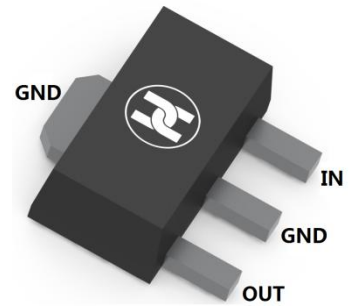


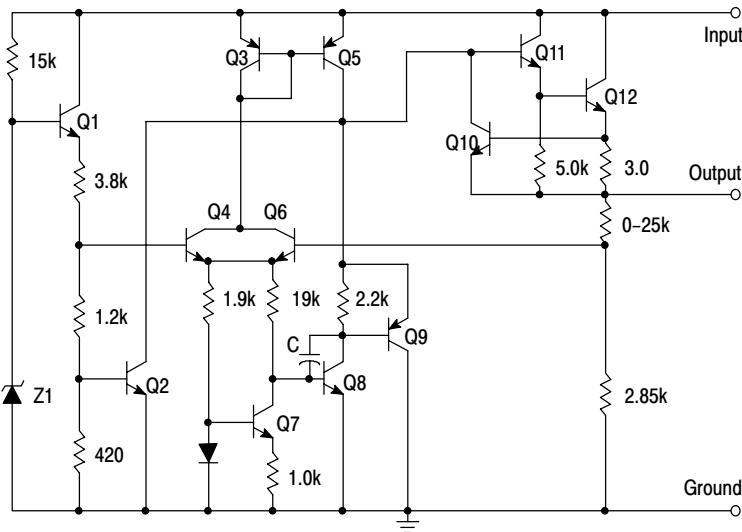
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

FEATURES

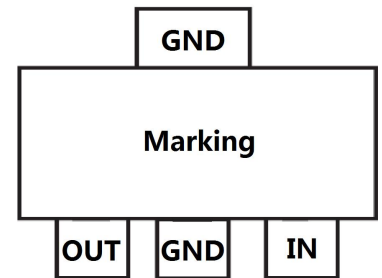
- Maximum Output Current  $I_o$ : 0.1 A
- Output Voltage  $V_o$ : 12 V
- Surface Mount device



SCHEMATIC DIAGRAM



SOT-89



MECHANICAL DATA

- Case: SOT-89
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.055 grams (approximate)

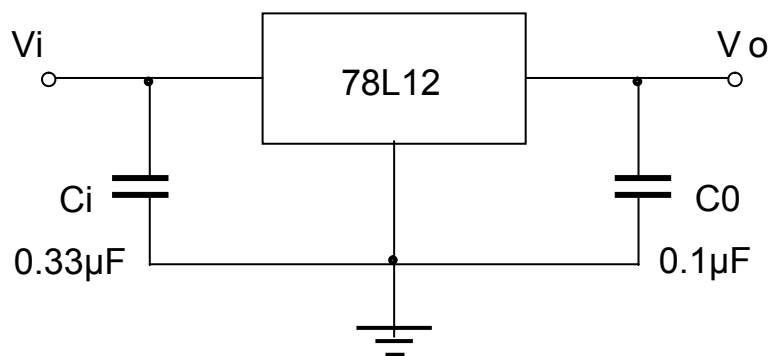
MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	35	V
Power Dissipation	$P_D$	Internally Limited	
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	166.7	$^{\circ}C/W$
Operating Temperature	$T_{opr}$	-25~+125	$^{\circ}C$
Storage Temperature Range	$T_{STG}$	-65 ~+150	$^{\circ}C$

**PLASTIC-ENCAPSULATE VOLTAGE REGULATORS**
**ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE  
( $V_i=19V, I_o=40mA, C_i=0.33\mu F, C_o=0.1\mu F$ , unless otherwise specified )**

