



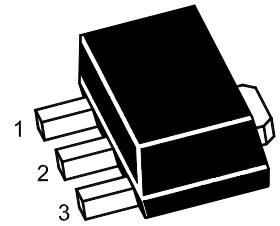
PJ78L05SQ-M

3-Terminal Voltage Regulator

Features

- Input voltage: up to 35V
- Output voltage: 5V
- Output current up to 100 mA, internal thermal overload protection and short-circuit current limiting.

SOT-89



1. VOUT 2. GND 3. VIN

Marking Code : 78L05

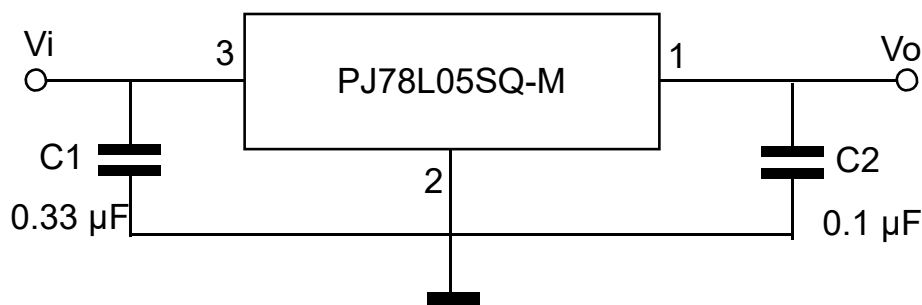
Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Input Voltage	V_I	35	V
Output Current	I_O	100	mA
Maximum Power Dissipation	P_D	350	mW
Thermal Resistance Junction-Air	$R_{\theta JA}$	250	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
ESD(Human Body Model)	$V_{ESD(HBM)}$	4000	V
ESD(Machine Body Model)	$V_{ESD(MM)}$	400	V

Recommended Operating Conditions

Parameter	Symbol	Min.	Max.	Unit
Input Voltage	V_I	7	25	V
Operating Temperature Range	T_{OPR}	-40	125	°C





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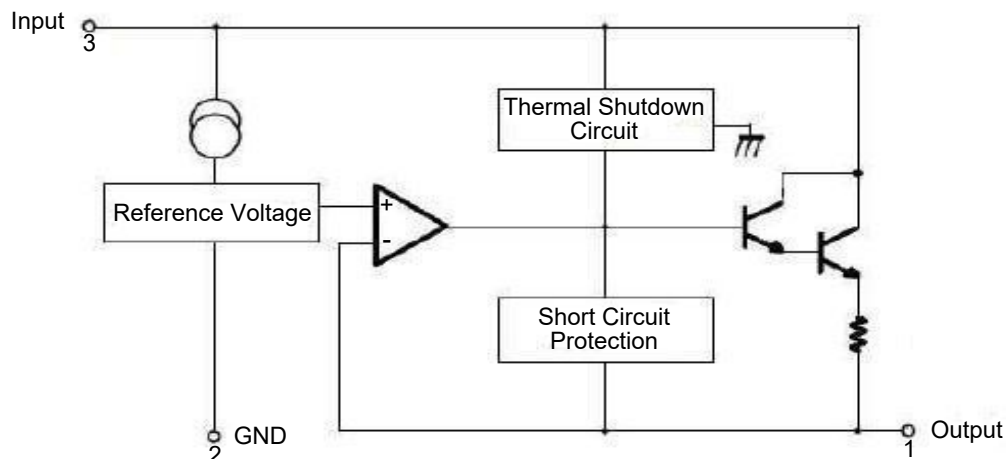
3-Terminal Voltage Regulator

Electrical Characteristics

Ratings at $T_J=25^{\circ}\text{C}$, $V_I=10\text{V}$, $I_O=40\text{mA}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	$T_J=25^{\circ}\text{C}$	4.90	5.0	5.10	V
		$V_I=7\text{V to }20\text{V}$, $I_O=1\text{mA to }40\text{mA}$	4.85	5.0	5.15	V
Line Regulation	ΔV_O	$V_I=7\text{V to }20\text{V}$ $I_O=40\text{mA}$	--	30	70	mV
Load Regulation	ΔV_O	$I_O=1\text{mA to }100\text{mA}$	--	25	40	mV
		$I_O=1\text{mA to }40\text{mA}$	--	15	30	mV
Dropout Voltage	V_D		--	1.88	2	V
Short Current	I_{OS}			100		mA
Quiescent Current	I_Q	$I_O=0\text{mA}$	--	2.3	4	mA
Quiescent Current Change	ΔI_Q	$V_I=7\text{V to }25\text{V}$	--	0.1	0.3	mA
		$I_O=1\text{mA to }40\text{mA}$, $V_I=25\text{V}$	--	0.2	--	mA
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{kHz}$	--	40	--	μV
Power Supply Rejection Ratio	PSRR	$f=120\text{Hz}$, $V_I=8\text{V to }20\text{V}$	47	75	--	dB
Peak Output Current	I_{PK}			150		mA
Average Temperature Coefficient of Output Voltage	$\Delta V_{OUT}/\Delta T$	$I_O=5\text{mA}$		-0.35		$\text{mV}/^{\circ}\text{C}$
Minimum Value of Input Voltage Required to Maintain Line Regulation	$V_{I(\text{min})}$			6.7	7	V

