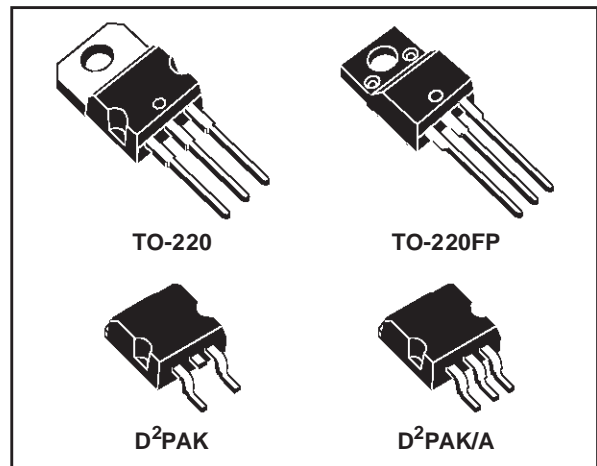




# LD1085 SERIES

## 3A LOW DROP POSITIVE VOLTAGE REGULATOR ADJUSTABLE AND FIXED

- TYPICAL DROPOUT 1.3V (AT 3A)
- THREE TERMINAL ADJUSTABLE OR FIXED OUTPUT VOLTAGE 1.8V, 2.5V, 2.85V, 3.3V, 3.6V, 5V, 8V, 9V, 12V.
- GUARANTEED OUTPUT CURRENT UP TO 3A
- OUTPUT TOLERANCE  $\pm 1\%$  AT 25°C AND  $\pm 2\%$  IN FULL TEMPERATURE RANGE
- INTERNAL POWER AND THERMAL LIMIT
- WIDE OPERATING TEMPERATURE RANGE -40°C TO 125°C
- PACKAGE AVAILABLE : TO-220, TO-220FP, D<sup>2</sup>PAK, D<sup>2</sup>PAK/A
- PINOUT COMPATIBILITY WITH STANDARD ADJUSTABLE VREG



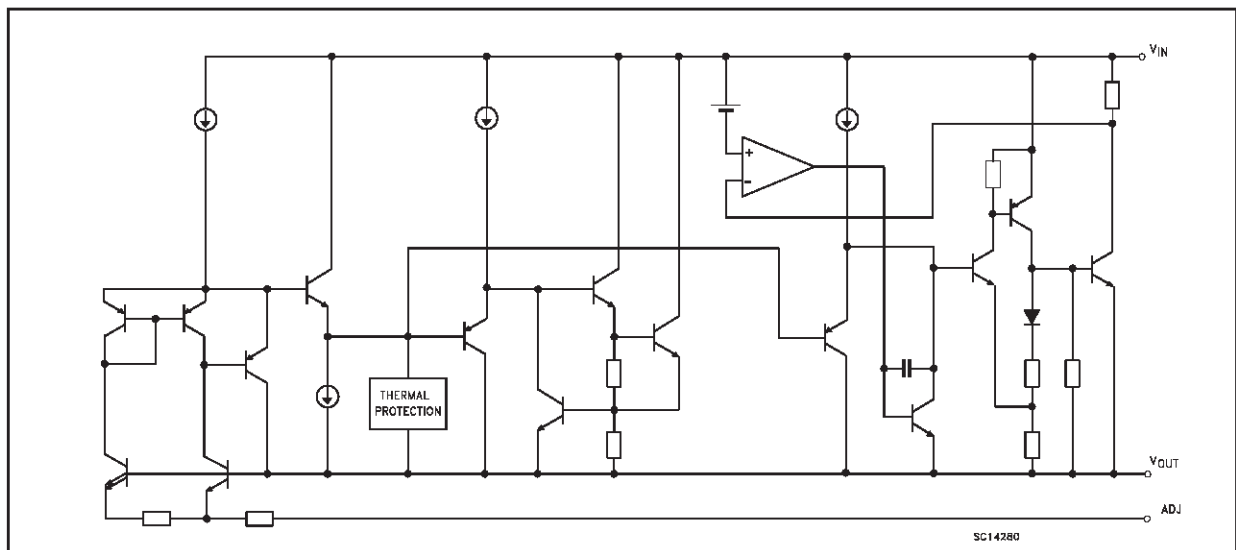
### DESCRIPTION

The LD1085 is a LOW DROP Voltage Regulator able to provide up to 3A of Output Current. Dropout is guaranteed at a maximum of 1.5V at the maximum output current, decreasing at lower loads. The LD1085 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 LD1085 quiescent current flows into the load, so increase efficiency. Only a 10 $\mu$ F minimum capacitor is need for stability.

The device is supplied in TO-220, TO-220FP, D<sup>2</sup>PAK and D<sup>2</sup>PAK/A. On chip trimming allows the regulator to reach a very tight output voltage tolerance, within  $\pm 1\%$  at 25°C.

### SCHEMATIC DIAGRAM



## LD1085 SERIES

### ABSOLUTE MAXIMUM RATINGS

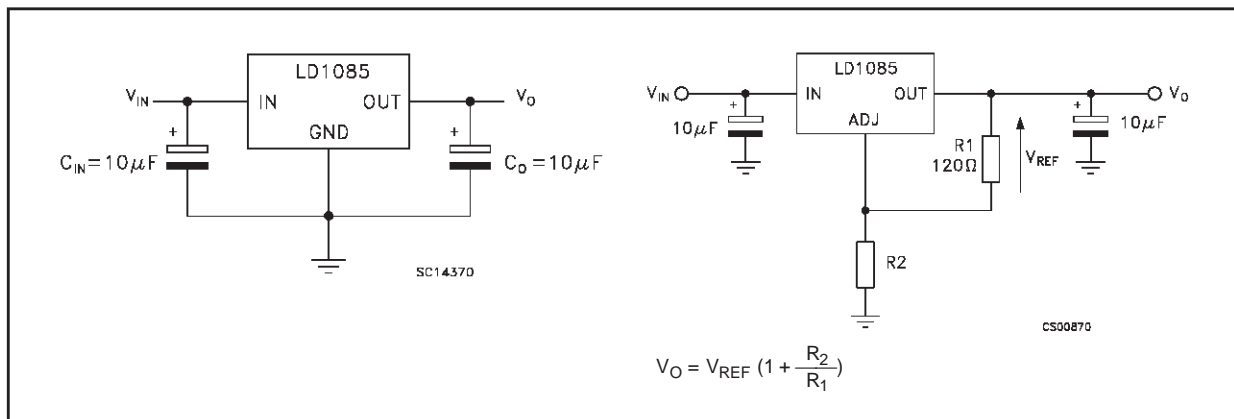
Symbol	Parameter	Value	Unit
$V_I$	DC Input Voltage	30	V
$I_O$	Output Current	Internally Limited	mA
$P_D$	Power Dissipation	Internally Limited	mW
$T_{stg}$	Storage Temperature Range	-55 to +150	°C
$T_{op}$	Operating Junction Temperature Range	-40 to +125	°C

