

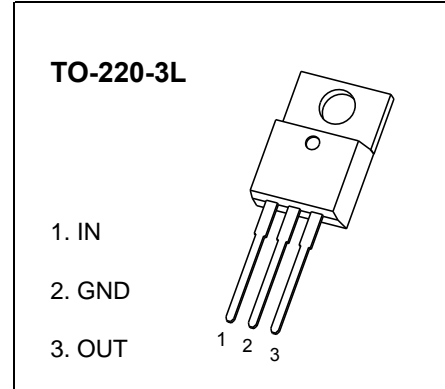
TO-220-3L Plastic-Encapsulate Voltage Regulator

CJ78M12 Three-terminal positive voltage regulator

FEATURES

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- Maximum output current
 $I_{OM}: 0.5A$
- Output voltage
 $V_O: 12 V$
- Continuous total dissipation
 $P_D: 1.5W (T_a = 25^\circ C)$



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

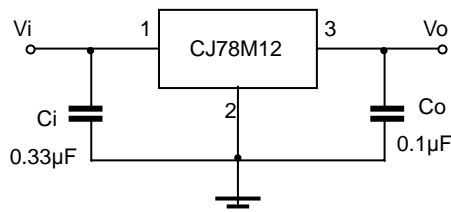
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	66.7	$^\circ C/W$
Operating Junction Temperature Range	T_{OPR}	-25~+125	$^\circ C$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ C$

ELECTRICAL CHARACTERISTICS ($V_i=19V, I_o=350mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output Voltage	V_o	$25^\circ C$	11.5	12	12.5	V	
		$14.5 \leq V_i \leq 27V, I_o=5mA-350mA$	-25-125 $^\circ C$	11.4	12	12.6	V
Load Regulation	ΔV_o	$I_o=5mA-500mA$	$25^\circ C$		25	240	mV
		$I_o=5mA-200mA$	$25^\circ C$		10	120	mV
Line Regulation	ΔV_o	$14.5V \leq V_i \leq 30V, I_o=200mA$	$25^\circ C$		10	100	mV
		$16V \leq V_i \leq 30V, I_o=200mA$	$25^\circ C$		3	50	mV
Quiescent Current	I_q		$25^\circ C$		4.6	6	mA
Quiescent Current Change	ΔI_q	$14.5V \leq V_i \leq 30V, I_o=200mA$	-25-125 $^\circ C$			0.8	mA
		$5mA \leq I_o \leq 350mA$	-25-125 $^\circ C$			0.5	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100KHz$	$25^\circ C$		75	$\mu V/V_o$	
Ripple Rejection	RR	$15 \leq V_i \leq 25V, f=120Hz, I_o=300mA$	-25-125 $^\circ C$	55	80	dB	
Dropout Voltage	V_d	$I_o=350mA$	$25^\circ C$		2	V	
Short Circuit Current	I_{sc}	$V_i=19V$	$25^\circ C$		240	mA	
Peak Current	I_{pk}		$25^\circ C$		0.7	A	

