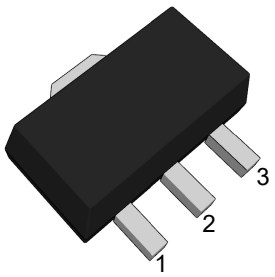
PJ79LxxSQ
3-Terminal Voltage Regulators

Description

The PJ79LxxSQ series of fixed voltage monolithic integrated circuit voltage three-terminal negative regulators are suitable for applications that required supply up to 100mA.

SOT-89



1. GND 2. VIN 3. VOUT

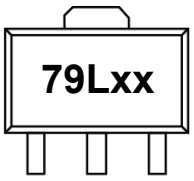
Features

- Input voltage: -30V
- Output voltage: -5V,-6V,-8V,-9V,-12V
- Output current up to 100 mA
- Thermal overload protection
- Short circuit current limiting

Applications

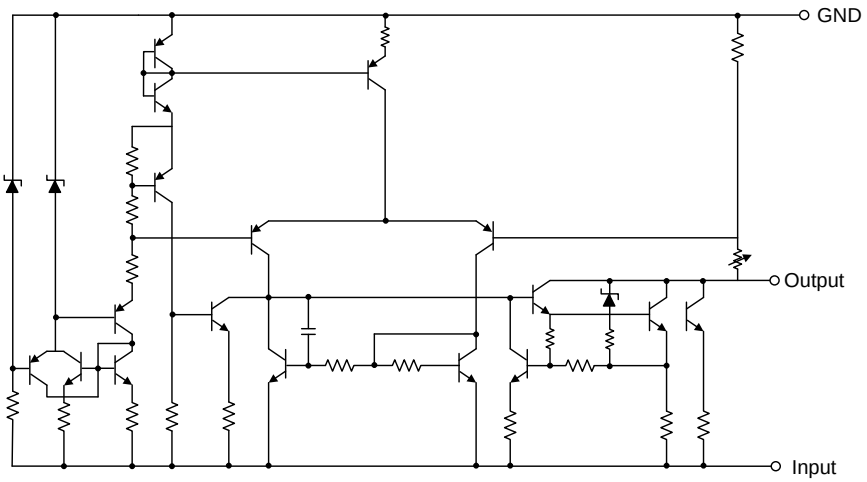
- TV Board
- Air Conditioner
- Charging Device

Ordering Information

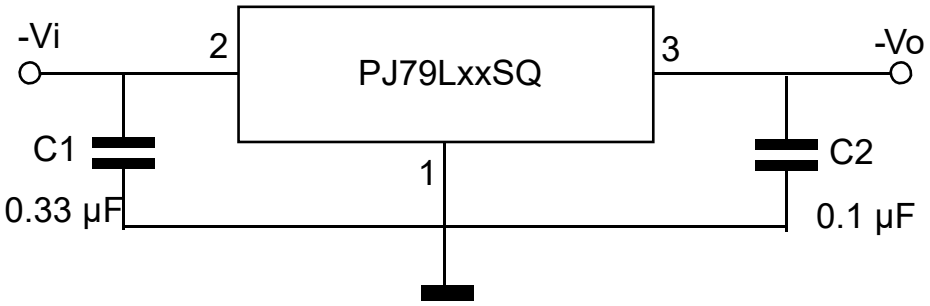
Orderable Device	Package	Reel (inch)	Package Qty (PCS)	Eco Plan [Note]	MSL Level	Marking Code
PJ79L05SQ	SOT-89	7/13	1000/3000	RoHS & Green	MSL1	
PJ79L06SQ						
PJ79L08SQ						
PJ79L09SQ						
PJ79L12SQ						

79Lxx: Product Code
e.g. PJ79L05SQ: 79L05

Function Block Diagram



Typical Application Circuit



Absolute Maximum Ratings

Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Input Voltage	$-V_I$	30	V
Output Current	I_O	100	mA
Maximum Power Dissipation	P_D	500	mW
Junction Temperature	T_J	125	°C
Operating Temperature Range	T_{OPR}	0 to +125	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

