



## • Three-terminal negative voltage regulator

## Main purposes:

The role of regulator and protection for a variety of electrical appliances, electronic equipment, regulator circuit

## Maximum Ratings

Para	ameter	Symbol	Ratings	Unit
Input voltage	79L05~79L15	Vı	-35	V
(T <sub>A</sub> =25℃)	79L18~79L24	VI	-40	v
Output current		$I_{O}$	0.15	Α
Total power dissi	otal power dissipation (T <sub>A</sub> =25°C) *)		0.5	W
Work (tube shell)	temperature	$T_{OP}$	-40~85	$^{\circ}$
Storage temperatus	re	$T_{stg}$	-55~150	$^{\circ}$ C

Three-terminal fixed output voltage regulator

0.5W、0.15A、-5V~-24V



Note:Devices installed in good thermal environment

79L05 Electrical characteristics (Unless otherwise specified  $0 \leqslant T_{J} \leqslant +125\,^{\circ}\text{C}$ ,  $V_{I} = -10V$ ,  $I_{0} = 40\text{mA}$ ,  $C_{I} = 0.33 \mu\text{F}$ ,  $C_{0} = 0.1 \mu\text{F}$ )

Parameter name	Symbol	Test	Test Condition		Тур	Max	Unit
Outsut Valtage	N/	T <sub>J</sub> =25 ℃		-4.8	-5	-5.2	V
Output Voltage	$V_{O}$	$1\text{mA} \leq I_0 \leq 40\text{mA}$ ,	$-7V \leq V_I \leq -20V$	-4.75	-5	-5.25	V
Voltage Degulation	6	T -25°C	-7V≤V <sub>I</sub> ≤-20V	_		150	
Voltage Regulation	$S_V$	$S_V$ $T_J=25^{\circ}C$ $-8V \leq V_1 \leq -20V$	_	_	100	mV	
Current Regulation	$S_{I}$	T <sub>J</sub> =25℃, 1mA≤I <sub>0</sub>	$T_J=25^{\circ}C$ , $1mA \leq I_O \leq 100mA$		_	60	mV
Quiescent Current	IQ	T <sub>J</sub> =25℃		_	_	6	mA
Outagonal Current Change	A =	$1\text{mA} \leq I_{O} \leq 40\text{mA}$		_	_	0.1	
Quiescent Current Change	$\triangle I_Q$	-8V≤V <sub>I</sub> ≤-20V	-8V≤V <sub>I</sub> ≤-20V		_	1.5	mA
Input - output differential pressure	$ V_I - V_O $	T <sub>J</sub> =25℃		_	1.7	_	V
Ripple Rejection Ratio	Srip	-8V≤V <sub>I</sub> ≤-18V; f	=120Hz	_	49	_	dB

79L06 Electrical characteristics (Unless otherwise specified  $0 \le T_{\text{\tiny J}} \le +125\,^{\circ}\text{C}$ ,  $V_{\text{\tiny I}} = -11V$ ,  $I_{\text{\tiny 0}} = 40\text{mA}$ ,  $C_{\text{\tiny I}} = 0.33\mu\text{F}$ ,  $C_{\text{\tiny 0}} = 0.1\mu\text{R}$ 

Parameter name	Symbol	Test	Test Condition		Тур	Max	Unit
Output Voltage	$V_{\rm o}$	T <sub>J</sub> =25℃		-5.76	-6	-6.24	V
output vortuge	• • •	$1\text{mA} \leq I_{O} \leq 40\text{mA}$	-8.1V≤V <sub>I</sub> ≤-21V	-5.7	-6	-6.3	•
V-14 D1-4:	6	T-25°C	-8.1V≤V <sub>I</sub> ≤-21V	-	1	150	
Voltage Regulation	$S_{V}$	$S_V$ $T_j=25^{\circ}C$ $-9V \leqslant V_1 \leqslant -21V$		1	110	mV	
Current Regulation	$S_{\rm I}$	T <sub>J</sub> =25°C, 1mA≤I0	T <sub>J</sub> =25℃, 1mA≤I0≤100mA		Ţ	70	mV
Quiescent Current	$I_Q$	T <sub>J</sub> =25°C		_		6	mA
Ovieseent Current Change	A.T.	1mA≤I <sub>O</sub> ≤40mA		_	_	0.1	
Quiescent Current Change	$\triangle I_Q$	-9V≤V <sub>I</sub> ≤-20V	-9V≤V <sub>I</sub> ≤-20V			1.5	mA
Input - output differential pressure	$ V_{I}$ - $V_{O} $	T <sub>J</sub> =25℃	$T_J=25$ °C		1.7		V
Ripple Rejection Ratio	Srip	-9V≤V <sub>I</sub> ≤-19V; f=	=120Hz	_	47		dB

