tant), C_O=10µF(tant)

TO-220 MECHANICAL DATA

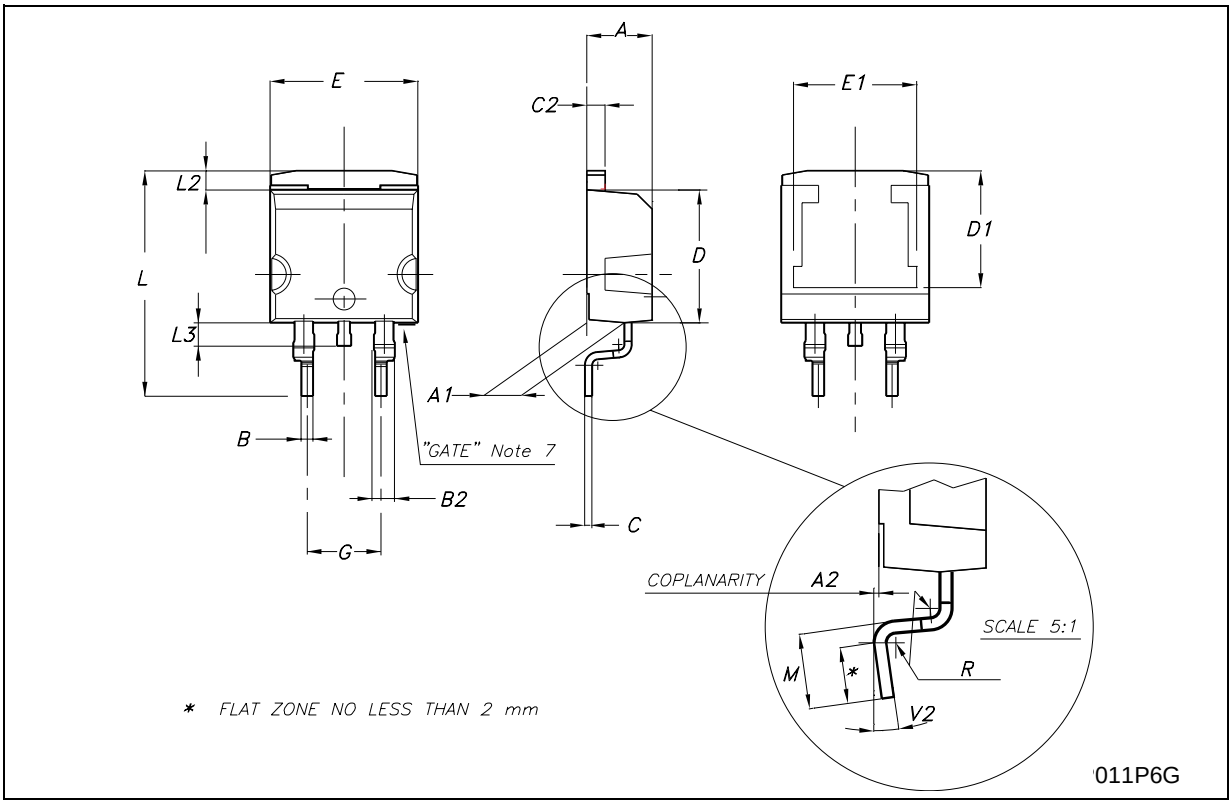
DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151



P011C

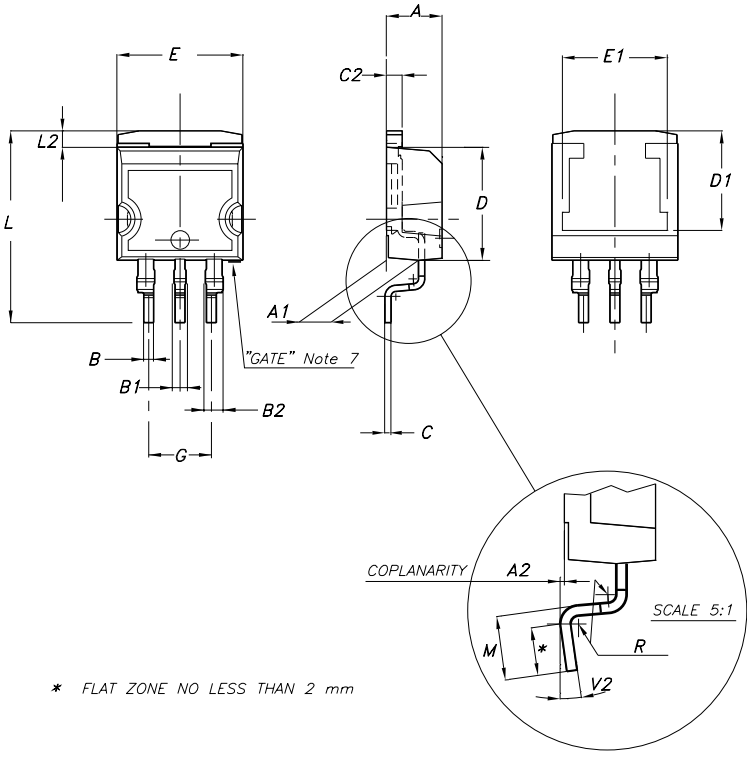
D²PAK MECHANICAL DATA

DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A	4.4		4.6	0.173		0.181
A1	2.49		2.69	0.098		0.106
A2	0.03		0.23	0.001		0.009
B	0.7		0.93	0.027		0.036
B2	1.14		1.7	0.044		0.067
C	0.45		0.6	0.017		0.023
C2	1.23		1.36	0.048		0.053
D	8.95		9.35	0.352		0.368
D1		8			0.315	
E	10		10.4	0.393		0.409
E1		8.5			0.335	
G	4.88		5.28	0.192		0.208
L	15		15.85	0.590		0.624
L2	1.27		1.4	0.050		0.055
L3	1.4		1.75	0.055		0.068
M	2.4		3.2	0.094		0.126
R		0.4			0.016	
V2	0°		8°	0°		8°