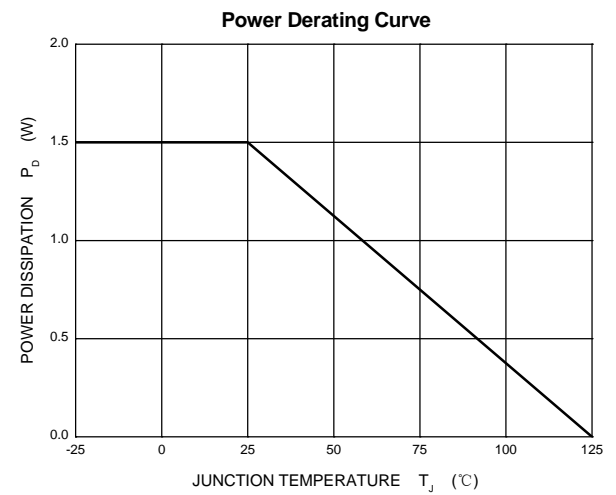
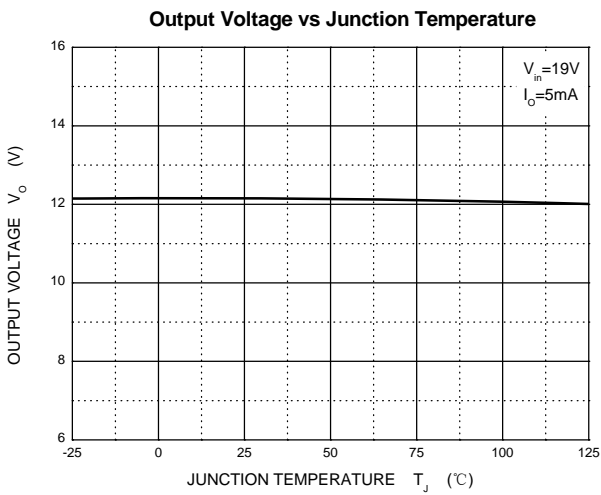
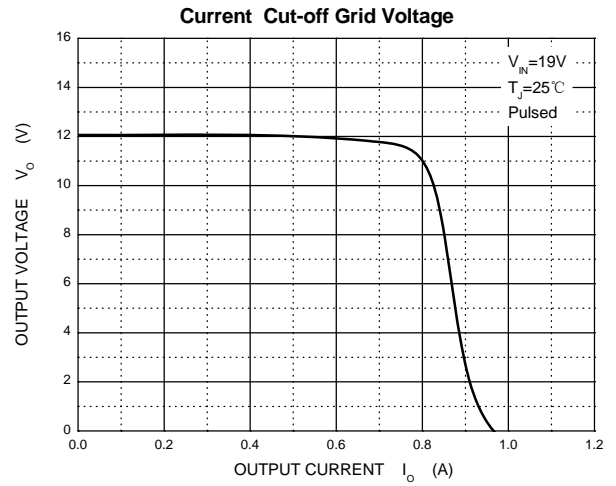
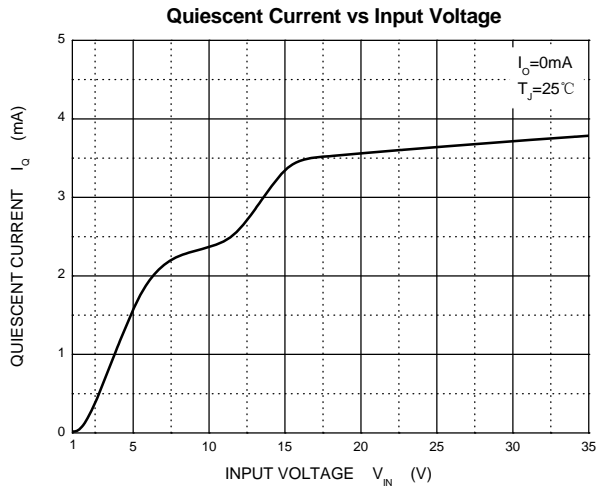
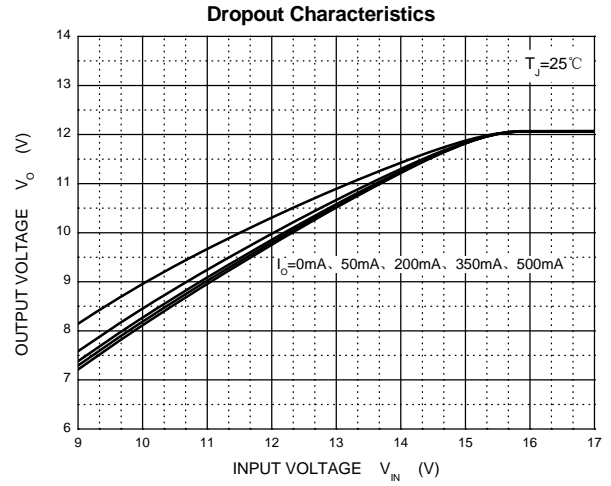
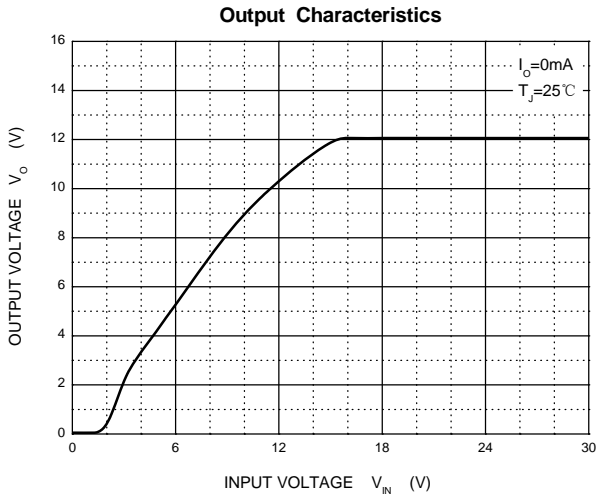
* Pulse test.

