

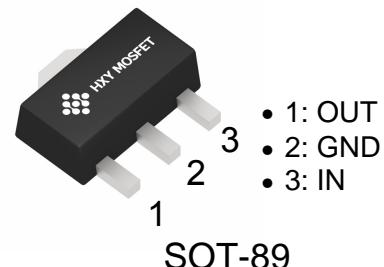


## Features

- Available Output Voltage: 10V
- Maximum Input Voltage: 30V for  $V_{OUT} < 13V$
- Maximum Output Current: Exceed 100mA at  $T_J = 25^\circ C$
- Output Tolerances:  $\pm 3\%$  at  $T_J = 25^\circ C$   
 $\pm 5\%$  over the Operating  $T_J$
- No External Components

## Applications

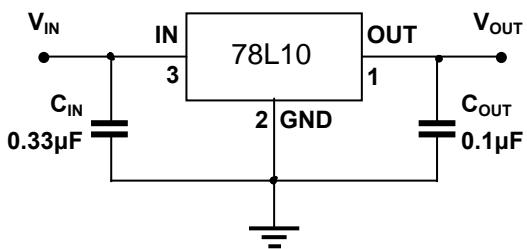
- TV Board
- Air Conditioner
- Vehicle Mounted Radar
- Charging Device



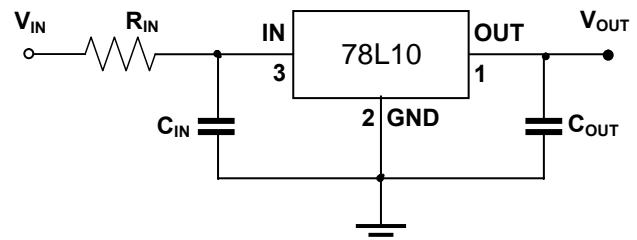
## Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
78L10	SOT-89	78L10	1000

## Typical Application Circuit



Conventional Circuit



Resistance are used at IN

## Absolute Maximum Ratings

Characteristic	Symbol	Value	Units
Maximum input voltage	$V_{IN}$	30	V
Maximum junction temperature	$T_J \text{ Max}$	150	°C
Storage temperature	$T_{stg}$	- 65 ~ 150	°C
Soldering temperature & time	$T_{solder}$	260°C, 10s	-



## Electrical Characteristics

78L10 ( $V_{OUT} = 5.0V$ ,  $V_{IN} = 13V$ ,  $I_{OUT} = 40mA$ ,  $C_{IN} = 0.33\mu F$ ,  $C_{OUT} = 0.1\mu F$ ,  $T_J = 25^\circ C$ , unless otherwise specified)

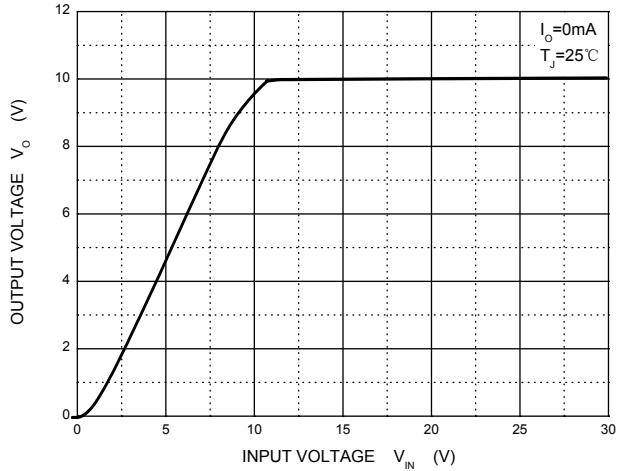
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	Vo		25°C	9.6	10.0	10.4
		13V≤Vi≤25V, Io=1mA~40mA	0-125°C	9.5	10.0	10.5
		Io=1mA~70mA		9.5	10.0	10.5
Load Regulation	ΔVo	Io=1mA~100mA	25°C		20	mV
		Io=1mA~40mA	25°C		11	mV
Line regulation	ΔVo	13V≤Vi≤25V	25°C		51	mV
		14V≤Vi≤25V	25°C		42	mV
Quiescent Current	Iq		25°C		4.2	mA
Quiescent Current Change	ΔIq	14V≤Vi≤25V	0-125°C		1.5	mA
	ΔIq	1mA≤Io≤40mA	0-125°C		0.1	mA
Output Noise Voltage	V <sub>N</sub>	10Hz≤f≤100KHz	25°C		62	uV
Ripple Rejection	RR	15V≤Vi≤25V, f=120Hz	0-125°C	3744		dB
Dropout Voltage	V <sub>d</sub>		25°C		1.7	V

\* Pulse test.

