



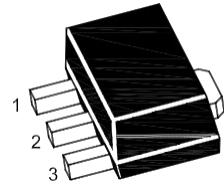
# PJ78S05SQ

## 3-Terminal Voltage Regulator

### Features

- Input voltage: up to 30V
- Output: 5V
- Output current up to 200 mA, internal thermal overload protection and short-circuit current limiting.

### SOT-89

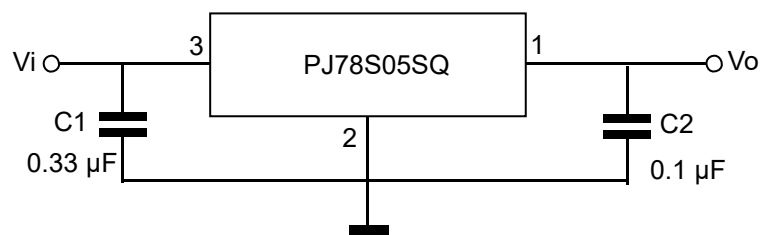


1. OUT 2. GND 3. IN

### Maximum Ratings

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

Parameter	Symbols	Value	Units
Input Voltage	$V_I$	30	V
Output Current	$I_O$	200	mA
Power Dissipation	$P_D$	350	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Operating Temperature Range	$T_{OPR}$	-40~125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55~150	$^\circ\text{C}$





### Electrical Characteristics

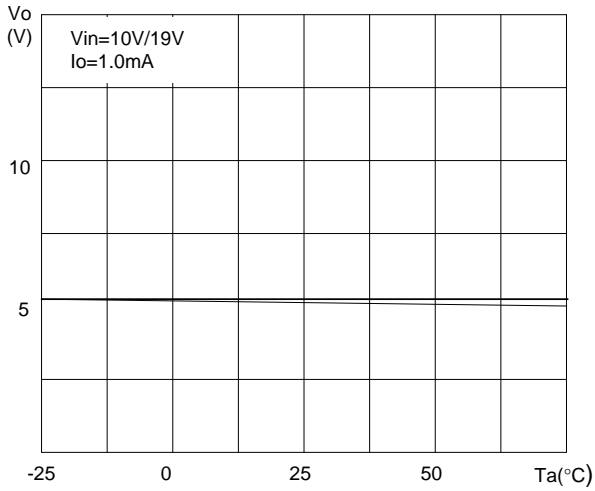
Ratings at  $0 < T_J < 125^\circ\text{C}$ ,  $V_I = 10\text{V}$ ,  $I_O = 40\text{mA}$ ,  $C_i = 0.33\mu\text{F}$ ,  $C_o = 0.1\mu\text{F}$ , unless otherwise specified.

Parameter	Symbols	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$	$T_J = 25^\circ\text{C}$	4.80	5.0	5.2	V
		$I_O = 1\text{mA to } 40\text{mA}$ $V_I = 7\text{V to } 20\text{V}$	4.75	5.0	5.25	V
		$I_O = 1\text{mA to } 70\text{mA}$ $V_I = 10\text{V}$	4.75	5.0	5.25	V
Line Regulation	$\Delta V_O$	$V_I = 7\text{V to } 20\text{V}$ $T_J = 25^\circ\text{C}$		8	150	mV
		$V_I = 8\text{V to } 20\text{V}$ $T_J = 25^\circ\text{C}$		6	100	mV
Load Regulation	$\Delta V_O$	$I_O = 1\text{mA to } 100\text{mA}$ $T_J = 25^\circ\text{C}$		11	60	mV
		$I_O = 1\text{mA to } 40\text{mA}$ $T_J = 25^\circ\text{C}$		5	30	mV
Ripple Rejection	RR	$V_I = 8\text{V to } 20\text{V}$ , $f = 120\text{Hz}$ , $T_J = 25^\circ\text{C}$	40	49		dB
Dropout Voltage	$V_D$	$T_J = 25^\circ\text{C}$		1.7		V
Quiescent Current	$I_Q$			2	5.5	mA
Quiescent Current Change	$\Delta I_Q$	$V_I = 8\text{V to } 20\text{V}$			1.5	mA
		$I_O = 1\text{mA to } 40\text{mA}$			0.1	mA
Output Noise Voltage	$V_N$	$10\text{Hz} \leq f \leq 100\text{kHz}$		40		$\mu\text{V}$