PJ78L05SQ Electrical Characteristics

V_I=-10V, I_O=40mA, 0℃≤ T_J≤125℃, C_I=0.33μF,C_O=0.1μF,unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$-V_O$	T_J=25°C	4.8	5.0	5.2	V
		I_O=1mA to 40mA, V_I=7V to 20V	4.75	--	5.25	V
		I_O=1mA to 70mA	4.75	--	5.25	V
Line Regulation	$\triangle V_O$	V_I=-7V to -20V, T_J=25°C	--	15	150	mV
		V_I=-8V to -20V, T_J=25°C	--	12	100	mV
Load Regulation	$\triangle V_O$	I_O=1mA to 100mA, T_J=25°C	--	20	60	mV
		I_O=1mA to 40mA, T_J=25°C	--	10	30	mV
Ripple Rejection	RR	V_I=-8V to -18V, f=120Hz, T_J=25°C	41	49	--	dB
Dropout Voltage	V_D		--	1.7	--	V
Quiescent Current	I_Q	T_J=25°C	--	--	6.0	mA
Quiescent Current Change	$\triangle I_Q$	V_I=-8V to -20V	--	--	1.5	mA
		I_O=1mA to 40mA	--	--	0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100kHz,T_J=25°C	--	120	--	μV

PJ78L06SQ Electrical Characteristics

V_I=-12V, I_O=40mA,0℃≤ T_J≤125℃, C_I=0.33μF,C_O=0.1μF,unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$-V_O$	T_J=25°C	5.76	6.0	6.24	V
		I_O=1mA to 40mA, V_I=-8.5V to -20V	5.7	--	6.3	V
		I_O=1mA to 70mA	5.7	--	6.3	V
Line Regulation	$\triangle V_O$	V_I=-8.5V to -20V, T_J=25°C	--	--	150	mV
		V_I=-9V to -20V, T_J=25°C	--	--	100	mV
Load Regulation	$\triangle V_O$	I_O=1mA to 100mA, T_J=25°C	--	--	60	mV
		I_O=1mA to 40mA, T_J=25°C	--	--	30	mV
Ripple Rejection	RR	V_I=-9V to -20V, f=120Hz, T_J=25°C	40	--	--	dB
Dropout Voltage	V_D		--	1.7	--	V
Quiescent Current	I_Q	T_J=25°C	--	--	6.0	mA
Quiescent Current Change	$\triangle I_Q$	V_I=-9V to -20V	--	--	1.5	mA
		I_O=1mA to 40mA	--	--	0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100kHz,T_J=25°C	--	190	--	μV

PJ78L08SQ Electrical Characteristics

V_I=-14V, I_O=40mA, 0℃≤ T_J≤125℃, C_I=0.33μF,C_O=0.1μF,unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$-V_O$	T_J=25°C	7.68	8.0	8.32	V
		I_O=1mA to 40mA, V_I=-10.5V to -23V	7.6	--	8.4	V
		I_O=1mA to 70mA	7.6	--	8.4	V
Line Regulation	$\triangle V_O$	V_I=-10.5V to -23V, T_J=25°C	--	--	175	mV
		V_I=-11V to -23V, T_J=25°C	--	--	150	mV
Load Regulation	$\triangle V_O$	I_O=1mA to 100mA, T_J=25°C	--	--	80	mV
		I_O=1mA to 40mA, T_J=25°C	--	--	50	mV
Ripple Rejection	RR	V_I=-11V to -21V, f=140Hz, T_J=25°C	39	--	--	dB
Dropout Voltage	V_D		--	1.7	--	V
Quiescent Current	I_Q	T_J=25°C	--	--	6.0	mA
Quiescent Current Change	$\triangle I_Q$	V_I=-11V to -23V	--	--	1.5	mA
		I_O=1mA to 40mA	--	--	0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100kHz,T_J=25°C	--	190	--	μV

PJ78L09SQ Electrical Characteristics

V_I=-15V, I_O=40mA, 0℃≤ T_J≤125℃, C_I=0.33μF,C_O=0.1μF,unless otherwise specified.

