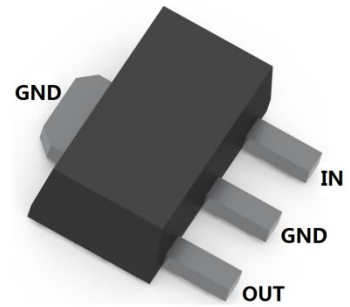


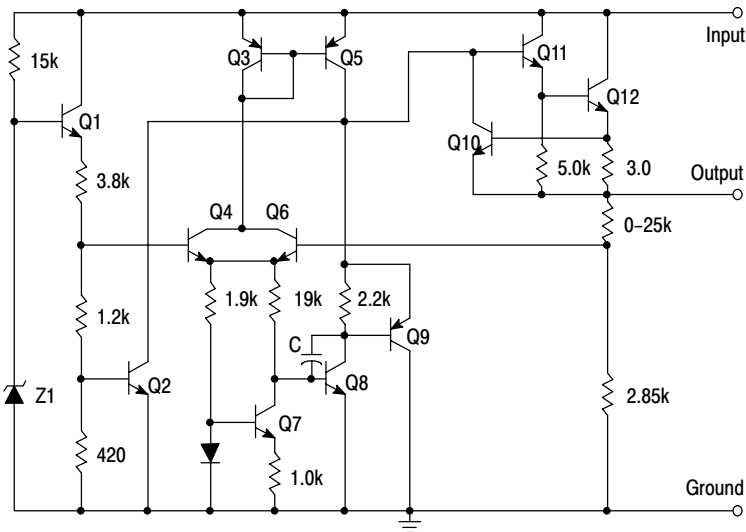
**PLASTIC-ENCAPSULATE VOLTAGE REGULATORS**

**FEATURES**

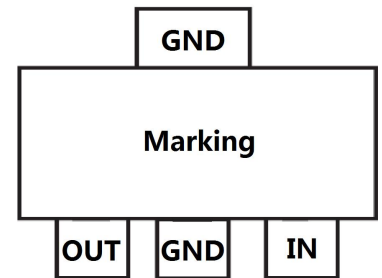
- Maximum Output Current  $I_o$ : 0.1 A
- Output Voltage  $V_o$ : 12 V
- Surface Mount device



**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	$^{\circ}C$

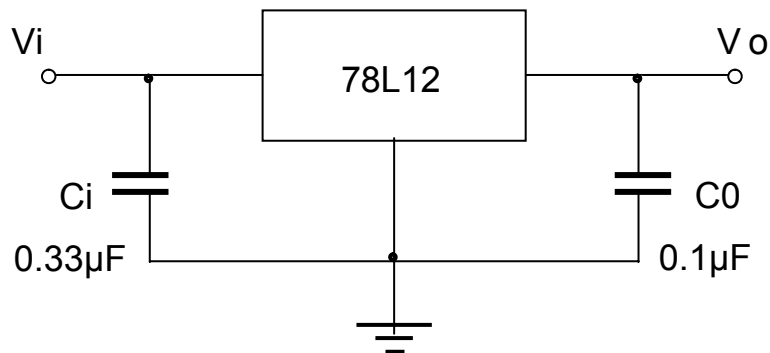
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

**ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE**  
*(Vi=19V, Io=40mA, Ci=0.33μF, Co=0.1μF, unless otherwise specified)*

