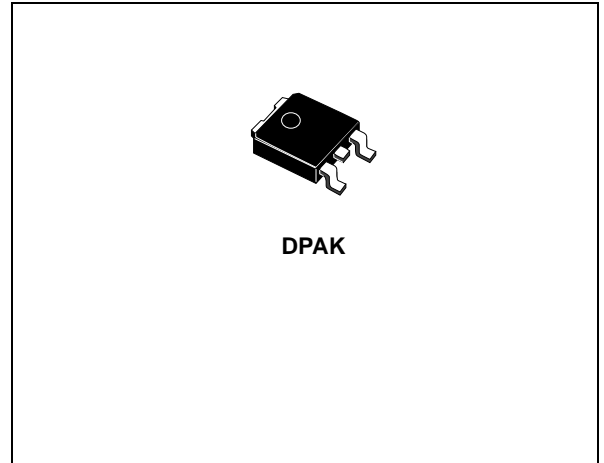


## 3A LOW DROP POSITIVE VOLTAGE REGULATOR ADJUSTABLE AND FIXED

- TYPICAL DROPOUT 1.3V (AT 3A)
- THREE TERMINAL ADJUSTABLE OR FIXED OUTPUT VOLTAGE 1.5V, 1.8V, 2.5V, 2.85V, 3.3V, 3.6V, 5V, 8V, 9V, 12V.
- GUARANTEED OUTPUT CURRENT UP TO 3A
- OUTPUT TOLERANCE  $\pm 2\%$  AT 25°C AND  $\pm 3\%$  IN FULL TEMPERATURE RANGE
- INTERNAL POWER AND THERMAL LIMIT
- WIDE OPERATING TEMPERATURE RANGE -40°C TO 125°C
- PACKAGE AVAILABLE: DPAK
- PINOUT COMPATIBILITY WITH STANDARD ADJUSTABLE VREG

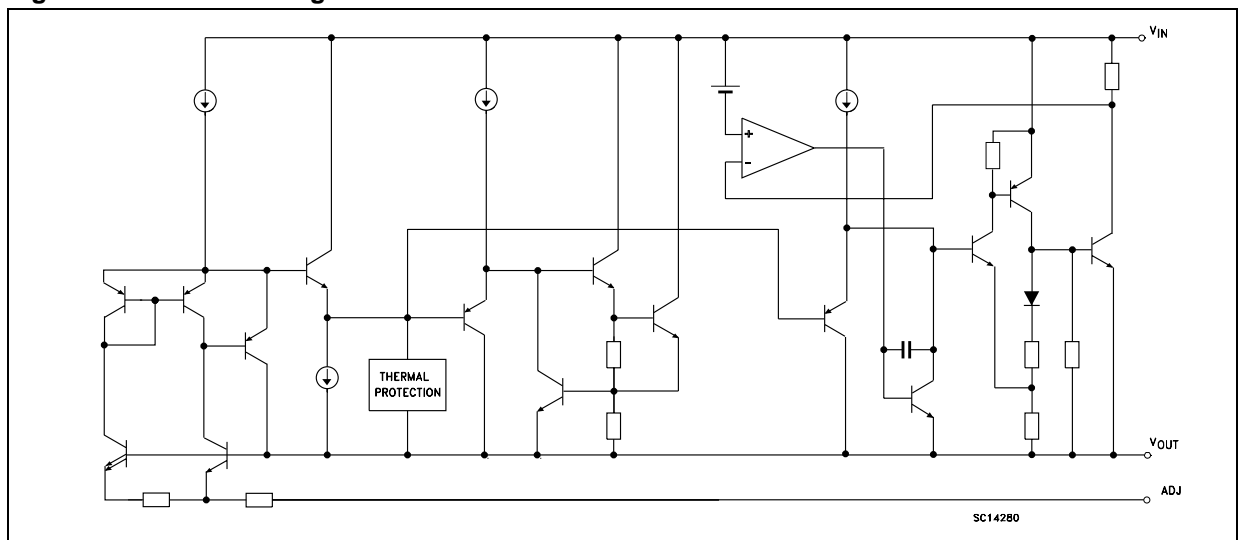


### DESCRIPTION

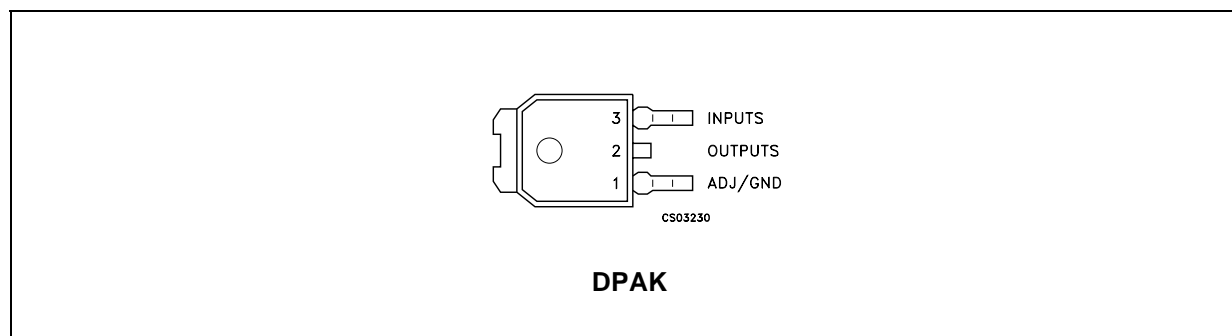
The LD1085 is a LOW DROP Voltage Regulator able to provide up to 3A of Output Current. Dropout is guaranteed at a maximum of 1.5V at the maximum output current, decreasing at lower loads. The LD1085 is pin to pin compatible with the older 3-terminal adjustable regulators, but has better performances 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 DPAK. On chip trimming allows the regulator to reach a very tight output voltage tolerance, within  $\pm 2\%$  at 25°C.

