



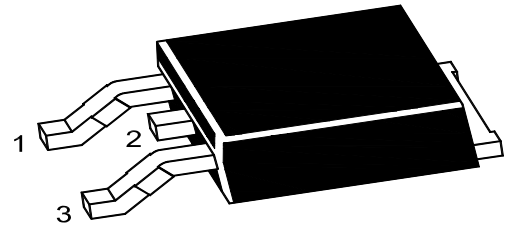
# PJ78M09TE

## 3-Terminal Voltage Regulator

### Features

- Input Voltage up to 35V
- Output Voltage: 9V  
Output Current: 0.5A (Max)
- Overload Protection and Short-Circuit Limiting.

TO-252



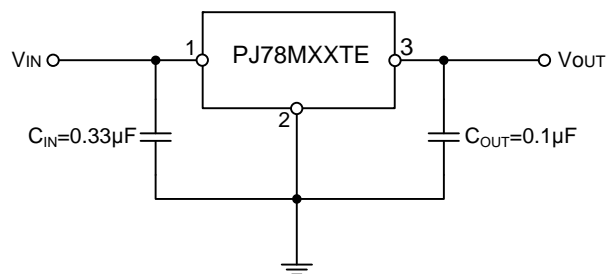
1.IN 2.GND 3.OUT

### Absolute Maximum Ratings

Ratings at  $T_A = 25^\circ\text{C}$  unless otherwise specified.

Parameter	Symbol	Value	Unit
Input Voltage	$V_I$	35	V
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	100	$^\circ\text{C}/\text{W}$
Thermal Resistance Junction-Case	$R_{\theta JC}$	8.0	$^\circ\text{C}/\text{W}$
Operating Temperature Range	$T_{\text{OPR}}$	-40~125	$^\circ\text{C}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{STG}}$	-55~150	$^\circ\text{C}$

