



DESCRIPTION

Three-terminal negative voltage regulator.

The A79L05~A79L24 is available in SOT89-3 Package.

FEATURES

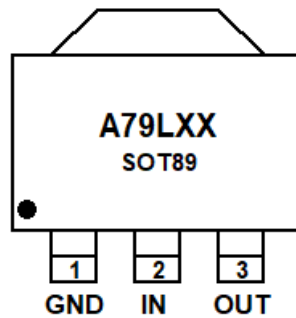
- main purposes
the role of regulator and protection for a variety of electrical appliances, electronic equipment, regulator circuit
- Available in SOT89-3 Package

ORDERING INFORMATION

Package Type		Part Number	
SOT89-3 SPQ: 1,000pcs/Reel	K3	A79LXXK3R	
		A79LXXK3VR	
Note	XX: Output Voltage 05=5.0V, 12=12V		
	V: Halogen free Package R: Tape & Reel		
AiT provides all RoHS products			



PIN DESCRIPTION



Top View

Pin #	Symbol	Function
1	GND	Ground
2	IN	Input
3	OUT	Output



ABSOLUTE MAXIMUM RATINGS

Operating temperature range applies unless otherwise specified

V_I , Input Voltage ($T_A=25^\circ\text{C}$)	
(A79L05~A79L15)	-35V
(A79L18~A79L24)	-40V
I_O , Output Current	0.15A
P_D , Total Power Dissipation ($T_A=25^\circ\text{C}$) ^{NOTE1}	0.5W
T_{OP} , Work (Tube Shell) Temperature	$-40^\circ\text{C} \sim +85^\circ\text{C}$
T_{STG} , Storage Temperature	$-55^\circ\text{C} \sim +150^\circ\text{C}$

Stresses above may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

NOTE1: Devices installed in good thermal environment

ELECTRICAL CHARACTERISTICS

A79L05

$0^\circ\text{C} \leq T_J \leq +125^\circ\text{C}$, $V_I = -10\text{V}$, $I_O = 40\text{mA}$, $C_I = 0.33\mu\text{F}$, $C_O = 0.1\mu\text{F}$, unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	$T_J = 25^\circ\text{C}$	-4.8	-5	-5.2	V
		$1\text{mA} \leq I_O \leq 40\text{mA}$, $-7\text{V} \leq V_I \leq -20\text{V}$	-4.75	-5	-5.25	
Voltage Regulation	S_V	$T_J = 25^\circ\text{C}$	-	-	150	mV
		$-7\text{V} \leq V_I \leq -20\text{V}$	-	-	100	
Current Regulation	S_I	$T_J = 25^\circ\text{C}$, $1\text{mA} \leq I_O \leq 100\text{mA}$	-	-	60	mV
Quiescent Current	I_Q	$T_J = 25^\circ\text{C}$	-	-	6	mA
Quiescent Current Change	ΔI_Q	$1\text{mA} \leq I_O \leq 40\text{mA}$	-	-	0.1	mA
		$-8\text{V} \leq V_I \leq -20\text{V}$	-	-	1.5	
Input-Output Differential Pressure	$ V_I - V_O $	$T_J = 25^\circ\text{C}$	-	1.7	-	V
Ripple Rejection Ratio	S_{rip}	$-8\text{V} \leq V_I \leq -18\text{V}$; $f = 120\text{Hz}$	-	49	-	dB



A79L06

0°C≤T_J≤+125°C, V_I=-11V, I_O=40mA, C_I=0.33μF, C_O=0.1μF, unless otherwise specified

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
Output Voltage	V _O	T _J =25°C		-5.76	-6	-6.24	V
		1mA≤I _O ≤40mA, -8.1V≤V _I ≤-21V		-5.7	-6	-6.3	
Voltage Regulation	S _V	T _J =25°C	-8.1V≤V _I ≤-21V	-	-	150	mV
			-9V≤V _I ≤-21V	-	-	110	
Current Regulation	S _I	T _J =25°C, 1mA≤I _O ≤100mA		-	-	70	mV
Quiescent Current	I _Q	T _J =25°C		-	-	6	mA
Quiescent Current Change	ΔI _Q	1mA≤I _O ≤40mA		-	-	0.1	mA
		-9V≤V _I ≤-20V		-	-	1.5	
Input-Output Differential Pressure	V _I -V _O	T _J =25°C		-	1.7	-	V
Ripple Rejection Ratio	S _{rip}	-9V≤V _I ≤-19V; f=120Hz		-	47	-	dB