**Figure 1: Schematic Diagram**



**Figure 2: Pin Connection (top view)**



**Table 1: Order Codes**

DPAK (*)	OUTPUT VOLTAGE
LD1085CDT15	1.5 V
LD1085CDT18	1.8 V
LD1085CDT25	2.5 V
LD1085CDT28	2.85 V
LD1085CDT33	3.3 V
LD1085CDT36	3.6 V
LD1085CDT50	5.0 V
LD1085CDT80	8.0 V
LD1085CDT90	9.0 V
LD1085CDT12	12.0 V
LD1085CDT	ADJ

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

**Table 2: Absolute Maximum Ratings**

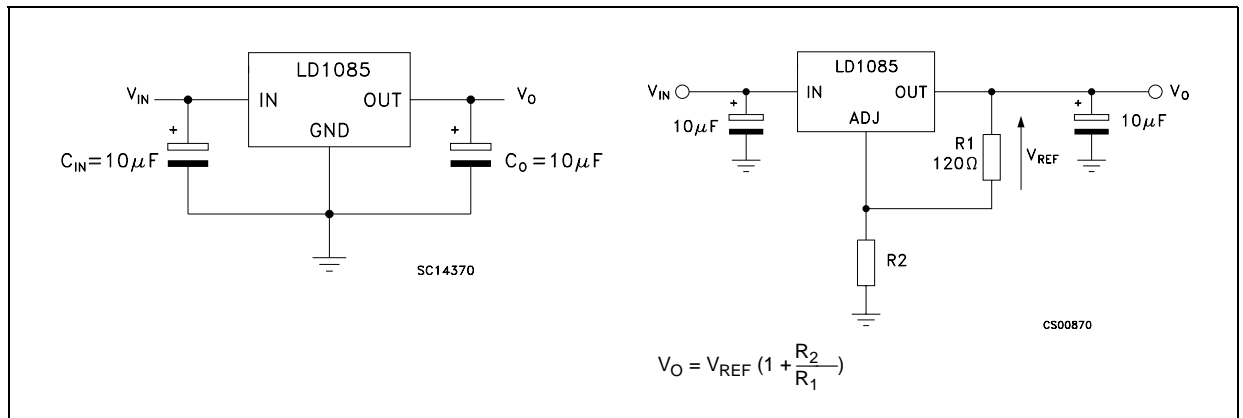
Symbol	Parameter	Value	Unit
$V_I$	DC Input Voltage	30	V
$I_O$	Output Current	Internally Limited	mA
$P_D$	Power Dissipation	Internally Limited	mW
$T_{stg}$	Storage Temperature Range	-55 to +150	°C
$T_{op}$	Operating Junction Temperature Range	-40 to +125	°C

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	DPAK	Unit
$R_{thj-case}$	Thermal Resistance Junction-case	3	°C/W
$R_{thj-amb}$	Thermal Resistance Junction-ambient	62.5	°C/W

Figure 3: Application Circuits



**Table 4: Electrical Characteristics Of LD1085CDT15** ( $V_I=4.5V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	1.47	1.5	1.53	V
		$I_O = 0$ to $3A$ $V_I = 3.1$ to $30V$ (note 1)	1.455	1.5	1.545	V
$\Delta V_O$	Line Regulation	$I_O = 0 \text{ mA}$ $V_I = 3.1$ to $18V$ $T_J = 25^\circ C$		0.2	4	mV
		$I_O = 0 \text{ mA}$ $V_I = 3.1$ 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		0.003	0.015	%/W
SVR	Supply Voltage Rejection	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 7.5 \pm 3V$	60	75		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.

**Table 5: Electrical Characteristics Of LD1085CDT18** ( $V_I=4.8V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	1.764	1.8	1.836	V
		$I_O = 0$ to $3A$ $V_I = 3.4$ to $30V$ (note 1)	1.746	1.8	1.854	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		0.003	0.015	%/W
SVR	Supply Voltage Rejection	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 7.5 \pm 3V$	60	75		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.

**Table 6: Electrical Characteristics Of LD1085CDT25** ( $V_I=5.5V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	2.45	2.5	2.55	V
		$I_O = 0$ to $3A$ $V_I = 4.1$ to $30V$ (note 1)	2.425	2.5	2.575	V
$\Delta V_O$	Line Regulation	$I_O = 0 \text{ mA}$ $V_I = 4.1$ to $18V$ $T_J = 25^\circ C$		0.2	5	mV
		$I_O = 0 \text{ mA}$ $V_I = 4.1$ to $18V$		0.4	5	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.