### Application Circuit





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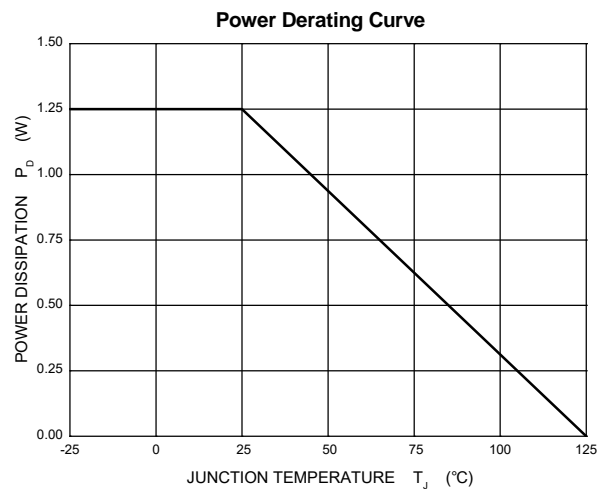
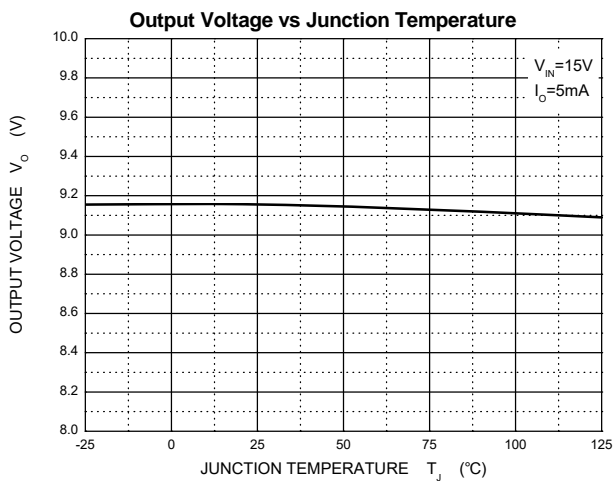
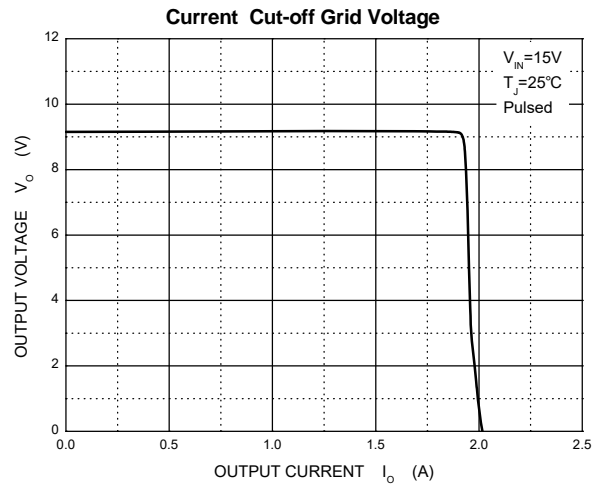
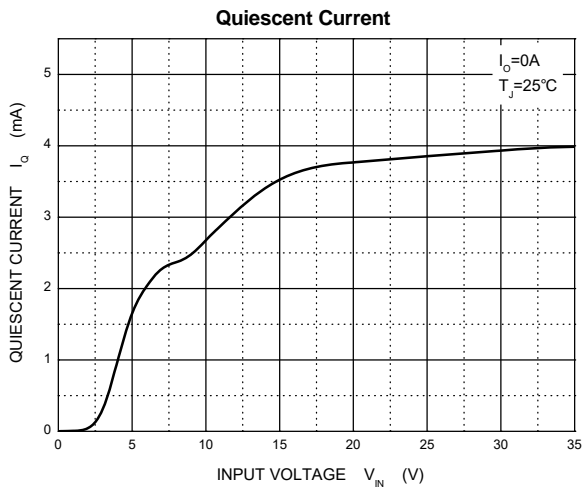
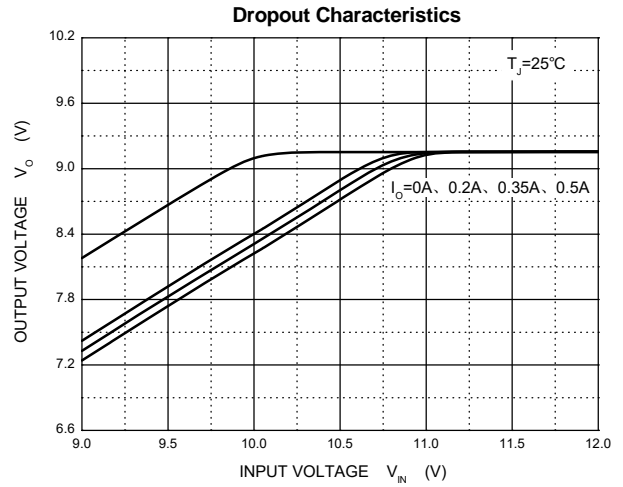
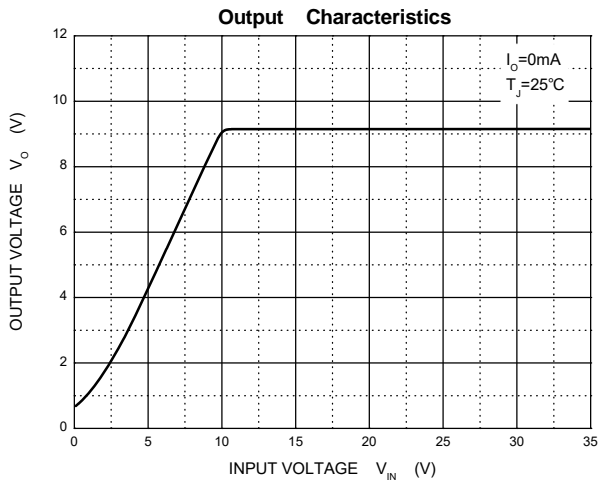
### Electrical Characteristics

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	$\Delta V_o$	$I_o=5mA\sim 500mA$	-	-	180	mV
		$I_o=5mA\sim 200mA$	-	-	90	mV
Line Regulation	$\Delta V_o$	$V_i=11.5V\sim 25V, I_o=200mA$	-	-	180	mV
		$V_i=12V\sim 25V, I_o=200mA$	-	-	90	mV
Output Noise Voltage	$V_N$	$f=10Hz\sim 100KHz$	-	58	-	$\mu V$
Ripple Rejection	RR	$V_i=13V\sim 23V, f=120Hz, I_o=300mA$	56	-	-	dB
Quiescent Current	$I_Q$		-	-	6	mA
Quiescent Current Change	$\Delta I_Q$	$V_i=11.5V\sim 25V, I_o=200mA$	-	-	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 Curves





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## 3-Terminal Voltage Regulator

### Package Outline TO-252

Dimensions in Millimeters