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

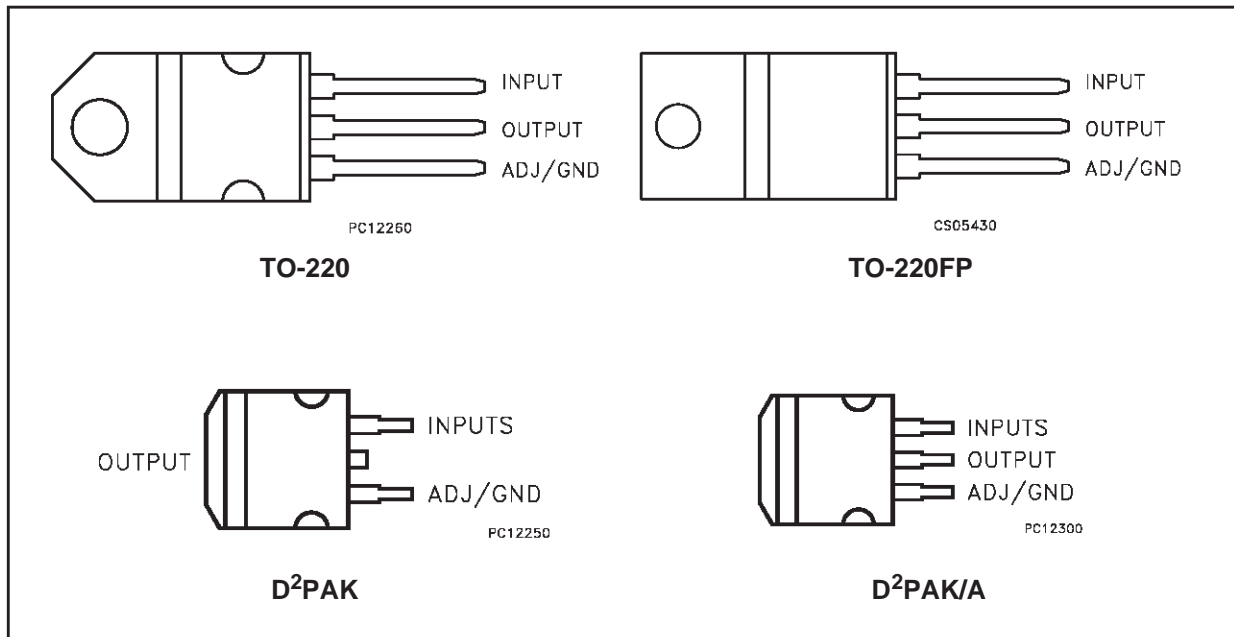
### THERMAL DATA

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

### APPLICATION CIRCUITS



CONNECTION DIAGRAM (top view)



ORDERING CODES

TO-220	TO-220FP	D <sup>2</sup> PAK (*)	D <sup>2</sup> PAK/A (*)	OUTPUT VOLTAGE
LD1085V18	LD1085P18	LD1085D2T18	LD1085D2M18	1.8 V
LD1085V25	LD1085P25	LD1085D2T25	LD1085D2M25	2.5 V
LD1085V28	LD1085P28	LD1085D2T28	LD1085D2M28	2.85 V
LD1085V33	LD1085P33	LD1085D2T33	LD1085D2M33	3.3 V
LD1085V36	LD1085P36	LD1085D2T36	LD1085D2M36	3.6 V
LD1085V50	LD1085P50	LD1085D2T50	LD1085D2M50	5.0 V
LD1085V80	LD1085P80	LD1085D2T80	LD1085D2M80	8.0 V
LD1085V90	LD1085P90	LD1085D2T90	LD1085D2M90	9.0 V
LD1085V120	LD1085P120	LD1085D2T120	LD1085D2M120	12.0 V
LD1085V	LD1085P	LD1085D2T	LD1085D2M	ADJ

(\*) Available in Tape & Reel with the suffix "R" for fixed version and "-R" for adjustable version.

## LD1085 SERIES

**ELECTRICAL CHARACTERISTICS OF LD1085#18** ( $V_I=4.8V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	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
$\Delta V_O$	Line Regulation	$I_O = 0 \text{ mA}$ $V_I = 3.4$ to $18V$ $T_J = 25^\circ C$		0.2	4	mV
		$I_O = 0 \text{ mA}$ $V_I = 3.4$ to $15V$		0.4	4	mV
$\Delta V_O$	Load Regulation	$I_O = 0$ to $3A$ $T_J = 25^\circ C$		2	10	mV
		$I_O = 0$ to $3A$		4	20	V
$V_d$	Dropout Voltage	$I_O = 3 \text{ A}$		1.3	1.5	V
$I_q$	Quiescent Current	$V_I \leq 30V$		5	10	mA
$I_{sc}$	Short Circuit Current	$V_I - V_O = 5V$	3.2	4.5		A
		$V_I - V_O = 25V$	0.2	0.5		A
	Thermal Regulation	$T_A = 25^\circ C$ , 30ms pulse		0.008	0.04	%/W
SVR	Supply Voltage Rejection	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 7.5 \pm 3V$	60	72		dB
eN	RMS Output Noise Voltage (% of $V_O$ )	$T_A = 25^\circ C$ $f = 10\text{Hz}$ to $10\text{KHz}$		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	$T_A = 125^\circ C$ 1000Hrs		0.5		%

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

**ELECTRICAL CHARACTERISTICS OF LD1085#25** ( $V_I=5.5V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	2.475	2.5	2.525	V
		$I_O = 0$ to $3A$ $V_I = 4.1$ to $30V$ (note 1)	2.45	2.5	2.55	V
$\Delta V_O$	Line Regulation	$I_O = 0 \text{ mA}$ $V_I = 4.1$ to $18V$ $T_J = 25^\circ C$		0.2	4	mV
		$I_O = 0 \text{ mA}$ $V_I = 4.1$ to $18V$		0.4	4	mV
$\Delta V_O$	Load Regulation	$I_O = 0$ to $3A$ $T_J = 25^\circ C$		2	10	mV
		$I_O = 0$ to $3A$		4	20	V
$V_d$	Dropout Voltage	$I_O = 3 \text{ A}$		1.3	1.5	V
$I_q$	Quiescent Current	$V_I \leq 30V$		5	10	mA
$I_{sc}$	Short Circuit Current	$V_I - V_O = 5V$	3.2	4.5		A
		$V_I - V_O = 25V$	0.2	0.5		A
	Thermal Regulation	$T_A = 25^\circ C$ , 30ms pulse		0.008	0.04	%/W
SVR	Supply Voltage Rejection	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 7.5 \pm 3V$	60	72		dB
eN	RMS Output Noise Voltage (% of $V_O$ )	$T_A = 25^\circ C$ $f = 10\text{Hz}$ to $10\text{KHz}$		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	$T_A = 125^\circ C$ 1000Hrs		0.5		%

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

**ELECTRICAL CHARACTERISTICS OF LD1085#285** ( $V_I=5.85V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0$ mA $T_J = 25^\circ C$	2.821	2.85	2.879	V
		$I_O = 0$ to 3A $V_I = 4.5$ to 30V (note 1)	2.793	2.85	2.907	V
$\Delta V_O$	Line Regulation	$I_O = 0$ mA $V_I = 4.5$ to 18V $T_J = 25^\circ C$		0.2	6	mV
		$I_O = 0$ mA $V_I = 4.5$ to 18V		0.5	6	mV
$\Delta V_O$	Load Regulation	$I_O = 0$ to 3A $T_J = 25^\circ C$		3	15	mV
		$I_O = 0$ to 3A		7	20	V
$V_d$	Dropout Voltage	$I_O = 3$ A		1.3	1.5	V
$I_q$	Quiescent Current	$V_I \leq 30V$		5	10	mA
$I_{sc}$	Short Circuit Current	$V_I - V_O = 5V$	3.2	4.5		A
		$V_I - V_O = 25V$	0.2	0.5		A
	Thermal Regulation	$T_A = 25^\circ C$ , 30ms pulse		0.008	0.04	%/W
SVR	Supply Voltage Rejection	$f = 120$ Hz, $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 7.85 \pm 3V$	60	72		dB
eN	RMS Output Noise Voltage (% of $V_O$ )	$T_A = 25^\circ C$ $f = 10$ Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	$T_A = 125^\circ C$ 1000Hrs		0.5		%