**Table 7: Electrical Characteristics Of LD1085CDT285** ( $V_I=5.85V$ ,  $C_I = C_O=10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0$ mA $T_J = 25^\circ C$	2.793	2.85	2.907	V
		$I_O = 0$ to 3A $V_I = 4.5$ to 30V (note 1)	2.765	2.85	2.935	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.

**Table 8: Electrical Characteristics Of LD1085CDT33** ( $V_I=6.3V$ ,  $C_I = C_O=10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0$ mA $T_J = 25^\circ C$	3.234	3.35	3.366	V
		$I_O = 0$ to 3A $V_I = 4.9$ to 30V (note 1)	3.201	3.35	3.399	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.

**Table 9: Electrical Characteristics Of LD1085CDT36** ( $V_I=6.6V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	3.528	3.6	3.672	V
		$I_O = 0$ to $3A$ $V_I = 5.2$ to $30V$ (note 1)	3.492	3.6	3.708	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	$I_O = 3 \text{ A}$		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	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 8.6 \pm 3V$	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.

**Table 10: Electrical Characteristics Of LD1085CDT50** ( $V_I=8V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	4.9	5	5.1	V
		$I_O = 0$ to $3A$ $V_I = 6.6$ to $30V$ (note 1)	4.85	5	5.15	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	20	mV
		$I_O = 0$ to $3A$		10	35	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	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 10 \pm 3V$	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.

**Table 11: Electrical Characteristics Of LD1085CDT80** ( $V_I=11V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	7.84	8	8.16	V
		$I_O = 0$ to $3A$ $V_I = 9.8$ to $30V$ (note 1)	7.76	8	8.24	V
$\Delta V_O$	Line Regulation	$I_O = 0 \text{ mA}$ $V_I = 9.8$ to $20V$ $T_J = 25^\circ C$		1	18	mV
		$I_O = 0 \text{ mA}$ $V_I = 9.8$ 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	$I_O = 3 \text{ A}$		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	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 13 \pm 3V$	54	71		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.

**Table 12: Electrical Characteristics Of LD1085CDT90** ( $V_I=12V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0 \text{ mA}$ $T_J = 25^\circ C$	8.82	9	9.18	V
		$I_O = 0$ to $3A$ $V_I = 11$ to $30V$ (note 1)	8.73	9	9.27	V
$\Delta V_O$	Line Regulation	$I_O = 0 \text{ mA}$ $V_I = 11$ to $20V$ $T_J = 25^\circ C$		1	20	mV
		$I_O = 0 \text{ mA}$ $V_I = 11$ 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	$I_O = 3 \text{ A}$		1.3	1.5	V
$I_q$	Quiescent Current	$V_I \leq 30V$		5	10	mA
$I_{sc}$	Short Circuit Current	$V_I - V_O = 5V$	5.5	6.5		A
		$V_I - V_O = 25V$	0.5	0.7		A
	Thermal Regulation	$T_A = 25^\circ C$ , 30ms pulse		0.008	0.04	%/W
SVR	Supply Voltage Rejection	$f = 120 \text{ Hz}$ , $C_O = 25 \mu F$ , $I_O = 3A$ $V_I = 14 \pm 3V$	54	70		dB
eN	RMS Output Noise Voltage (% of $V_O$ )	$T_A = 25^\circ C$ $f = 10\text{Hz}$ 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.

**Table 13: Electrical Characteristics Of LD1085CDT12** ( $V_I=15V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 0\text{ mA}$ $T_J = 25^\circ C$	11.76	12	12.24	V
		$I_O = 0$ to $3A$ $V_I = 13.8$ to $30V$ (note 1)	11.64	12	12.36	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	$I_O = 3\text{ A}$		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	$f = 120\text{ Hz}$ , $C_O = 25\ \mu F$ , $I_O = 3A$ $V_I = 17 \pm 3V$	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.

**Table 14: Electrical Characteristics Of LD1085CDT** ( $V_I=4.25V$ ,  $C_I = C_O = 10\mu F$ ,  $T_A = -40$  to  $125^\circ C$ , unless otherwise specified.)

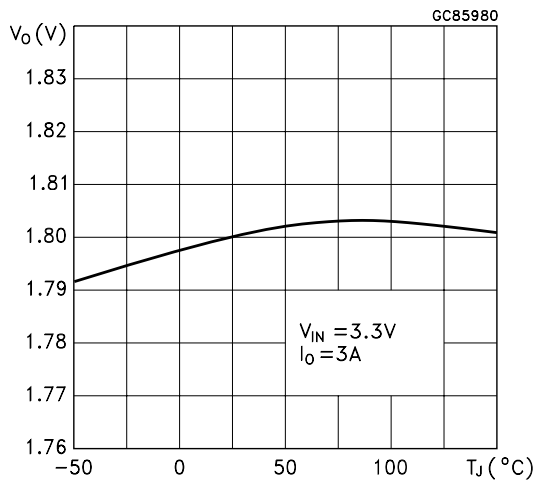
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_O$	Output Voltage	$I_O = 10\text{ mA}$ $T_J = 25^\circ C$	1.225	1.25	1.275	V
		$I_O = 10\text{ mA}$ to $5A$ $V_I = 2.85$ to $30V$ (note 1)	1.213	1.25	1.288	V
$\Delta V_O$	Line Regulation	$I_O = 10\text{ mA}$ $V_I = 2.85$ to $16.5V$ $T_J = 25^\circ C$		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
$I_{O(\min)}$	Minimum Load Current	$V_I = 30V$		3	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		0.003	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	75		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 $5A$ $V_I = 2.75$ 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.