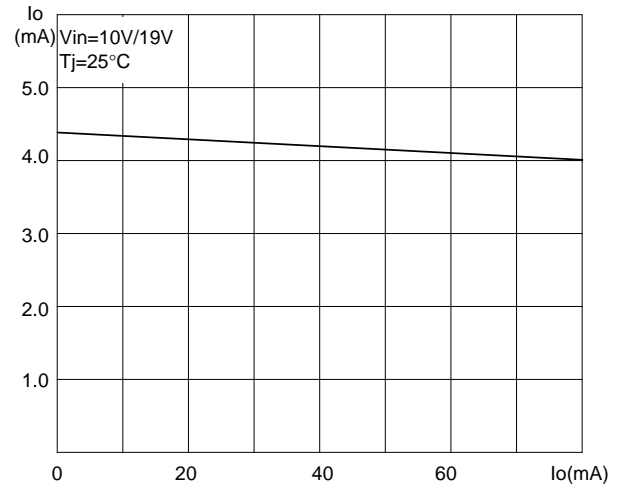


### Ratings and Characteristic Curves

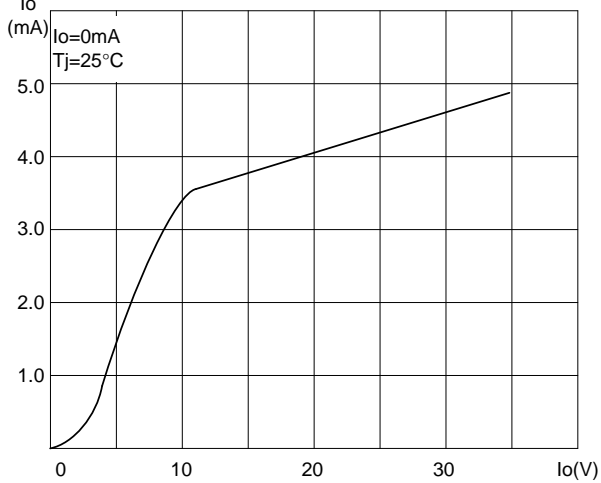
Output Voltage vs Ambient Temperature



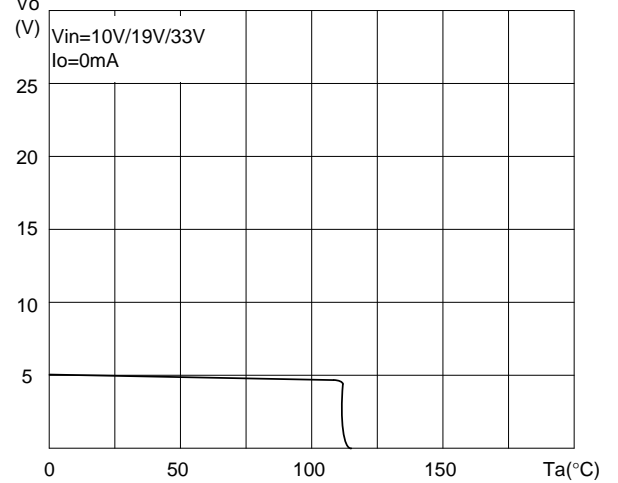
Quiescent Current vs Output Current



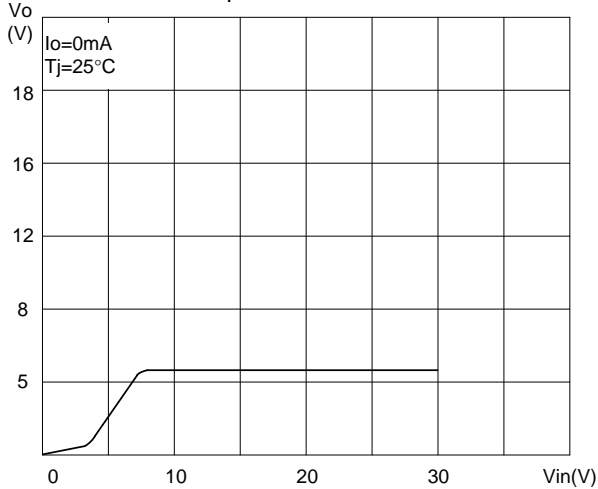
Quiescent Current vs Input