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79L08 Electrical characteristics (Unless otherwise specified  $0 \le T_{\downarrow} \le +125^{\circ}\text{C}$ ,  $V_{i} = -14V$ ,  $I_{0} = 40\text{mA}$ ,  $C_{i} = 0.33 \mu\text{F}$ ,  $C_{0} = 0.1 \mu\text{F}$ )

Parameter name	Symbol		Test Condition	Min	Тур	Max	Unit
Output Voltage	$V_{O}$	T <sub>J</sub> =25℃		-7.7	-8	-8.3	V
Output Voltage	*0	1mA≤I <sub>0</sub> ≤40	mA, -10.5V≤V <sub>I</sub> ≤-23V	-7.6	-8	-8.4	v
V-14 D1-4	$S_V$	T 25°C	-10.5V≤V <sub>I</sub> ≤-23V			175	37
Voltage Regulation	Sγ	T <sub>J</sub> =25℃	-11V≤V <sub>I</sub> ≤-23V	-	-	125	mV
Current Regulation	$S_{I}$	T <sub>J</sub> =25℃, 1m.	$A \leq I_O \leq 100 \text{mA}$	_	-	80	mV
Quiescent Current	$I_Q$	T <sub>J</sub> =25℃		-	_	6.5	mA
Quiescent Current Change	Λ I	1mA≤I <sub>0</sub> ≤40	mA,	_	_	0.1	
Quiescent current change	$\triangle I_Q$	-11V≤V <sub>I</sub> ≤-2	-11V≤V <sub>I</sub> ≤-23V		_	1.5	mA
Input - output differential pressure	$ V_I - V_O $	T <sub>J</sub> =25℃	T <sub>J</sub> =25℃		1.7	_	V
Ripple Rejection Ratio	Srip	-12V≤V <sub>I</sub> ≤-2	3V; f=120Hz	_	45	_	dB

79L09 Electrical characteristics (Unless otherwise specified  $0 \le T_{\downarrow} \le +125 ^{\circ}\text{C}$ ,  $V_i = -15V$ ,  $I_0 = 40\text{mA}$ ,  $C_i = 0.33 \mu\text{F}$ ,  $C_0 = 0.1 \mu\text{F}$ )

Parameter name	Symbol	Tes	Test Condition		Тур	Max	Unit
Output Voltage	V	T <sub>J</sub> =25℃		-8.64	-9	-9.36	**
output vortage	$V_{O}$	1mA≤I <sub>O</sub> ≤40m	A, -11.4V≤V <sub>I</sub> ≤-24V	-8.55	-9	-9.45	V
Voltage Degulation	$S_V$	T <sub>J</sub> =25°C	-11.4V≤V <sub>1</sub> ≤-24V		I	200	
Voltage Regulation	Sy		-12V≤V <sub>I</sub> ≤-24V	_	-	160	mV
Current Regulation	$S_{\rm I}$	T <sub>J</sub> =25℃, 1mA≤I <sub>C</sub>	o≤100mA	_		90	mV
Quiescent Current	$I_Q$	T <sub>J</sub> =25℃		_	-	6.5	mA
Owiganast Change	Λ1	1mA≤I <sub>O</sub> ≤40mA		_		0.1	
Quiescent Current Change	$\triangle I_Q$	-12V≤V <sub>I</sub> ≤-24V	-12V≤V <sub>I</sub> ≤-24V		_	1.5	mA
Input - output differential pressure	$ V_I - V_O $	T <sub>J</sub> =25℃	T <sub>J</sub> =25℃		1.7	_	V
Ripple Rejection Ratio	Srip	-12V≤V <sub>I</sub> ≤-24V;	f=120Hz	_	44	_	dB

