TECH PUBLIC
台舟电子

78M12

1 Ampere Surface Mount Negative Three Terminal Voltage Regulator

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Features

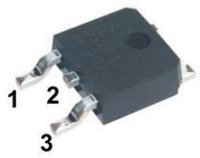
Input voltage:up to 35V

- Output voltage:12V
- Output current up to 500 mA, internal thermal overload protection and short-circuit current limiting.

Application

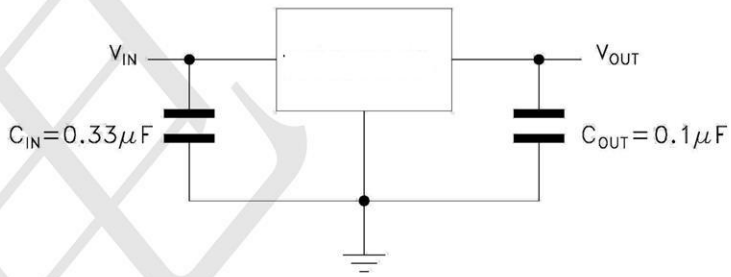
- Voltage Regulator.

Package and Pin Configuration



1.IN 2.GND 3.OUT

Standard Application Circuit



Marking:

"78M09" is part number,fixed

"xx" is internal code

Absolute Maximum Ratings

Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Input Voltage	V_I	35	V
Thermal Resistance,Junction-to-Air	$R_{\theta JA}$	100	°C/W
Operating Temperature Range	T_{OPR}	-40 to +125	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

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Electrical Characteristics

Ratings at T_J = 25°C, V_I=10V, Io=40mA, Ci=0.33μF,Co=0.1μF,unless otherwise specified.

Parameter	Symbols	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_O	T_J=25°C	11.5	12	12.5	V
		5mA ≤ I_O ≤ 350mA V_I=14.5V to 27V	11.4	12	12.6	
Line Regulation	$\triangle V_O$	V_O = 14.5 V to 30 V			100	mV
		V_I = 16 V to 30 V			50	mV
Load Regulation	$\triangle V_O$	I_O = 5 mA to 500 mA			240	mV
		I_O = 5 mA to 200 mA			120	mV
Ripple Rejection	RR	V_I= 15~25 V, f=120Hz	55	80		dB
Output Noise Voltage	V_N	f=10Hz~100Hz, T_J=25°C		75		μV
Dropout Voltage	V_D	Io=1A		2		V
Quiescent Current	I_Q	T_J = 25°C			6	mA
Quiescent Current Change	$\triangle I_Q$	I_O = 5 mA to 350 mA, T_J = 25°C			0.5	mA
		V_I = 14.5 V to 30 V, T_J = 25°C			0.8	

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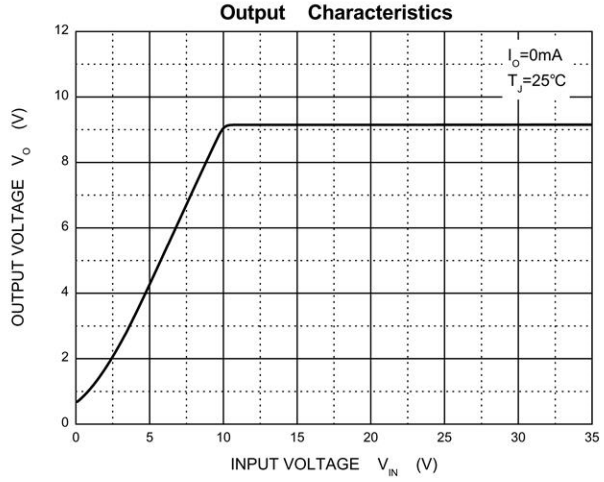
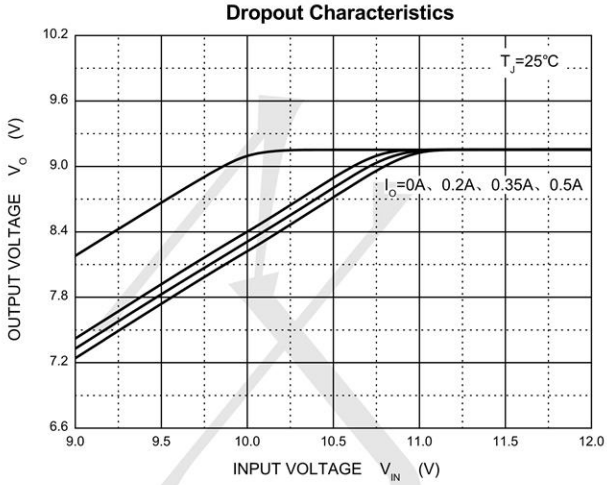
Typical Characteristics

