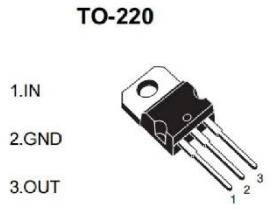
Linear Voltage Regulator

Lumimax Optoelectronic Tech.

L7808 Three-terminal positive voltage regulator

FEATURES

- Maximum Output Current I_{OM}: 1.5A
- Output Voltage V_O: 8V
- Continuous total dissipation
  P_D: 1.5W(T_A=25°C)
  15W(T_C=25°C)



ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

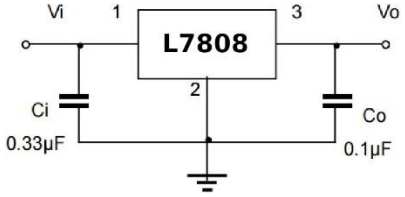
Parameter	Symbol	Value	UNIT
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3	°C/W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	8.3	°C/W
Operating Junction Temperature Range	T_{OPR}	0 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

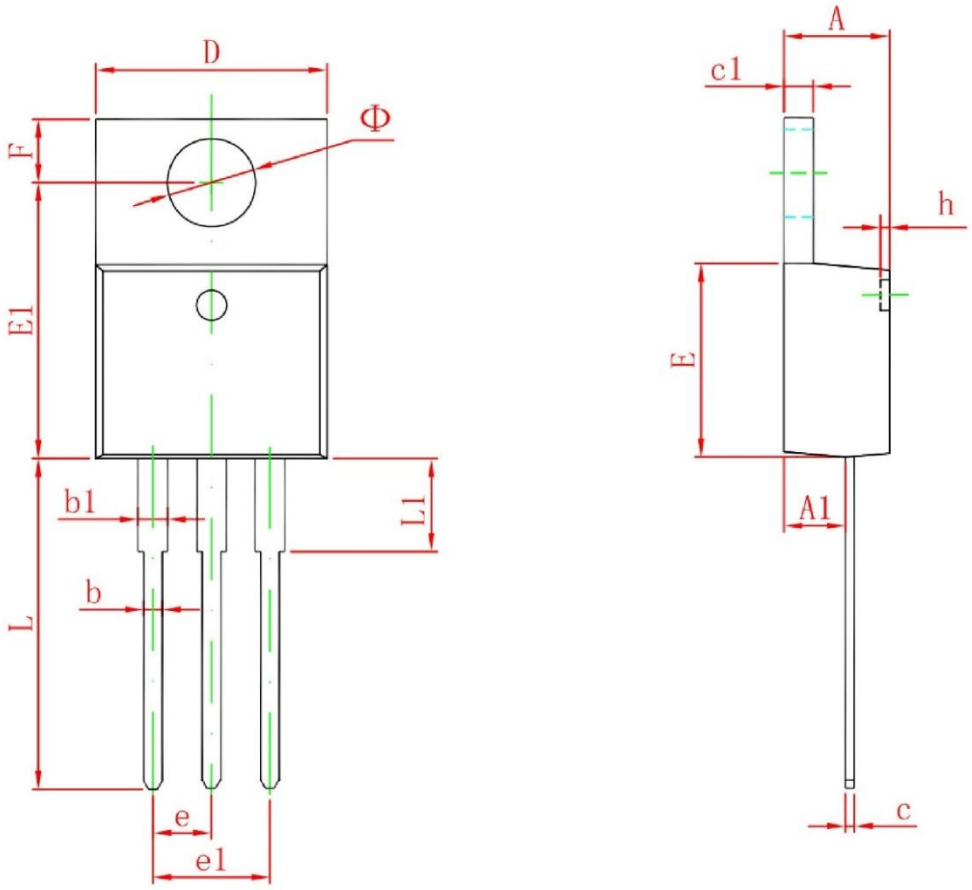
(V_i=14V, I_O=500mA, C_i=0.33μF, C_O=0.1μF, unless otherwise specified)

Parameter	Symbol	Test conditions		MIN	TYP	MAX	UNIT
Output Voltage	V_O		25°C	7.7	8	8.3	V
		10.5V≤V_i≤23V, I_O=5mA-1A, P≤15W	0~125°C	7.6	8	8.4	
Load Regulation	ΔV_O	I_O=5mA-1.5A	25°C		12	160	mV
		I_O=250mA-750mA	25°C		4	80	
Line Regulation	ΔV_O	10.5V≤V_i≤25V	25°C		6	160	mV
		11V≤V_i≤17V	25°C		2	80	
Quiescent Current	I_Q		25°C		4.3	8	mA
Quiescent Current Change	ΔI_Q	10.5V≤V_i≤25V	0~125°C			1	mA
		5mA≤I_O≤1A	0~125°C			0.5	
Output Noise Voltage	V_N	10Hz≤F≤100KHz	25°C		52		μV
Output Voltage Drift	$\Delta V_O/\Delta T$	I_O=5mA	0~125°C		-0.8		mV/°C
Ripple Rejection	RR	11.5V≤V_i≤21.5V, F=120Hz	0~125°C	55	72		dB
Dropout Voltage	V_D	I_O=1A	25°C		2		V
Output Resistance	R_O	F=1KHz	25°C		10		mΩ
Short Circuit Current	I_{SC}		25°C		450		mA
Peak Current	I_{PK}		25°C		2.2		A

TYPICAL APPLICATION



TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	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	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
Φ	3.735	3.935	0.147	0.155