5A LOW DROPOUT POSITIVE REGULATOR

IL1084-XX

Features
- ◆ Output Current : 5A
- ◆ Maximum Input Voltage : 12V
- ◆ Adjustable Output Voltage or Fixed
  1.5V, 1.8V, 2.5V, 2.85V, 3.3V, 3.6V, 5V
- ◆ Current Limiting and Thermal Protection
- ◆ Standard 3-Pin Power Packages

Applications
- ◆ Post Regulator for Switching DC/DC Converter
- ◆ High Efficiency Liner Regulators
- ◆ Battery Charger

Absolute Maximum Ratings **(Note 1)**

Power Dissipation **(Note 2)**

Internally Limited Junction Temperature **(Note 3)** 150°C

Storage Temperature Range -65°C to 150°C

Operating Ratings

Junction Temperature Range **(Note 3)** -10°C to 125°C

ELECTRICAL CHARACTERISTICS

Typicals and limits appearing in normal type apply for Tj= +25°C.
Limits appearing in **Boldface** type apply over the entire junction temperature range for operation.

Symbol	Parameter	Conditions	Min (Note 5)	Typ (Note 4)	Max (Note 5)	Units
VOUT	Output Voltage (Note 6) IL1084-Adj BT2	IOUT=10mA,VIN=4.25V 0≤IOUT≤IFULL LOAD 2.75V≤VIN≤10V	1.237 1.232 1.225	1.250 1.250 1.250	1.263 1.268 1.275	V
	IL1084-1.5 BT2	IOUT=10mA,VIN=4.5V 0≤IOUT≤IFULL LOAD 3.0V≤VIN≤10V	1.485 1.478 1.470	1.500 1.500 1.500	1.515 1.522 1.530	
	IL1084-1.8 BT2	IOUT=10mA,VIN=4.8V 0≤IOUT≤IFULL LOAD 3.3V≤VIN≤10V	1.782 1.773 1.764	1.800 1.800 1.800	1.818 1.827 1.836	
	IL1084-2.5 BT2	IOUT=10mA,VIN=5.5V 0≤IOUT≤IFULL LOAD 4.0V≤VIN≤10V	2.475 2.463 2.450	2.500 2.500 2.500	2.525 2.537 2.550	
	IL1084-2.85 BT2	IOUT=10mA,VIN=5.85V 0≤IOUT≤IFULLLOAD 4.35V≤VIN≤10V	2.820 2.805 2.790	2.850 2.850 2.850	2.880 2.895 2.910	
	IL1084-3.3 BT2	IOUT=10mA,VIN=6.3V 0≤IOUT≤IFULL LOAD 4.8V≤VIN≤10V	3.270 3.250 3.235	3.300 3.300 3.300	3.330 3.350 3.365	
	IL1084-3.6 BT2	IOUT=10mA,VIN=6.6V 0≤IOUT≤IFULL LOAD 5.1V≤VIN≤10V	3.564 3.546 3.528	3.600 3.600 3.600	3.636 3.654 3.672	
	IL1084-5.0 BT2	IOUT=10mA,VIN=8.0V 0≤IOUT≤IFULL LOAD 6.5V≤VIN≤10V	4.950 4.925 4.900	5.000 5.000 5.000	5.050 5.075 5.100	

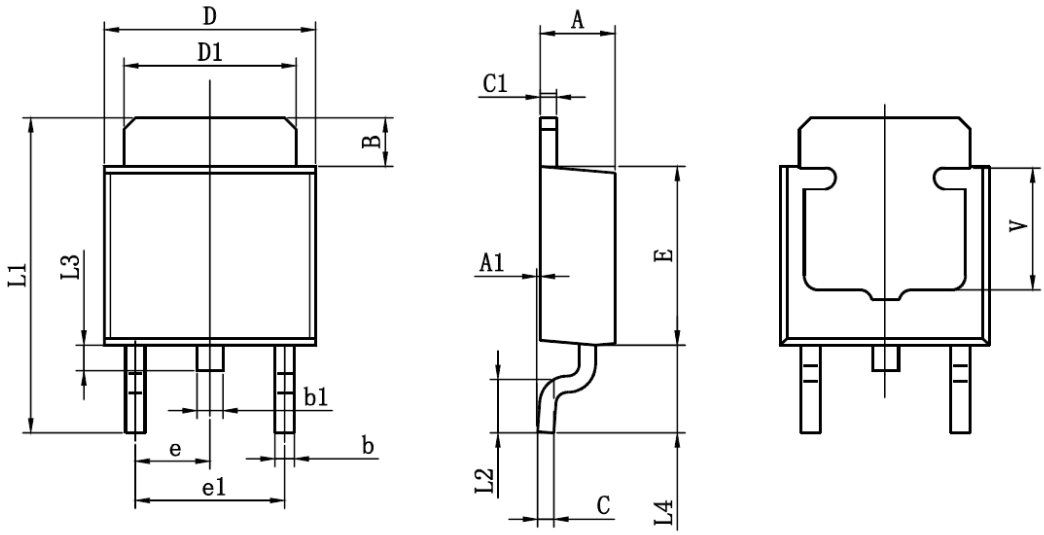
ELECTRICAL CHARACTERISTICS

Typicals and limits appearing in normal type apply for Tj= +25°C.
Limits appearing in **Boldface** type apply over the entire junction temperature range for operation.

