

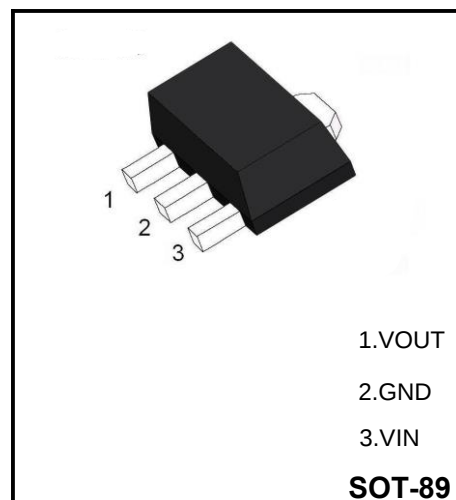
12V 0.1A positive voltage regulator

FEATURES

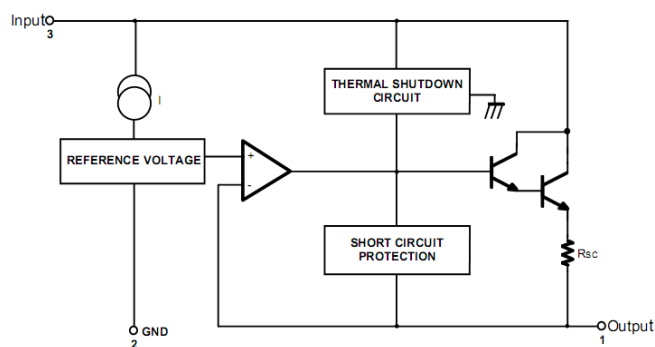
- ◆ Maximum Output Current of 100mA
- ◆ Output Voltage of 12V
- ◆ Thermal Overload Protection
- ◆ Short Circuit Current Limiting
- ◆ Output Voltage Offered in $\pm 5\%$ Tolerance

Description

The 78L12 of fixed voltage monolithic integrated circuit voltage regulators are suitable for application that required supply current up to 100mA.



Internal Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	35	V
Operating Temperature Range	T_{OPR}	0 ~ +125	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics

($V_I = 10V$, $I_O = 40mA$, $0^\circ C \leq T_j \leq 125^\circ C$, $C_I = 0.33\mu F$, $C_O = 0.1\mu F$, unless otherwise specified. (Note)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Output Voltage	V_{OUT}	$T_j = 25^\circ C$	11.5	12.0	12.5	V
		$V_{IN} = 14.5V \sim 27V$, $I_{OUT} = 1mA \sim 40mA$	11.4	12.0	12.6	
		$V_{IN} = 14.5V \sim V_{Max}$, $I_{OUT} = 1mA \sim 70mA$	11.4	12.0	12.6	
Line Regulation(Note)	ΔV_{OUT}	$V_{IN} = 14.5V \sim 27V$, $T_j = 25^\circ C$			300	mV
		$V_{IN} = 16V \sim 27V$, $T_j = 25^\circ C$			250	
Load Regulation(Note)	ΔV_{OUT}	$I_{OUT} = 1mA \sim 100mA$, $T_j = 25^\circ C$			100	mV
		$I_{OUT} = 1mA \sim 40mA$, $T_j = 25^\circ C$			50	
Quiescent Current	I_Q	$T_j = 25^\circ C$			6	mA
Quiescent Current Change	ΔI_Q	$I_{OUT} = 1mA \sim 40mA$			0.1	mA
		$V_{IN} = 16V \sim 27V$			1.5	
Output Voltage Drift	$\Delta V / \Delta T$	$I_{OUT} = 5mA$		-0.65		mV/ $^\circ C$
Output Noise Voltage	V_N	$f = 10Hz \sim 100KHz$	70			μV
Ripple Rejection	RR	$f = 120Hz$, $V_I = 15V \sim 25V$, $T_j = 25^\circ C$	37			dB
Dropout Voltage	V_d	$T_j = 25^\circ C$		1.7		V

Notes: The maximum steady state usable output current and input voltage are very dependent on the heat Sinking and/or lead length of the package. The data above represent pulse test conditions with junction temperature as indicated at the initiation of tests.