A79L08

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

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
Output Voltage	V _O	T _J =25°C		-7.7	-8	-8.3	V
		1mA≤I _O ≤40mA, -10.5V≤V _I ≤-23V		-7.6	-8	-8.4	
Voltage Regulation	S _V	T _J =25°C	-10.5V≤V _I ≤-23V	-	-	175	mV
			-11V≤V _I ≤-23V	-	-	125	
Current Regulation	S _I	T _J =25°C, 1mA≤I _O ≤100mA		-	-	80	mV
Quiescent Current	I _Q	T _J =25°C		-	-	6.5	mA
Quiescent Current Change	ΔI _Q	1mA≤I _O ≤40mA		-	-	0.1	mA
		-11V≤V _I ≤-23V		-	-	1.5	
Input-Output Differential Pressure	V _I -V _O	T _J =25°C		-	1.7	-	V
Ripple Rejection Ratio	S _{rip}	-12V≤V _I ≤-23V; f=120Hz		-	45	-	dB

A79L09

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

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
Output Voltage	V _O	T _J =25°C		-8.64	-9	-9.36	V
		1mA≤I _O ≤40mA, -11.4V≤V _I ≤-24V		-8.55	-9	-9.45	
Voltage Regulation	S _V	T _J =25°C	-11.4V≤V _I ≤-24V	-	-	200	mV
			-12V≤V _I ≤-24V	-	-	160	
Current Regulation	S _I	T _J =25°C, 1mA≤I _O ≤100mA		-	-	90	mV
Quiescent Current	I _Q	T _J =25°C		-	-	6.5	mA
Quiescent Current Change	ΔI _Q	1mA≤I _O ≤40mA		-	-	0.1	mA
		-12V≤V _I ≤-24V		-	-	1.5	
Input-Output Differential Pressure	V _I -V _O	T _J =25°C		-	1.7	-	V
Ripple Rejection Ratio	S _{rip}	-12V≤V _I ≤-24V; f=120Hz		-	44	-	dB



A79L10

0°C ≤ T_J ≤ +125°C, V_I = -16V, I_O = 40mA, C_I = 0.33μF, C_O = 0.1μF, unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V _O	T _J = 25°C	-9.6	-10	-10.4	V
		1mA ≤ I _O ≤ 40mA, -12.5V ≤ V _I ≤ -25V	-9.5	-10	-10.5	
Voltage Regulation	S _V	T _J = 25°C	-12.5V ≤ V _I ≤ -25V	-	230	mV
			-13V ≤ V _I ≤ -25V	-	170	
Current Regulation	S _I	T _J = 25°C, 1mA ≤ I _O ≤ 100mA	-	-	90	mV
Quiescent Current	I _Q	T _J = 25°C	-	-	6.5	mA
Quiescent Current Change	ΔI _Q	1mA ≤ I _O ≤ 40mA	-	-	0.1	mA
		-13V ≤ V _I ≤ -25V	-	-	1.5	
Input-Output Differential Pressure	V _I - V _O	T _J = 25°C	-	1.7	-	V
Ripple Rejection Ratio	S _{rip}	-13V ≤ V _I ≤ -24V; f = 120Hz	-	43	-	dB

A79L12

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V _O	T _J = 25°C	-11.5	-12	-12.5	V
		1mA ≤ I _O ≤ 40mA, -14.5V ≤ V _I ≤ -27V	-11.4	-12	-12.6	
Voltage Regulation	S _V	T _J = 25°C	-14.5V ≤ V _I ≤ -27V	-	250	mV
			-16V ≤ V _I ≤ -27V	-	200	
Current Regulation	S _I	T _J = 25°C, 1mA ≤ I _O ≤ 100mA	-	-	100	mV
Quiescent Current	I _Q	T _J = 25°C	-	-	6.5	mA
Quiescent Current Change	ΔI _Q	1mA ≤ I _O ≤ 40mA	-	-	0.1	mA
		-16V ≤ V _I ≤ -27V	-	-	1.5	
Input-Output Differential Pressure	V _I - V _O	T _J = 25°C	-	1.7	-	V
Ripple Rejection Ratio	S _{rip}	-15V ≤ V _I ≤ -25V; f = 120Hz	-	42	-	dB

