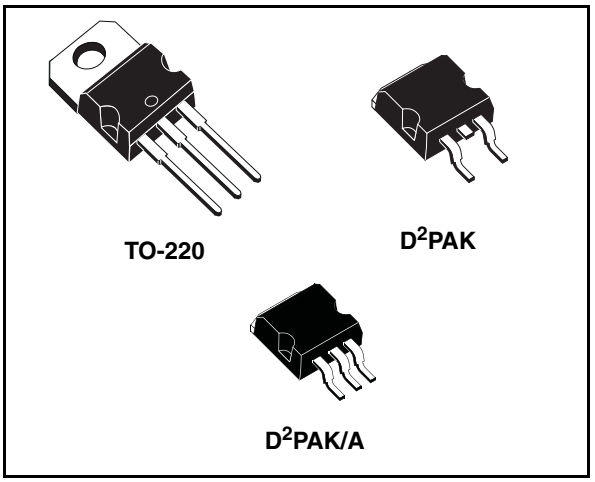
LD1084 series

5A Low drop positive voltage regulator adjustable and fixed

Features

- Typical dropout 1.3V (at 5A)
- 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 5A
- Output 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



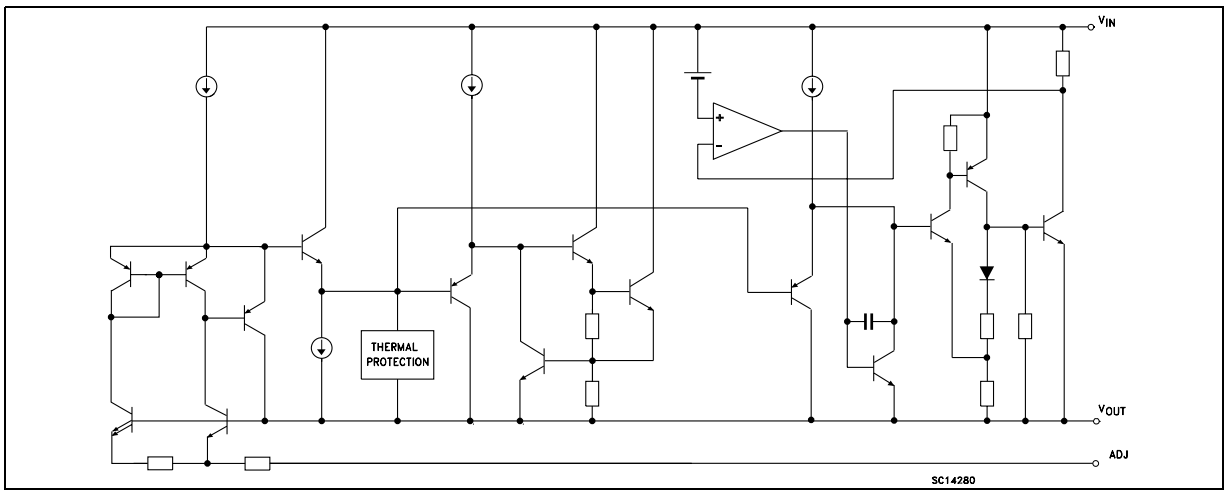
Description

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.

Schematic diagram



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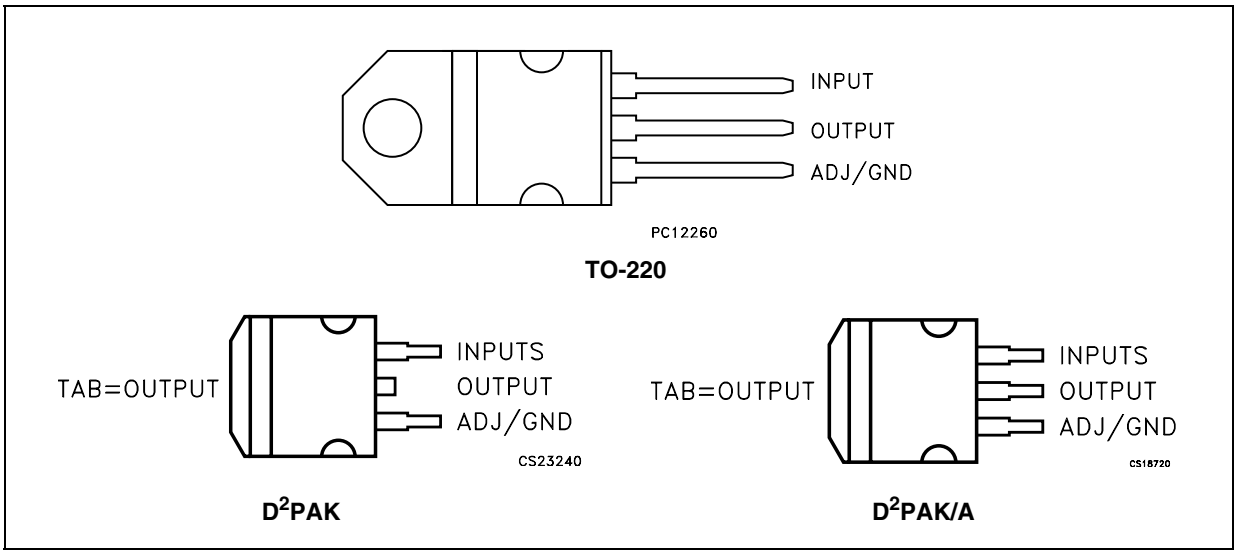
1 Pin configuration

Figure 1. Pin connections (top view)



2 Maximum ratings

Table 1. 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

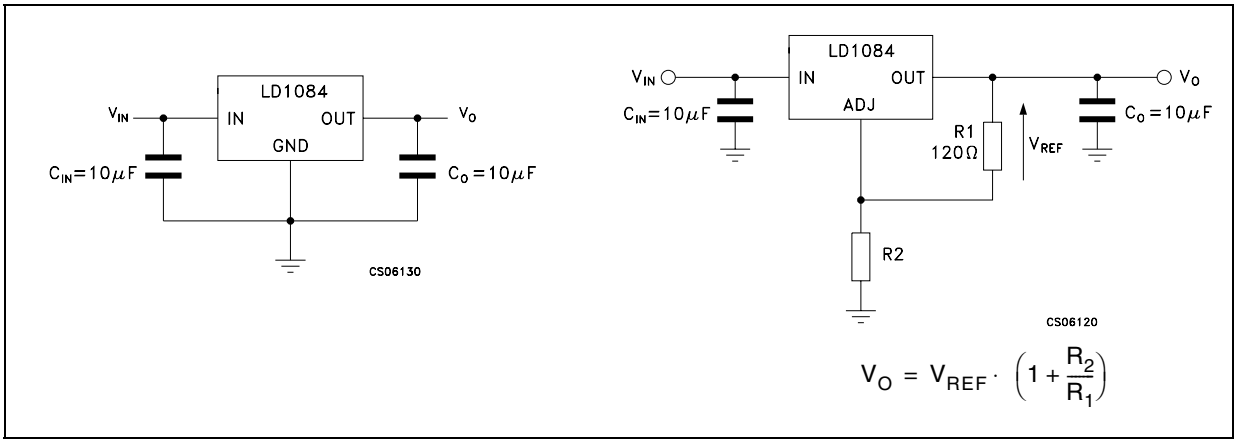
Note: Absolute Maximum Ratings are those values beyond which damage to the device may occur. Functional operation under these condition is not implied

