

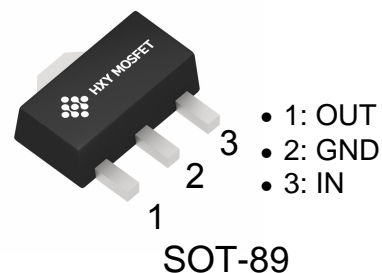


## Features

- 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

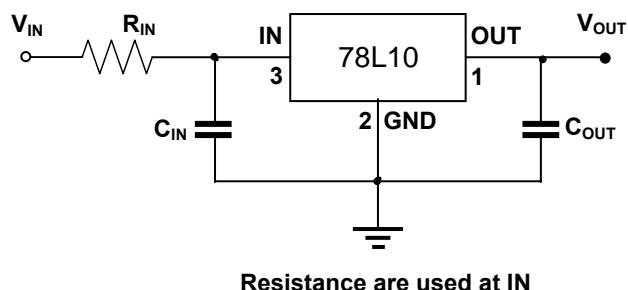
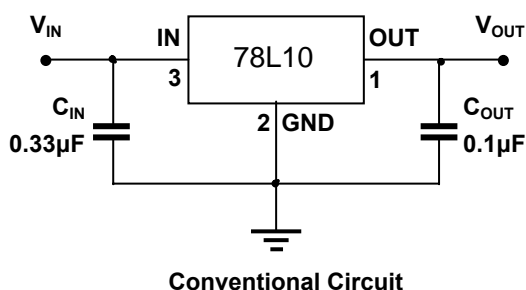
- TV Board
- Air Conditioner
- Vehicle Mounted Radar
- Charging Device



## Package Marking and Ordering Information

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

## Typical Application Circuit



## Absolute Maximum Ratings

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



## Electrcal Charcteristics

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)

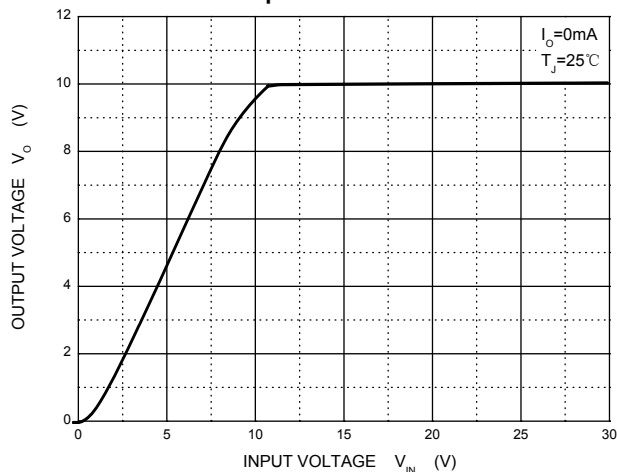
Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output voltage	$V_o$		$25^\circ C$	9.6	10.0	10.4	V
		$13V \leq V_i \leq 25V, I_o = 1mA \sim 40mA$	$0 \sim 125^\circ C$	9.5	10.0	10.5	V
		$I_o = 1mA \sim 70mA$		9.5	10.0	10.5	V
Load Regulation	$\Delta V_o$	$I_o = 1mA \sim 100mA$	$25^\circ C$		20	90	mV
		$I_o = 1mA \sim 40mA$	$25^\circ C$		11	40	mV
Line regulation	$\Delta V_o$	$13V \leq V_i \leq 25V$	$25^\circ C$		51	175	mV
		$14V \leq V_i \leq 25V$	$25^\circ C$		42	125	mV
Quiescent Current	$I_q$		$25^\circ C$		4.2	6	mA
Quiescent Current Change	$\Delta I_q$	$14V \leq V_i \leq 25V$	$0 \sim 125^\circ C$			1.5	mA
	$\Delta I_q$	$1mA \leq I_o \leq 40mA$	$0 \sim 125^\circ C$			0.1	mA
Output NoiseVoltage	$V_N$	$10Hz \leq f \leq 100KHz$	$25^\circ C$		62		$\mu V$
RippleRejection	RR	$15V \leq V_i \leq 25V, f = 120Hz$	$0 \sim 125^\circ C$	3744			dB
DropoutVoltage	$V_d$		$25^\circ C$		1.7		V

\* Pulse test.