79L10 Electrical characteristics (Unless otherwise specified  $0 \le T_{\downarrow} \le +125 \, ^{\circ}_{\circ}$ ,  $V_{i} = -16V$ ,  $I_{0} = 40 \, \text{mA}$ ,  $C_{i} = 0.33 \, \mu\text{F}$ ,  $C_{0} = 0.1 \, \mu\text{F}$ )

Parameter name	Symbol		Test Condition		Тур	Max	Unit
Output Voltage	$V_{0}$	T <sub>J</sub> =25℃		-9.6	-10	-10.4	v
output voitage		1mA≤I <sub>0</sub> ≤40	mA, -12.5V≤V <sub>I</sub> ≤-25V	-9.5	-10	-10.5	v
Voltage Description	ltage Regulation S <sub>V</sub>	T. 05%	-12.5V≤V <sub>I</sub> ≤-25V	_	_	230	**
Voltage Regulation	$S_V$	T <sub>J</sub> =25℃	-13V≤V <sub>I</sub> ≤-25V	_	_	170	mV
Current Regulation	$S_{I}$	T <sub>J</sub> =25℃, 1m.	$T_J=25^{\circ}C$ , $1mA \leqslant I_O \leqslant 100mA$		_	90	mV
Quiescent Current	$I_Q$	T <sub>J</sub> =25℃		_	_	6.5	mA
0.:	^ I	1mA≤I <sub>0</sub> ≤40	1mA≤I <sub>O</sub> ≤40mA			0.1	
Quiescent Current Change	$\triangle I_Q$	-13V≤V <sub>I</sub> ≤-2	-13V≤V <sub>I</sub> ≤-25V		_	1.5	mA
Input - output differential pressure	V <sub>I</sub> - V <sub>O</sub>	T <sub>J</sub> =25℃			1.7	_	V
Ripple Rejection Ratio	Srip	-13V≤V <sub>I</sub> ≤-2	4V; f=120Hz		43	_	dB

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79L12 Electrical characteristics (Unless otherwise specified  $0 \leqslant T_{\downarrow} \leqslant +125 ^{\circ}\text{C}$ ,  $V_{i} = -19V$ ,  $I_{0} = 40 \text{mA}$ ,  $C_{i} = 0.33 \mu\text{F}$ ,  $C_{0} = 0.1 \mu\text{F}$ )

Parameter name	Symbol		Test Condition	Min	Тур	Max	Unit
	V	T <sub>J</sub> =25°C	T <sub>J</sub> =25 ℃		-12	-12.5	v
Output Voltage	$V_{O}$	1mA≤I <sub>O</sub> ≤40r	1mA≤I <sub>O</sub> ≤40mA, -14.5V≤V <sub>I</sub> ≤-27V		-12	-12.6	·
	c	T <sub>J</sub> =25℃	-14.5V≤V <sub>I</sub> ≤-27V	_	_	250	V
Voltage Regulation	$S_V$	1 <sub>3</sub> =25 C	-16V≤V <sub>I</sub> ≤-27V	_	-	200	mV
Current Regulation	$S_{\rm I}$	T <sub>J</sub> =25°C, 1mA	$\Lambda \leq I_O \leq 100 \text{mA}$	_	_	100	mV
Quiescent Current	$I_Q$	T <sub>J</sub> =25℃			_	6.5	mA
	Λ.Ι.	1mA≤I <sub>O</sub> ≤40r	mA	_	_	0.1	A
Quiescent Current Change	$\triangle I_Q$	-16V≤V <sub>I</sub> ≤-27	-16V≤V <sub>I</sub> ≤-27V		_	1.5	mA
Input - output differential pressure	$ V_{I}$ - $V_{O} $	T <sub>J</sub> =25℃	T <sub>J</sub> =25°C		1.7		V
Ripple Rejection Ratio	Srip	-15V≤V <sub>I</sub> ≤-25	5V; f=120Hz	_	42	_	dB