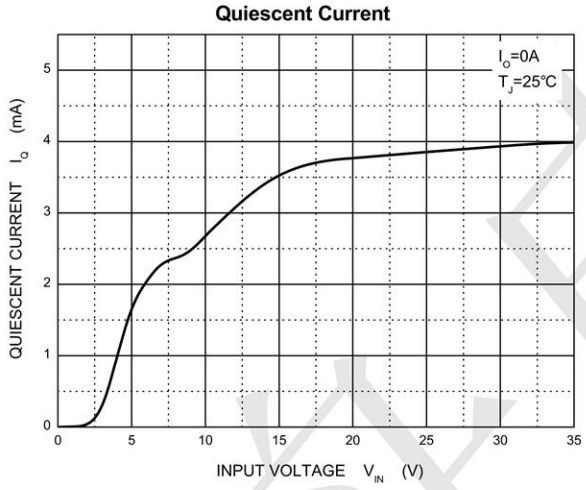
Output Characteristics



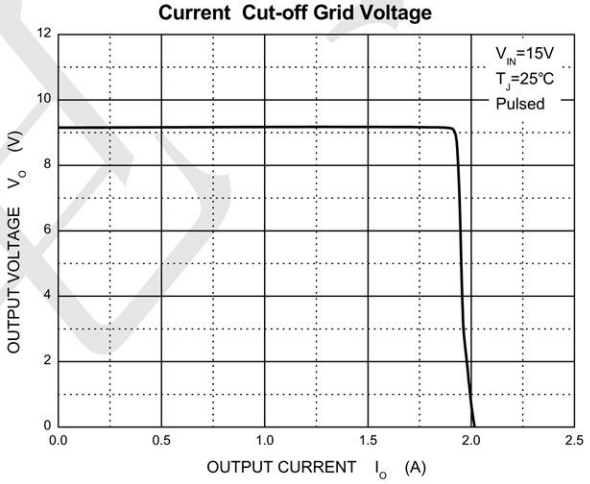
Dropout Characteristics



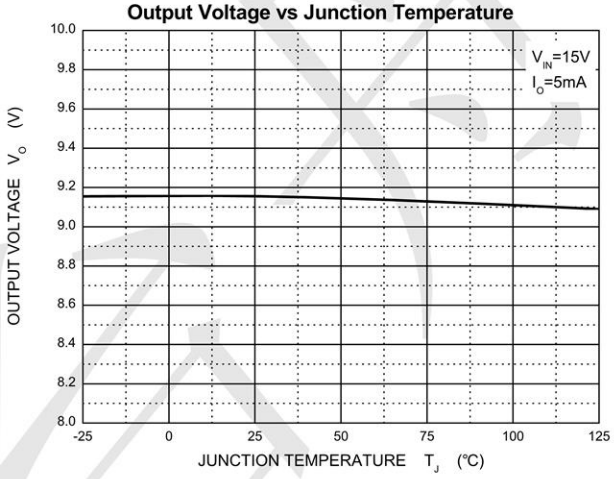
Quiescent Current



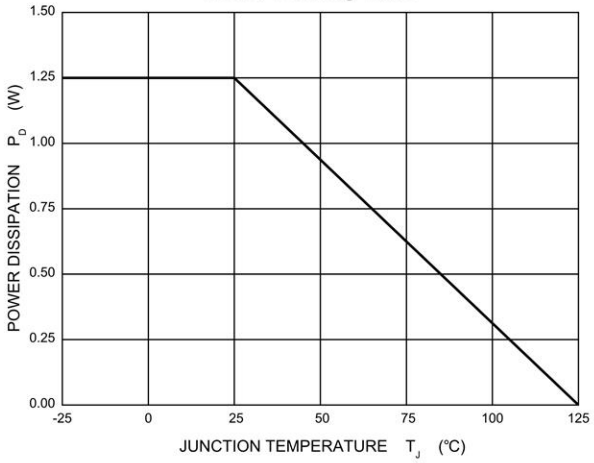
Current Cut-off Grid Voltage



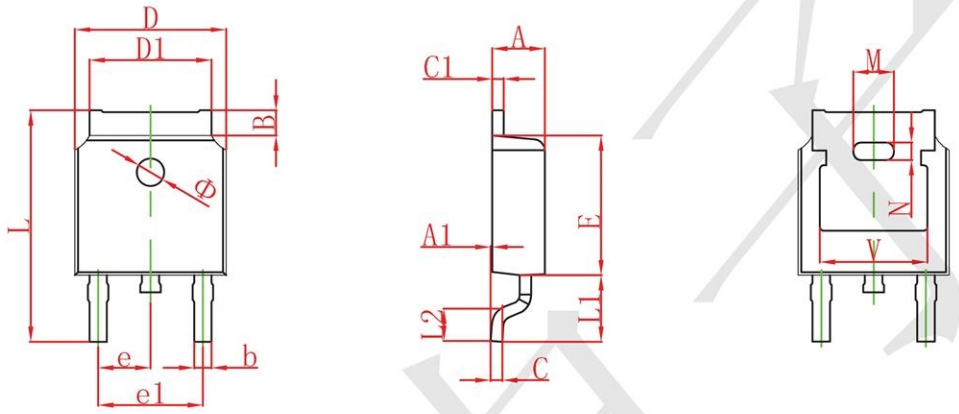
Output Voltage vs Junction Temperature



Power Derating Curve



TO252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
B	0.800	1.400	0.031	0.055
b	0.710	0.810	0.028	0.032
c	0.460	0.560	0.018	0.022
c1	0.460	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
E	6.000	6.200	0.236	0.244
e	2.286 TYP.		0.090 TYP.	
e1	4.327	4.727	0.170	0.186
M	1.778REF.		0.070REF.	
N	0.762REF.		0.018REF.	
L	9.800	10.400	0.386	0.409
L1	2.9REF.		0.114REF.	
L2	1.400	1.700	0.055	0.067
V	4.830 REF.		0.190 REF.	
Φ	1.100	1.300	0.043	0.051