



79L05--79L24

- 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

Parameter		Symbol	Ratings	Unit
Input voltage (T _A =25°C)	79L05~79L15	V _I	-35	V
	79L18~79L24		-40	
Output current		I _O	0.15	A
Total power dissipation (T _A =25°C)		P _D	0.5	W
Work (tube shell) temperature		T _{OP}	-40~85	°C
Storage temperature		T _{stg}	-55~150	°C

Three-terminal fixed output voltage regulator

0.5W、0.15A、-5V~-24V



SOT-89

Note: Devices installed in good thermal environment

79L05 Electrical characteristics (Unless otherwise specified 0≤T_J≤+125°C, V_I=-10V, I_O=40mA, C_I=0.33μF, C_O=0.1μF)

Parameter name	Symbol	Test Condition		Min	Typ	Max	Unit
Output Voltage	V _O	T _J =25°C		-4.8	-5	-5.2	V
		1mA≤I _O ≤40mA, -7V≤V _I ≤-20V		-4.75	-5	-5.25	
Voltage Regulation	S _V	T _J =25°C	-7V≤V _I ≤-20V	—	—	150	mV
			-8V≤V _I ≤-20V	—	—	100	
Current Regulation	S _I	T _J =25°C, 1mA≤I _O ≤100mA		—	—	60	mV
Quiescent Current	I _Q	T _J =25°C		—	—	6	mA
Quiescent Current Change	△I _Q	1mA≤I _O ≤40mA		—	—	0.1	mA
		-8V≤V _I ≤-20V		—	—	1.5	
Input - output differential pressure	V _I -V _O	T _J =25°C		—	1.7	—	V
Ripple Rejection Ratio	Srip	-8V≤V _I ≤-18V; f=120Hz		—	49	—	dB

79L06 Electrical characteristics (Unless otherwise specified 0≤T_J≤+125°C, V_I=-11V, I_O=40mA, C_I=0.33μF, C_O=0.1μF)

Parameter name	Symbol	Test Condition		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	△I _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	Srip	-9V≤V _I ≤-19V; f=120Hz		—	47	—	dB



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79L08 Electrical characteristics (Unless otherwise specified $0 \leq T_J \leq +125^\circ\text{C}$, $V_I = -14\text{V}$, $I_O = 40\text{mA}$, $C_I = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$)

Parameter name	Symbol	Test Condition		Min	Typ	Max	Unit
Output Voltage	V_O	$T_J = 25^\circ\text{C}$		-7.7	-8	-8.3	V
		$1\text{mA} \leq I_O \leq 40\text{mA}, -10.5\text{V} \leq V_I \leq -23\text{V}$		-7.6	-8	-8.4	
Voltage Regulation	S_V	$T_J = 25^\circ\text{C}$	$-10.5\text{V} \leq V_I \leq -23\text{V}$	—	—	175	mV
			$-11\text{V} \leq V_I \leq -23\text{V}$	—	—	125	
Current Regulation	S_I	$T_J = 25^\circ\text{C}, 1\text{mA} \leq I_O \leq 100\text{mA}$		—	—	80	mV
Quiescent Current	I_Q	$T_J = 25^\circ\text{C}$		—	—	6.5	mA
Quiescent Current Change	ΔI_Q	$1\text{mA} \leq I_O \leq 40\text{mA}, -11\text{V} \leq V_I \leq -23\text{V}$		—	—	0.1	mA
				—	—	1.5	
Input - output differential pressure	$ V_I - V_O $	$T_J = 25^\circ\text{C}$		—	1.7	—	V
Ripple Rejection Ratio	S_{Rip}	$-12\text{V} \leq V_I \leq -23\text{V}; f = 120\text{Hz}$		—	45	—	dB

79L09 Electrical characteristics (Unless otherwise specified $0 \leq T_J \leq +125^\circ\text{C}$, $V_I = -15\text{V}$, $I_O = 40\text{mA}$, $C_I = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$)