Functional Block Diagram

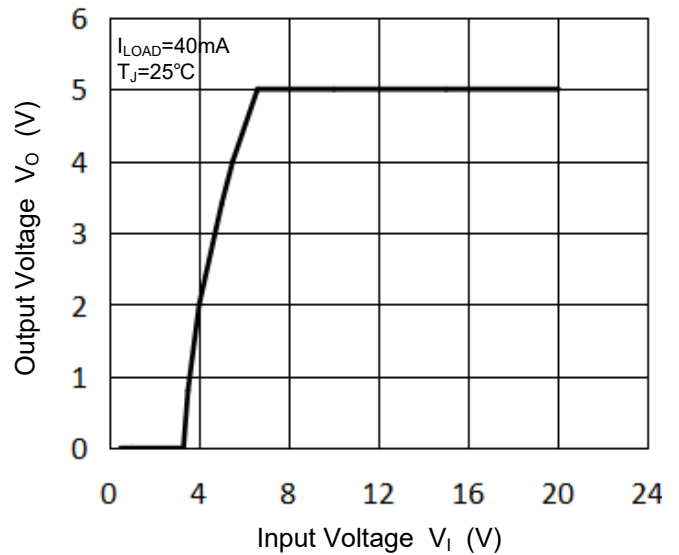
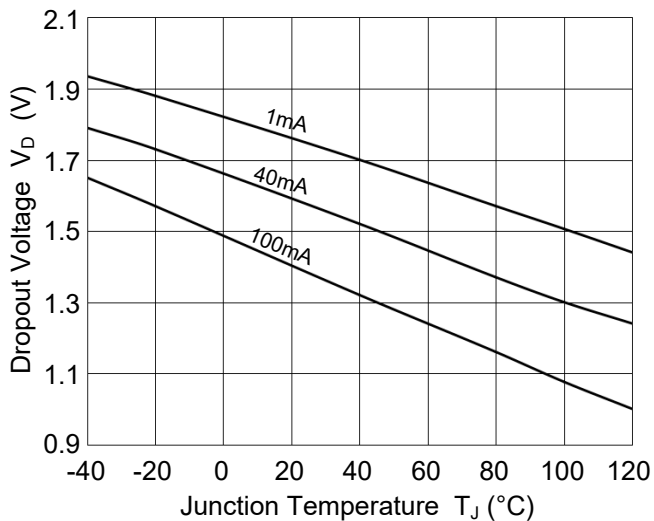
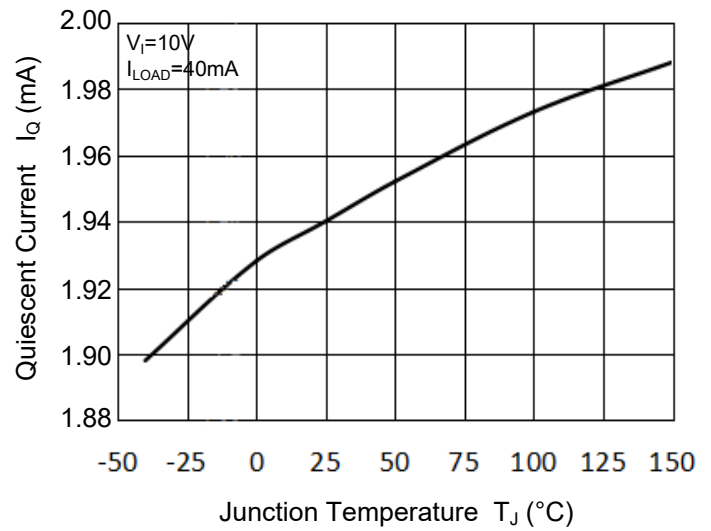
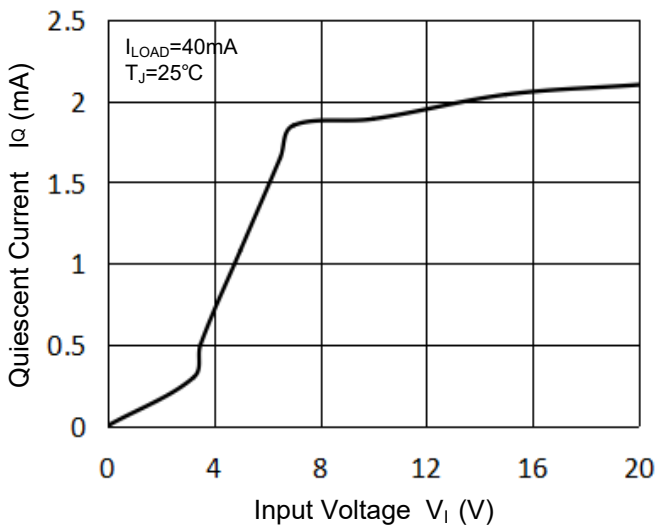
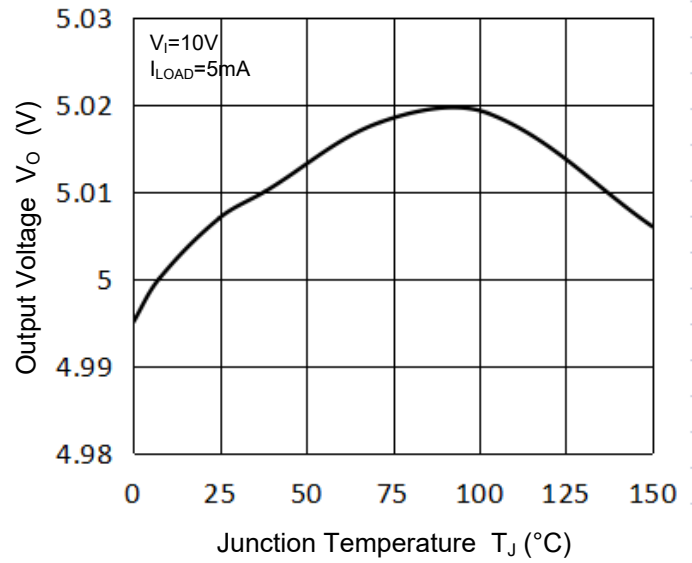
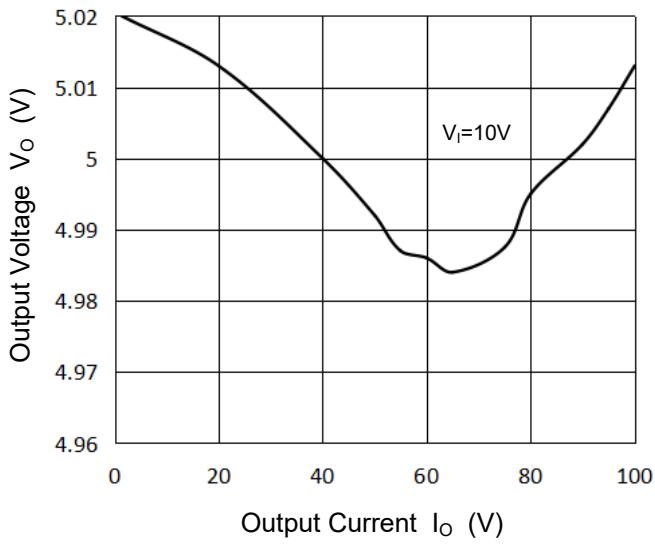