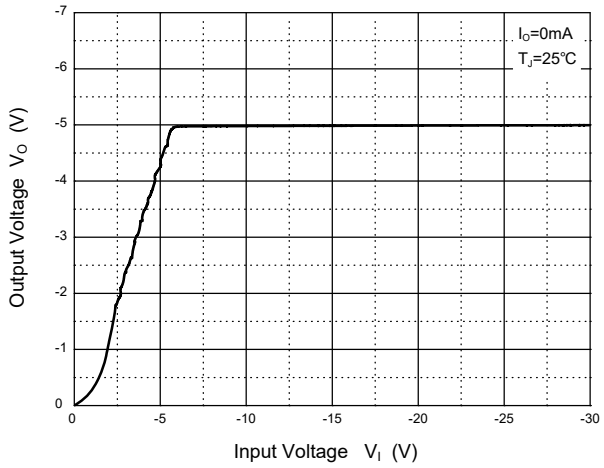
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$-V_O$	T_J=25°C	8.64	9.0	9.36	V
Line Regulation	$\triangle V_O$	V_I=12.5V to 24V, T_J=25°C	--	27	200	mV
Load Regulation	$\triangle V_O$	I_O=1mA to 100mA, T_J=25°C	--	12	90	mV
Ripple Rejection	RR	V_I=12V to 22V, f=150Hz, T_J=25°C,ein=1Vp-p	38	67	--	dB
Dropout Voltage	V_D		--	1.7	--	V
Quiescent Current	I_Q	T_J=25°C	--	--	6.0	mA
Quiescent Current Change	$\triangle I_Q$	V_I=12V to 22V	--	--	1.5	mA
		I_O=1mA to 40mA	--	--	0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100kHz,T_J=25°C	--	210	--	μV

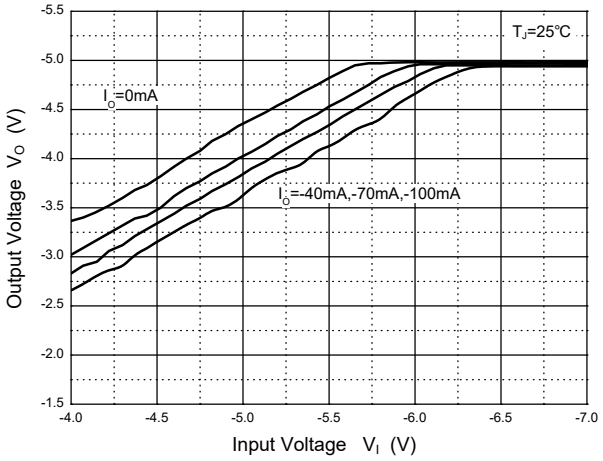
PJ78L12SQ Electrical Characteristics

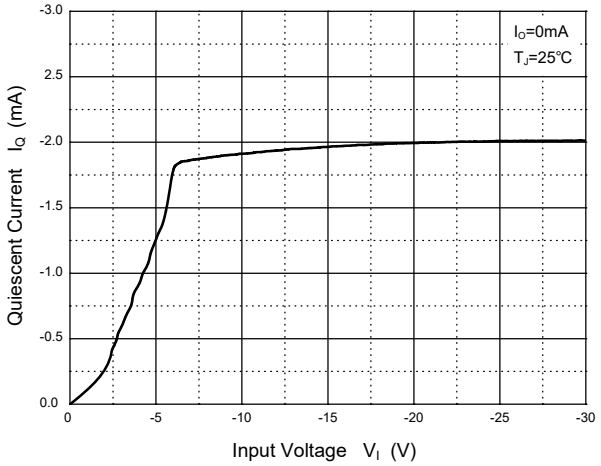
V_I=-19V, I_O=40mA, 0℃≤ T_J≤125℃, C_I=0.33μF,C_O=0.1μF,unless otherwise specified.