Parameter name	Symbol	Test Condition		Min	Typ	Max	Unit
Output Voltage	V_O	$T_J = 25^\circ\text{C}$		-8.64	-9	-9.36	V
		$1\text{mA} \leq I_O \leq 40\text{mA}, -11.4\text{V} \leq V_I \leq -24\text{V}$		-8.55	-9	-9.45	
Voltage Regulation	S_V	$T_J = 25^\circ\text{C}$	$-11.4\text{V} \leq V_I \leq -24\text{V}$	—	—	200	mV
			$-12\text{V} \leq V_I \leq -24\text{V}$	—	—	160	
Current Regulation	S_I	$T_J = 25^\circ\text{C}, 1\text{mA} \leq I_O \leq 100\text{mA}$		—	—	90	mV
Quiescent Current	I_Q	$T_J = 25^\circ\text{C}$		—	—	6.5	mA
Quiescent Current Change	ΔI_Q	$1\text{mA} \leq I_O \leq 40\text{mA}$		—	—	0.1	mA
		$-12\text{V} \leq V_I \leq -24\text{V}$		—	—	1.5	
Input - output differential pressure	$ V_I - V_O $	$T_J = 25^\circ\text{C}$		—	1.7	—	V
Ripple Rejection Ratio	S_{Rip}	$-12\text{V} \leq V_I \leq -24\text{V}; f = 120\text{Hz}$		—	44	—	dB

79L10 Electrical characteristics (Unless otherwise specified $0 \leq T_J \leq +125^\circ\text{C}$, $V_I = -16\text{V}$, $I_O = 40\text{mA}$, $C_I = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$)

Parameter name	Symbol	Test Condition		Min	Typ	Max	Unit
Output Voltage	V_O	$T_J = 25^\circ\text{C}$		-9.6	-10	-10.4	V
		$1\text{mA} \leq I_O \leq 40\text{mA}, -12.5\text{V} \leq V_I \leq -25\text{V}$		-9.5	-10	-10.5	
Voltage Regulation	S_V	$T_J = 25^\circ\text{C}$	$-12.5\text{V} \leq V_I \leq -25\text{V}$	—	—	230	mV
			$-13\text{V} \leq V_I \leq -25\text{V}$	—	—	170	
Current Regulation	S_I	$T_J = 25^\circ\text{C}, 1\text{mA} \leq I_O \leq 100\text{mA}$		—	—	90	mV
Quiescent Current	I_Q	$T_J = 25^\circ\text{C}$		—	—	6.5	mA
Quiescent Current Change	ΔI_Q	$1\text{mA} \leq I_O \leq 40\text{mA}$		—	—	0.1	mA
		$-13\text{V} \leq V_I \leq -25\text{V}$		—	—	1.5	
Input - output differential pressure	$ V_I - V_O $	$T_J = 25^\circ\text{C}$		—	1.7	—	V
Ripple Rejection Ratio	S_{Rip}	$-13\text{V} \leq V_I \leq -25\text{V}; f = 120\text{Hz}$		—	43	—	dB



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79L12 Electrical characteristics (Unless otherwise specified $0 \leq T_J \leq +125^\circ\text{C}$, $V_i = -19\text{V}$, $I_o = 40\text{mA}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$)

Parameter name	Symbol	Test Condition		Min	Typ	Max	Unit
Output Voltage	V_o	$T_J = 25^\circ\text{C}$		-11.5	-12	-12.5	V
		$1\text{mA} \leq I_o \leq 40\text{mA}$, $-14.5\text{V} \leq V_i \leq -27\text{V}$		-11.4	-12	-12.6	
Voltage Regulation	S_v	$T_J = 25^\circ\text{C}$	$-14.5\text{V} \leq V_i \leq -27\text{V}$	—	—	250	mV
			$-16\text{V} \leq V_i \leq -27\text{V}$	—	—	200	
Current Regulation	S_i	$T_J = 25^\circ\text{C}$, $1\text{mA} \leq I_o \leq 100\text{mA}$		—	—	100	mV
Quiescent Current	I_Q	$T_J = 25^\circ\text{C}$		—	—	6.5	mA
Quiescent Current Change	ΔI_Q	$1\text{mA} \leq I_o \leq 40\text{mA}$		—	—	0.1	mA
		$-16\text{V} \leq V_i \leq -27\text{V}$		—	—	1.5	
Input - output differential pressure	$ V_i - V_o $	$T_J = 25^\circ\text{C}$		—	1.7	—	V
Ripple Rejection Ratio	Srip	$-15\text{V} \leq V_i \leq -25\text{V}$; $f = 120\text{Hz}$		—	42	—	dB

