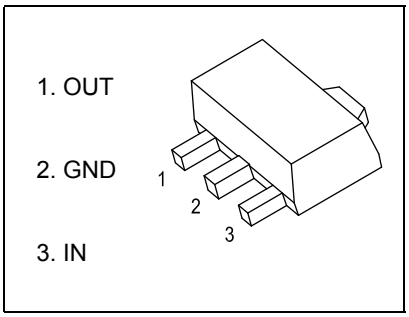
SOT-89 Plastic-Encapsulate Voltage Regulators

78L08 Three-terminal positive voltage regulator

SOT-89-3L



FEATURES

- Maximum output current
  I_{OM}: 0.1A
- Output voltage
  V_O: 8V
- Continuous total dissipation
  P_D: 0.6 W (T_a= 25 ℃)

ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

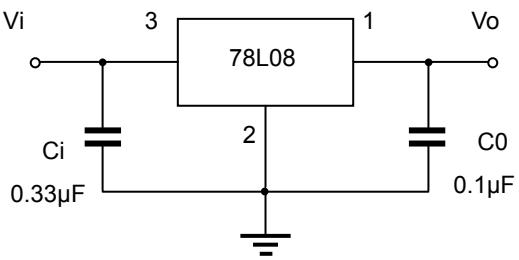
Parameter	Symbol	Value	Unit
Input Voltage	V_i	30	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	166.7	℃/W
Operating Junction Temperature Range	T_{OPR}	-40~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE (Vi=14V,Io=40mA,Ci=0.33uF,,Co=0.1uF, unless otherwise specified)

Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output voltage	Vo		25℃	7.7	8.0	8.3	V
		10.5V≤V_I≤23V, Io=1mA-40mA	0-125℃	7.6	8.0	8.4	V
		Io=1mA-70mA		7.6	8.0	8.4	V
Load Regulation	△Vo	Io=1mA-100mA	25℃		18	80	mV
		Io=1mA-40mA	25℃		10	40	mV
Line regulation	△Vo	10.5V≤V_I≤23V	25℃		42	175	mV
		11V≤V_I≤23V	25℃		36	125	mV
Quiescent Current	Iq		25℃		4	6.0	mA
Quiescent Current Change	△Iq	11V≤V_I≤23V	0-125℃			1.5	mA
	△Iq	1mA≤I_O≤40mA	0-125℃			0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz	25℃		54		μV/Vo
Ripple Rejection	RR	13V≤V_I≤23V,f=120Hz	0-125℃	37	46		dB
Dropout Voltage	Vd		25℃		1.7		V

* Pulse test.

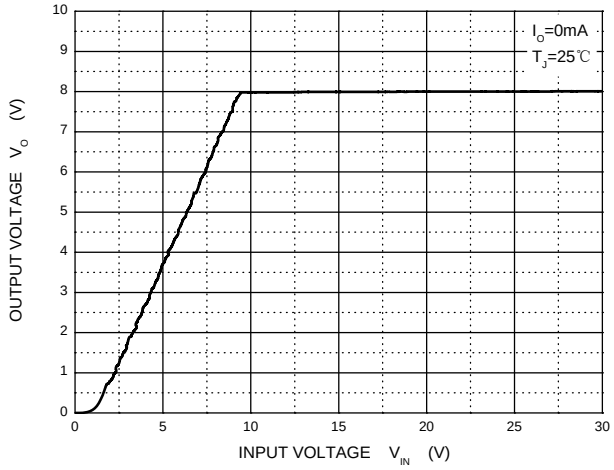
TYPICAL APPLICATION



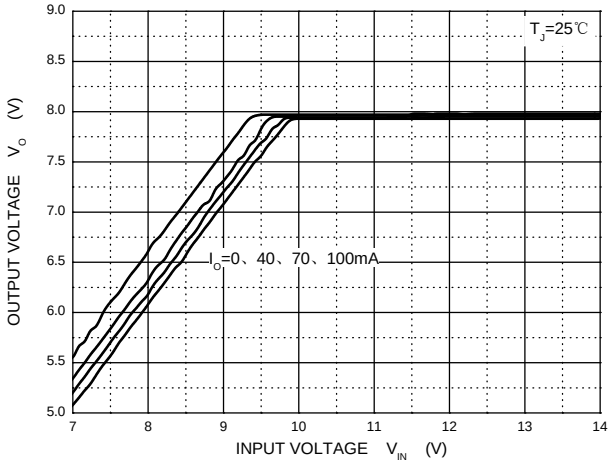
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as