Table 2. Thermal Data

Symbol	Parameter	TO-220	D^2PAK D^2PAK/A	Unit
R_{thJC}	Thermal resistance junction-case	3	3	°C/W
R_{thJA}	Thermal resistance junction-ambient	50	62.5	°C/W

3 Schematic application

Figure 2. Application circuit



4 Electrical characteristics

Table 3. 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	Min.	Typ.	Max.	Unit
V_O	Output voltage (1)	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	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 = 25µF, 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		%

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

Table 4. 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	Min.	Typ.	Max.	Unit
V_O	Output voltage (1)	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	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 35A		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 = 25µF, 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		%

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

Table 5. 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	Min.	Typ.	Max.	Unit
V_O	Output voltage (1)	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	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 = 5A		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 = 25µF, 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		%

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

Table 6. 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	Min.	Typ.	Max.	Unit
V_O	Output voltage (1)	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	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 = 5A		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 = 25µF, 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		%

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

Table 7. 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	Min.	Typ.	Max.	Unit
V_O	Output voltage (1)	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	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 = 5A		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 = 25µF, 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		%

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

Table 8. 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	Min.	Typ.	Max.	Unit
V_O	Output voltage (1)	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	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 = 5A		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 = 25µF, 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		%

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

Table 9. 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	Min.	Typ.	Max.	Unit
V_O	Output voltage (1)	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	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 = 5A		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 = 25µF, 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		%

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

Table 10. 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	Min.	Typ.	Max.	Unit
V_O	Output voltage (1)	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	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 = 5A		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 = 25µF, 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		%

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

Table 11. 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	Min.	Typ.	Max.	Unit
V_O	Output voltage (1)	I_O = 0 mA, T_J = 25°C	8.91	9	9.09	V
		I_O = 0 to 3A, V_I = 10.6 to 30V	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 = 5A		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 = 25µF, 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		%

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

Table 12. 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	Min.	Typ.	Max.	Unit
V_O	Output voltage (1)	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	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 = 5A		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 = 25µF, 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		%

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

Table 13. 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	Min.	Typ.	Max.	Unit
V_O	Output voltage (1)	I_O = 10mA T_J = 25°C	1.237	1.25	1.263	V
		I_O = 10mA to 3A, V_I = 2.85 to 30V	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 = 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	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 = 25µF,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 (1)	I_O = 10mA to 5A, V_I = 2.85 to 16.5V		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		%

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

5 Typical application

Unless otherwise specified T_J = 25°C, C_I = 10µF (tant.), C_O = 22µF (tant.)