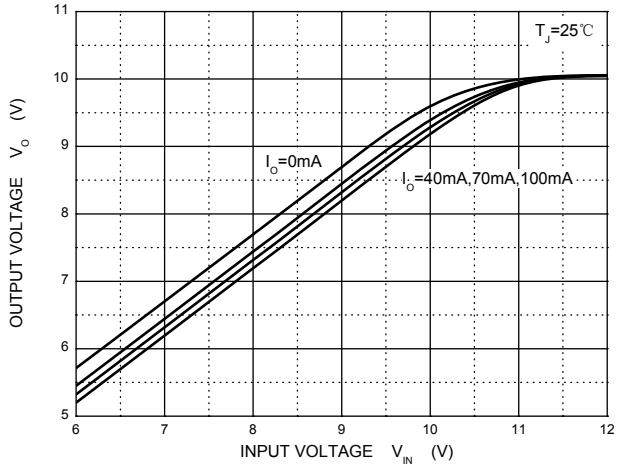


## Typical Characteristics

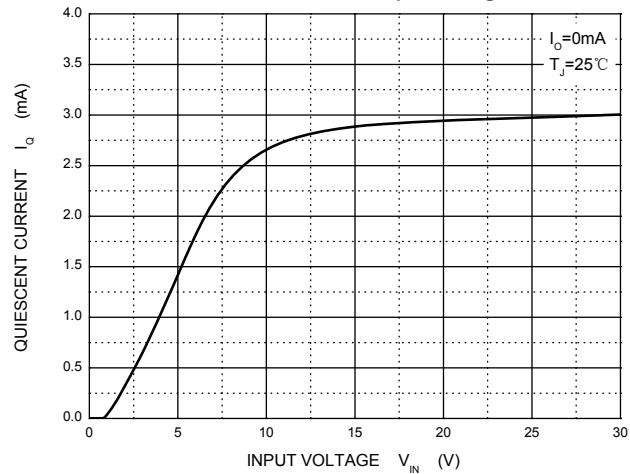
Output Characteristics



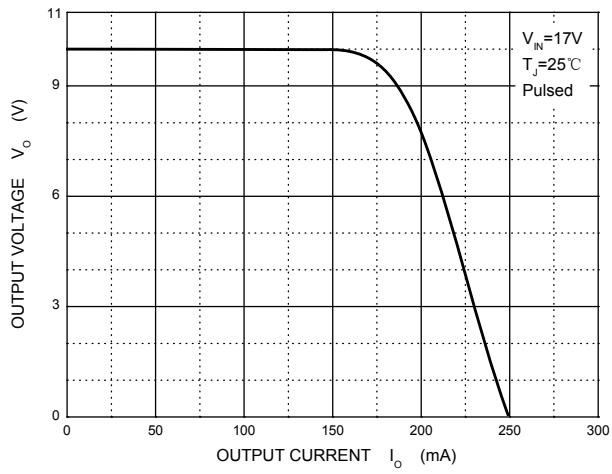
Dropout Characteristics



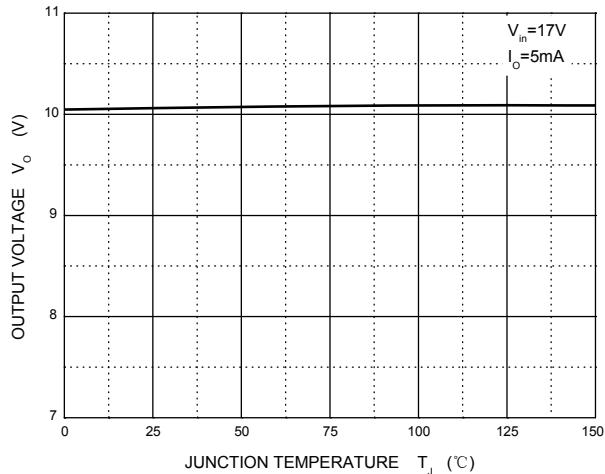
Quiescent Current vs Input Voltage



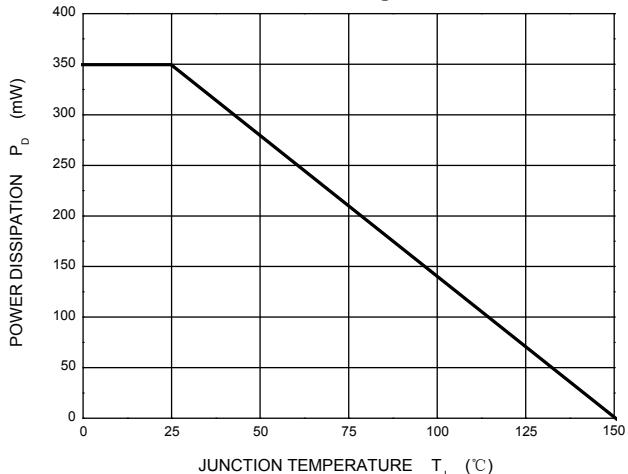
Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature

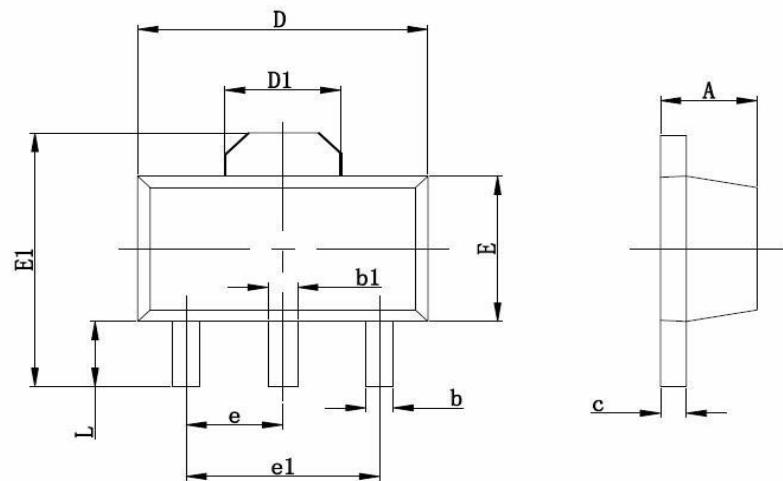


Power Derating Curve





### SOT-89 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047



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