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	$V_o$	11.5	12	12.5	V	$T_J=+25^\circ C$
		11.4	12	12.6	V	$14V \leq V_i \leq 27V, I_o=1mA \sim 40mA, 0^\circ C \leq T_J \leq +125^\circ C$
		11.4	12	12.6	V	$14V \leq V_i \leq 27V, I_o=1mA \sim 70mA, 0^\circ C \leq T_J \leq +125^\circ C$
Load Regulation	$\Delta V_o$		22	100	mV	$I_o=1mA \sim 100mA, T_J=+25^\circ C$
			13	50	mV	$I_o=1mA \sim 40mA, T_J=+25^\circ C$
Line regulation	$\Delta V_o$		55	250	mV	$14.5V \leq V_i \leq 27V$
			49	200	mV	$16V \leq V_i \leq 27V, T_J=+25^\circ C$
Quiescent Current	$I_q$		4.3	6.5	mA	$T_J=+25^\circ C$
Quiescent Current Change	$\Delta I_q$			1.5	mA	$16V \leq V_i \leq 27V, 0^\circ C \leq T_J \leq +125^\circ C$
				0.1	mA	$1mA \leq I_o \leq 40mA, 0^\circ C \leq T_J \leq +125^\circ C$
Output Noise Voltage	$V_N$		70		$\mu V/V_o$	$10Hz \leq f \leq 100kHz, T_J=+25^\circ C$
Ripple Rejection	RR	37	42		dB	$15V \leq V_i \leq 25V, f=120Hz, 0^\circ C \leq T_J \leq +125^\circ C$
Dropout Voltage	$V_d$		1.7		V	$T_J=+25^\circ C$

\*Pulse Test

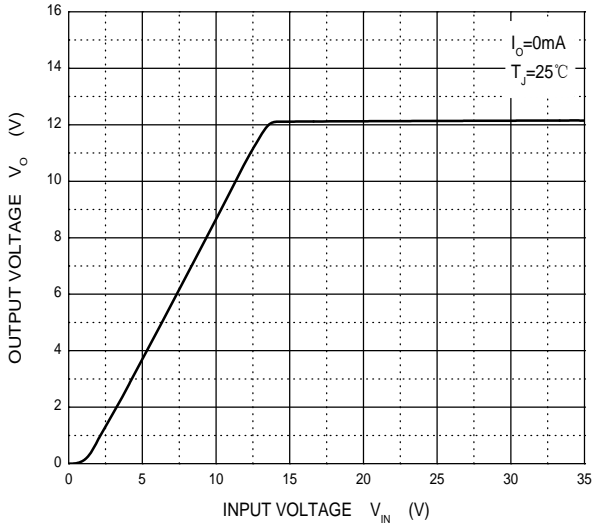
**TYPICAL APPLICATION**


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

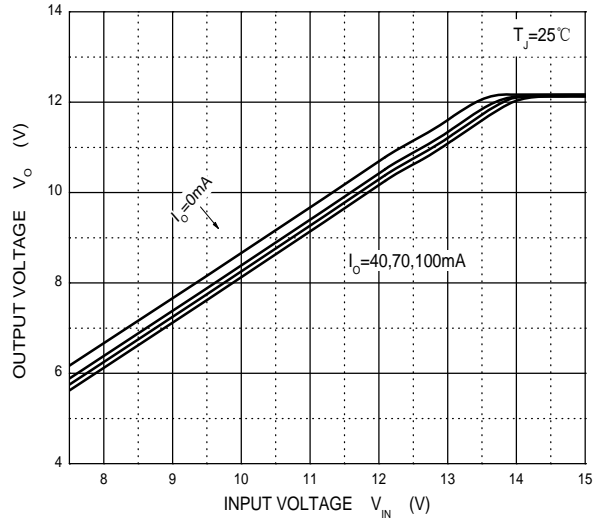
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