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

**ELECTRICAL CHARACTERISTICS OF LD1085#33** ( $V_I=6.3V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0$ mA $T_J = 25^\circ C$	3.267	3.3	3.333	V
		$I_O = 0$ to 3A $V_I = 4.9$ to 30V (note 1)	3.234	3.35	3.366	V
$\Delta V_O$	Line Regulation	$I_O = 0$ mA $V_I = 4.9$ to 18V $T_J = 25^\circ C$		0.5	6	mV
		$I_O = 0$ mA $V_I = 4.9$ to 18V		1	6	mV
$\Delta V_O$	Load Regulation	$I_O = 0$ to 3A $T_J = 25^\circ C$		3	15	mV
		$I_O = 0$ to 3A		7	20	V
$V_d$	Dropout Voltage	$I_O = 3$ A		1.3	1.5	V
$I_q$	Quiescent Current	$V_I \leq 30V$		5	10	mA
$I_{sc}$	Short Circuit Current	$V_I - V_O = 5V$	3.2	4.5		A
		$V_I - V_O = 25V$	0.2	0.5		A
	Thermal Regulation	$T_A = 25^\circ C$ , 30ms pulse		0.008	0.04	%/W
SVR	Supply Voltage Rejection	$f = 120$ Hz, $C_O = 25 \mu F$ , $I_O = 5A$ $V_I = 8.3 \pm 3V$	60	72		dB
eN	RMS Output Noise Voltage (% of $V_O$ )	$T_A = 25^\circ C$ $f = 10$ Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	$T_A = 125^\circ C$ 1000Hrs		0.5		%

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

## LD1085 SERIES

**ELECTRICAL CHARACTERISTICS OF LD1085#36** ( $V_I=6.6V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	3.564	3.6	3.636	V
		$I_O = 0$ to $3A$ $V_I = 5.2$ to $30V$ (note 1)	3.528	3.6	3.672	V
$\Delta V_O$	Line Regulation	$I_O = 0 \text{ mA}$ $V_I = 5.2$ to $18V$ $T_J = 25^\circ C$		0.5	10	mV
		$I_O = 0 \text{ mA}$ $V_I = 5.2$ to $18V$		1	10	mV
$\Delta V_O$	Load Regulation	$I_O = 0$ to $3A$ $T_J = 25^\circ C$		3	15	mV
		$I_O = 0$ to $3A$		7	20	V
$V_d$	Dropout Voltage	$I_O = 3A$		1.3	1.5	V
$I_q$	Quiescent Current	$V_I \leq 30V$		5	10	mA
$I_{sc}$	Short Circuit Current	$V_I - V_O = 5V$	3.2	4.5		A
		$V_I - V_O = 25V$	0.2	0.5		A
	Thermal Regulation	$T_A = 25^\circ C$ , 30ms pulse		0.008	0.04	%/W
SVR	Supply Voltage Rejection	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 8.6 \pm 3V$	60	72		dB
eN	RMS Output Noise Voltage (% of $V_O$ )	$T_A = 25^\circ C$ $f = 10\text{Hz}$ to $10\text{KHz}$		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	$T_A = 125^\circ C$ 1000Hrs		0.5		%

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

**ELECTRICAL CHARACTERISTICS OF LD1085#50** ( $V_I=8V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	4.95	5	5.05	V
		$I_O = 0$ to $3A$ $V_I = 6.6$ to $30V$ (note 1)	4.9	5	5.1	V
$\Delta V_O$	Line Regulation	$I_O = 0 \text{ mA}$ $V_I = 6.6$ to $20V$ $T_J = 25^\circ C$		0.5	10	mV
		$I_O = 0 \text{ mA}$ $V_I = 6.6$ to $20V$		1	10	mV
$\Delta V_O$	Load Regulation	$I_O = 0$ to $3A$ $T_J = 25^\circ C$		5	10	mV
		$I_O = 0$ to $3A$		10	35	V
$V_d$	Dropout Voltage	$I_O = 3A$		1.3	1.5	V
$I_q$	Quiescent Current	$V_I \leq 30V$		5	10	mA
$I_{sc}$	Short Circuit Current	$V_I - V_O = 5V$	3.2	4.5		A
		$V_I - V_O = 25V$	0.2	0.5		A
	Thermal Regulation	$T_A = 25^\circ C$ , 30ms pulse		0.008	0.04	%/W
SVR	Supply Voltage Rejection	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 10 \pm 3V$	60	72		dB
eN	RMS Output Noise Voltage (% of $V_O$ )	$T_A = 25^\circ C$ $f = 10\text{Hz}$ to $10\text{KHz}$		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	$T_A = 125^\circ C$ 1000Hrs		0.5		%

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

**ELECTRICAL CHARACTERISTICS OF LD1085#80** ( $V_I=11V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0$ mA $T_J = 25^\circ C$	7.92	8	8.08	V
		$I_O = 0$ to 3A $V_I = 9.8$ to 30V (note 1)	7.84	8	8.16	V
$\Delta V_O$	Line Regulation	$I_O = 0$ mA $V_I = 9.8$ to 20V $T_J = 25^\circ C$		1	18	mV
		$I_O = 0$ mA $V_I = 9.8$ to 20V		2	18	mV
$\Delta V_O$	Load Regulation	$I_O = 0$ to 3A $T_J = 25^\circ C$		8	30	mV
		$I_O = 0$ to 3A		12	60	V
$V_d$	Dropout Voltage	$I_O = 3$ A		1.3	1.5	V
$I_q$	Quiescent Current	$V_I \leq 30V$		5	10	mA
$I_{sc}$	Short Circuit Current	$V_I - V_O = 5V$	3.2	4.5		A
		$V_I - V_O = 25V$	0.2	0.5		A
	Thermal Regulation	$T_A = 25^\circ C$ , 30ms pulse		0.008	0.04	%/W
SVR	Supply Voltage Rejection	$f = 120$ Hz, $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 13 \pm 3V$	54	71		dB
eN	RMS Output Noise Voltage (% of $V_O$ )	$T_A = 25^\circ C$ $f = 10$ Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	$T_A = 125^\circ C$ 1000Hrs		0.5		%

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

**ELECTRICAL CHARACTERISTICS OF LD1085#90** ( $V_I=12V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0$ mA $T_J = 25^\circ C$	8.91	9	9.09	V
		$I_O = 0$ to 3A $V_I = 11$ to 30V (note 1)	8.82	9	9.18	V
$\Delta V_O$	Line Regulation	$I_O = 0$ mA $V_I = 11$ to 20V $T_J = 25^\circ C$		1	20	mV
		$I_O = 0$ mA $V_I = 11$ to 20V		2	20	mV
$\Delta V_O$	Load Regulation	$I_O = 0$ to 3A $T_J = 25^\circ C$		8	30	mV
		$I_O = 0$ to 3A		12	60	V
$V_d$	Dropout Voltage	$I_O = 3$ A		1.3	1.5	V
$I_q$	Quiescent Current	$V_I \leq 30V$		5	10	mA
$I_{sc}$	Short Circuit Current	$V_I - V_O = 5V$	3.2	4.5		A
		$V_I - V_O = 25V$	0.2	0.5		A
	Thermal Regulation	$T_A = 25^\circ C$ , 30ms pulse		0.008	0.04	%/W
SVR	Supply Voltage Rejection	$f = 120$ Hz, $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 14 \pm 3V$	54	70		dB
eN	RMS Output Noise Voltage (% of $V_O$ )	$T_A = 25^\circ C$ $f = 10$ Hz to 10KHz		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	$T_A = 125^\circ C$ 1000Hrs		0.5		%