D^2PAK/A MECHANICAL DATA

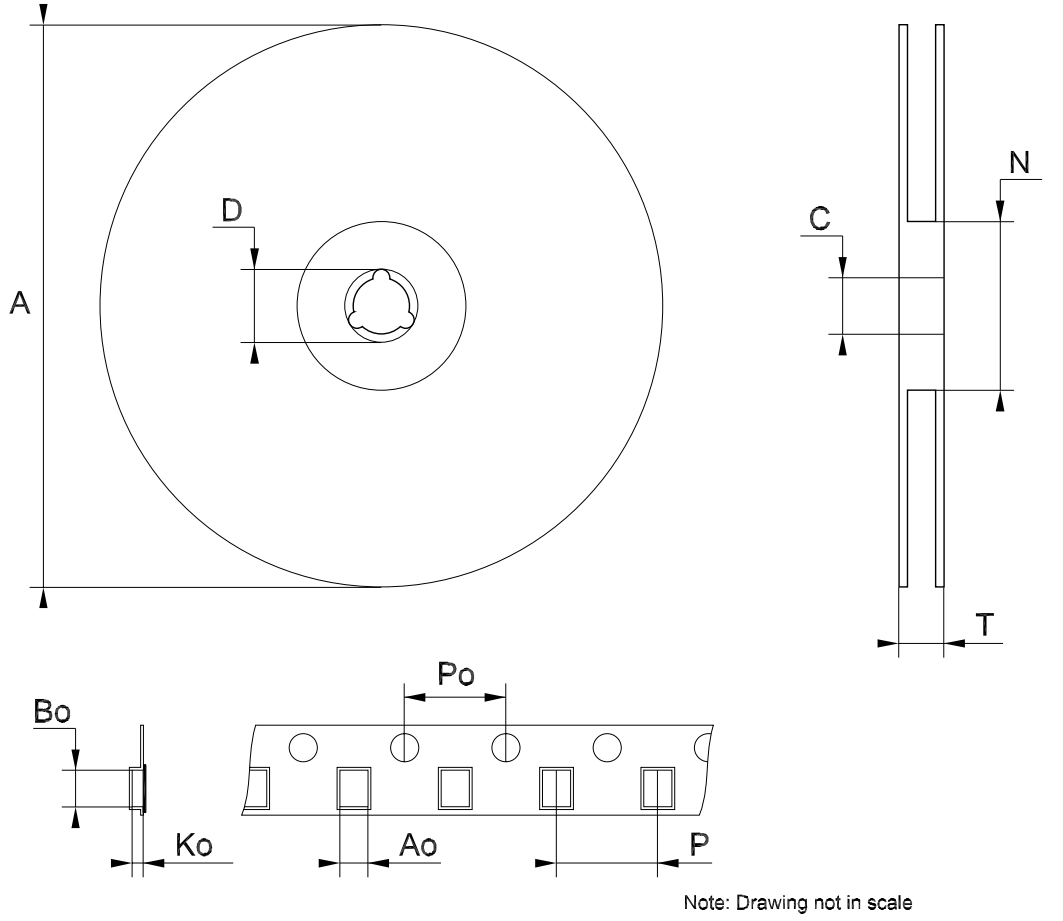
DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
A1	2.49		2.69	0.098		0.106
A2	0.03		0.23	0.001		0.009
B	0.7		0.93	0.028		0.037
B1	0.8		1.3	0.031		0.051
B2	1.14		1.7	0.045		0.067
C	0.45		0.60	0.018		0.024
C2	1.23		1.36	0.048		0.054
D	8.95		9.35	0.352		0.368
D1		8			0.315	
E	10		10.4	0.394		0.409
E1		8.5			0.335	
G	4.88		5.28	0.192		0.208
L	15		15.85	0.591		0.624
L2	1.27		1.4	0.050		0.055
M	2.4		3.2	0.094		0.126
R		0.4			0.016	
V2	0°		8°	0°		8°



7106164/D

Tape & Reel D^2PAK-P^2PAK-D^2PAK/A-P^2PAK/A MECHANICAL DATA

DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A			180			7.086
C	12.8	13.0	13.2	0.504	0.512	0.519
D	20.2			0.795		
N	60			2.362		
T			14.4			0.567
Ao	10.50	10.6	10.70	0.413	0.417	0.421
Bo	15.70	15.80	15.90	0.618	0.622	0.626
Ko	4.80	4.90	5.00	0.189	0.193	0.197
Po	3.9	4.0	4.1	0.153	0.157	0.161
P	11.9	12.0	12.1	0.468	0.472	0.476



Note: Drawing not in scale

Table 15: Revision History

Date	Revision	Description of Changes
07-Oct-2004	3	Mistake Order Codes - Table 1.
08-Feb-2005	4	Mistake U.M. Load Regulation - V ==> mV.
16-Jun-2005	5	Order Codes has been updated.
05-Jul-2005	6	The figure 3 D^2PAK and D^2PAK/A has been updated.
08-Sep-2005	7	Order Codes has been updated.