Typical Characteristics

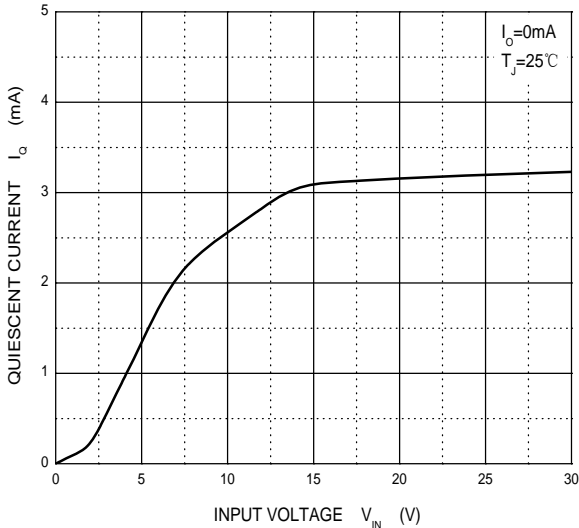
Output Characteristics



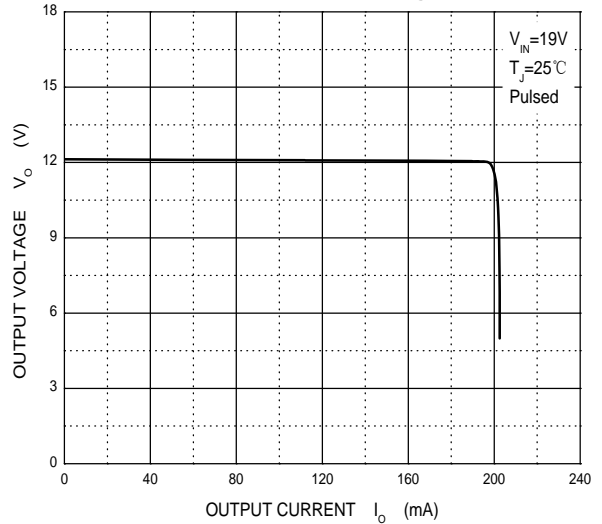
Dropout Characteristics



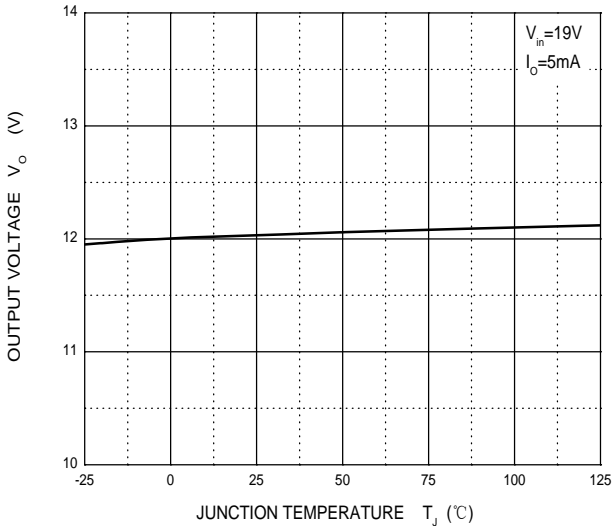
Quiescent Current



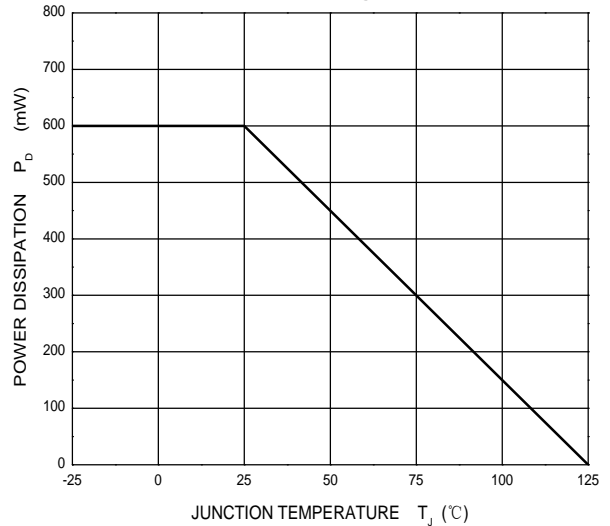
Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature

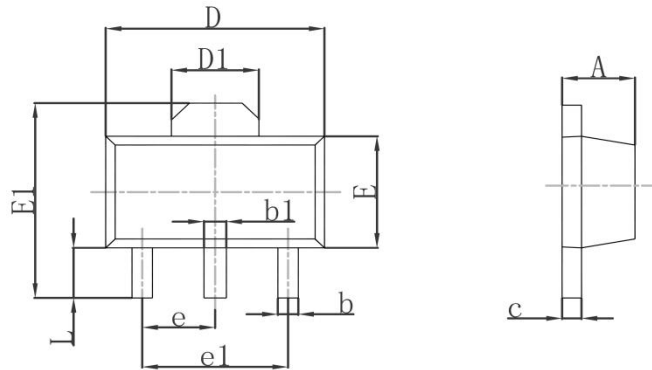


Power Derating Curve



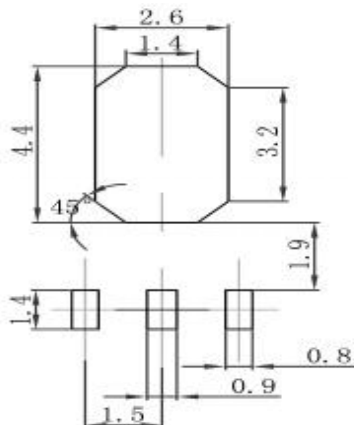
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