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

## LD1085 SERIES

**ELECTRICAL CHARACTERISTICS OF LD1085#120** ( $V_I=15V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	11.88	12	12.12	V
		$I_O = 0$ to $3A$ $V_I = 13.8$ to $30V$ (note 1)	11.76	12	12.24	V
$\Delta V_O$	Line Regulation	$I_O = 0 \text{ mA}$ $V_I = 13.8$ to $25V$ $T_J = 25^\circ C$		1	25	mV
		$I_O = 0 \text{ mA}$ $V_I = 13.8$ to $25V$		2	25	mV
$\Delta V_O$	Load Regulation	$I_O = 0$ to $3A$ $T_J = 25^\circ C$		12	36	mV
		$I_O = 0$ to $3A$		24	72	V
$V_d$	Dropout Voltage	$I_O = 3A$		1.3	1.5	V
$I_q$	Quiescent Current	$V_I \leq 30V$		5	10	mA
$I_{sc}$	Short Circuit Current	$V_I - V_O = 5V$	3.2	4.5		A
		$V_I - V_O = 25V$	0.2	0.5		A
	Thermal Regulation	$T_A = 25^\circ C$ , 30ms pulse		0.008	0.04	%/W
SVR	Supply Voltage Rejection	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 17 \pm 3V$	54	66		dB
eN	RMS Output Noise Voltage (% of $V_O$ )	$T_A = 25^\circ C$ $f = 10\text{Hz}$ to $10\text{KHz}$		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	$T_A = 125^\circ C$ 1000Hrs		0.5		%

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

**ELECTRICAL CHARACTERISTICS OF LD1085#** ( $V_I=4.25V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

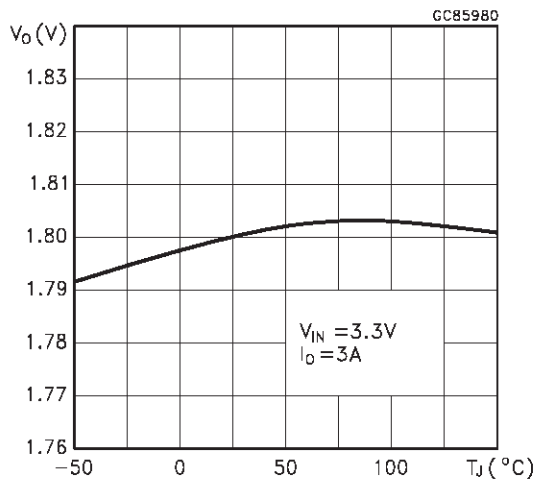
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 10\text{mA}$ $T_J = 25^\circ C$	1.237	1.25	1.263	V
		$I_O = 10\text{mA}$ to $5A$ $V_I = 2.85$ to $30V$ (note 1)	1.225	1.25	1.275	V
$\Delta V_O$	Line Regulation	$I_O = 10\text{mA}$ $V_I = 2.85$ to $16.5V$ $T_J = 25^\circ C$		0.015	0.2	%
		$I_O = 10\text{mA}$ $V_I = 2.85$ to $16.5V$		0.035	0.2	%
$\Delta V_O$	Load Regulation	$I_O = 10\text{mA}$ to $5A$ $T_J = 25^\circ C$		0.1	0.3	%
		$I_O = 0$ to $5A$		0.2	0.4	%
$V_d$	Dropout Voltage	$I_O = 5A$		1.3	1.5	V
$I_{O(\text{min})}$	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	$T_A = 25^\circ C$ , 30ms pulse		0.003	0.015	%/W
SVR	Supply Voltage Rejection	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $C_{ADJ} = 25 \mu F$ , $I_O = 5A$ $V_I = 6.25 \pm 3V$	60	72		dB
$I_{ADJ}$	Adjust Pin Current	$V_I = 4.25V$ $I_O = 10 \text{ mA}$		55	120	$\mu A$
$\Delta I_{ADJ}$	Adjust Pin Current Change	$I_O = 10\text{mA}$ to $5A$ $V_I = 2.85$ to $16.5V$ (note 1)		0.2	5	$\mu A$
eN	RMS Output Noise Voltage (% of $V_O$ )	$T_A = 25^\circ C$ $f = 10\text{Hz}$ to $10\text{KHz}$		0.003		%
S	Temperature Stability			0.5		%
S	Long Term Stability	$T_A = 125^\circ C$ 1000Hrs		0.5		%

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

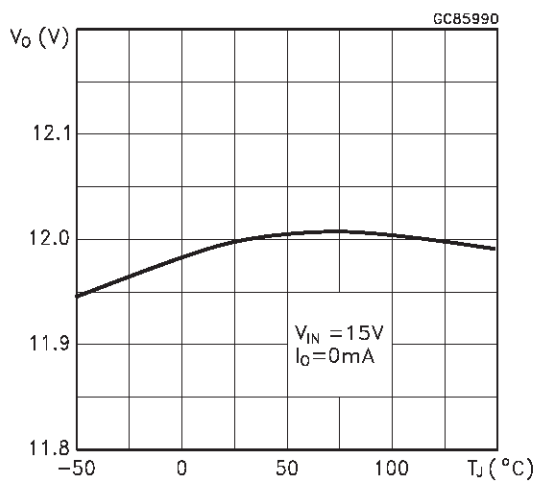


**TYPICAL CHARACTERISTICS** (unless otherwise specified  $T_j = 25^\circ\text{C}$ ,  $C_i=C_o=10\mu\text{F}$ )

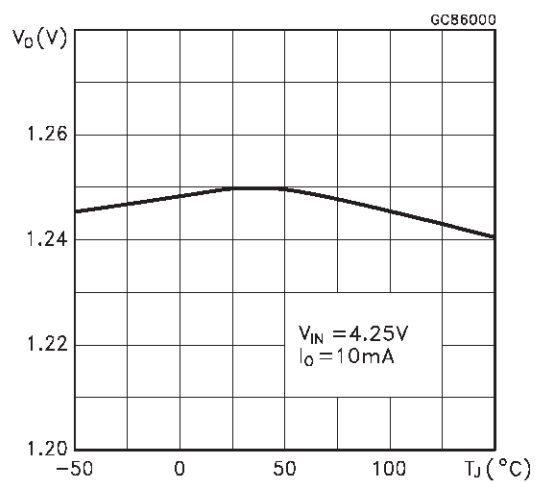
**Figure 1 :** Output Voltage vs Temperature