A79L15

0°C ≤ T_J ≤ +125°C, V_I = -23V, I_O = 40mA, C_I = 0.33μF, C_O = 0.1μF, unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V _O	T _J = 25°C	-14.4	-15	-15.6	V
		1mA ≤ I _O ≤ 40mA, -17.5V ≤ V _I ≤ -30V	-14.25	-15	-15.75	
Voltage Regulation	S _V	T _J = 25°C	-17.5V ≤ V _I ≤ -30V	-	300	mV
			-20V ≤ V _I ≤ -30V	-	250	
Current Regulation	S _I	T _J = 25°C, 1mA ≤ I _O ≤ 100mA	-	-	150	mV
Quiescent Current	I _Q	T _J = 25°C	-	-	6.5	mA
Quiescent Current Change	ΔI _Q	1mA ≤ I _O ≤ 40mA	-	-	0.1	mA
		-20V ≤ V _I ≤ -30V	-	-	1.5	
Input-Output Differential Pressure	V _I - V _O	T _J = 25°C	-	1.7	-	V
Ripple Rejection Ratio	S _{rip}	-18.5V ≤ V _I ≤ -28.5V; f = 120Hz	-	39	-	dB



A79L18

0°C≤T_J≤+125°C, V_I=-27V, I_O=40mA, C_I=0.33μF, C_O=0.1μF, unless otherwise specified

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
Output Voltage	V _O	T _J =25°C		-17.3	-18	-18.7	V
		1mA≤I _O ≤40mA, -20.7V≤V _I ≤-33V		-17.1	-18	-18.9	
Voltage Regulation	S _V	T _J =25°C	-20.7V≤V _I ≤-33V	-	-	325	mV
			-21V≤V _I ≤-33V	-	-	275	
Current Regulation	S _I	T _J =25°C, 1mA≤I _O ≤100mA		-	-	170	mV
Quiescent Current	I _Q	T _J =25°C		-	-	6.5	mA
Quiescent Current Change	ΔI _Q	1mA≤I _O ≤40mA		-	-	0.1	mA
		-21V≤V _I ≤-33V		-	-	1.5	
Input-Output Differential Pressure	V _I -V _O	T _J =25°C		-	1.7	-	V
Ripple Rejection Ratio	S _{rip}	-23V≤V _I ≤-33V; f=120Hz		-	48	-	dB

A79L20

0°C≤T_J≤+125°C, V_I=-29V, I_O=40mA, C_I=0.33μF, C_O=0.1μF, unless otherwise specified

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
Output Voltage	V _O	T _J =25°C		-19.2	-20	-20.8	V
		1mA≤I _O ≤40mA, -23.5V≤V _I ≤-35V		-19.0	-20	-21.0	
Voltage Regulation	S _V	T _J =25°C	-23.5V≤V _I ≤-35V	-	-	330	mV
			-24V≤V _I ≤-35V	-	-	285	
Current Regulation	S _I	T _J =25°C, 1mA≤I _O ≤100mA		-	-	180	mV
Quiescent Current	I _Q	T _J =25°C		-	-	6.5	mA
Quiescent Current Change	ΔI _Q	1mA≤I _O ≤40mA		-	-	0.1	mA
		-24V≤V _I ≤-35V		-	-	1.5	
Input-Output Differential Pressure	V _I -V _O	T _J =25°C		-	1.7	-	V
Ripple Rejection Ratio	S _{rip}	-27V≤V _I ≤-35V; f=120Hz		-	37	-	dB