Typical Characteristics

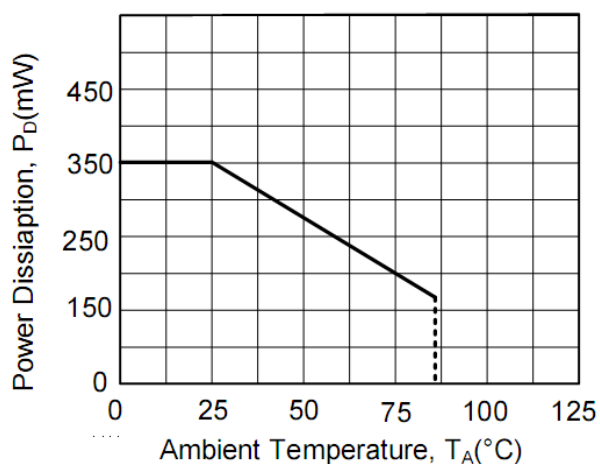


Figure 1 : Ambient temperature vs. Power dissipation

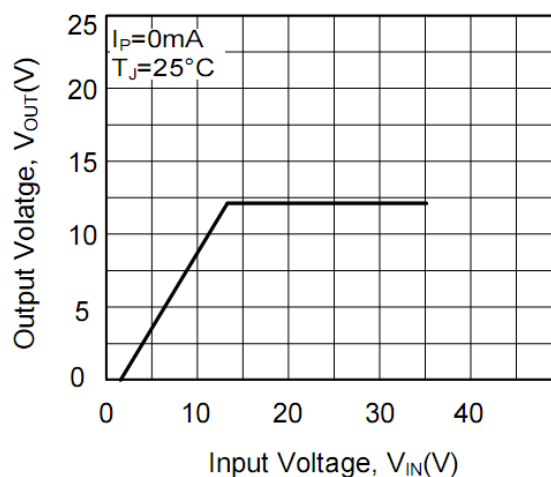


Figure 2 : Output Characteristics

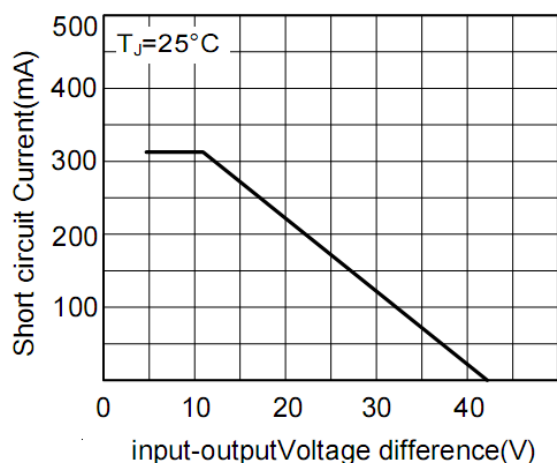


Figure 3 : Short Circuit output current

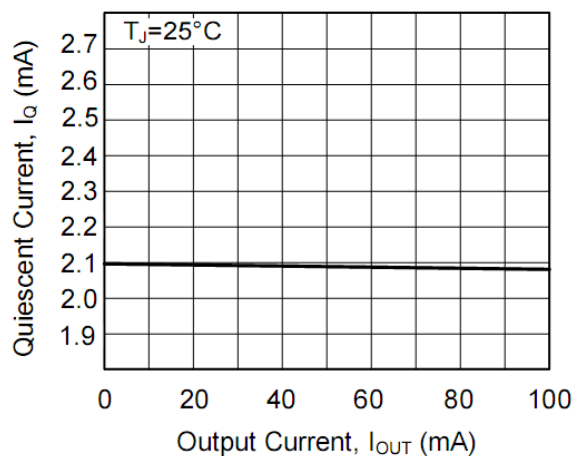


Figure 4 : Quiescent Current vs Input Voltage

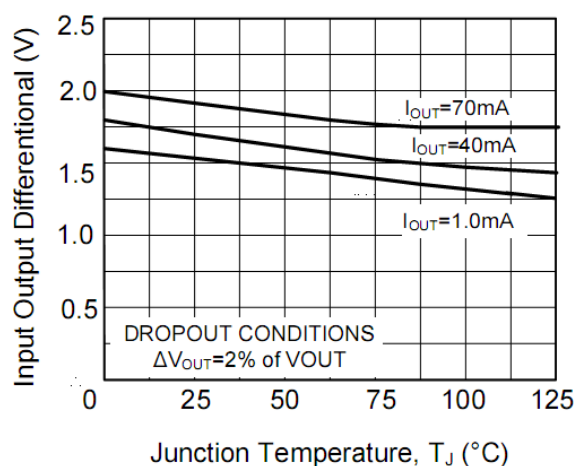


Figure 5 : Dropout Voltage