Typical Characteristics

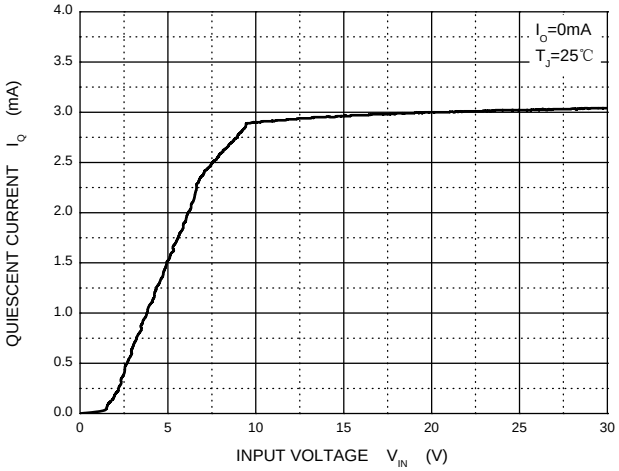
Output Characteristics



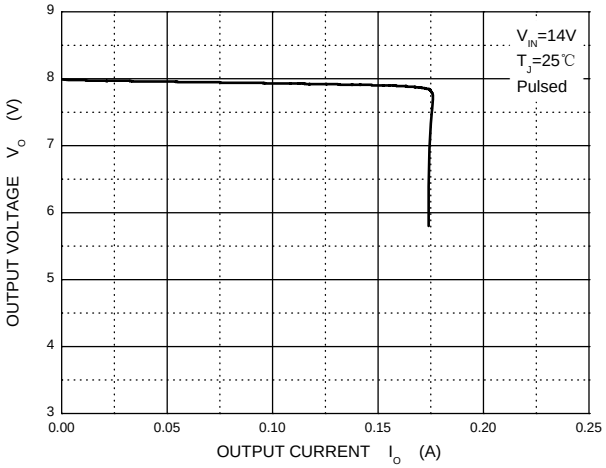
Dropout Characteristics



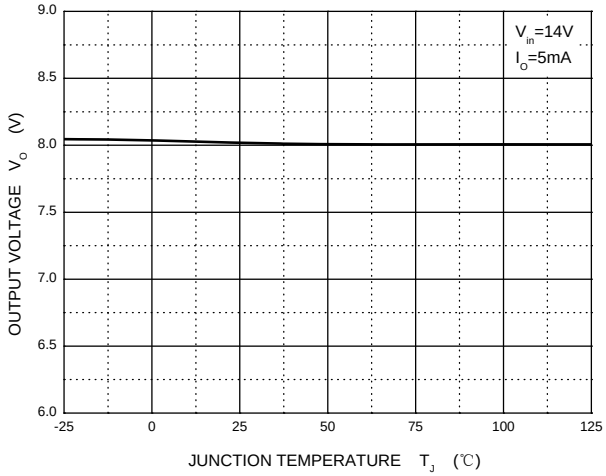
Quiescent Current vs Input Voltage



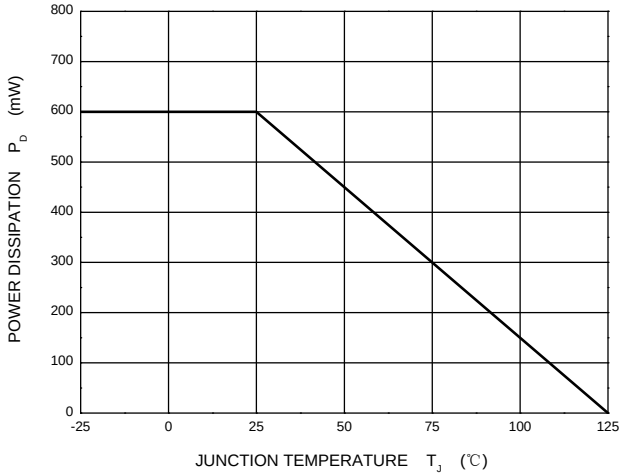
Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature

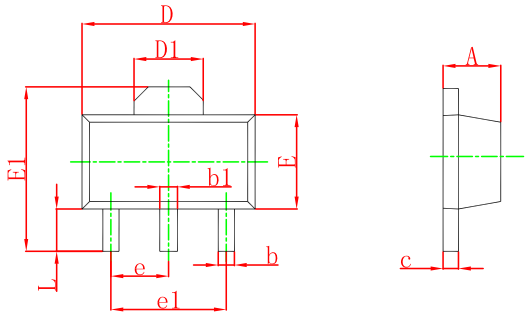


Power Derating Curve



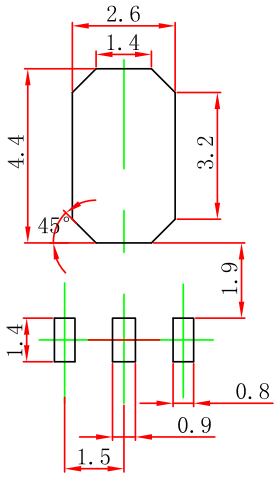
Outlitne Drawing

SOT-89-3L 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

SOT-89-3L Suggested Pad Layout



Note:
1.Controlling dimension:in/millimeters.
2.General tolerance: ±0.05mm.
3.The pad layout is for reference purposes only.

PACKAGE SPECIFICATIONS

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	G.W.(Kg)
SOT-89-3L	7'	330	1000	203×203×195	40000	438×438×220	180000