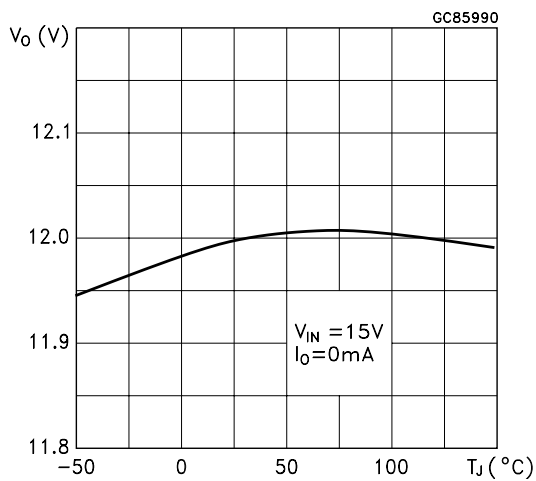


**TYPICAL CHARACTERISTICS** (unless otherwise specified  $T_j = 25^\circ\text{C}$ ,  $C_i=C_o=10\mu\text{F}$ )

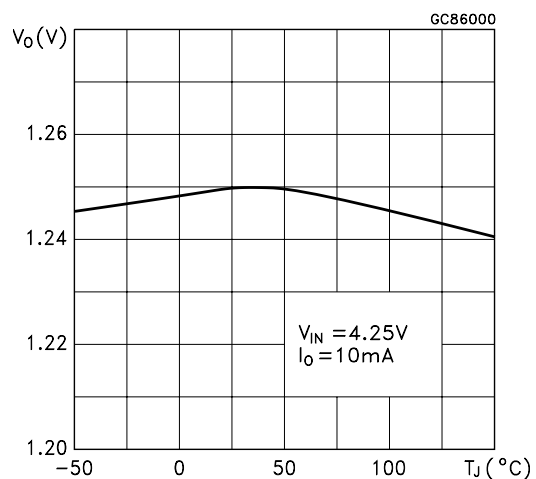
**Figure 4:** Output Voltage vs Temperature



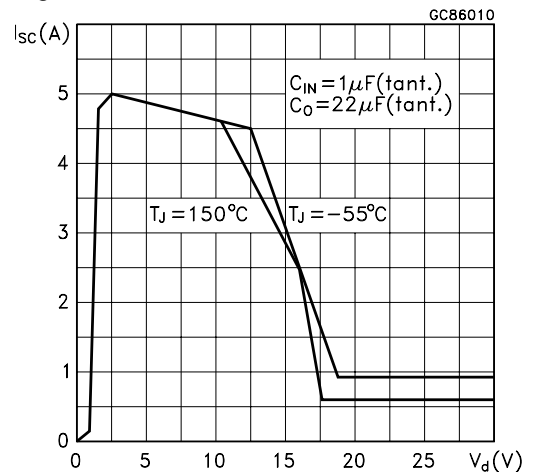
**Figure 5:** Output Voltage vs Temperature



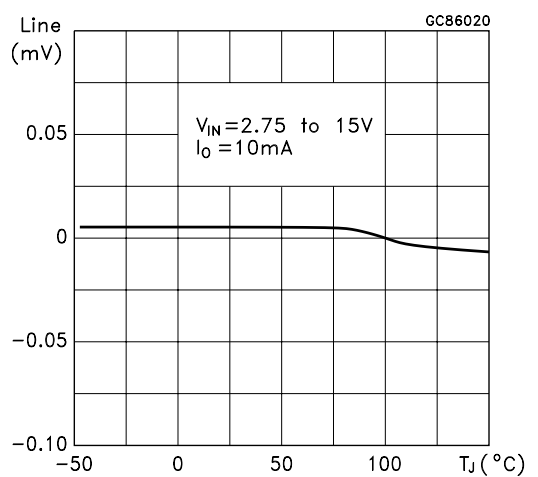
**Figure 6:** Output Voltage vs Temperature