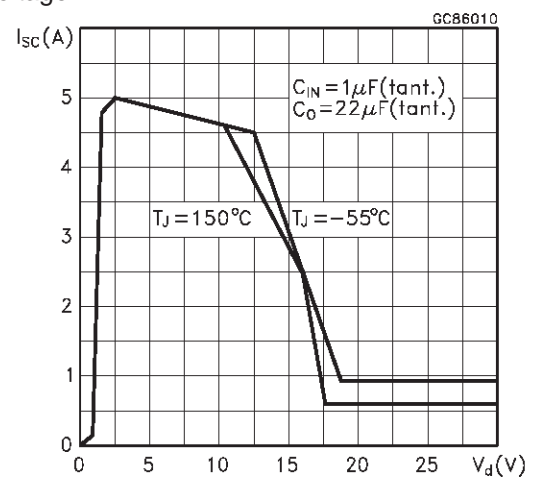
**Figure 2 :** Output Voltage vs Temperature



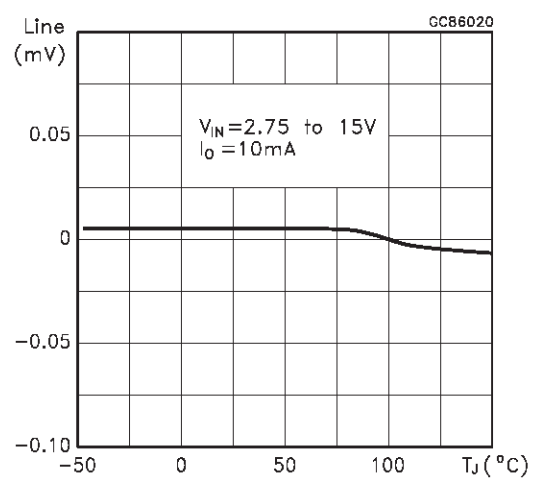
**Figure 3 :** Output Voltage vs Temperature