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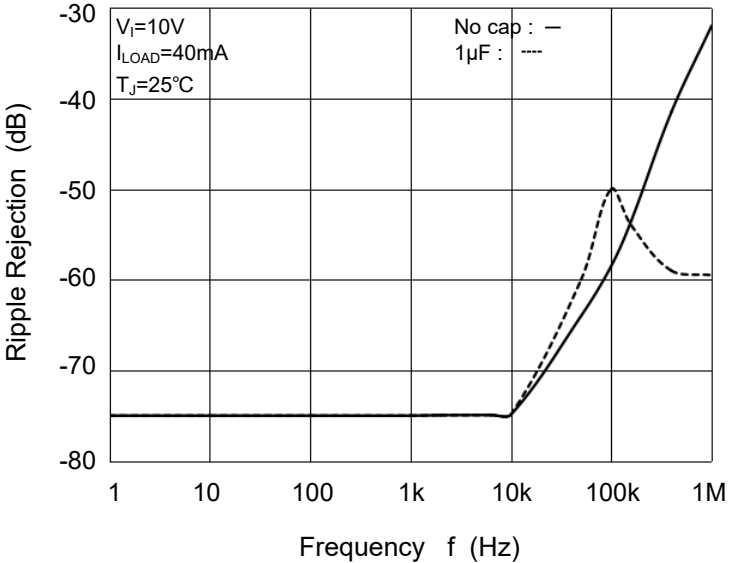
Typical Characteristic Curves