**Figure 7:** Short Circuit Current vs Dropout Voltage



**Figure 8:** Line Regulation vs Temperature



**Figure 9:** Load Regulation vs Temperature

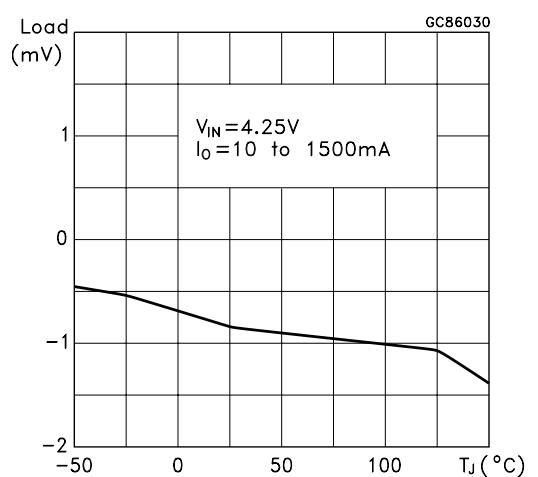


Figure 10: Dropout Voltage vs Temperature

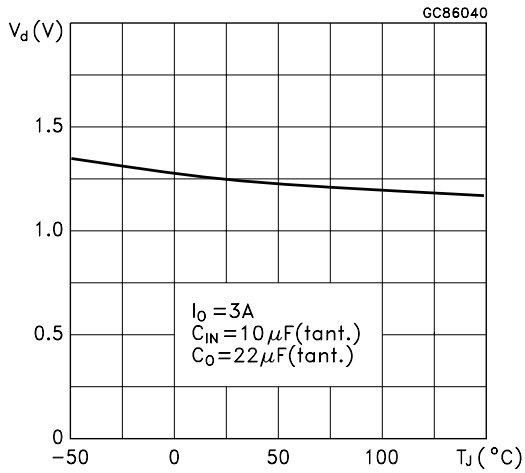


Figure 13: Quiescent Current vs Temperature

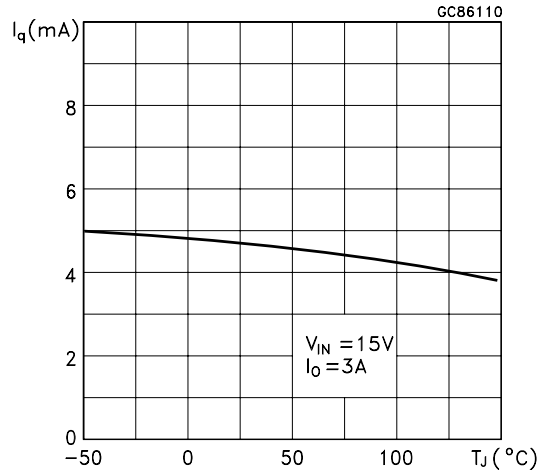


Figure 11: Dropout Voltage vs Output Current

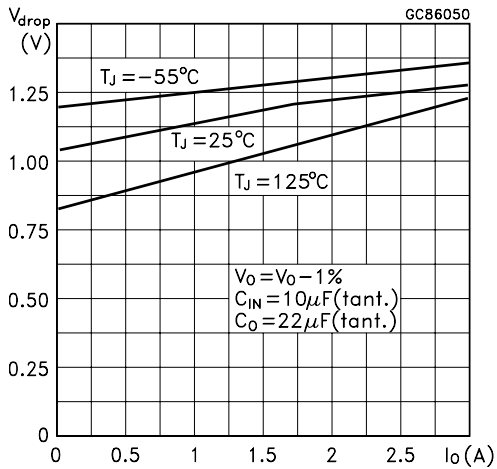


Figure 14: Dropout Voltage vs Output Current

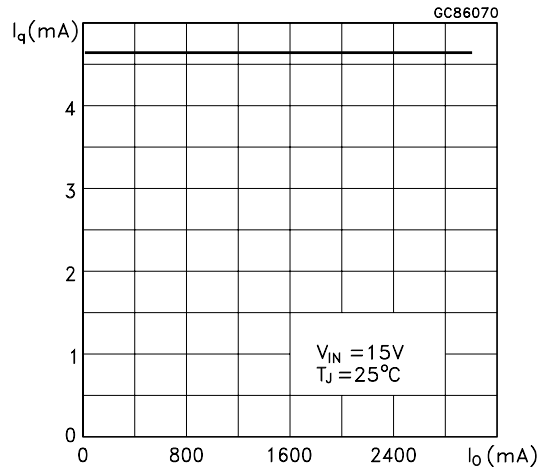


Figure 12: Adjust Pin Current vs Temperature

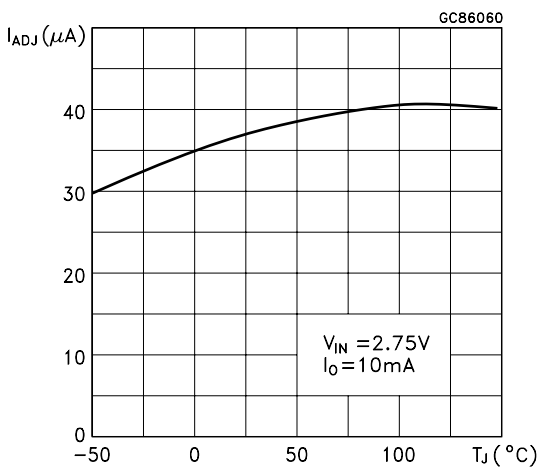
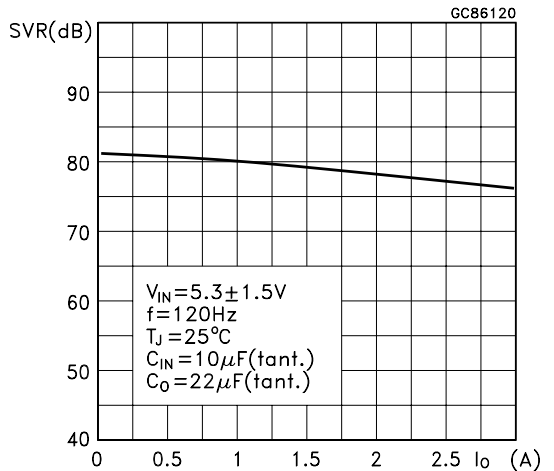
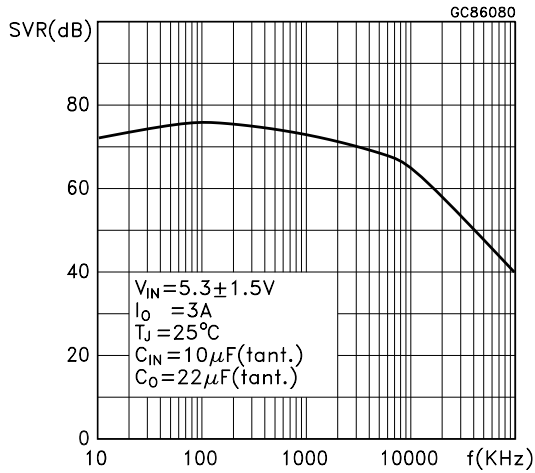