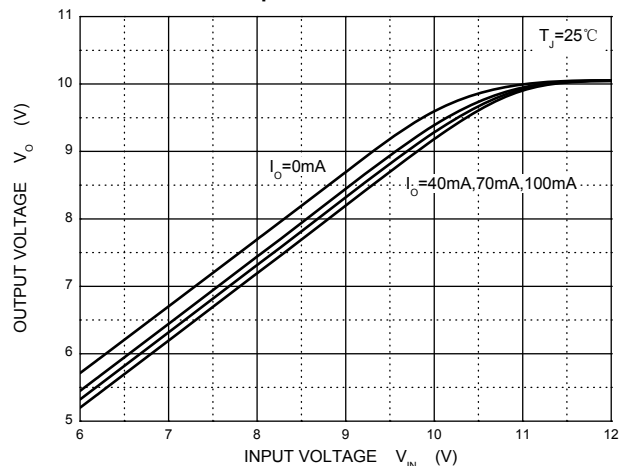


## Typical Characteristics

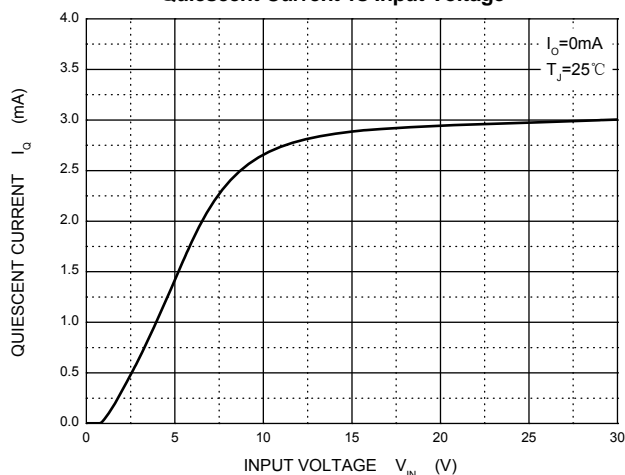
Output Characteristics



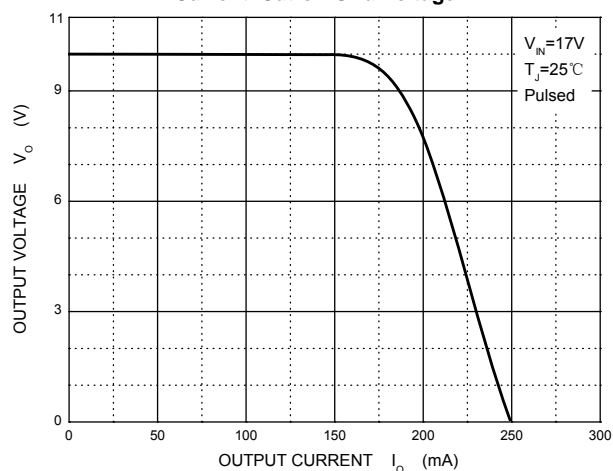
Dropout Characteristics



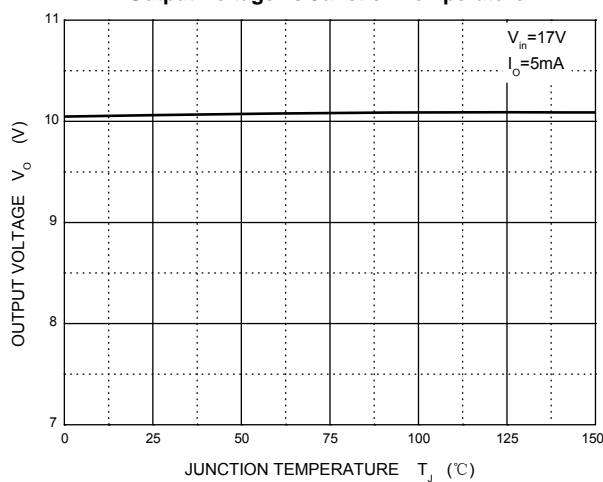
Quiescent Current vs Input Voltage



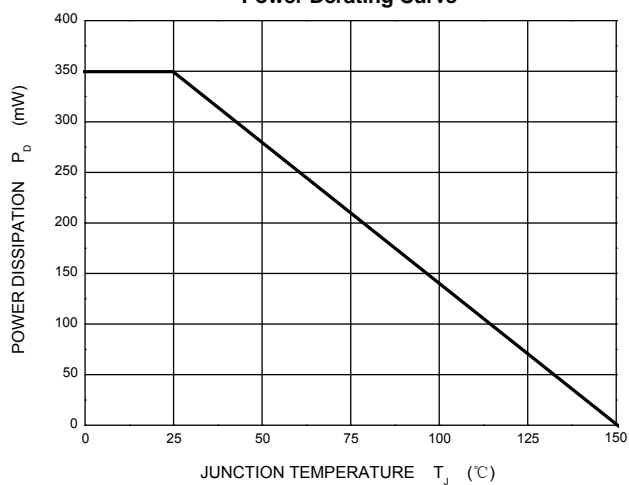
Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature

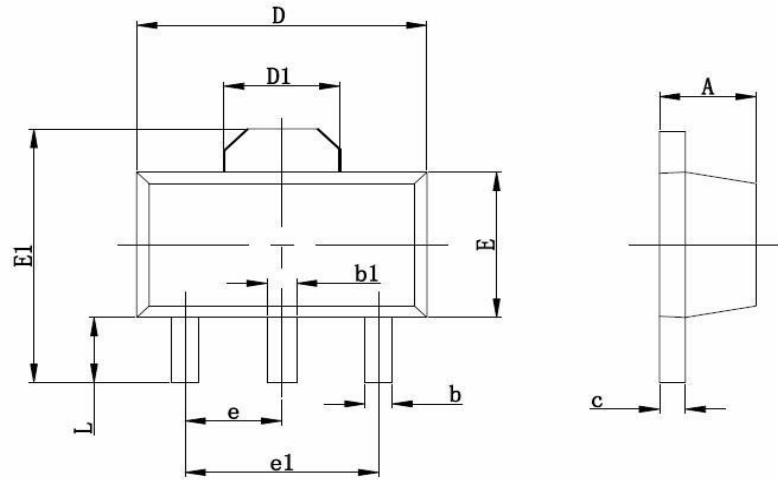


Power Derating Curve





## 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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