**Figure 4 :** Short Circuit Current vs Dropout Voltage



**Figure 5 :** Line Regulation vs Temperature



**Figure 6 :** Load Regulation vs Temperature

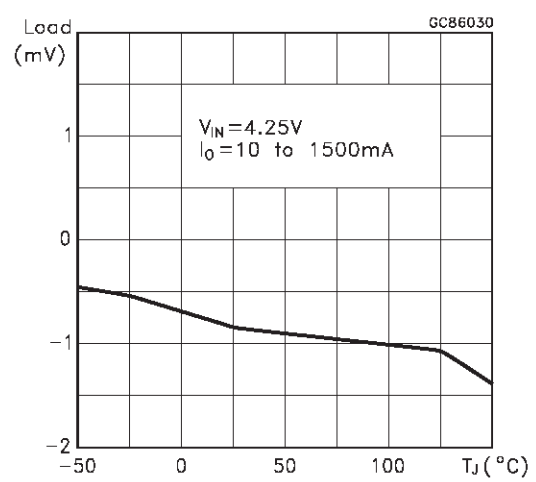


Figure 7 : Dropout Voltage vs Temperature

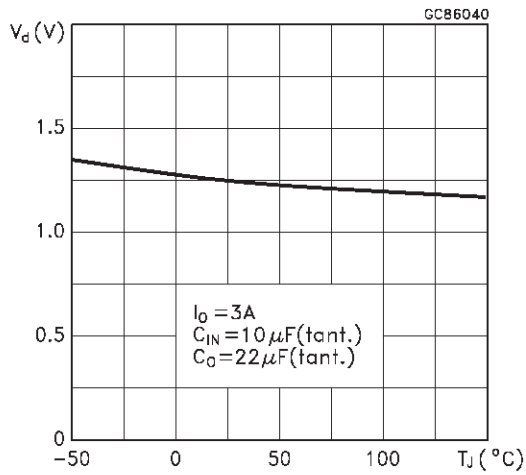


Figure 10 : Quiescent Current vs Temperature

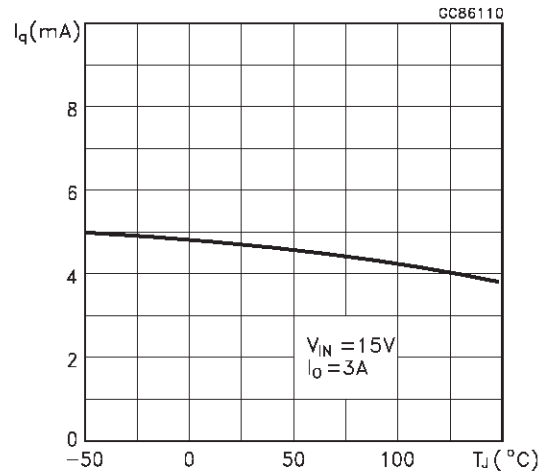


Figure 8 : Dropout Voltage vs Output Current

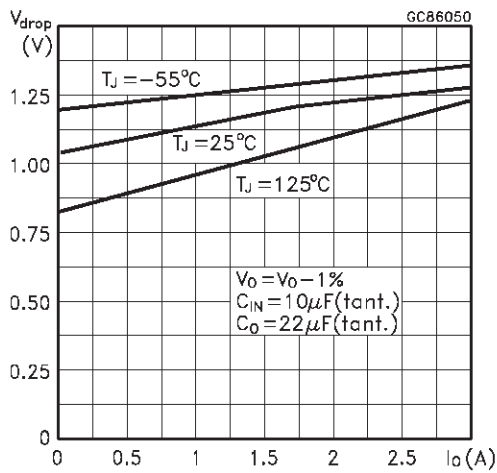


Figure 11 : Dropout Voltage vs Output Current

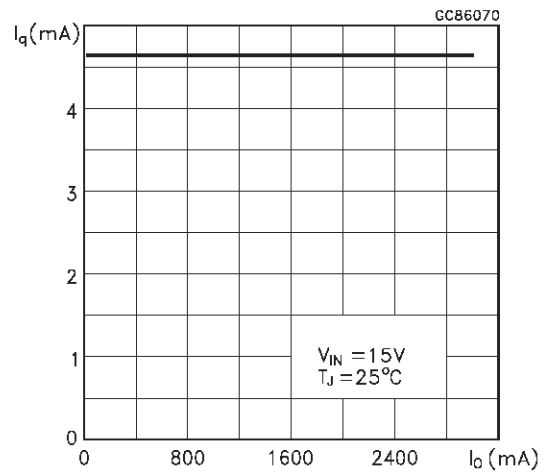


Figure 9 : Adjust Pin Current vs Temperature

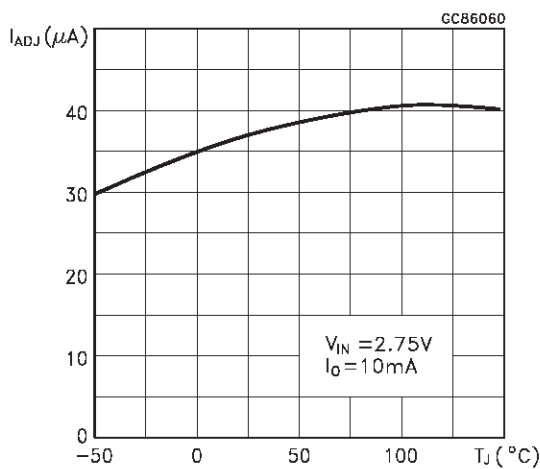
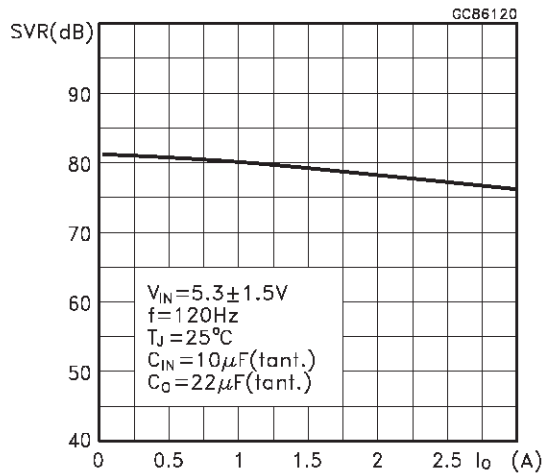
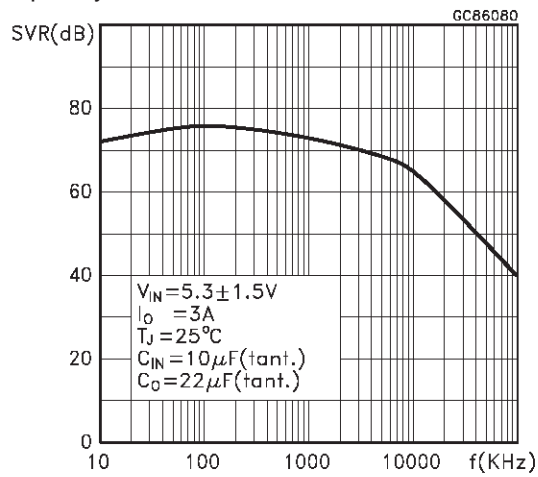


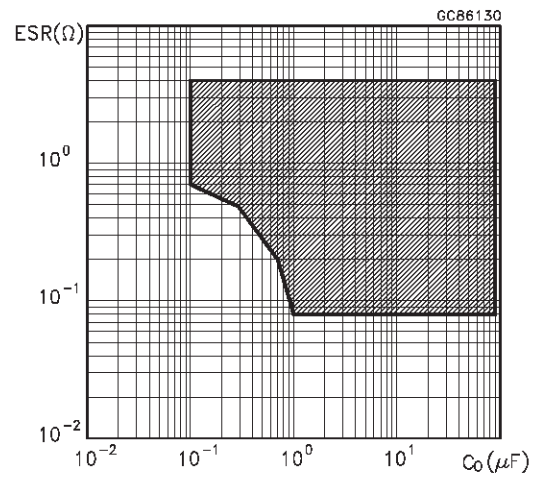
Figure 12 : Supply Voltage Rejection vs Output Current



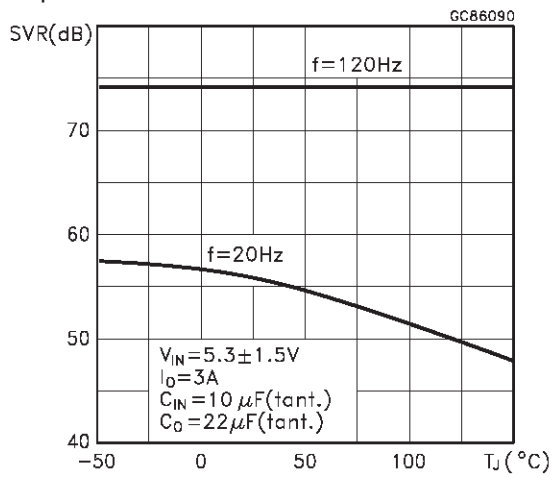
**Figure 13 : Supply Voltage Rejection vs Frequency**



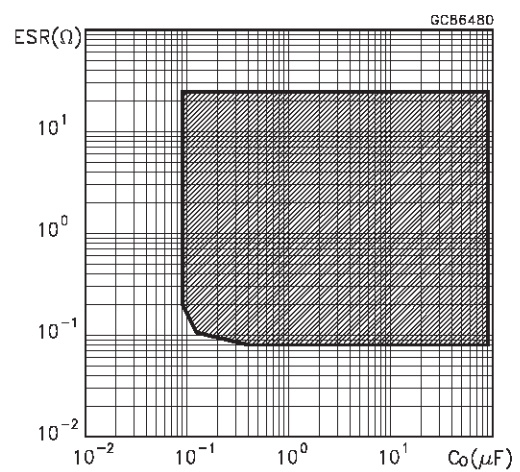
**Figure 16 : Stability**



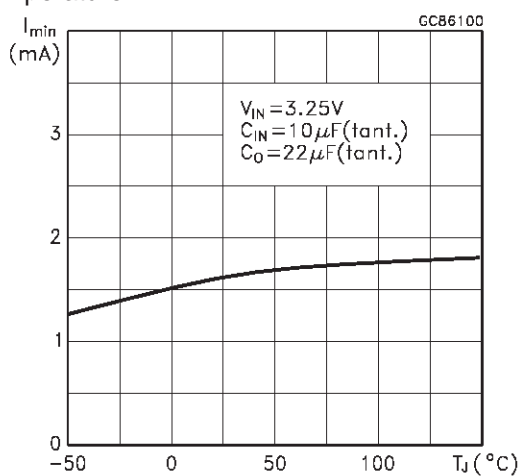
**Figure 14 : Supply Voltage Rejection vs Temperature**