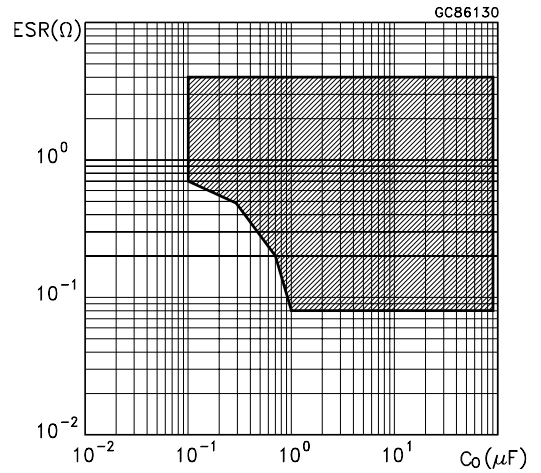
Figure 15: Supply Voltage Rejection vs Output Current



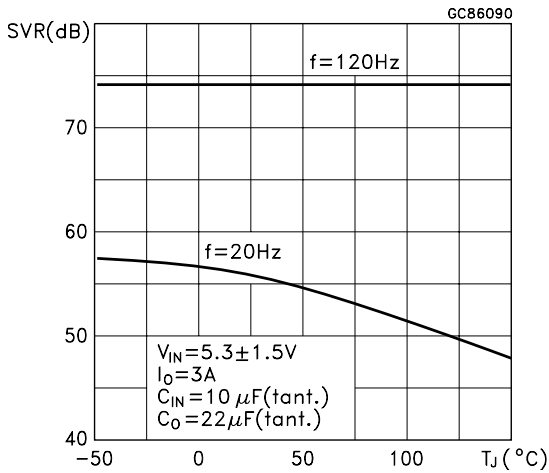
**Figure 16: Supply Voltage Rejection vs Frequency**



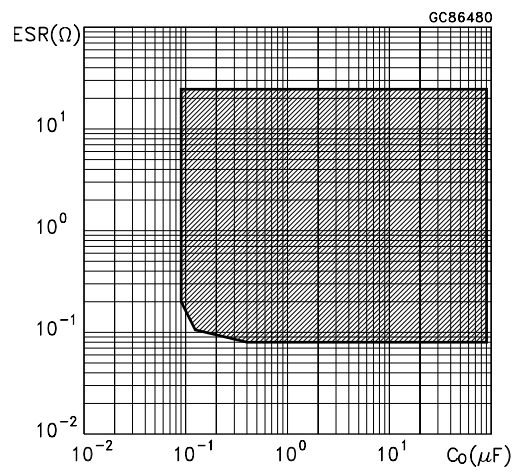
**Figure 19: Stability**



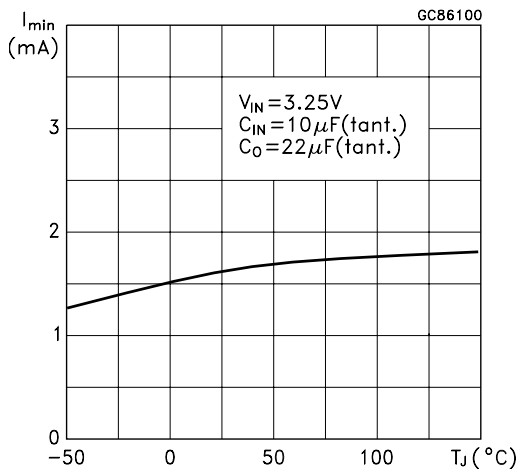
**Figure 17: Supply Voltage Rejection vs Temperature**