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	1.550REF		0.061REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP		0.060TYP	
e1	3.000TYP		0.118TYP	
L	0.900	1.200	0.035	0.047

SOT-89 Suggested Pad Layout



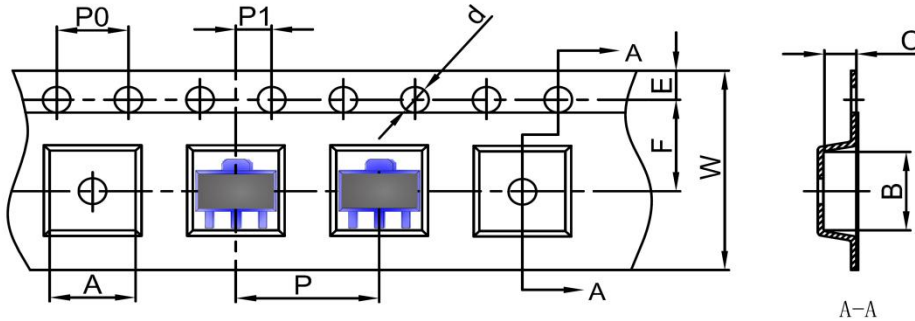
Note:

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

PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

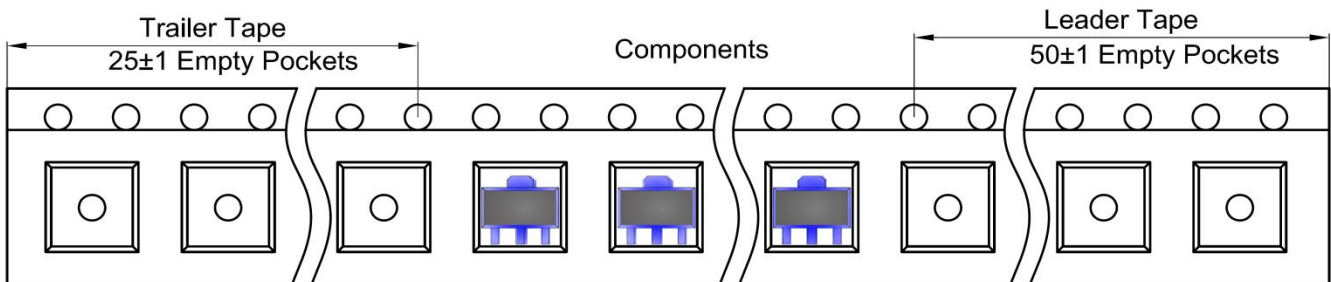
SOT-89 Tape and Reel

SOT-89 Embossed Carrier Tape

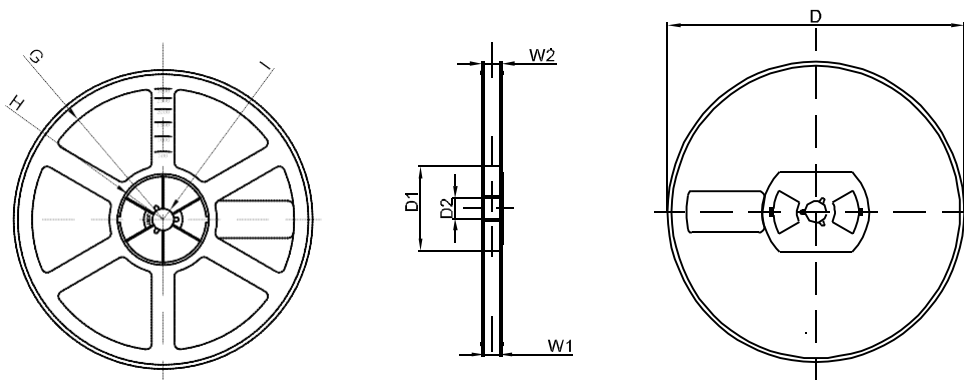


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-89	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-89 Tape Leader and Trailer



SOT-89 Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	13.20	16.50
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1