79L15 Electrical characteristics (Unless otherwise specified  $0 \le T_{\downarrow} \le +125 \, ^{\circ}\text{C}$ ,  $V_1 = -23V$ ,  $I_0 = 40 \, \text{mA}$ ,  $C_1 = 0.33 \, \mu\text{F}$ ,  $C_0 = 0.1 \, \mu\text{F}$ )

Parameter name	Symbol	Test	Condition	Min	Тур	Max	Unit
Output Voltage	V	T <sub>J</sub> =25℃		-14.4	-15	-15.6	v
output vortage	$V_{O}$	$1\text{mA} \leq I_{O} \leq 40\text{mA}$	$-17.5V \leqslant V_I \leqslant -30V$	-14.25	-15	-15.75	· ·
	c	T₁=25°C	-17.5V≤V <sub>I</sub> ≤-30V	_	_	300	mV
Voltage Regulation	$S_V$	1 <sub>3</sub> =25 C	-20V≤V <sub>I</sub> ≤-30V	_	_	250	mV
Current Regulation	$S_{\rm I}$	$T_J=25^{\circ}C$ , $1mA \leq I_O$	≤100mA	_	_	150	mV
Quiescent Current	$I_Q$	T <sub>J</sub> =25℃		_	_	6.5	mA
Onings Const Change	ΛI	1mA≤I <sub>O</sub> ≤40mA		_	_	0.1	m A
Quiescent Current Change	$\triangle I_Q$	-20V≤V <sub>I</sub> ≤-30V	-20V≤V <sub>I</sub> ≤-30V		_	1.5	mA
Input - output differential pressure	$ V_{I}$ - $V_{O} $	T <sub>J</sub> =25℃	T <sub>J</sub> =25°C		1.7	_	V
Ripple Rejection Ratio	Srip	-18.5V≤V <sub>I</sub> ≤-28.5V	/; f=120Hz	_	39	_	dB

79L18 Electrical characteristics (Unless otherwise specified 0≤T₃≤+125℃, V₁=-27V, I₀=40mA, C₁=0. 33μF, C₀=0. 1μF)

Parameter name	Symbol	Test	Test Condition		Тур	Max	Unit
Output Voltage	$V_{O}$	T <sub>J</sub> =25℃		-17.3	-18	-18.7	V
output vortage	<b>v</b> <sub>0</sub>	1mA≤I <sub>O</sub> ≤40mA,	$-20.7V$ ≤ $V_I$ ≤ $-33V$	-17.1	-18	-18.9	·
V 1. P 1.	c	T₁=25°C	-20.7V≤V <sub>I</sub> ≤-33V	_	_	325	mV
Voltage Regulation	$S_V$	-21V≤V <sub>I</sub> ≤-	-21V≤V <sub>I</sub> ≤-33V		_	275	mv
Current Regulation	$S_{I}$	T <sub>J</sub> =25℃, 1mA≤I <sub>C</sub>	0≤100mA	_	_	170	mV
Quiescent Current	$I_Q$	T <sub>J</sub> =25℃		_	_	6.5	mA
Quiescent Current Change	Λ1	1mA≤I <sub>O</sub> ≤40mA		_	_	0.1	A
Quiescent current change	$\triangle I_Q$	-21V≤V <sub>I</sub> ≤-33V	-21V≤V <sub>I</sub> ≤-33V		_	1.5	mA
Input - output differential pressure	$ V_I - V_O $	T <sub>J</sub> =25℃	T <sub>J</sub> =25℃		1.7	_	V
Ripple Rejection Ratio	Srip	-23V≤V <sub>I</sub> ≤-33V;	f=120Hz	_	48		dB

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Unit: mm



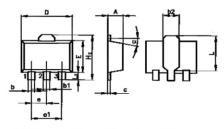
79L20 Electrical characteristics (Unless otherwise specified  $0 \le T_{\downarrow} \le +125^{\circ}\text{C}$ ,  $V_{i} = -29V$ ,  $I_{0} = 40\text{mA}$ ,  $C_{i} = 0.33 \mu\text{F}$ ,  $C_{0} = 0.1 \mu\text{F}$ )

