

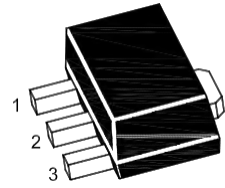
# PJ78M12SQ

## 3-Terminal Voltage Regulator

### Features

- Input voltage: up to 35V
- Output Voltage: 12V
- Output current up to 500 mA, internal thermal overload protection and short-circuit limiting.

SOT-89

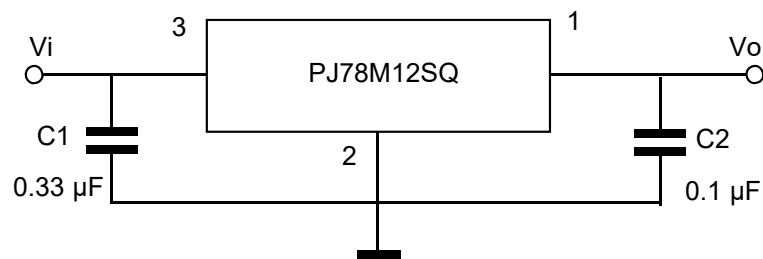


1. OUT 2. GND 3. IN

### Maximum Ratings

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

Parameter	Symbols	Value	Units
Input Voltage	$V_I$	35	V
Output Current	$I_o$	500	mA
Power Dissipation	$P_D$	500	mW
Operating Virtual Junction Temperature	$T_{OPR}$	-40~125	$^\circ\text{C}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55~150	$^\circ\text{C}$





# PJ78M12SQ

## 3-Terminal Voltage Regulator

### Electrical Characteristics

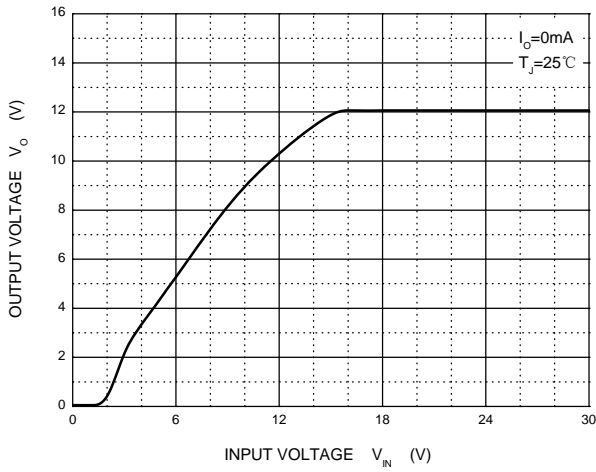
Ratings at  $T_J = 25^\circ\text{C}$ ,  $V_I = 19\text{V}$ ,  $I_O = 350\text{mA}$ ,  $C_i = 0.33\mu\text{F}$ ,  $C_o = 0.1\mu\text{F}$ , unless otherwise specified.

Parameter	Symbols	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$		11.5	12	12.5	V
		$I_O = 5\text{mA to } 350\text{mA}$ $V_I = 14.5\text{V to } 27\text{V}$	11.4	12	12.6	V
Line Regulation	$\Delta V_O$	$V_I = 14.5\text{V to } 30\text{V}$ $I_O = 200\text{mA}$			100	mV
		$V_I = 16\text{V to } 30\text{V}$ $I_O = 200\text{mA}$			50	mV
Load Regulation	$\Delta V_O$	$I_O = 5\text{mA to } 500\text{mA}$			240	mV
		$I_O = 5\text{mA to } 200\text{mA}$			120	mV
Ripple Rejection	RR	$V_I = 15\text{V to } 25\text{V}$ , $I_O = 300\text{mA}$ $f = 120\text{Hz}$	55			dB
Output Noise Voltage	$V_N$	$f = 10\text{Hz} \sim 100\text{KHz}$		75		$\mu\text{V}$
Dropout Voltage	$V_D$	$I_O = 350\text{mA}$		2		V
Quiescent Current	$I_Q$				6	mA
Quiescent Current Change	$\Delta I_Q$	$V_I = 14.5\text{V to } 30\text{V}$ , $I_O = 200\text{mA}$			0.8	mA
		$I_O = 5\text{mA to } 350\text{mA}$			0.5	mA