79L15 Electrical characteristics (Unless otherwise specified $0 \leq T_J \leq +125^\circ\text{C}$, $V_i = -23\text{V}$, $I_o = 40\text{mA}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$)

Parameter name	Symbol	Test Condition		Min	Typ	Max	Unit
Output Voltage	V_o	$T_J = 25^\circ\text{C}$		-14.4	-15	-15.6	V
		$1\text{mA} \leq I_o \leq 40\text{mA}$, $-17.5\text{V} \leq V_i \leq -30\text{V}$		-14.25	-15	-15.75	
Voltage Regulation	S_v	$T_J = 25^\circ\text{C}$	$-17.5\text{V} \leq V_i \leq -30\text{V}$	—	—	300	mV
			$-20\text{V} \leq V_i \leq -30\text{V}$	—	—	250	
Current Regulation	S_i	$T_J = 25^\circ\text{C}$, $1\text{mA} \leq I_o \leq 100\text{mA}$		—	—	150	mV
Quiescent Current	I_Q	$T_J = 25^\circ\text{C}$		—	—	6.5	mA
Quiescent Current Change	ΔI_Q	$1\text{mA} \leq I_o \leq 40\text{mA}$		—	—	0.1	mA
		$-20\text{V} \leq V_i \leq -30\text{V}$		—	—	1.5	
Input - output differential pressure	$ V_i - V_o $	$T_J = 25^\circ\text{C}$		—	1.7	—	V
Ripple Rejection Ratio	Srip	$-18.5\text{V} \leq V_i \leq -28.5\text{V}$; $f = 120\text{Hz}$		—	39	—	dB

79L18 Electrical characteristics (Unless otherwise specified $0 \leq T_J \leq +125^\circ\text{C}$, $V_i = -27\text{V}$, $I_o = 40\text{mA}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$)

Parameter name	Symbol	Test Condition		Min	Typ	Max	Unit
Output Voltage	V_o	$T_J = 25^\circ\text{C}$		-17.3	-18	-18.7	V
		$1\text{mA} \leq I_o \leq 40\text{mA}$, $-20.7\text{V} \leq V_i \leq -33\text{V}$		-17.1	-18	-18.9	
Voltage Regulation	S_v	$T_J = 25^\circ\text{C}$	$-20.7\text{V} \leq V_i \leq -33\text{V}$	—	—	325	mV
			$-21\text{V} \leq V_i \leq -33\text{V}$	—	—	275	
Current Regulation	S_i	$T_J = 25^\circ\text{C}$, $1\text{mA} \leq I_o \leq 100\text{mA}$		—	—	170	mV
Quiescent Current	I_Q	$T_J = 25^\circ\text{C}$		—	—	6.5	mA
Quiescent Current Change	ΔI_Q	$1\text{mA} \leq I_o \leq 40\text{mA}$		—	—	0.1	mA
		$-21\text{V} \leq V_i \leq -33\text{V}$		—	—	1.5	
Input - output differential pressure	$ V_i - V_o $	$T_J = 25^\circ\text{C}$		—	1.7	—	V
Ripple Rejection Ratio	Srip	$-23\text{V} \leq V_i \leq -33\text{V}$; $f = 120\text{Hz}$		—	48	—	dB