**Figure 17 : Stability**



**Figure 15 : Minimum Load Current vs Temperature**



**Figure 18 : Line Transient**

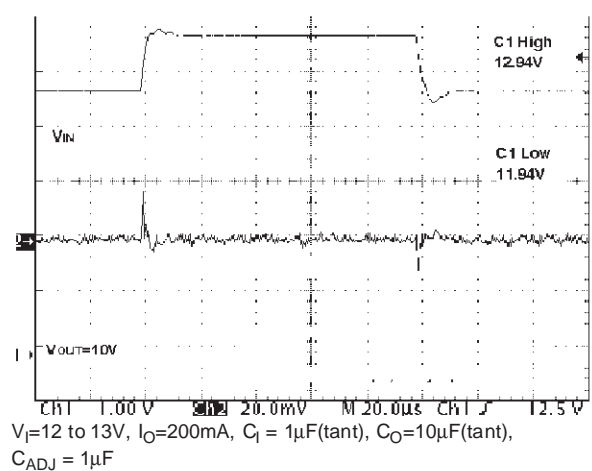


Figure 19 : Line Transient

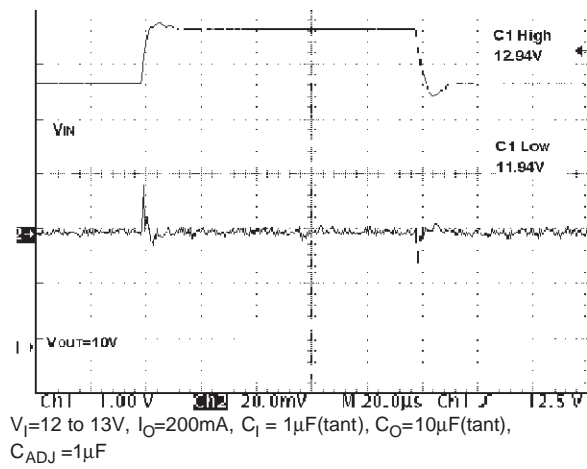


Figure 21 : Load Transient

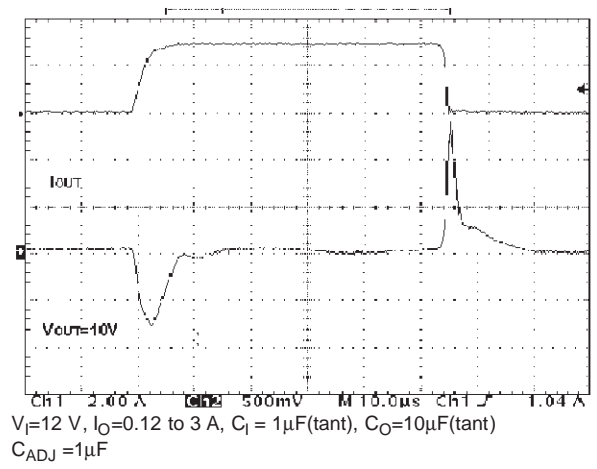
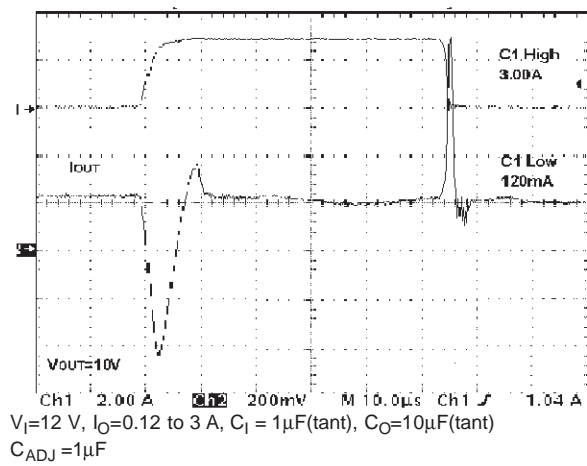
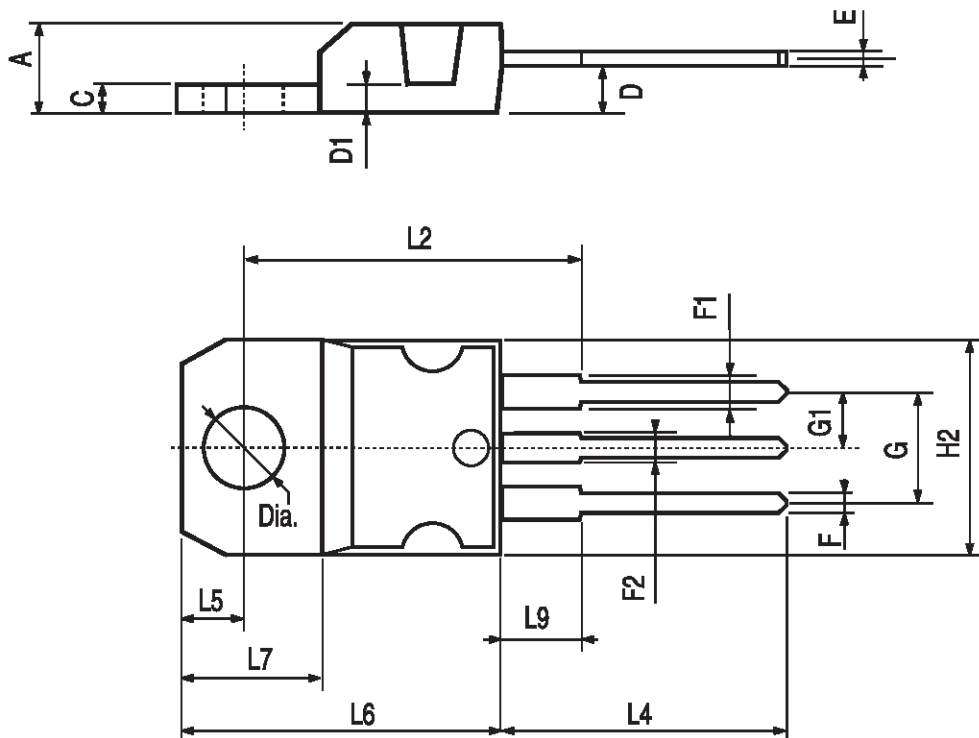


Figure 20 : Load Transient



## TO-220 MECHANICAL DATA

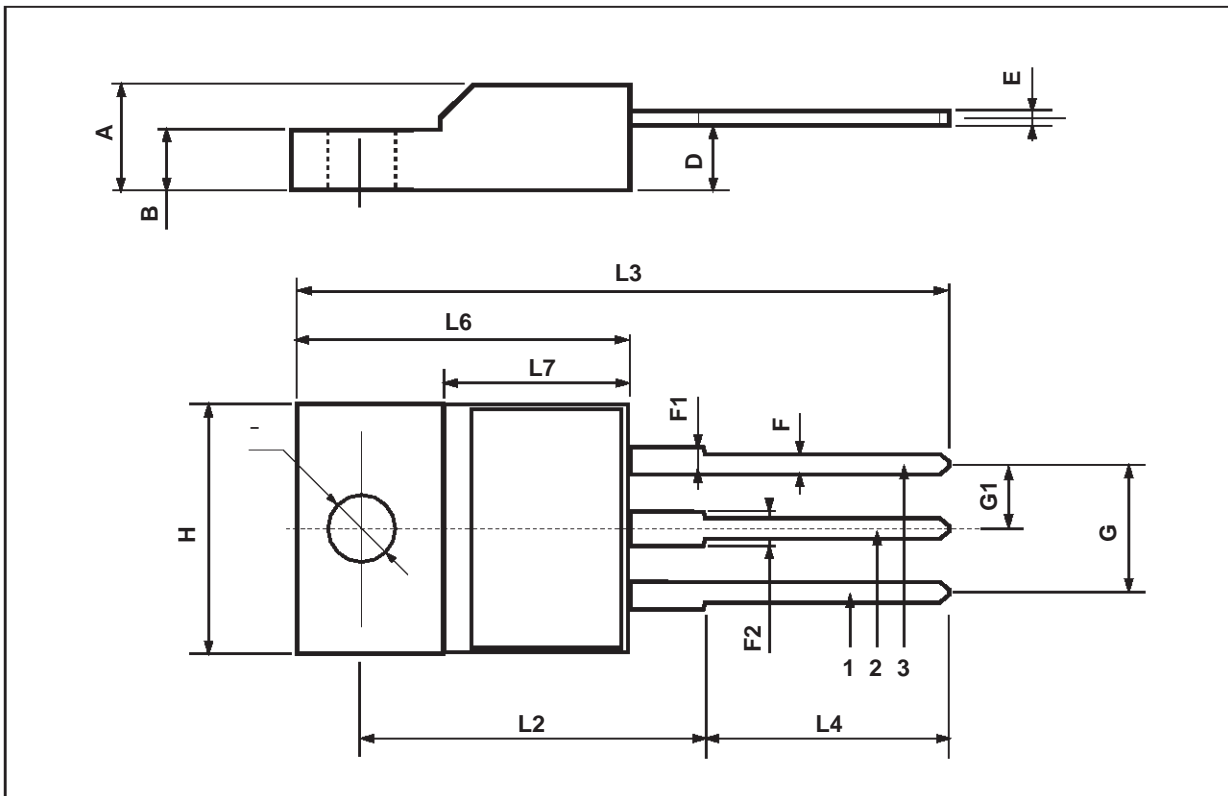
DIM.	mm.			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
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