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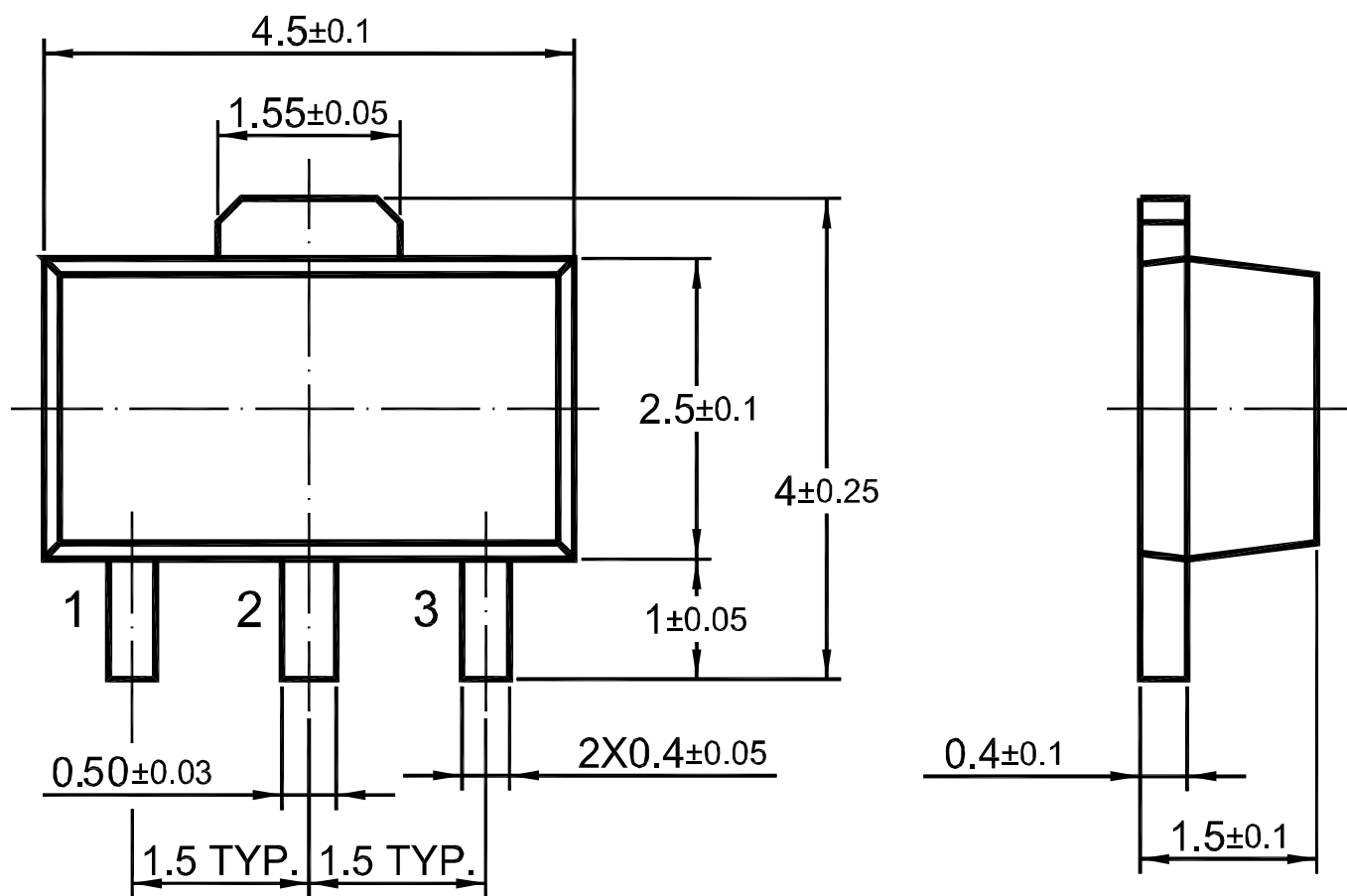
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3-Terminal Voltage Regulator

Package Outline

SOT-89

Dimensions in mm



Ordering Information

Device	Package	Shipping
PJ78L05SQ-M	SOT-89	1,000PCS/Reel&7inches
		3,000PCS/Reel&13inches