79L05--79L24

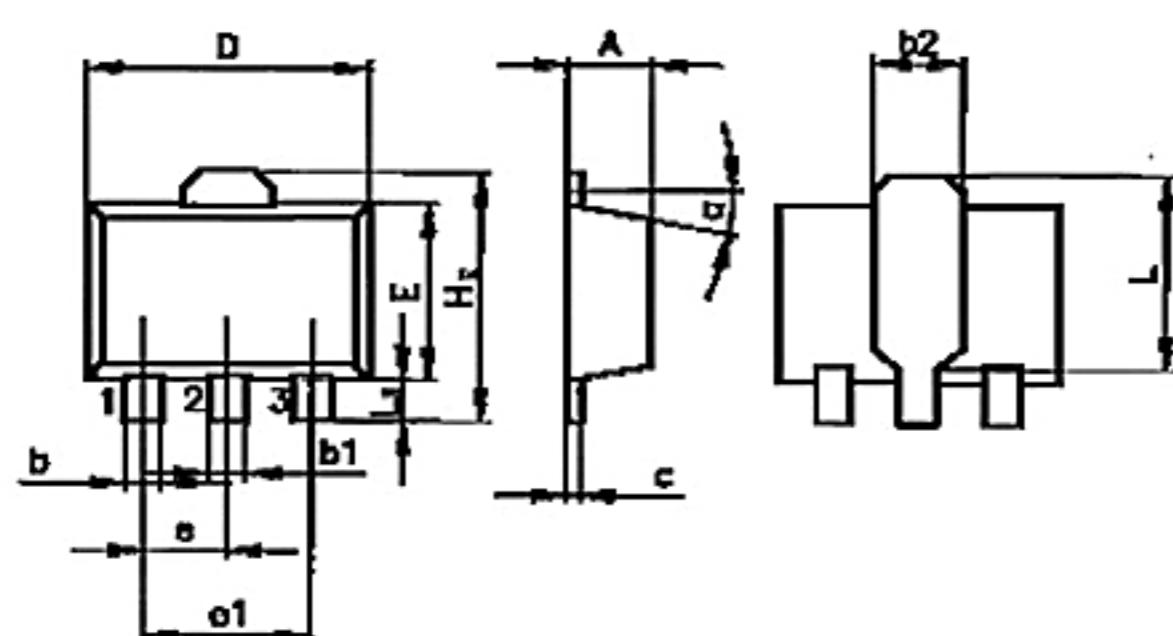
79L20 Electrical characteristics (Unless otherwise specified $0 \leq T_j \leq +125^\circ\text{C}$, $|V_i| = -29\text{V}$, $I_o = 40\text{mA}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$)

Parameter name	Symbol	Test Condition			Min	Typ	Max	Unit		
Output Voltage	V_o	$T_j = 25^\circ\text{C}$			-19.2	-20	-20.8	V		
		$1\text{mA} \leq I_o \leq 40\text{mA}, -23.5\text{V} \leq V_i \leq -35\text{V}$			-19.0	-20	-21.0			
Voltage Regulation	S_v	$T_j = 25^\circ\text{C}$	$-23.5\text{V} \leq V_i \leq -35\text{V}$		—	—	330	mV		
			$-24\text{V} \leq V_i \leq -35\text{V}$		—	—	285			
Current Regulation	S_I	$T_j = 25^\circ\text{C}, 1\text{mA} \leq I_o \leq 100\text{mA}$			—	—	180	mV		
Quiescent Current	I_Q	$T_j = 25^\circ\text{C}$			—	—	6.5	mA		
Quiescent Current Change	ΔI_Q	$1\text{mA} \leq I_o \leq 40\text{mA}$			—	—	0.1	mA		
		$-24\text{V} \leq V_i \leq -35\text{V}$			—	—	1.5			
Input - output differential pressure	$ V_I - V_o $	$T_j = 25^\circ\text{C}$			—	1.7	—	V		
Ripple Rejection Ratio	S_{rip}	$-27\text{V} \leq V_i \leq -35\text{V}; f = 120\text{Hz}$			—	37	—	dB		

79L24 Electrical characteristics (Unless otherwise specified $0 \leq T_j \leq +125^\circ\text{C}$, $|V_i| = -33\text{V}$, $I_o = 40\text{mA}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$)