Parameter name	Symbol	T	est Condition	Min	Тур	Max	Unit
Out aut Valtage	Vo	T <sub>J</sub> =25°C	T <sub>J</sub> =25℃		-20	-20.8	V
Output Voltage		1mA≤I <sub>0</sub> ≤40ı	mA, $-23.5V \leq V_I \leq -35V$	-19.0	-20	-21.0	V
Valtara Basslation	c.	T₁=25°C	-23.5V≤V <sub>I</sub> ≤-35V	_	-	330	mV
Voltage Regulation	$S_V$	-24V≤V <sub>1</sub> ≤-35V	_	_	285	mv	
Current Regulation	$S_1$	T <sub>J</sub> =25°C, 1m/	$A \leq I_O \leq 100 \text{mA}$	_		180	mV
Quiescent Current	$I_Q$	T <sub>J</sub> =25°C		_	_	6.5	mA
Outcomet Comment Chance	^ I	1mA≤I <sub>0</sub> ≤40i	mA	_	_	0.1	A
Quiescent Current Change	$\triangle I_Q$	-24V≤V <sub>I</sub> ≤-35	-24V≤V <sub>I</sub> ≤-35V			1.5	mA
Input - output differential pressure	$ V_I - V_O $	T <sub>J</sub> =25°C	•	_	1.7	_	V
Ripple Rejection Ratio	Srip	-27V≤V <sub>I</sub> ≤-3:	5V; f=120Hz	_	37	_	dB

79L24 Electrical characteristics (Unless otherwise specified  $0 \leqslant T_{J} \leqslant +125 \, ^{\circ}\text{C}$ ,  $V_{i}$ =-33V,  $I_{0}$ =40mA,  $C_{i}$ =0.  $33 \mu F$ ,  $C_{0}$ =0.  $1 \mu F$ )

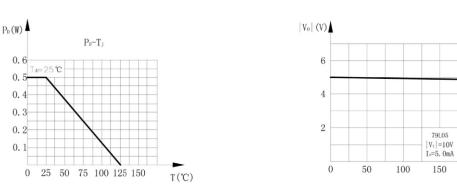
Parameter name	Symbol	Te	est Condition	Min	Тур	Max	Unit
Output Voltage	$V_{O}$	T <sub>J</sub> =25 ℃		-23.0	-24	-25.0	V
output vortage	<b>v</b> <sub>0</sub>	$1\text{mA} \leq I_{\text{O}} \leq 40\text{m}$	nA, -27V≤V <sub>I</sub> ≤-38V	-22.8	-24	-25.2	'
Voltage Regulation	c	T₁=25°C	-27V≤V <sub>I</sub> ≤-38V	_		350	mV
vortage Regulation	$S_V$	$\begin{array}{c c} I_{J}=25 \text{ C} \\ \hline -28 \text{V} \leqslant \text{V}_{I} \leqslant -38 \text{V} \end{array}$	_	_	300	mv	
Current Regulation	$S_{I}$	T <sub>J</sub> =25℃, 1mA	$\leq I_0 \leq 100 \text{mA}$	_	_	200	mV
Quiescent Current	$I_Q$	T <sub>J</sub> =25 ℃		_	_	6.5	mA
Quiescent Current Change	^ I	1mA≤I <sub>O</sub> ≤40n	nA	_	_	0.1	mA
Quiescent current change	$\triangle I_Q$	-28V≤V <sub>I</sub> ≤-38	-28V≤V <sub>I</sub> ≤-38V		_	1.5	mA
Input - output differential pressure	$ V_{I}-V_{O} $	T <sub>J</sub> =25 ℃	T <sub>J</sub> =25 ℃		1.7	_	V
Ripple Rejection Ratio	Srip	-29V≤V <sub>I</sub> ≤-35	V; f=120Hz	_	47	_	dB

SOT-89 Dimensions



1GND 2 IN 3 OUT

Size	SOT-89			Size	SOT-89		
Symbol	min	typ	max	Symbol	min typ m		max
A		1.5		e		1.5	
b			0.65	e1		3	
b1			0.65	$H_E$			4.25
b2		1.6		L	2.6		2.95
С	0.25			$L_{E}$	0.8		1.2
D		4.5		α			10°
E			2.6				



Dissipation of power and temperature curves

The curve of the output voltage and junction temperature

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