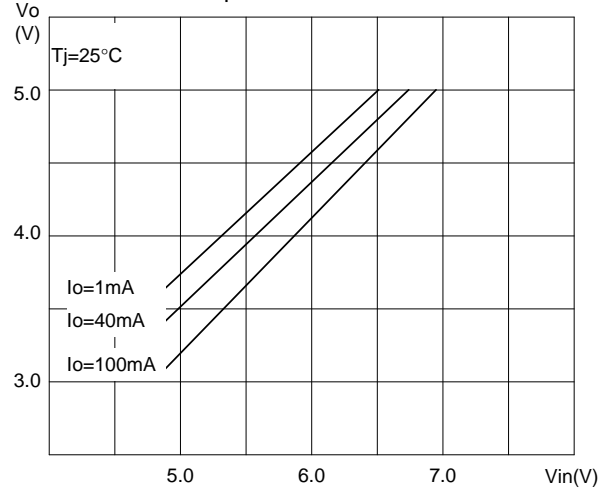
Thermal Shutdown



Output Characteristics



Dropout Characteristics





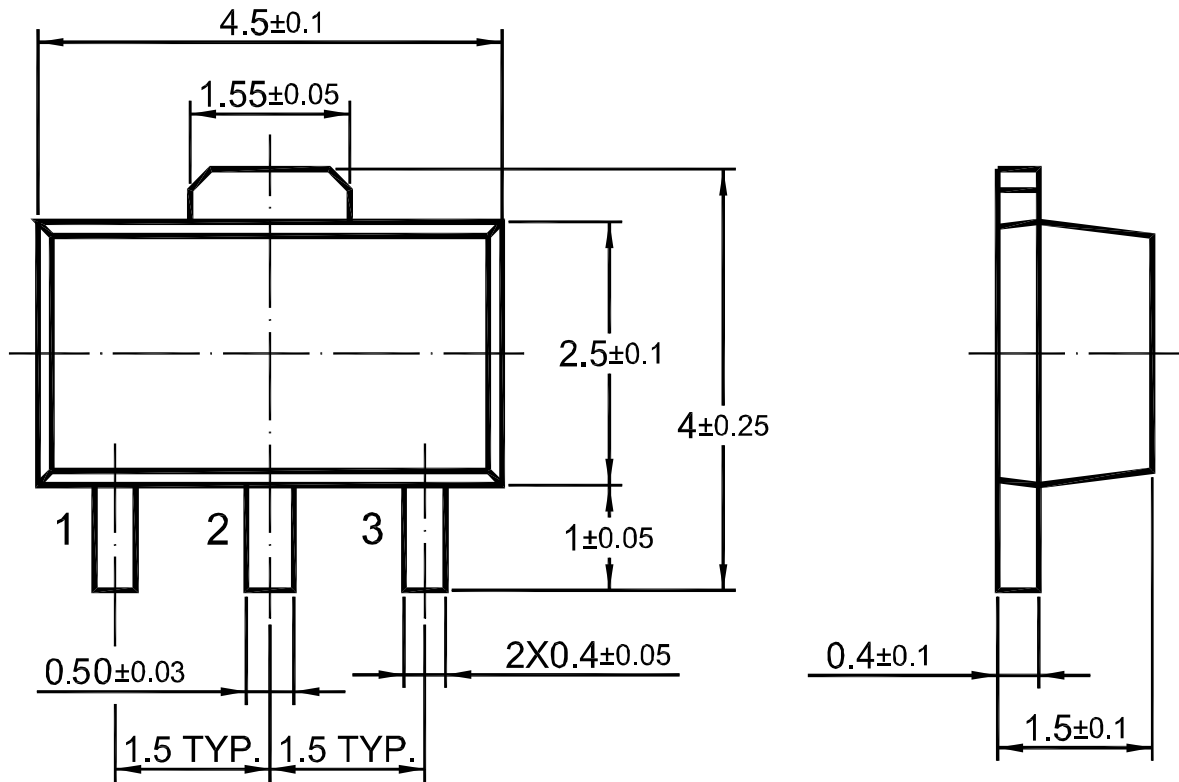
# PJ78S05SQ

## 3-Terminal Voltage Regulator

### Package Outline

SOT-89

Dimensions in mm



### Ordering Information

Device	Package	Shipping
PJ78S05SQ	SOT-89	1,000/ Tape & Reel (7 inches)