**Figure 20: Stability**



**Figure 18: Minimum Load Current vs Temperature**



**Figure 21: Line Transient**

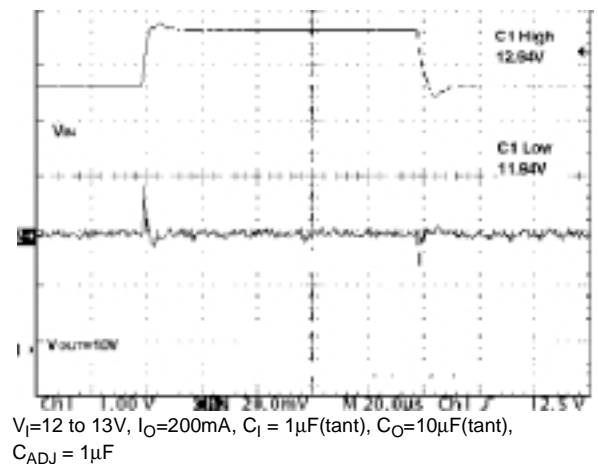
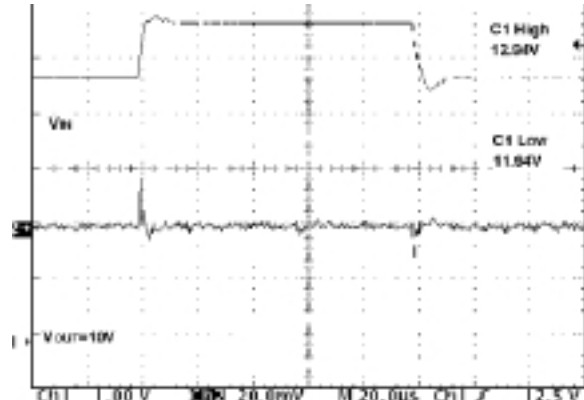
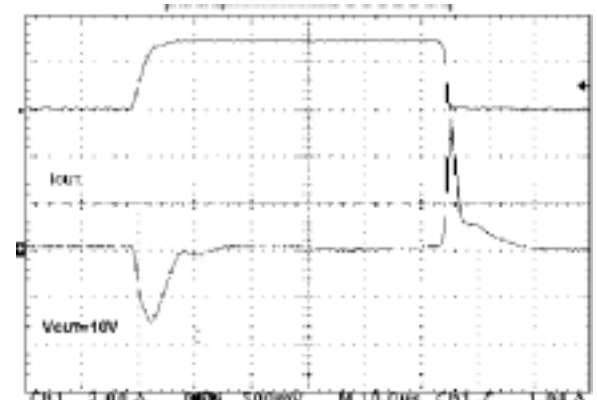


Figure 22: Line Transient



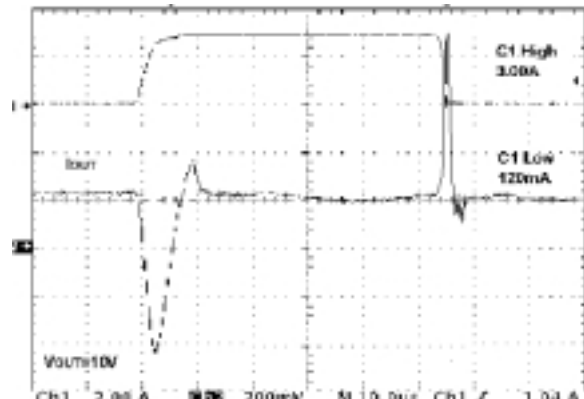
$V_I=12$  to  $13$ V,  $I_O=200$ mA,  $C_I=1\mu$ F(tant),  $C_O=10\mu$ F(tant),  $C_{ADJ}=1\mu$ F

Figure 24: Load Transient



$V_I=12$  V,  $I_O=0.12$  to  $3$  A,  $C_I=1\mu$ F(tant),  $C_O=10\mu$ F(tant),  $C_{ADJ}=1\mu$ F

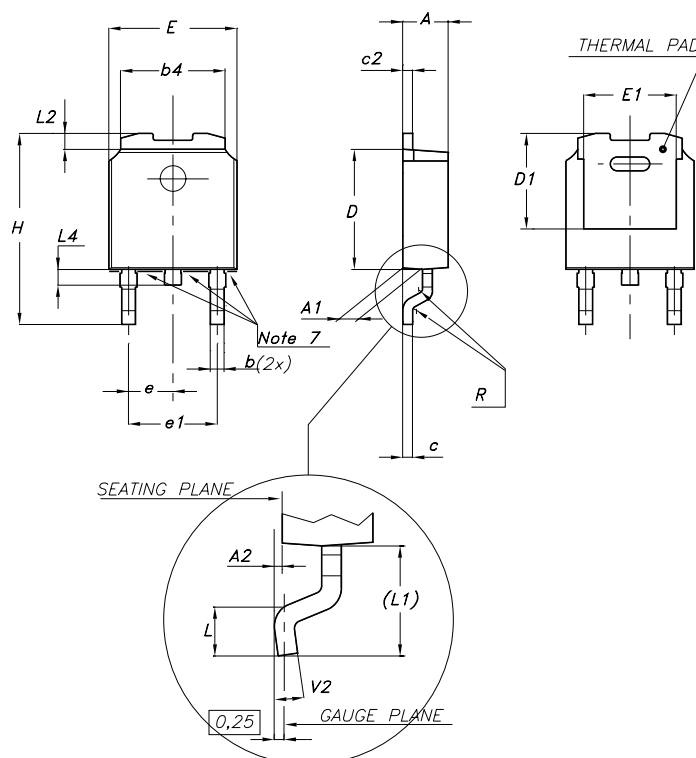
Figure 23: Load Transient



$V_I=12$  V,  $I_O=0.12$  to  $3$  A,  $C_I=1\mu$ F(tant),  $C_O=10\mu$ F(tant),  $C_{ADJ}=1\mu$ F