Symbol	Parameter	Conditions	Min (Note 5)	Typ (Note 4)	Max (Note 5)	Units
ΔVOUT	Line Regulation (Note 7) IL1084-Adj BT2	IOUT=10mA, 2.75V≤VIN≤10V	–	–	0.3 0.4	%
	IL1084-1.5 BT2	IOUT=10mA, 3.0V≤VIN≤10V	– –	– –	6 10	mV
	IL1084-1.8 BT2	IOUT=10mA, 3.3V≤VIN≤10V	– –	– –	6 10	
	IL1084-2.5 BT2	IOUT=10mA, 4.0V≤VIN≤10V	– –	– –	6 10	
	IL1084-2.85 BT2	IOUT=10mA, 4.35V≤VIN≤10V	– –	– –	6 10	
	IL1084-3.3 BT2	IOUT=10mA, 4.8V≤VIN≤10V	– –	– –	6 10	
	IL1084-3.6 BT2	IOUT=10mA, 5.1V≤VIN≤10V	– –	– –	6 10	
	IL1084-5.0 BT2	IOUT=10mA, 6.5V≤VIN≤10V	– –	– –	6 10	
ΔVOUT	Load Regulation (Note 7) IL1084-Adj BT2	VIN=4.25V, 0≤IOUT≤IFULL LOAD	--	--	0.3 0.4	%
	IL1084-1.5 BT2 IL1084-1.8 BT2 IL1084-2.5 BT2 IL1084-2.85 BT2	VIN=5.0V, 0≤IOUT≤IFULL LOAD	--	--	12 20	mV
	IL1084-3.3 BT2	VIN=5.0V, 0≤IOUT≤IFULL LOAD	– –	– –	15 20	
	IL1084-3.6 BT2	VIN=5.3V, 0≤IOUT≤IFULL LOAD	– –	– –	15 25	
	IL1084-5.0 BT2	VIN=8.0V, 0≤IOUT≤IFULL LOAD	– –	– –	20 35	
ΔV	Dropout Voltage (Note 8)	ΔVREF=1%, IOUT=5A	–	–	1.5	V
IO(MIN)	Minimum Load Current	VIN=10V	–	–	10	mA
ILIMIT	Current Limit	VIN=6.25V	5.5	–	–	A
IADJ	Adjust Pin Current	VIN=2.75÷10V,IOUT=10mA	–	–	120	μA
ΔIADJ	Adjust Pin Current Change	IOUT=10mA÷5A, VIN=2.75÷10V	–	–	5	μA
RR	Ripple Rejection	fRIPPLE = 120Hz, COUT=25μF Tantalum, Iout=5A;VIN=4.25V	60	–	–	dB
S	Temperature Stability		–	0.5	–	%

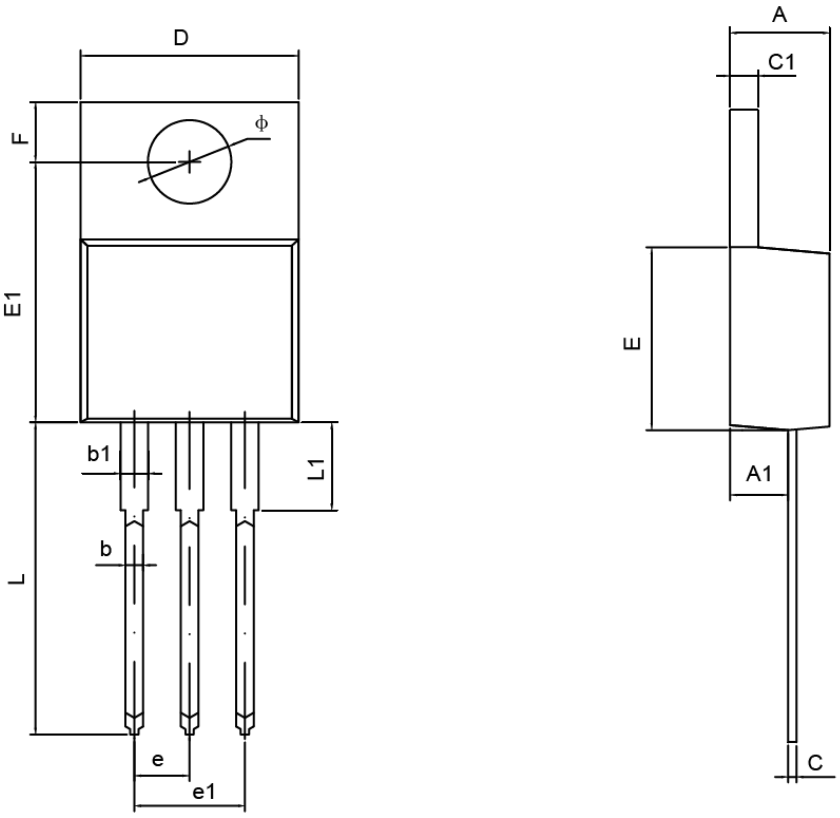
NOTES 1: Rating indicate conditions for which the device is intended to be functional, but specific performance is not Guaranteeed. For guaranteed specifications and the test conditions, see the Electrical Characteristics.
NOTES 2: Power Dissipation is kept in a safe range by current limiting circuitry. Refer to Overload Recovery in Application Notes. **NOTES 3:** The maximum power dissipation is a function of Tj(MAX), ΘjA and TA . The maximu allowable power dissipation at any ambient temperature is PD=(Tj(MAX) – TA)ΘjA .**NOTES 4:** Typical Values represent the most likely parametric norm **NOTES 5:** All limits are guaranteed by testing or statistical analysis
NOTES 6: IFULL LOAD is defind in the current limit curves . The IFULL LOAD curve defines the current limit as function
NOTES 7: Load and Line regulation are measured at constant junction temperature , and are guaranteed up to the maximum power dissipation of 30W.Power dissipation is determined by the input/output differential and the output current. Guaranteed maximum power dissipation will not be available over the full input/output range. **NOTES 8:** Dropout voltage is specified over the full output current range of the device