Figure 3. Short circuit current vs dropout voltage

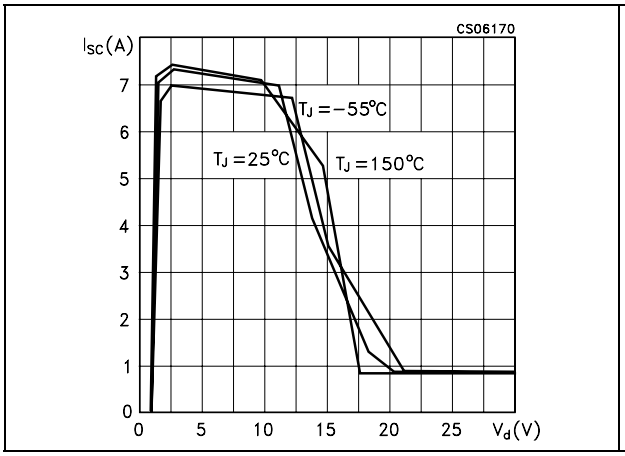


Figure 4. Line regulation vs temperature

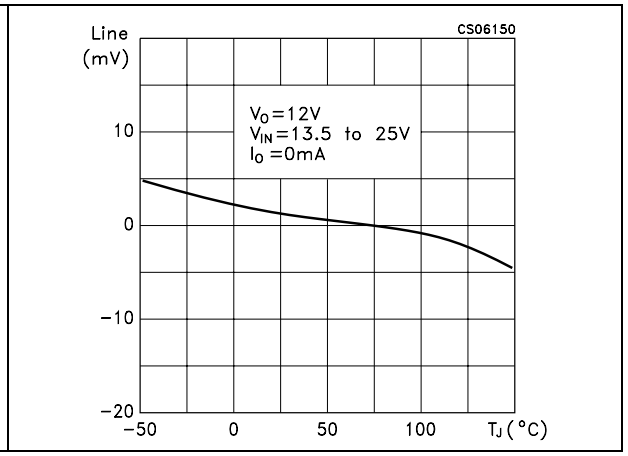


Figure 5. Quiescent current vs temperature

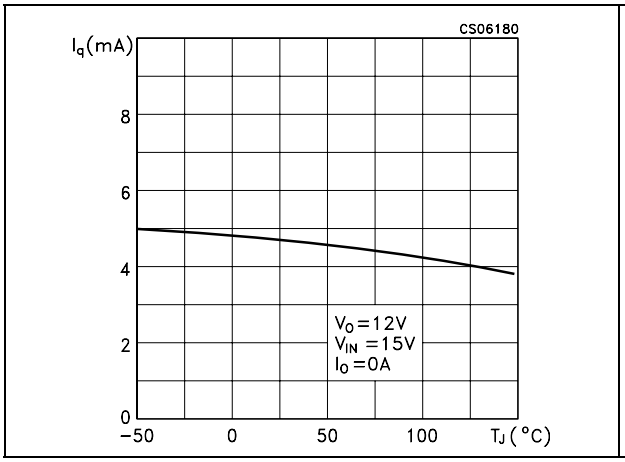


Figure 6. Output voltage vs temperature

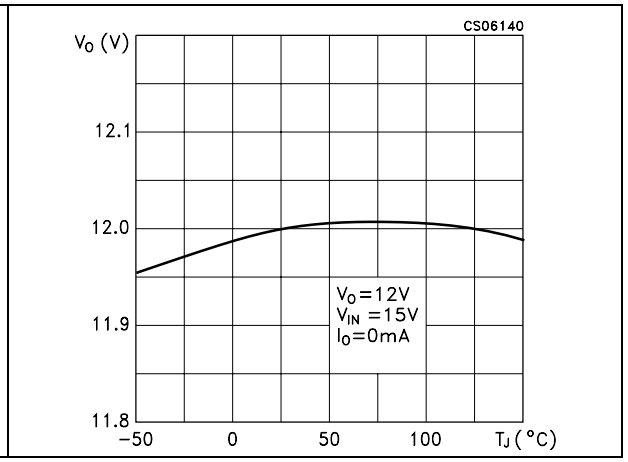


Figure 7. Load regulation vs temperature

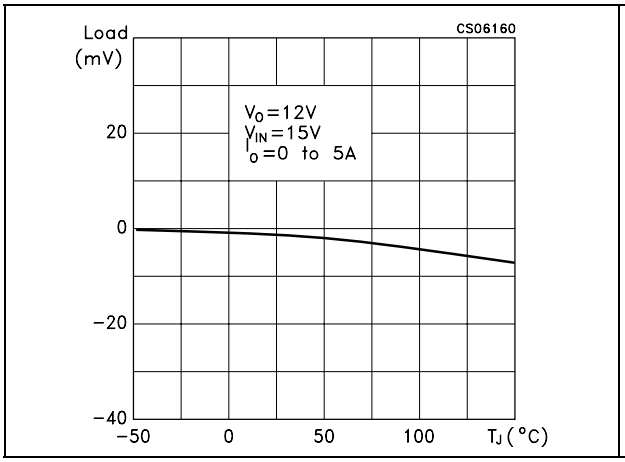


Figure 8. Quiescent current vs output voltage

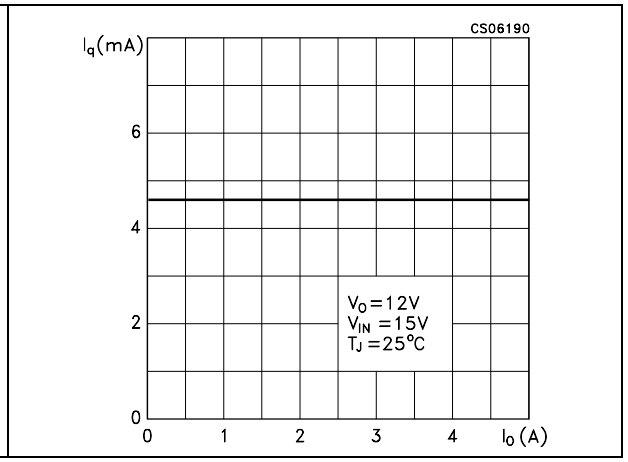


Figure 9. Quiescent current vs input voltage

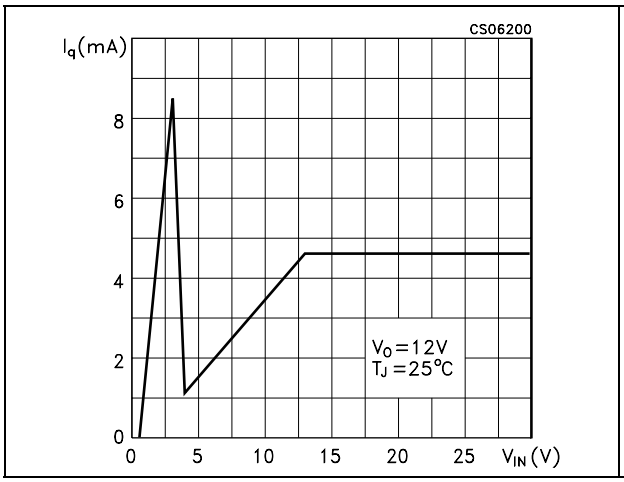


Figure 10. Dropout voltage vs output current

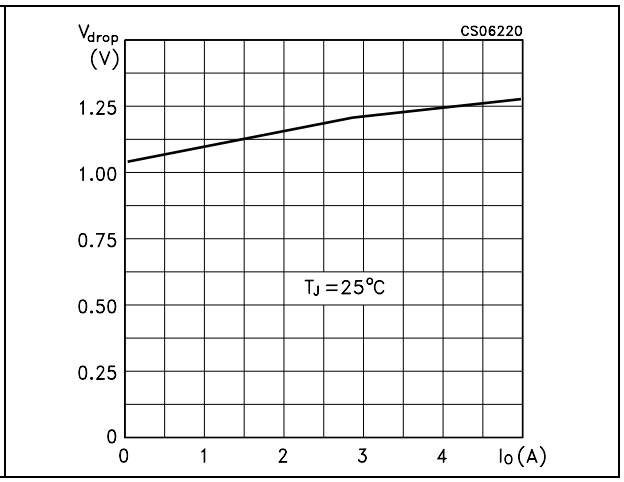