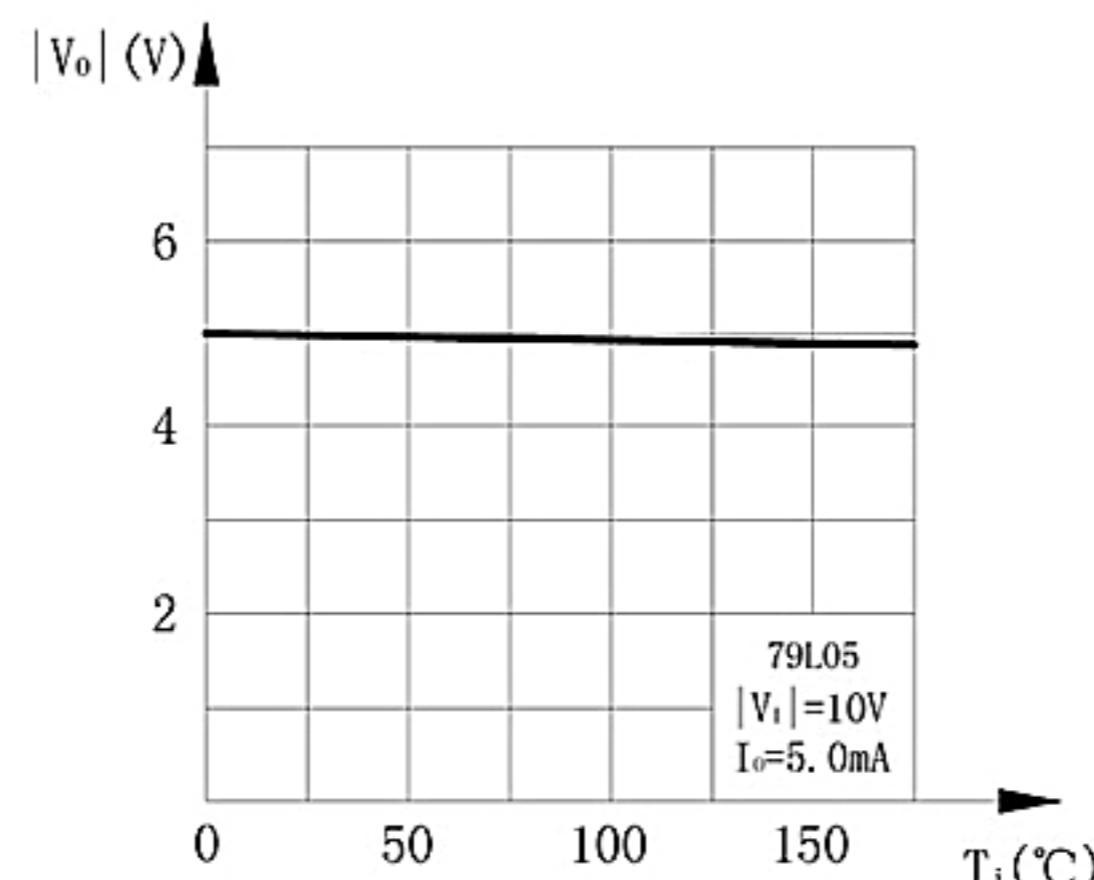
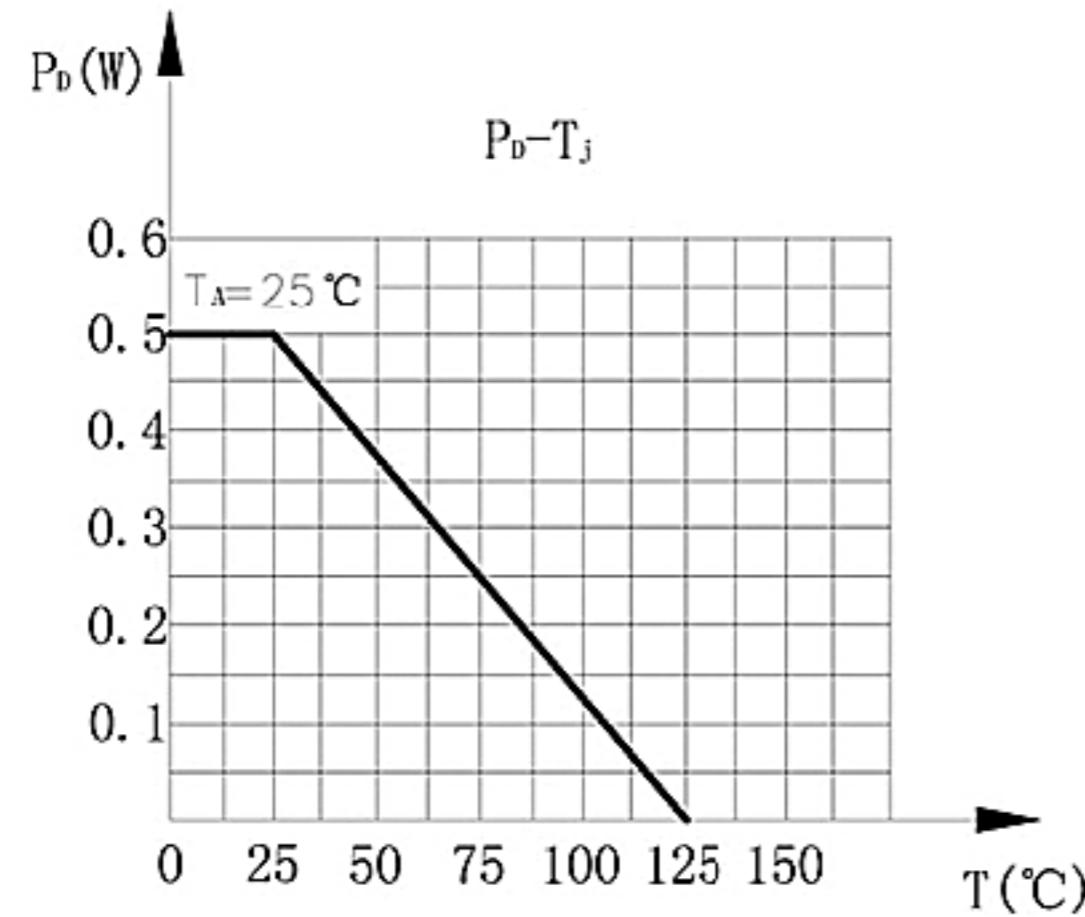
Parameter name	Symbol	Test Condition			Min	Typ	Max	Unit		
Output Voltage	V_o	$T_j = 25^\circ\text{C}$			-23.0	-24	-25.0	V		
		$1\text{mA} \leq I_o \leq 40\text{mA}, -27\text{V} \leq V_i \leq -38\text{V}$			-22.8	-24	-25.2			
Voltage Regulation	S_v	$T_j = 25^\circ\text{C}$	$-27\text{V} \leq V_i \leq -38\text{V}$		—	—	350	mV		
			$-28\text{V} \leq V_i \leq -38\text{V}$		—	—	300			
Current Regulation	S_I	$T_j = 25^\circ\text{C}, 1\text{mA} \leq I_o \leq 100\text{mA}$			—	—	200	mV		
Quiescent Current	I_Q	$T_j = 25^\circ\text{C}$			—	—	6.5	mA		
Quiescent Current Change	ΔI_Q	$1\text{mA} \leq I_o \leq 40\text{mA}$			—	—	0.1	mA		
		$-28\text{V} \leq V_i \leq -38\text{V}$			—	—	1.5			
Input - output differential pressure	$ V_I - V_o $	$T_j = 25^\circ\text{C}$			—	1.7	—	V		
Ripple Rejection Ratio	S_{rip}	$-29\text{V} \leq V_i \leq -35\text{V}; f = 120\text{Hz}$			—	47	—	dB		

SOT-89 Dimensions



Symbol	SOT-89			Symbol	SOT-89		
	min	typ	max		min	typ	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
c	0.25			L _E	0.8		1.2
D		4.5		a			10°
E			2.6				

1 GND 2 IN 3 OUT



Dissipation of power and temperature curves

The curve of the output voltage and junction temperature