TO-252-2L PACKAGE OUTLINE DIMENSIONS



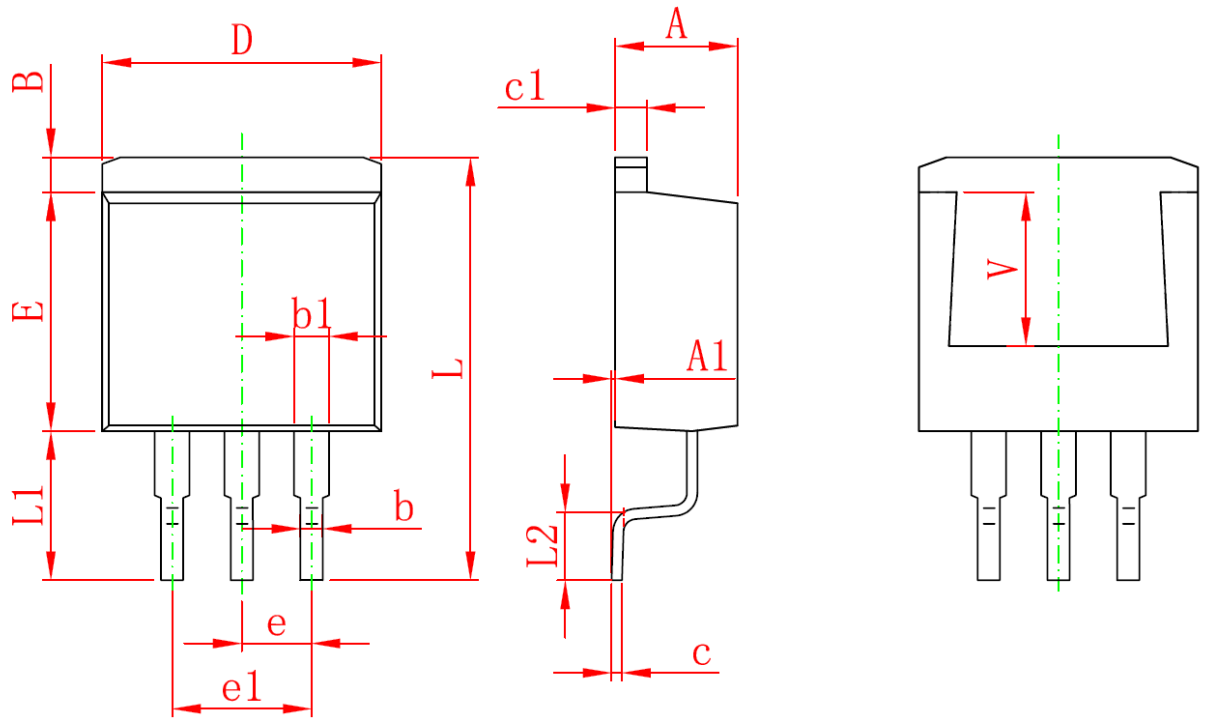
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300TYP		0.091TYP	
e1	4.500	4.700	0.177	0.185
L1	9.500	9.900	0.374	0.390
L2	1.400	1.780	0.055	0.070
L3	0.650	0.950	0.026	0.037
L4	2.550	2.900	0.100	0.114
V	3.80REF		0.150REF	

TO-220-3L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	1.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.710	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540TYP		0.100TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
ϕ	3.790	3.890	0.149	0.153

TO-263-3L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.170	1.370	0.046	0.054
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
L	15.050	15.450	0.593	0.608
L1	5.080	5.480	0.200	0.216
L2	2.340	2.740	0.092	0.108
V	5.600 REF		0.220 REF	