Figure 11. Supply voltage rejection vs output current

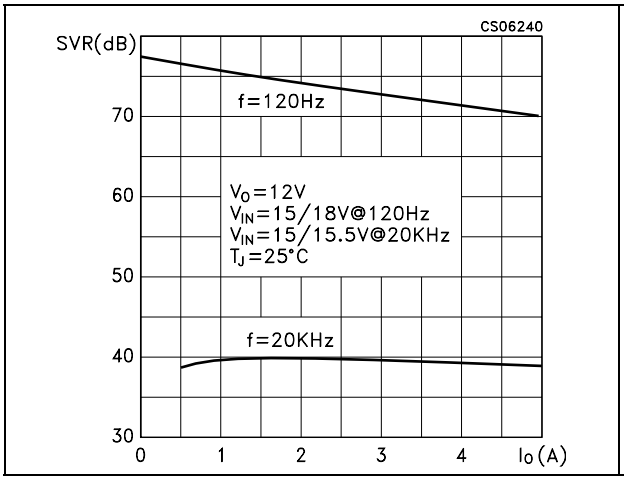


Figure 12. Dropout voltage vs temperature

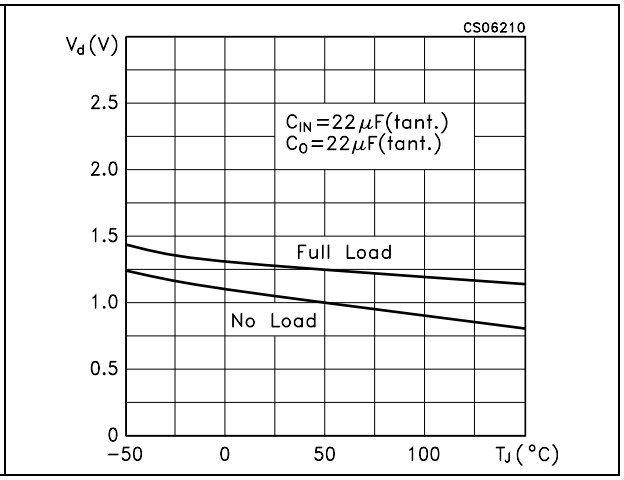


Figure 13. Supply voltage rejection vs temperature

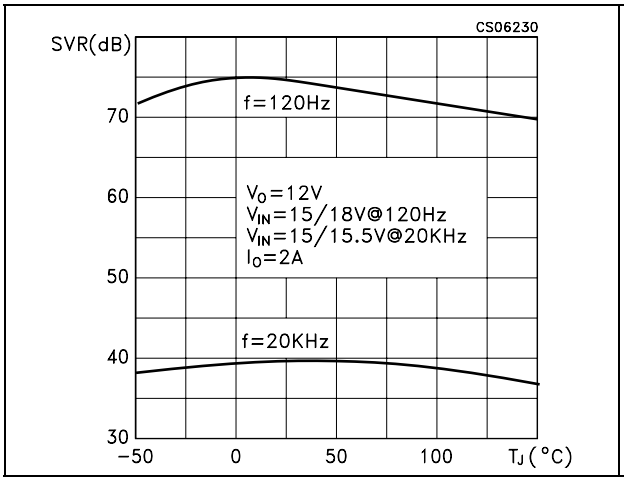


Figure 14. Supply voltage rejection vs frequency

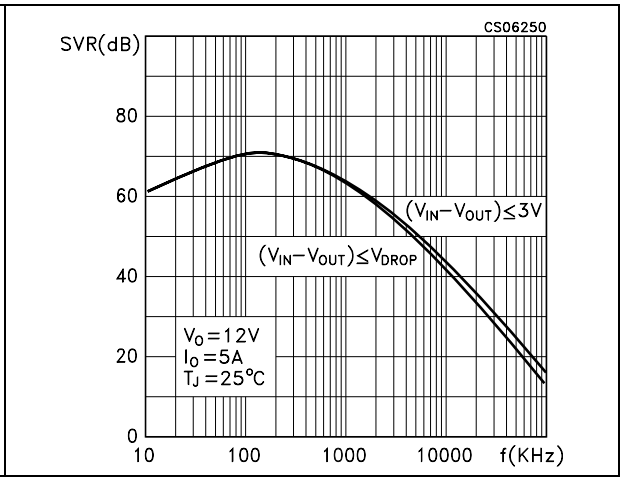


Figure 15. Adjust pin current vs output current

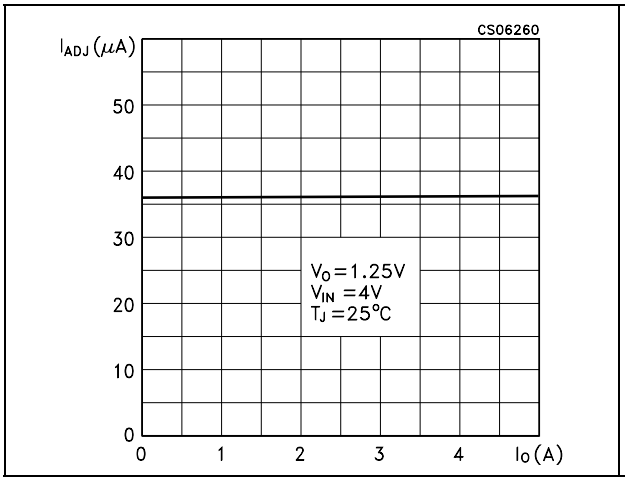


Figure 16. Reference voltage vs temperature

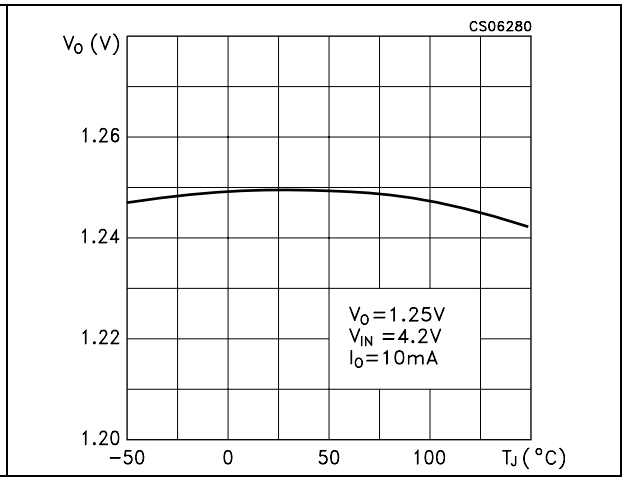


Figure 17. Load regulation vs temperature

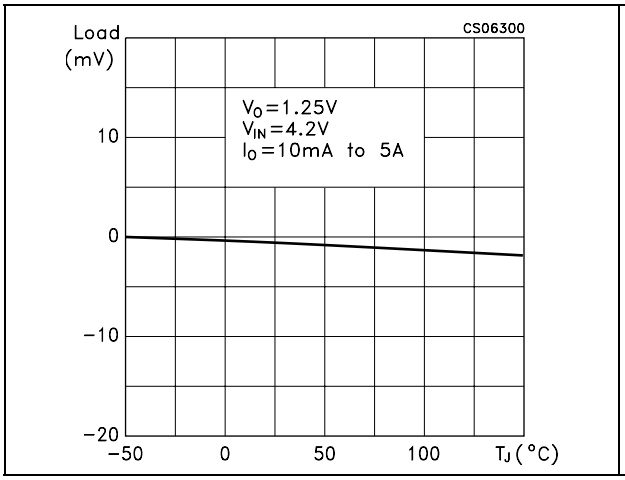


Figure 18. Adjust pin current vs temperature