TYPICAL APPLICATION

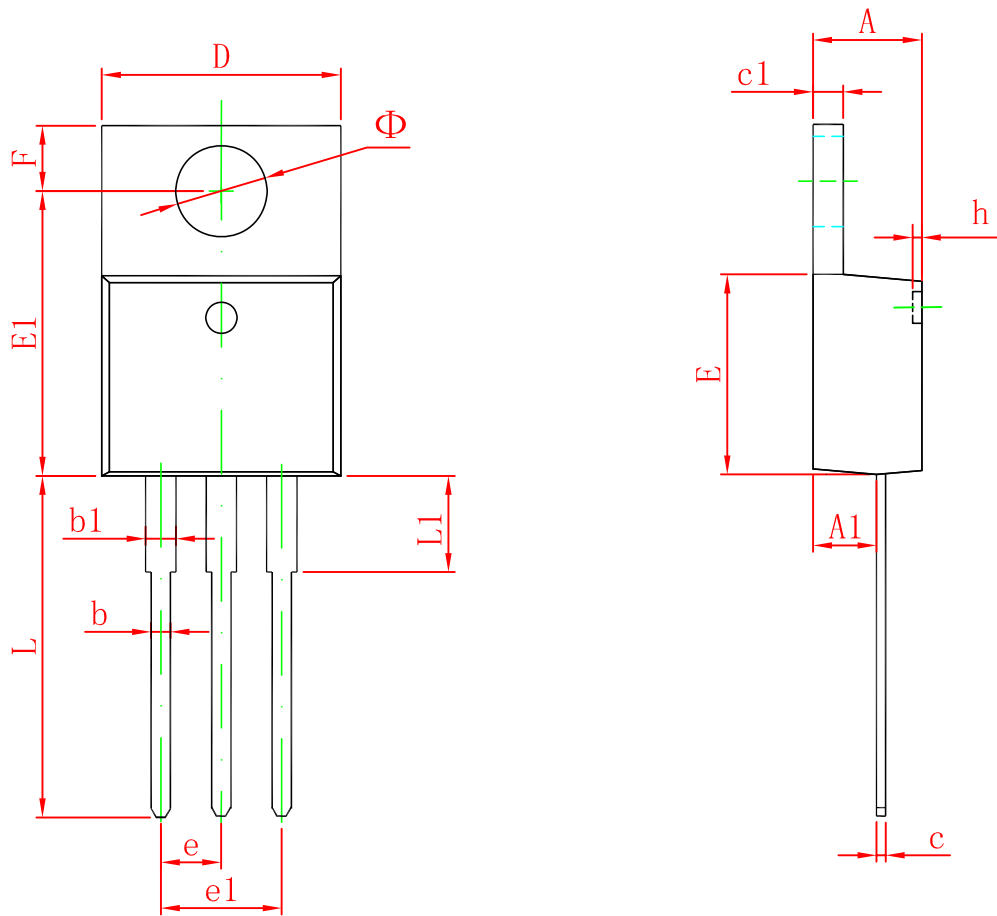


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics



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