

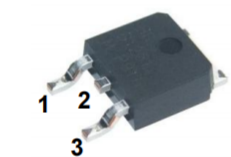
Features

- Input voltage: up to 35V
- Output voltage: 9V
- 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

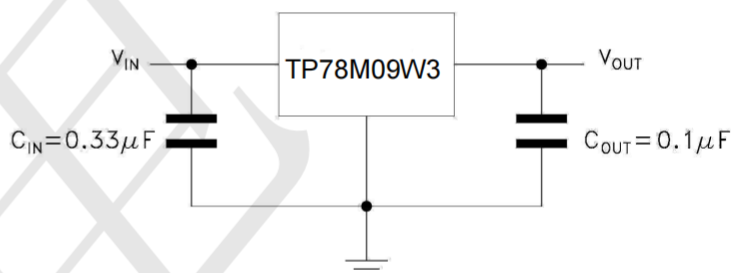
Marking:



"78M09" is part number, fixed

"xx" is internal code

Standard Application Circuit



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

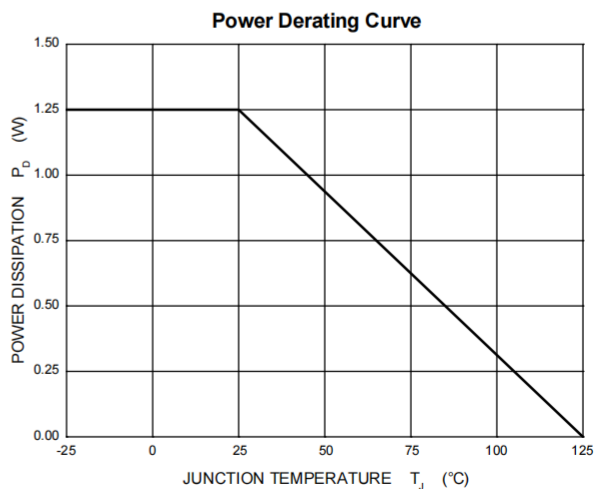
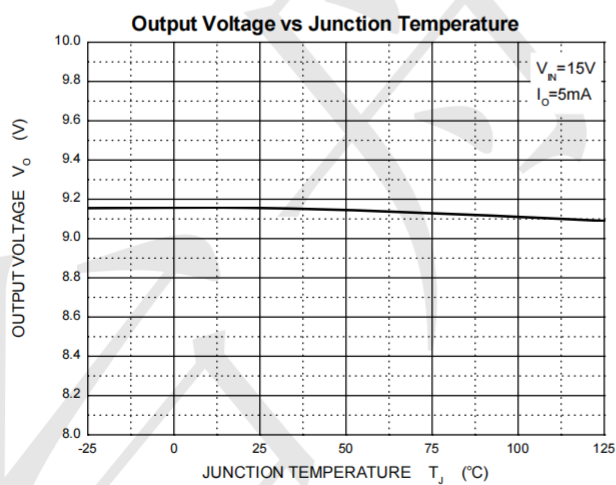
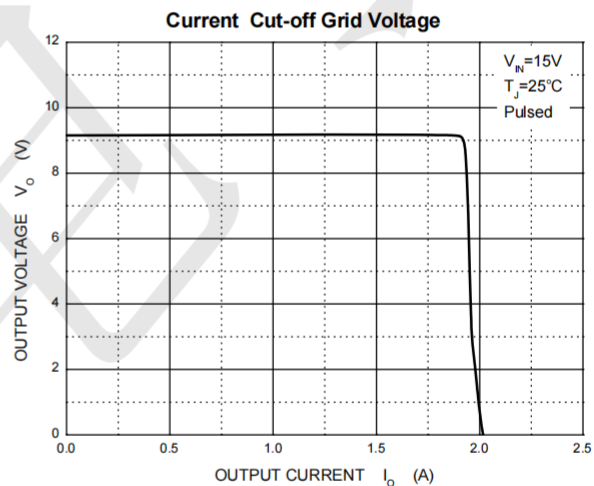
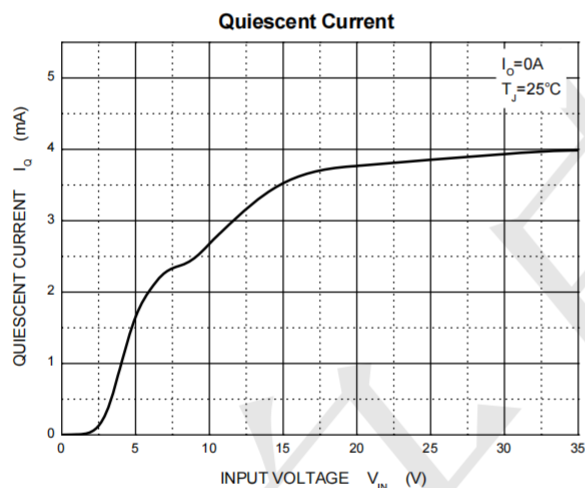
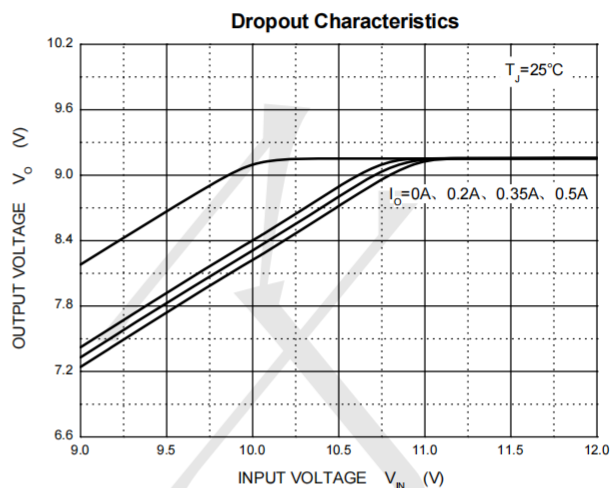
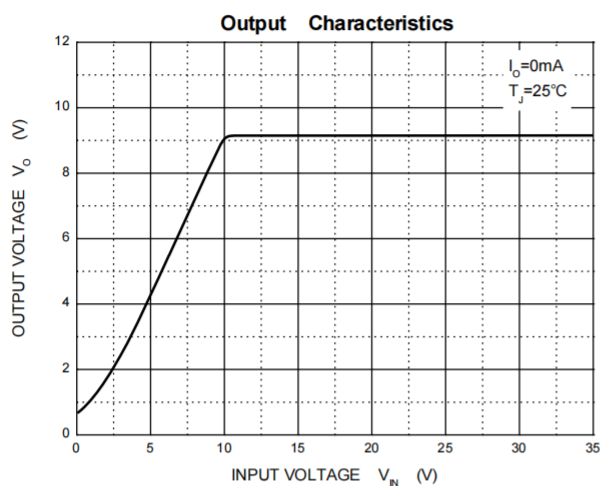
Parameter	Symbol	Value	Unit
Input Voltage	V_I	35	V
Thermal Resistance, Junction-to-Air	$R_{\theta JA}$	100	°C/W
Operating Temperature Range	T_{OPR}	-40 to +125	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