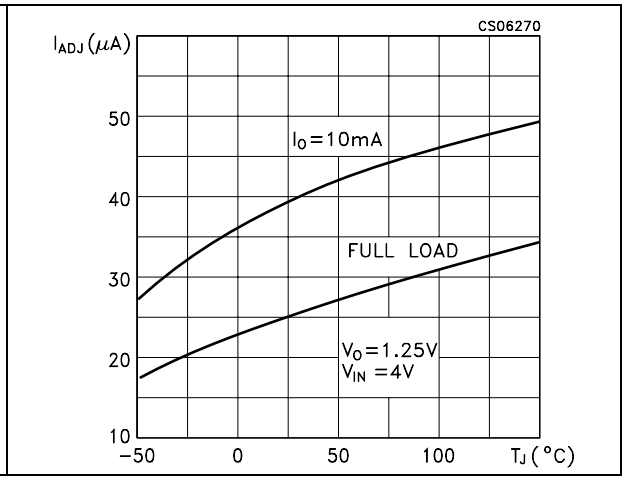


Figure 19. Line regulation vs temperature

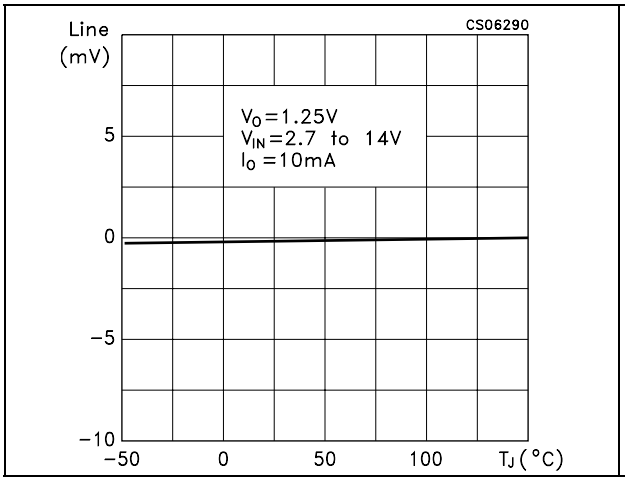


Figure 20. Minimum load current vs temperature

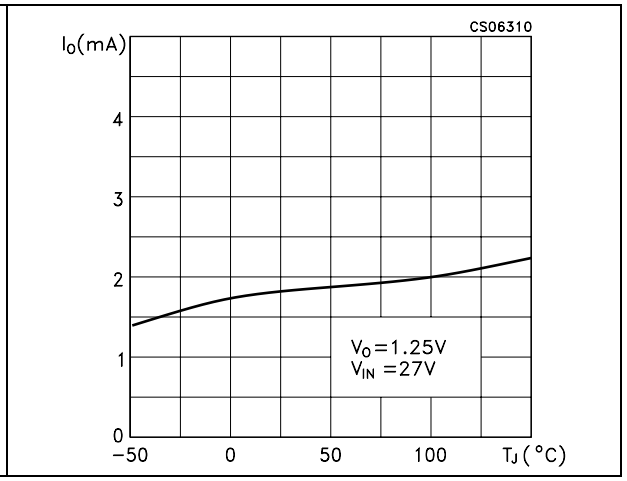


Figure 21. Supply voltage rejection vs temperature

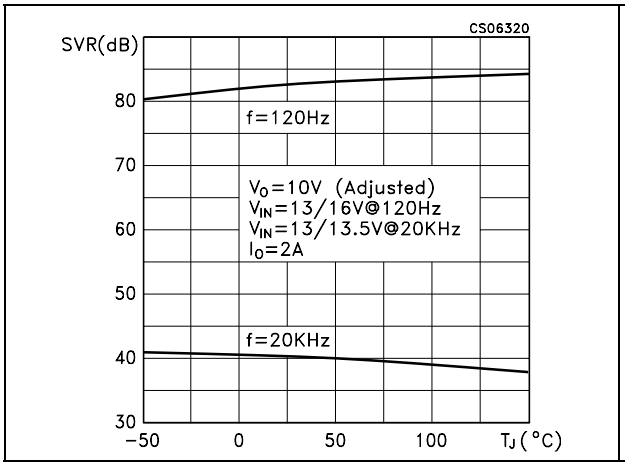


Figure 22. Supply voltage rejection vs frequency

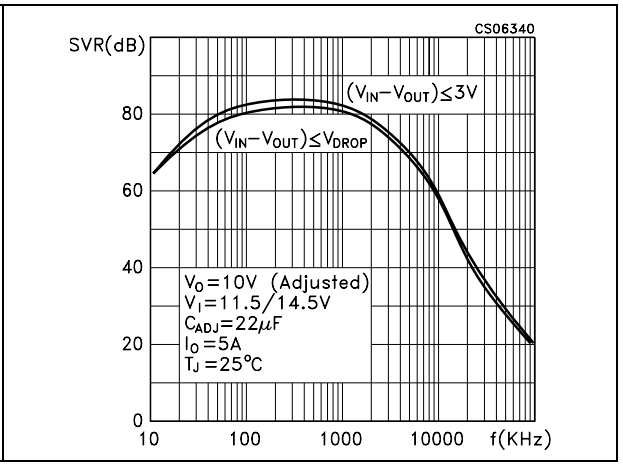


Figure 23. Stability

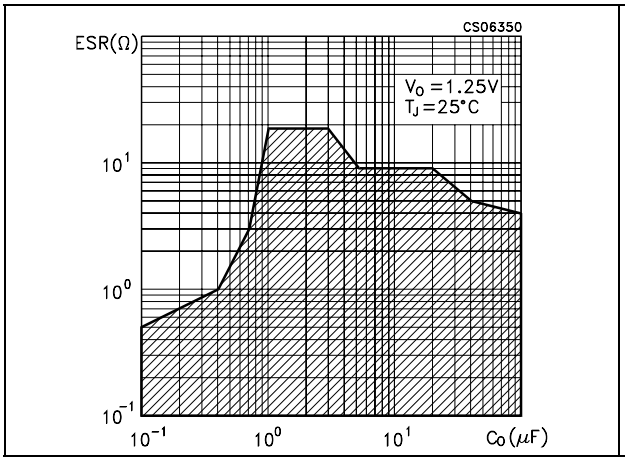


Figure 24. Supply voltage rejection vs output current

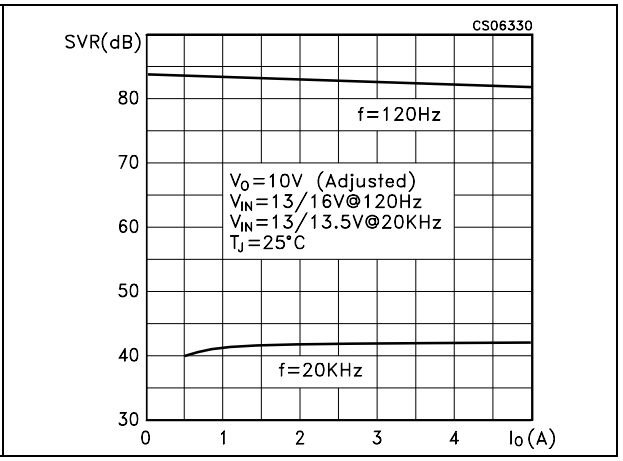


Figure 25. Stability

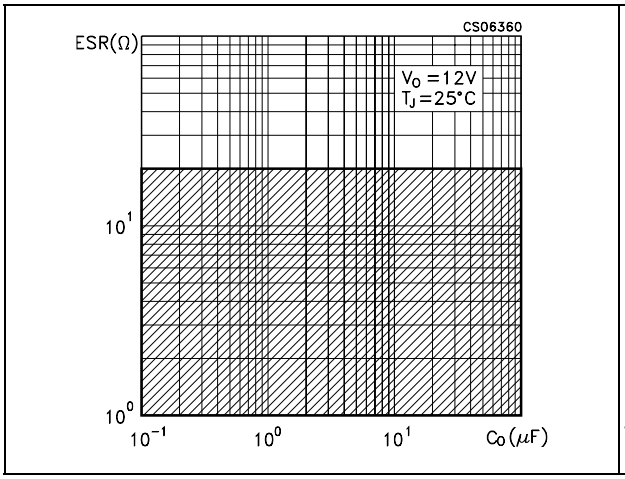
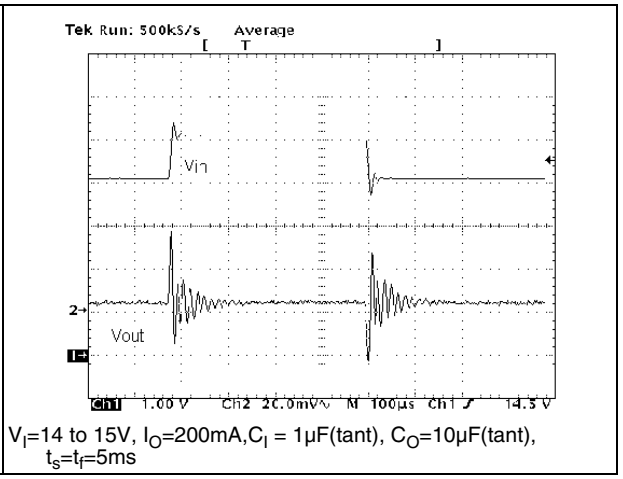