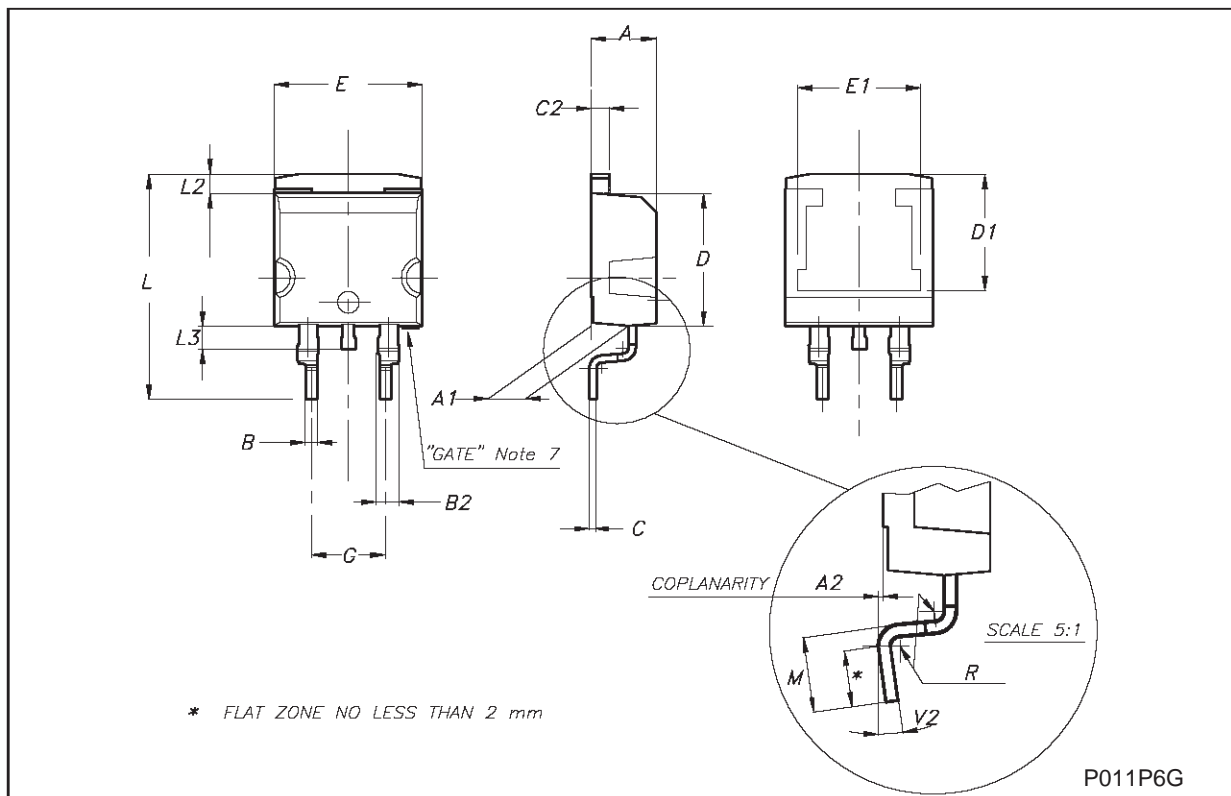
**TO-220FP MECHANICAL DATA**

DIM.	mm.			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
B	2.5		2.7	0.098		0.106
D	2.5		2.75	0.098		0.108
E	0.45		0.70	0.017		0.027
F	0.75		1	0.030		0.039
F1	1.15		1.70	0.045		0.067
F2	1.15		1.70	0.045		0.067
G	4.95		5.2	0.194		0.204
G1	2.4		2.7	0.094		0.106
H	10.0		10.40	0.393		0.409
L2		16			0.630	
L3	28.6		30.6	1.126		1.204
L4	9.8		10.6	0.385		0.417
L6	15.9		16.4	0.626		0.645
L7	9		9.3	0.354		0.366
DIA.	3		3.2	0.118		0.126



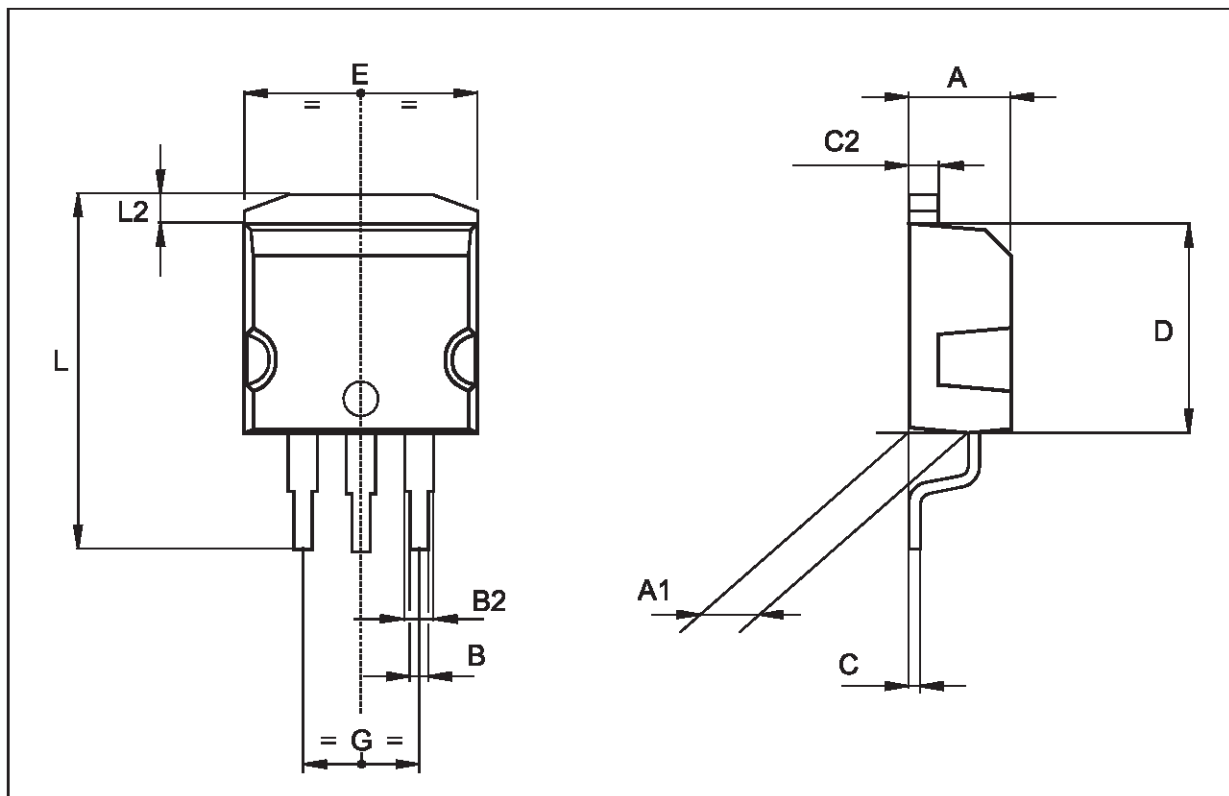
D<sup>2</sup>PAK MECHANICAL DATA

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<sup>2</sup>PAK/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
B	0.7		0.93	0.027		0.036
B2	1.14		1.7	0.044		0.067
C	0.45		0.60	0.017		0.023
C2	1.21		1.36	0.047		0.053
D	8.95		9.35	0.352		0.368
E	10		10.4	0.393		0.409
G	4.88		5.28	0.192		0.208
L	15		15.85	0.590		0.106
L2	1.27		1.4	0.050		0.055





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