A79L24

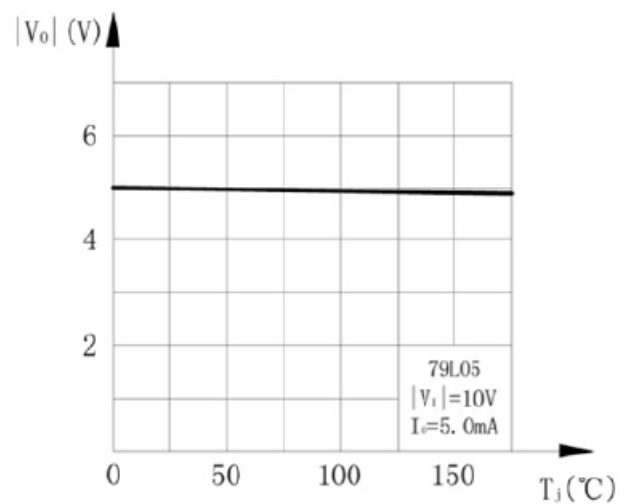
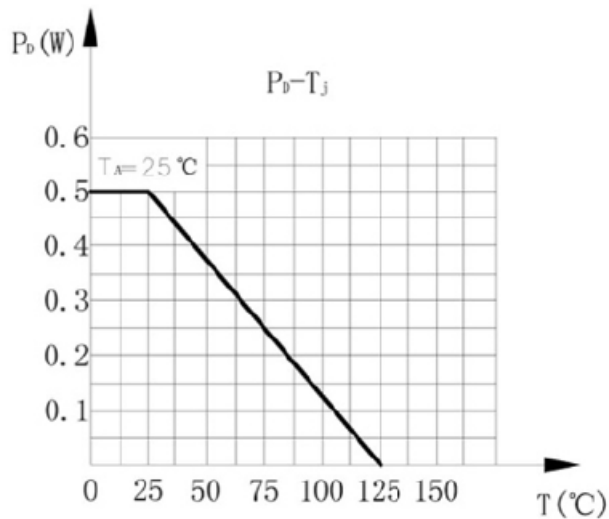
0°C≤T_J≤+125°C, V_I=-33V, I_O=40mA, C_I=0.33μF, C_O=0.1μF, unless otherwise specified

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
Output Voltage	V _O	T _J =25°C		-23.0	-24	-25.0	V
		1mA≤I _O ≤40mA, -27V≤V _I ≤-38V		-22.8	-24	-25.2	
Voltage Regulation	S _V	T _J =25°C	-27V≤V _I ≤-38V	-	-	350	mV
			-28V≤V _I ≤-38V	-	-	300	
Current Regulation	S _I	T _J =25°C, 1mA≤I _O ≤100mA		-	-	200	mV
Quiescent Current	I _Q	T _J =25°C		-	-	6.5	mA
Quiescent Current Change	ΔI _Q	1mA≤I _O ≤40mA		-	-	0.1	mA
		-28V≤V _I ≤-38V		-	-	1.5	
Input-Output Differential Pressure	V _I -V _O	T _J =25°C		-	1.7	-	V
Ripple Rejection Ratio	S _{rip}	-29V≤V _I ≤-35V; f=120Hz		-	47	-	dB



TYPICAL CHARACTERISTICS

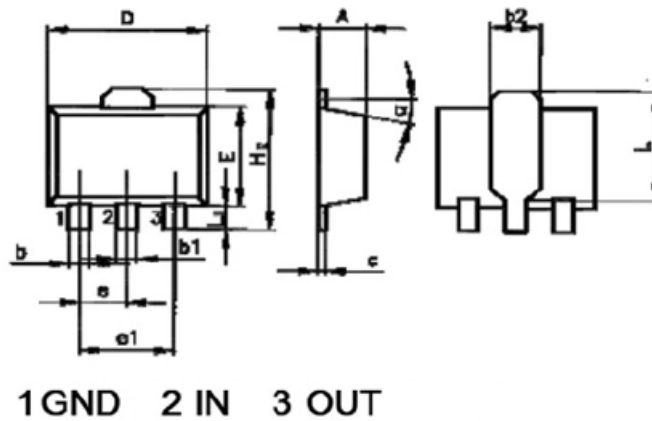
1. Dissipation of Power and Temperature Curves
2. The Curve of The Output Voltage and Junction Temperature





PACKAGE INFORMATION

Dimension in SOT89-3 (Unit: mm)



Symbol	Min	Max
A	1.5 TYP.	
b	-	0.65
b1	-	0.65
b2	1.6 TYP.	
c	0.25	-
D	4.5 TYP.	
E	-	2.6
e	1.5 TYP.	
e1	3 TYP.	
H _E	-	4.25
L	2.6	2.95
L _E	0.8	1.2
α	-	10°



IMPORTANT NOTICE

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc.'s integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or server property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.