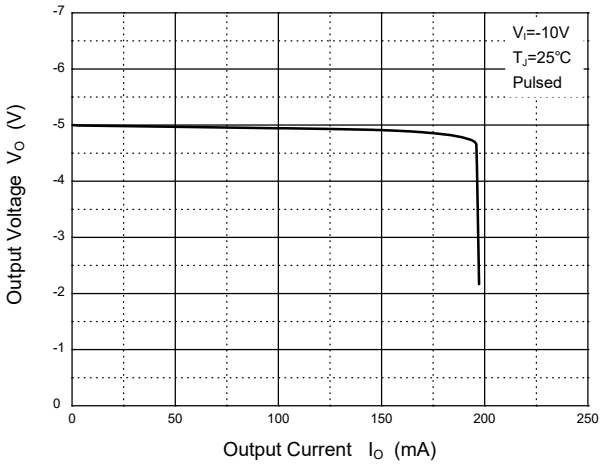
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$-V_O$	T_J=25°C	11.5	12	12.5	V
Line Regulation	$\triangle V_O$	V_I=14.5V to 27V, T_J=25°C	--	--	250	mV
Load Regulation	$\triangle V_O$	I_O=1mA to 100mA, T_J=25°C	--	--	100	mV
Ripple Rejection	RR	V_I=15V to 25V, f=120Hz, T_J=25°C	36	--	--	dB
Dropout Voltage	V_D		--	1.7	--	V
Quiescent Current	I_Q	T_J=25°C	--	--	6.0	mA
Quiescent Current Change	$\triangle I_Q$	V_I=15V to 25V	--	--	1.5	mA
		I_O=1mA to 40mA	--	--	0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100kHz,T_J=25°C	--	290	--	μV

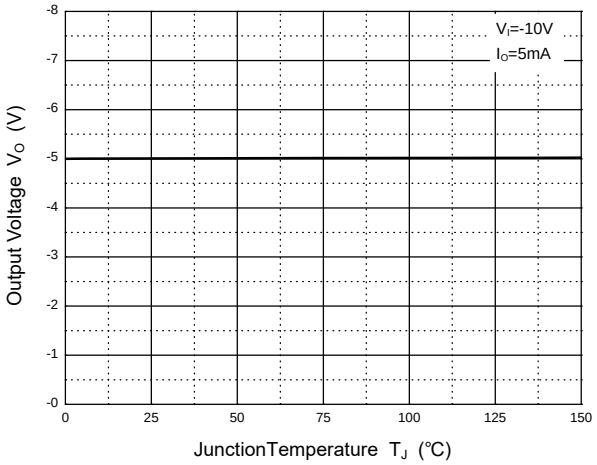
Typical Characteristic Curves(PJ79L05SQ)

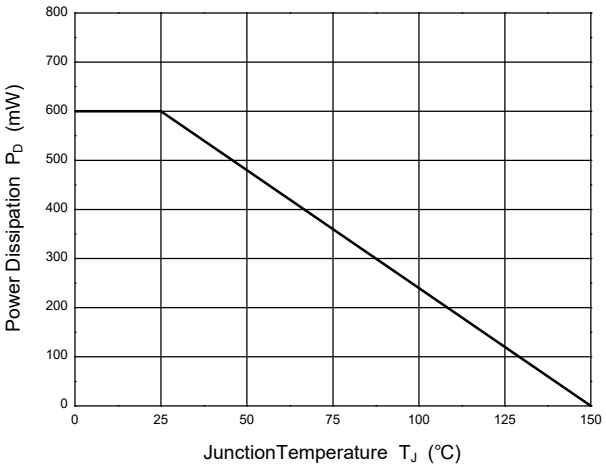












Package Outline

SOT-89

Dimensions in mm