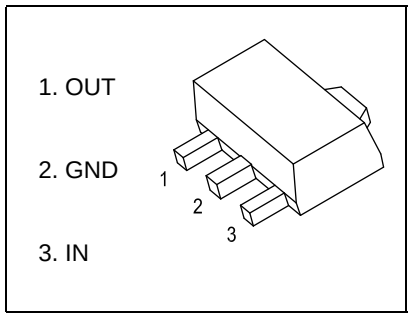
78L15 Three-terminal positive voltage regulator

SOT-89-3L



FEATURES

- Maximum output current
  I_{OM}: 0.1A
- Output voltage
  V_O: 15V
- Continuous total dissipation
  P_D: 0.6 W (T_a= 25 ℃)

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

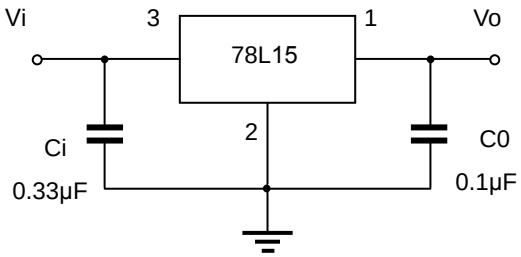
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	166.7	℃/W
Operating Junction Temperature Range	T_{OPR}	-25~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE (Vi=23V,Io=40mA,Ci=0.33uF,,Co=0.1uF, unless otherwise specified)

Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output voltage	Vo		25℃	14.4	15	15.6	V
		17.5V≤V_I≤30V, Io=1mA-40mA	0-125℃	14.25	15	15.75	V
		Io=1mA-70mA		14.25	15	15.75	V
Load Regulation	△Vo	Io=1mA-100mA	25℃		25	150	mV
		Io=1mA-40mA	25℃		15	75	mV
Line regulation	△Vo	17.5V≤V_I≤30V, Io=40mA	25℃		65	300	mV
		19V≤V_I≤30V,Io=40mA	25℃		58	250	mV
Quiescent Current	Iq		25℃		4.6	6.5	mA
Quiescent Current Change	△Iq	19V≤V_I≤30V,Io=40mA	0-125℃			1.5	mA
	△Iq	1mA≤I_O≤40mA,Vi=23V	0-125℃			0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz	25℃		82		μV/Vo
Ripple Rejection	RR	18.5V≤V_I≤28.5V,f=120Hz	0-125℃	34	39		dB
Dropout Voltage	Vd		25℃		1.7		V

* Pulse test.

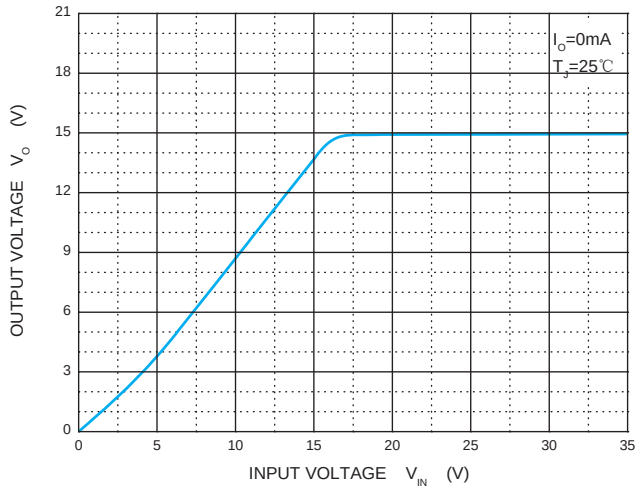
TYPICAL APPLICATION



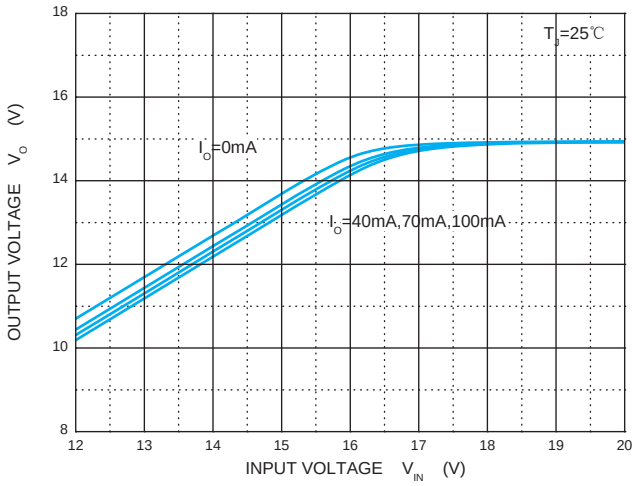
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as