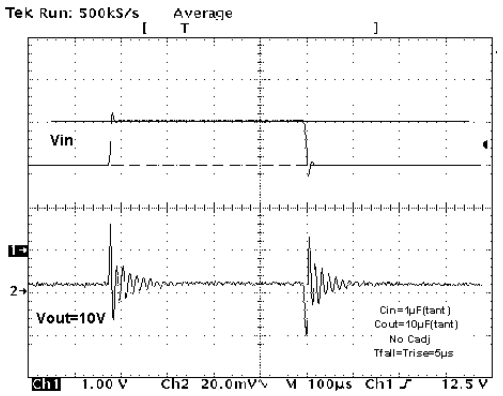


Figure 26. Line transient



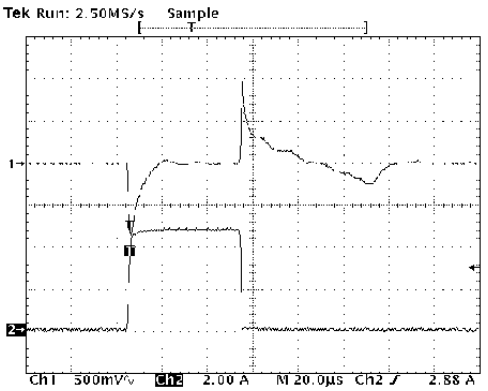
V_I=14 to 15V, I_O=200mA,C_I = 1µF(tant), C_O=10µF(tant), t_s=t_f=5ms

Figure 27. Line transient



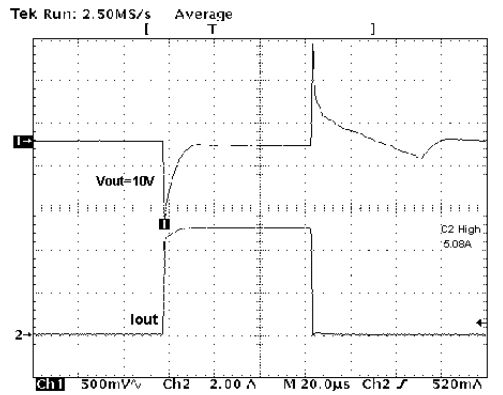
V_I=12 to 13V, I_O=200mA, C_I = 1µF(tant), C_O=10µF(tant), No C_{ADJ} t_s=t_f=5µs

Figure 28. Load transient



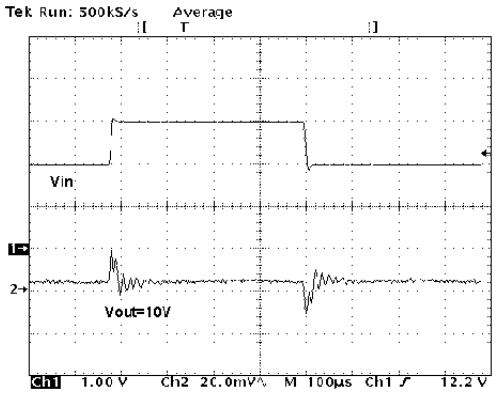
V_I=15 V, I_O=0.1 to 5 A, C_I = 1µF(tant), C_O=10µF(tant)

Figure 29. Load transient



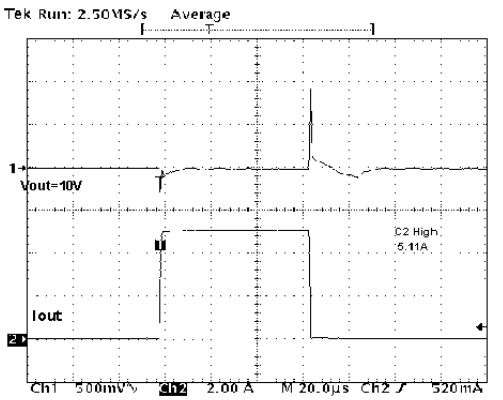
V_I=15 V, I_O=0.1 to 5 A, C_I = 1µF(tant), C_O=10µF(tant), No C_{ADJ}

Figure 30. 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 31. Load Transient



