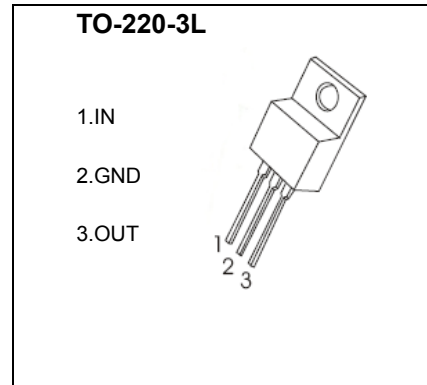


TO-220-3L Plastic-Encapsulate Voltage Regulators

7812 Three-terminal positive voltage regulator

FEATURES

Maximum Output current I_{OM} : 1.5 A
 Output voltage V_o : 12 V
 Continuous total dissipation
 P_D : 1.5 W ($T_a = 25^\circ\text{C}$)
 15 W ($T_c = 25^\circ\text{C}$)



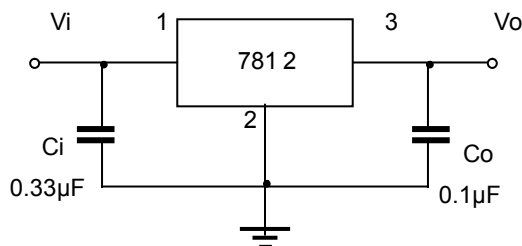
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	66.7	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	6.67	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_{OPR}	-25~+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55~+150	$^\circ\text{C}$

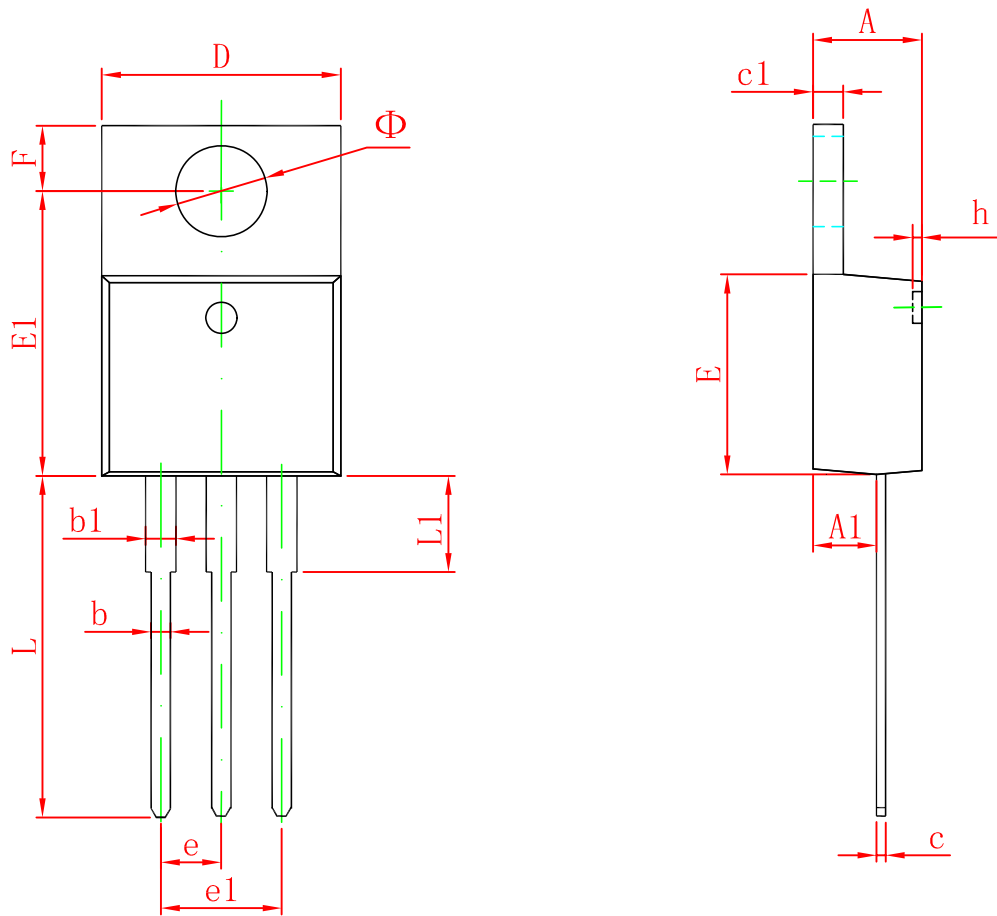
ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=19V, I_o=500mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	V_o	25°C	11.5	12.0	12.5	V
		$I_o = 5.0\text{mA} - 1.0\text{A}, P \leq 15\text{W}$ $14.5\text{V} \leq V_i \leq 27\text{V}$	0-125 $^\circ\text{C}$	11.4	12	12.6
Load Regulation	ΔV_o	$14.5\text{V} \leq V_i \leq 30\text{V}$	25°C	10	240	mV
		$16\text{V} \leq V_i \leq 22\text{V}$	25°C	3	120	mV
Line regulation	ΔV_o	$I_o = 5\text{mA} - 1.5\text{A}$	25°C	12	240	mV
		$I_o = 250\text{mA} - 750\text{mA}$	25°C	4	120	mV
Quiescent Current	I_q	25°C		4.3	8	mA
Quiescent Current Change	ΔI_q	$5.0\text{mA} \leq I_o \leq 1.0\text{A}$	0-125 $^\circ\text{C}$		0.5	mA
		$14.5\text{V} \leq V_i \leq 30\text{V}$	0-125 $^\circ\text{C}$		1.0	mA
Output voltage drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$	0-125 $^\circ\text{C}$	-1		mV/ $^\circ\text{C}$
Output Noise Voltage	V_N	$f = 10\text{Hz} \text{ to } 100\text{KHz}$	25°C	75		μV
Ripple Rejection	RR	$f = 120\text{Hz}, 15\text{V} \leq V_i \leq 25\text{V}$	0-125 $^\circ\text{C}$	55	71	dB
Dropout Voltage	V_d	$I_o = 1.0\text{A}$	25°C	2		V
Output resistance	R_o	$f = 1\text{KHz}$	25°C	18		m Ω
Short Circuit Current	I_{sc}	25°C		350		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