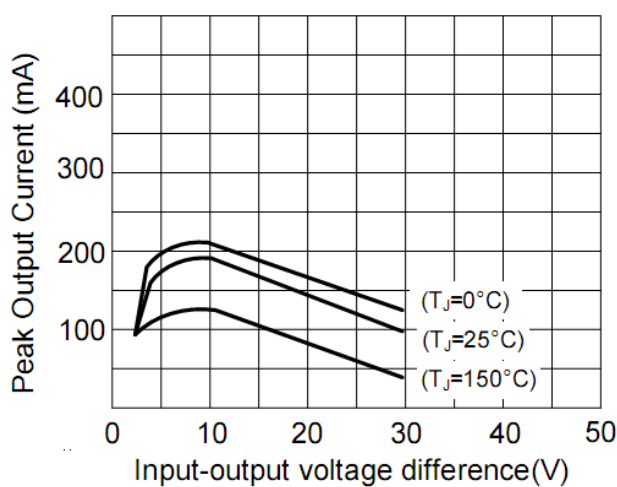
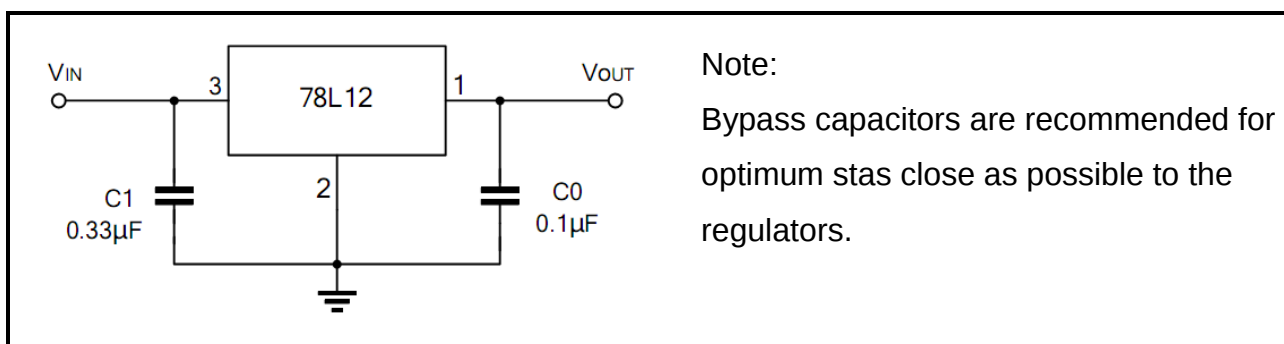


Figure 6 : Peak Output Current vs. Dropout Voltage Difference

Application Circuit



Ordering information

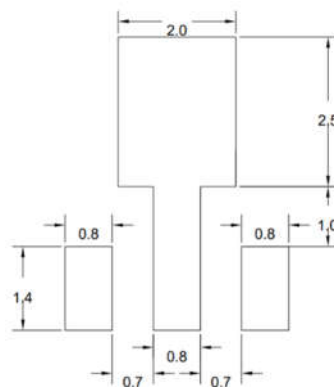
Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-89

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

The recommended mounting pad size



UNIT:MM

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