## DPAK MECHANICAL DATA

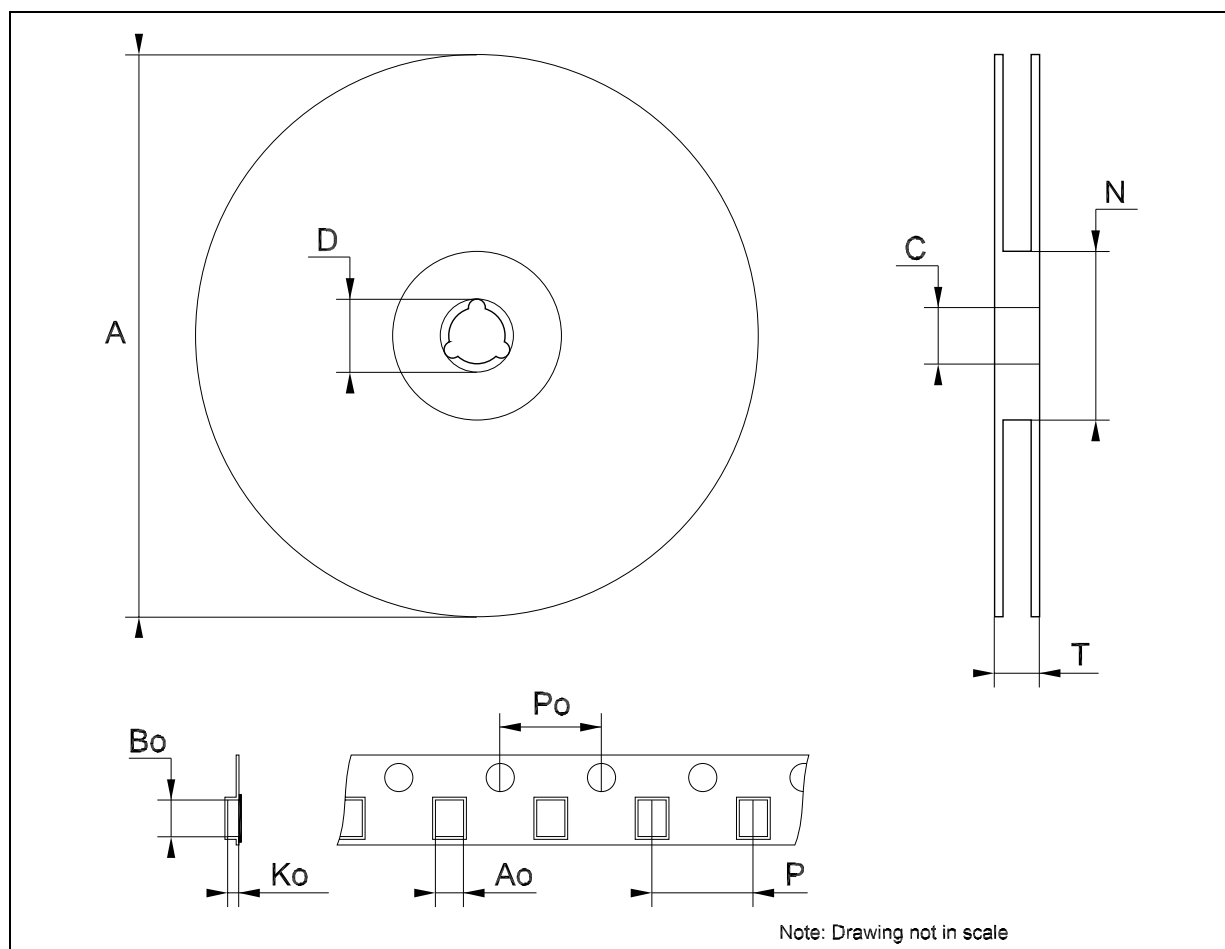
DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A	2.2		2.4	0.086		0.094
A1	0.9		1.1	0.035		0.043
A2	0.03		0.23	0.001		0.009
B	0.64		0.9	0.025		0.035
B2	5.2		5.4	0.204		0.212
C	0.45		0.6	0.017		0.023
C2	0.48		0.6	0.019		0.023
D	6		6.2	0.236		0.244
D1		5.1			0.200	
E	6.4		6.6	0.252		0.260
E1		4.7			0.185	
e		2.28			0.090	
e1	4.4		4.6	0.173		0.181
H	9.35		10.1	0.368		0.397
L	1			0.039		
(L1)		2.8			0.110	
L2		0.8			0.031	
L4	0.6		1	0.023		0.039



0068772-F

## Tape &amp; Reel DPAK-PPAK MECHANICAL DATA

DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A			330			12.992
C	12.8	13.0	13.2	0.504	0.512	0.519
D	20.2			0.795		
N	60			2.362		
T			22.4			0.882
Ao	6.80	6.90	7.00	0.268	0.272	0.276
Bo	10.40	10.50	10.60	0.409	0.413	0.417
Ko	2.55	2.65	2.75	0.100	0.104	0.105
Po	3.9	4.0	4.1	0.153	0.157	0.161
P	7.9	8.0	8.1	0.311	0.315	0.319



**Table 15: Revision History**

Date	Revision	Description of Changes
07-Oct-2004	6	Mistake Order Codes - Table 1.

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