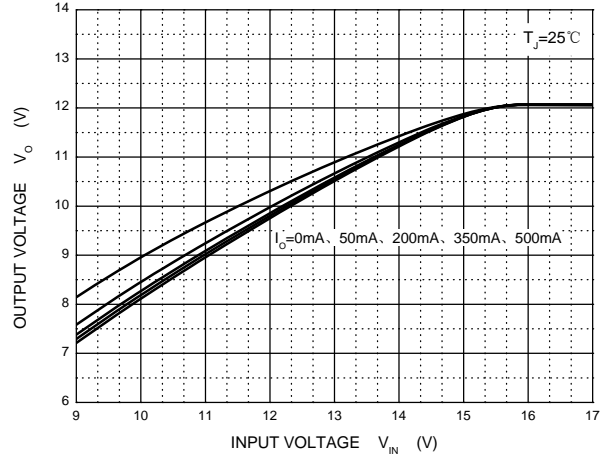


### Ratings and Characteristic Curves

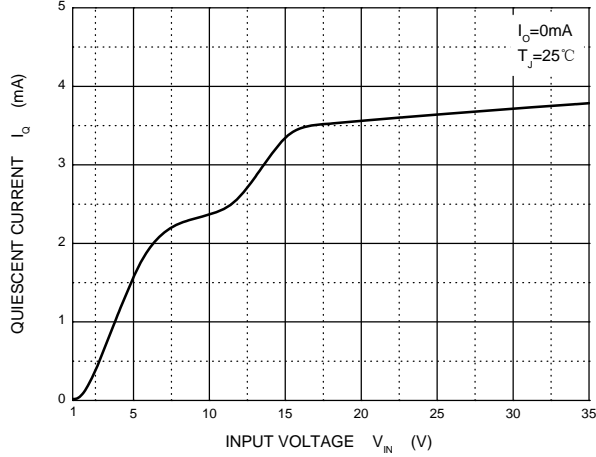
#### Output Characteristics



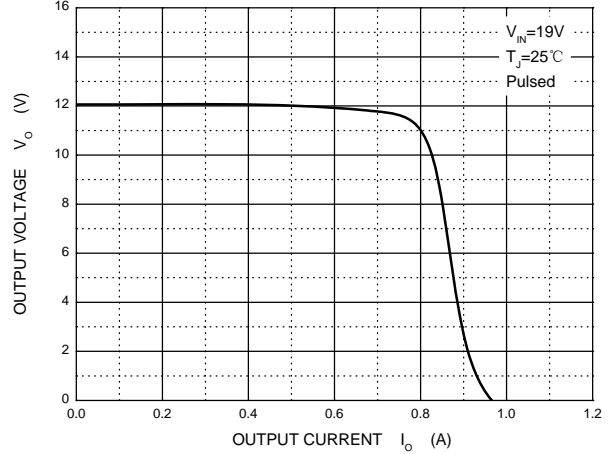
#### Dropout Characteristics



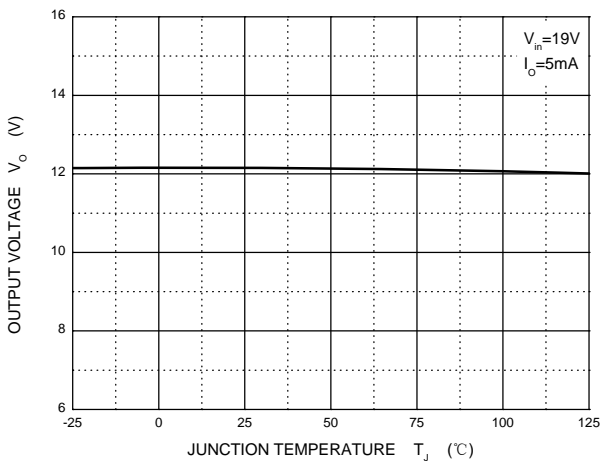
#### Quiescent Current vs Input Voltage



#### Current Cut-off Grid Voltage



#### Output Voltage vs Junction Temperature





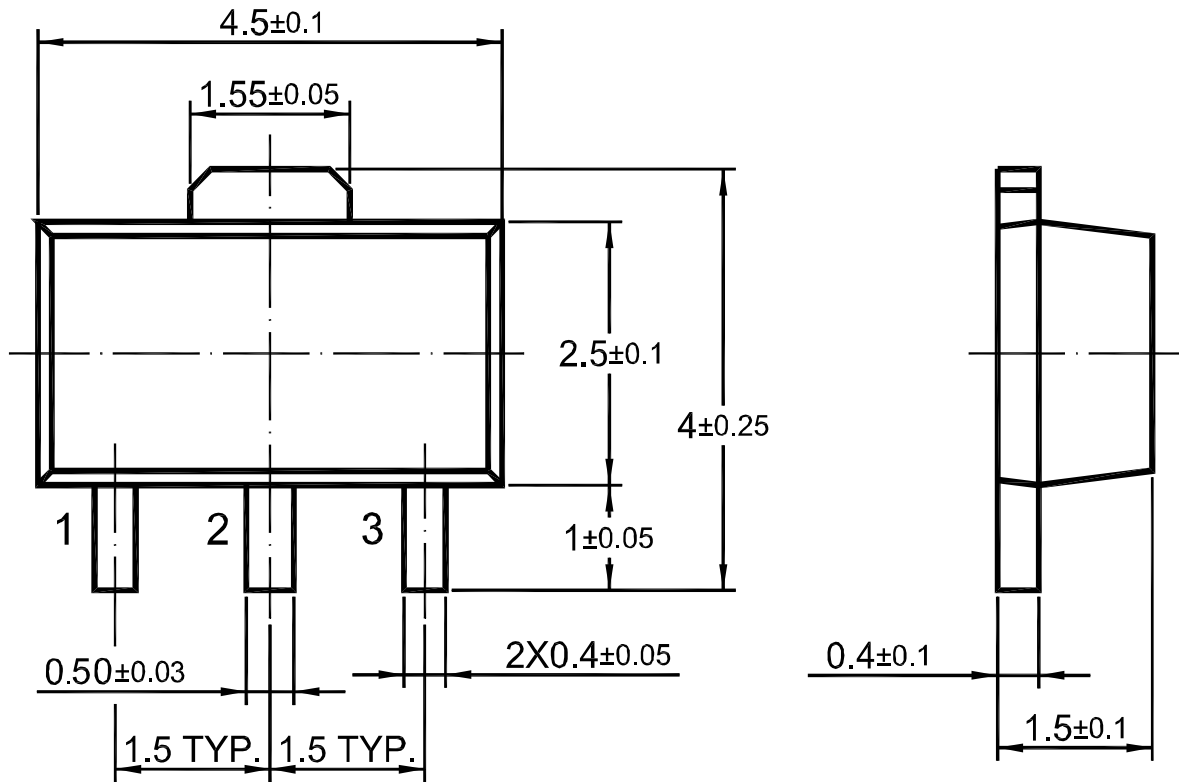
# PJ78M12SQ

## 3-Terminal Voltage Regulator

### Package Outline

SOT-89

Dimensions in mm



### ORDERING INFORMATION

Device	Package	Shipping
PJ78M12SQ	SOT-89	1,000/ Tape & Reel (7 inches)