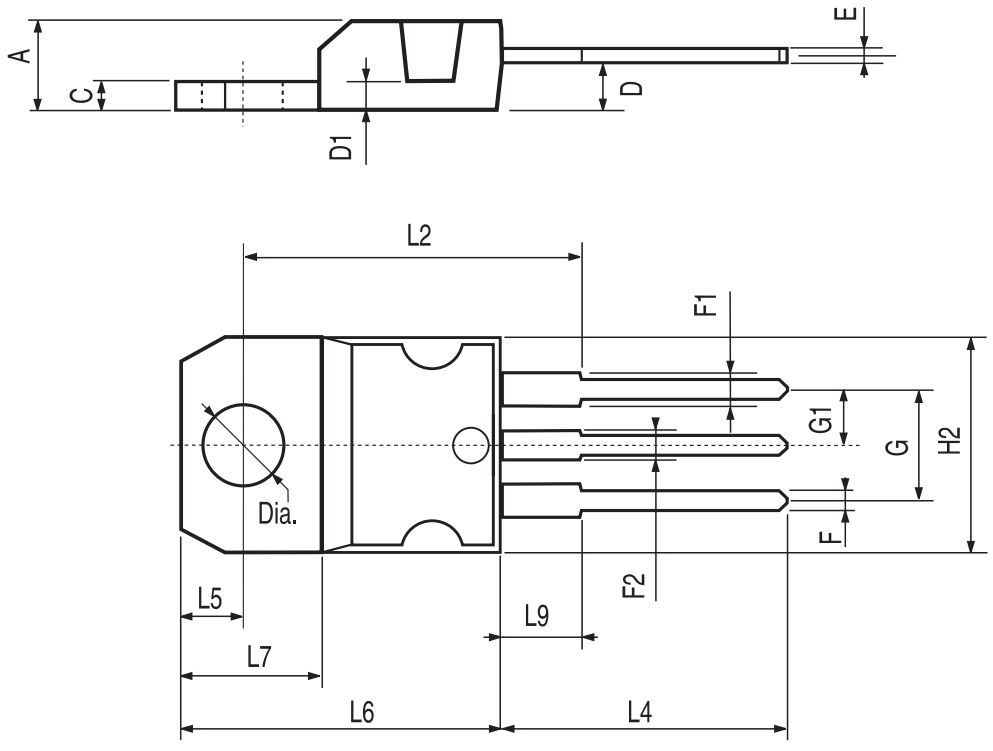
V_I=13 V, I_O=0.1 to 5 A, C_I = 1µF(tant), C_O=10µF(tant)

6 Package mechanical data

In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect. The category of second Level Interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com.

TO-220 MECHANICAL DATA

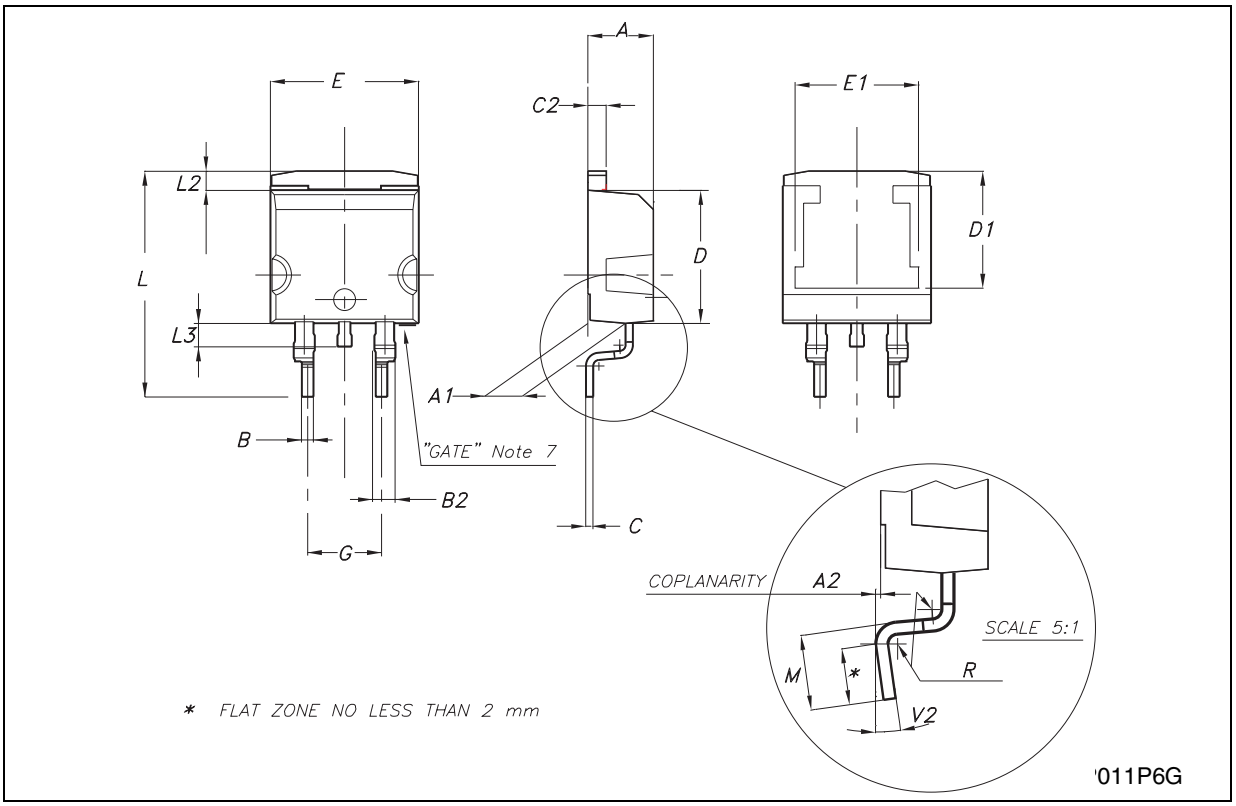
DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106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