Typical Characteristics

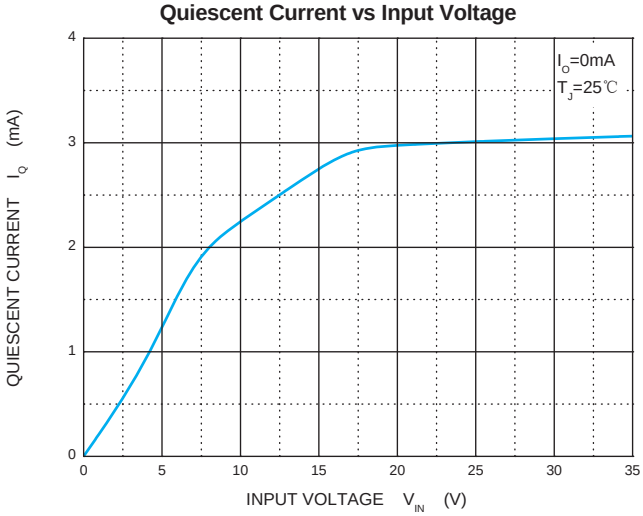
Output Characteristics



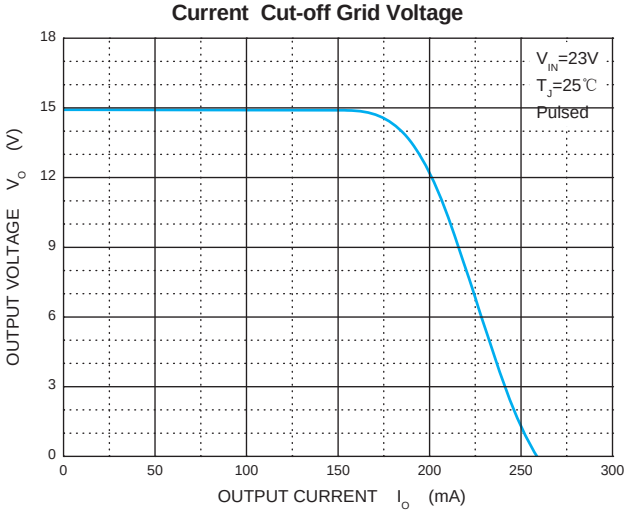
Dropout Characteristics



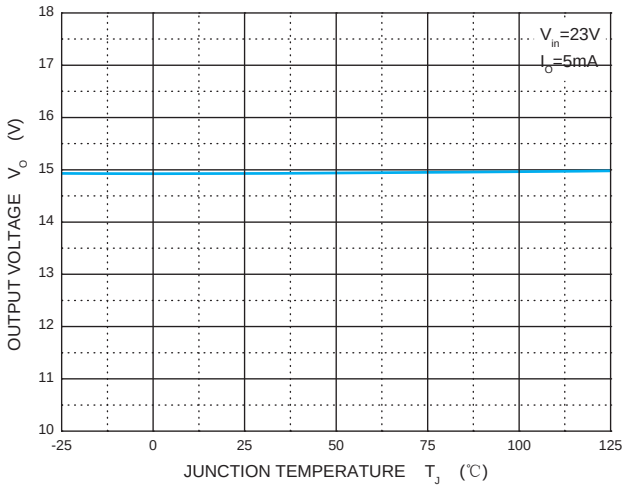
Quiescent Current vs Input Voltage



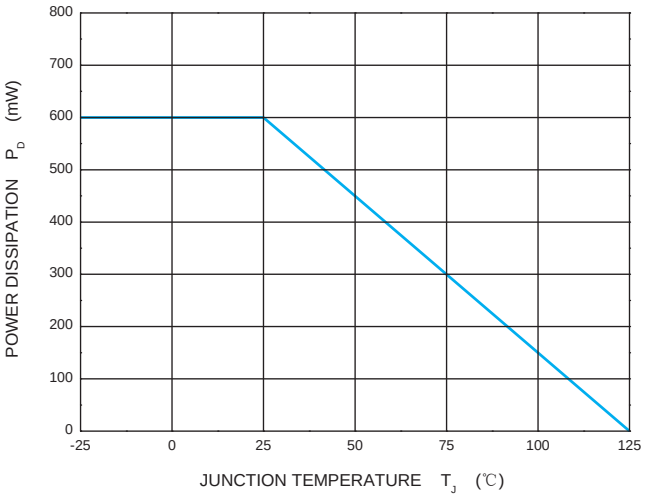
Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature

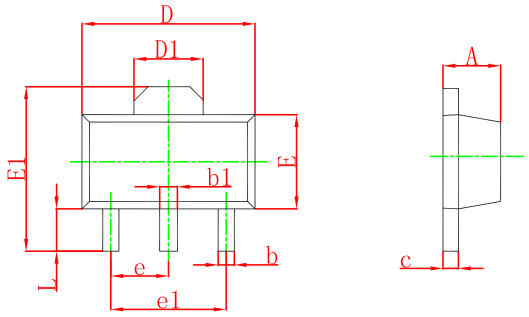


Power Derating Curve



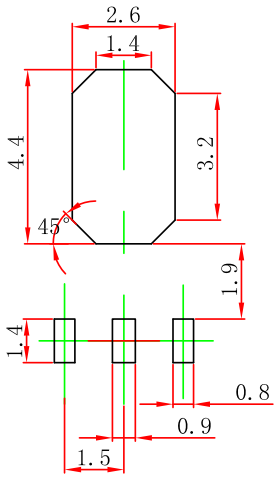
Outlitne Drawing

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