Electrical Characteristics

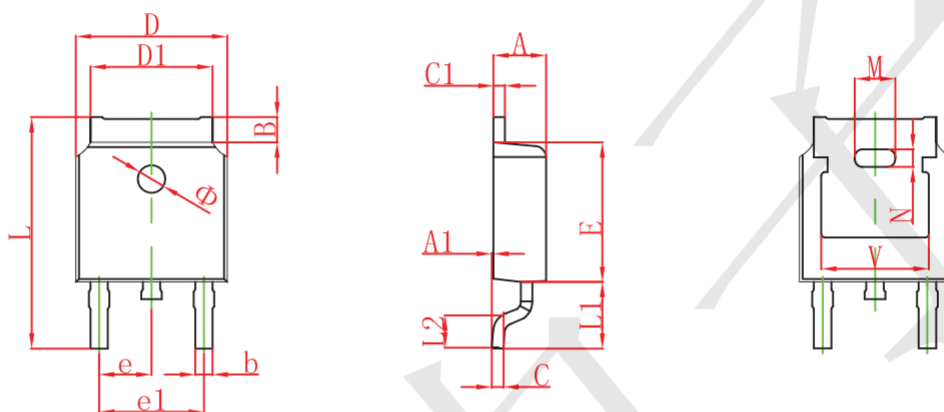
Ratings at $V_i=15V$, $I_o=350mA$, $C_i=0.33\mu F$, $C_o=0.1\mu F$, $T_J = 25^\circ C$ unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_o		8.65	9	9.35	V
		$V_i=11.5V\sim 24V$, $I_o=5mA\sim 350mA$	8.55	9	9.45	V
Load Regulation	ΔV_o	$I_o=5mA\sim 500mA$	—	—	180	mV
		$I_o=5mA\sim 200mA$	—	—	90	mV
Line Regulation	ΔV_o	$V_i=11.5V\sim 25V$, $I_o=200mA$	—	—	180	mV
		$V_i=12V\sim 25V$, $I_o=200mA$	—	—	90	mV
Output Noise Voltage	V_N	$f=10Hz\sim 100KHz$	—	58	—	μV
Ripple Rejection	RR	$V_i=13V\sim 23V$, $f=120Hz$, $I_o=300mA$	56	—	—	dB
Quiescent Current	I_Q		—	—	6	mA
Quiescent Current Change	ΔI_Q	$V_i=11.5V\sim 25V$, $I_o=200mA$	—	—	0.8	mA
		$I_o=5mA\sim 350mA$	—	—	0.5	mA
Dropout Voltage	V_D	$I_o=350mA$	—	2	—	V
Short Circuit Current	I_{sc}	$V_i=35V$	—	50	—	mA

Typical Characteristics



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