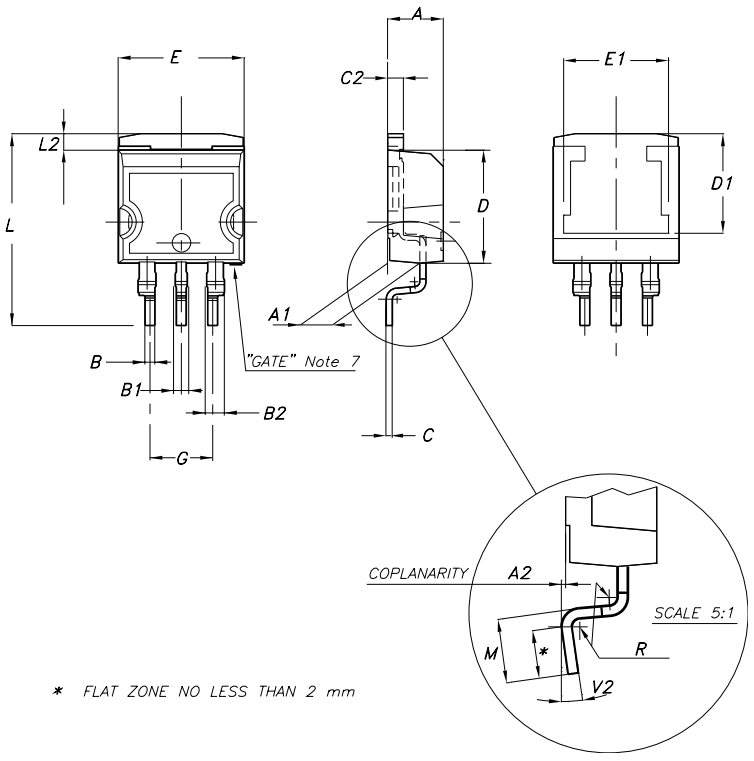
D²PAK MECHANICAL DATA

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°



D²PAK/A MECHANICAL DATA

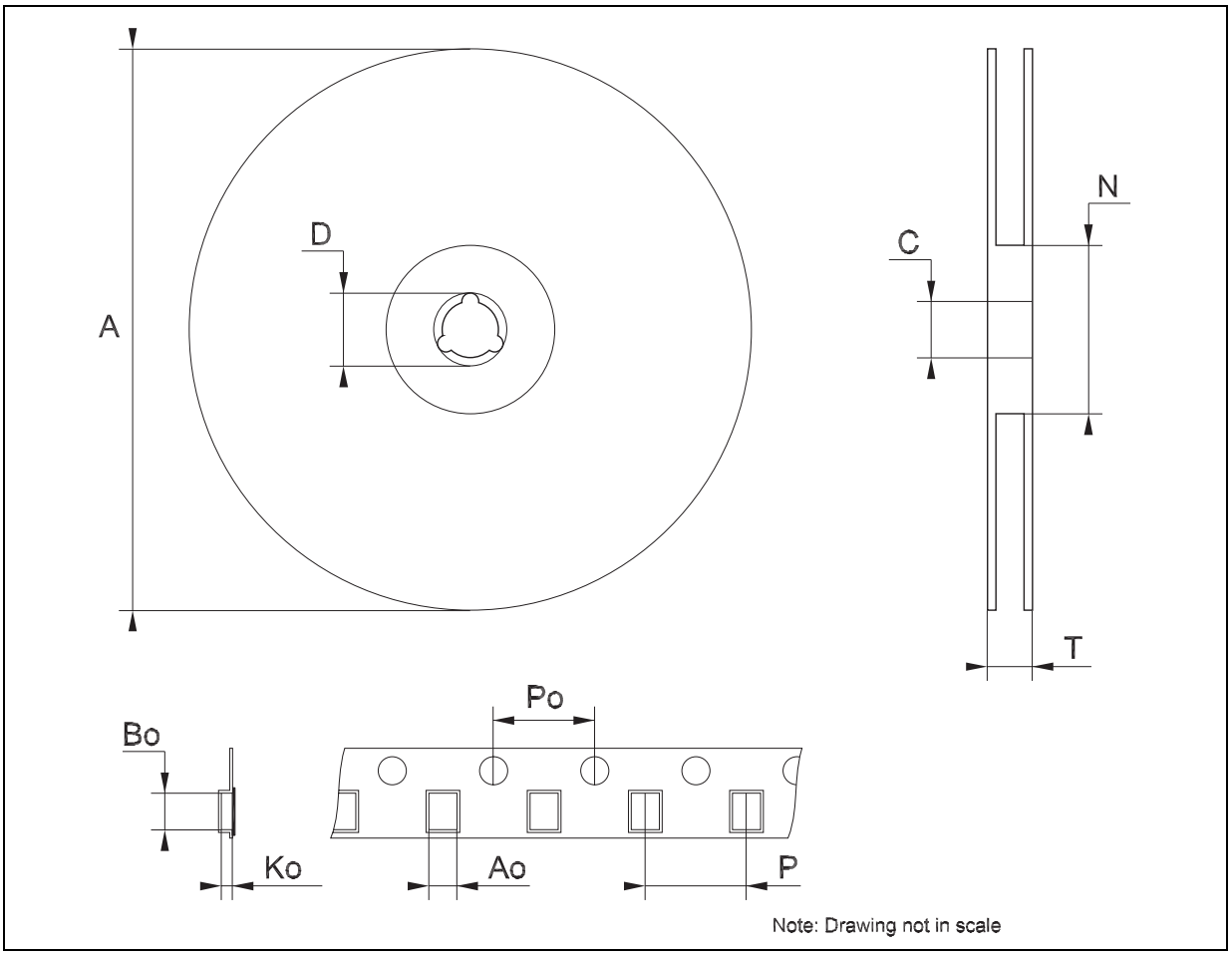
DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
A1	2.49		2.69	0.098		0.106
A2	0.03		0.23	0.001		0.009
B	0.7		0.93	0.028		0.037
B1	0.8		1.3	0.031		0.051
B2	1.14		1.7	0.045		0.067
C	0.45		0.60	0.018		0.024
C2	1.23		1.36	0.048		0.054
D	8.95		9.35	0.352		0.368
D1		8			0.315	
E	10		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

7 Order codes

Table 14. Order codes

Part numbers			
Packages			Output voltage
TO-220	D^2PAK	D^2PAK/A	
		LD1084D2M15R (1)	1.5 V
		LD1084D2M18R	1.8 V
LD1084V25		LD1084D2M25R	2.5 V
		LD1084D2M28R (1)	2.85 V
	LD1084D2T33R	LD1084D2M33R	3.3 V
		LD1084D2M36R	3.6 V
	LD1084D2T50R	LD1084D2M50R	5.0 V
		LD1084D2M80R	8.0 V
		LD1084D2M90R	9.0 V
LD1084V12	LD1084D2T12R	LD1084D2M12R	12.0 V
LD1084V	LD1084D2T-R	LD1084D2M-R	ADJ

1. Available on request.

8 Revision history

Table 15. Revision history

Date	Revision	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.
04-Apr-2007	6	Order Codes has been updated and the document has been reformatted.
07-Jun-2007	7	Order Codes has been updated.

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