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	Vo	11.5	12	12.5	V	TJ=+25°C
		11.4	12	12.6	V	14V≤Vi≤27V, Io=1mA~40mA, 0°C≤TJ≤+125°C
		11.4	12	12.6	V	14V≤Vi≤27V, Io=1mA~70mA, 0°C≤TJ≤+125°C
Load Regulation	ΔVo		22	100	mV	Io=1mA~100mA, TJ=+25°C
			13	50	mV	Io=1mA~40mA, TJ=+25°C
Line regulation	ΔVo		55	250	mV	14.5V≤Vi≤27V
			49	200	mV	16V≤Vi≤27V, TJ=+25°C
Quiescent Current	Iq		4.3	6.5	mA	TJ=+25°C
Quiescent Current Change	ΔIq			1.5	mA	16V≤Vi≤27V, 0°C≤TJ≤+125°C
				0.1	mA	1mA≤Io≤40mA, 0°C≤TJ≤+125°C
Output Noise Voltage	VN		70		μV/Vo	10Hz≤f≤100kHz, TJ=+25°C
Ripple Rejection	RR	37	42		dB	15V≤Vi≤25V, f=120Hz, 0°C≤TJ≤+125°C
Dropout Voltage	Vd		1.7		V	TJ=+25°C

\*Pulse Test

**TYPICAL APPLICATION**

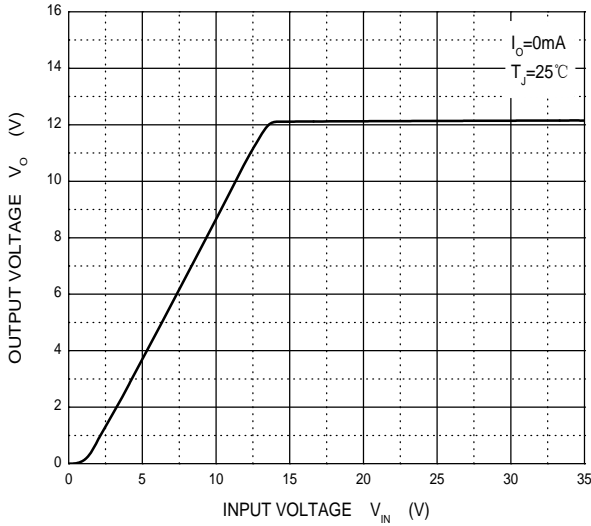


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

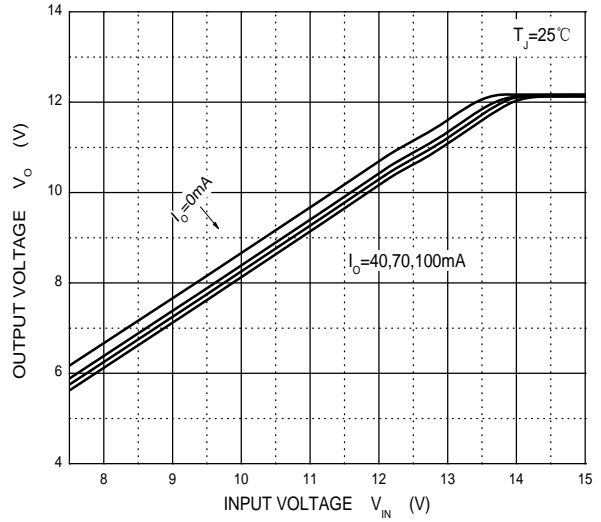
**PLASTIC-ENCAPSULATE VOLTAGE REGULATORS**

**Typical Characteristics**

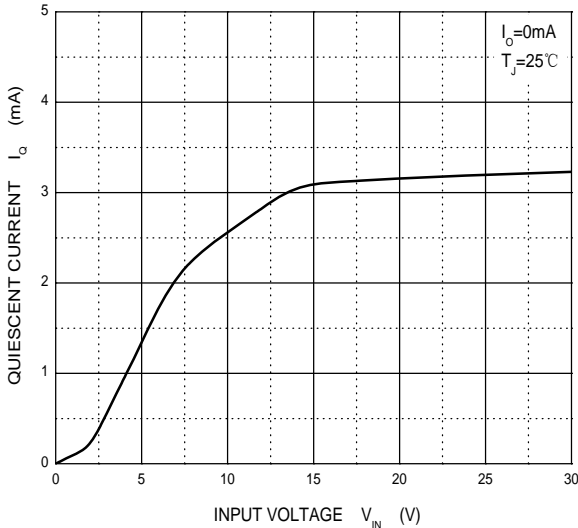
**Output Characteristics**



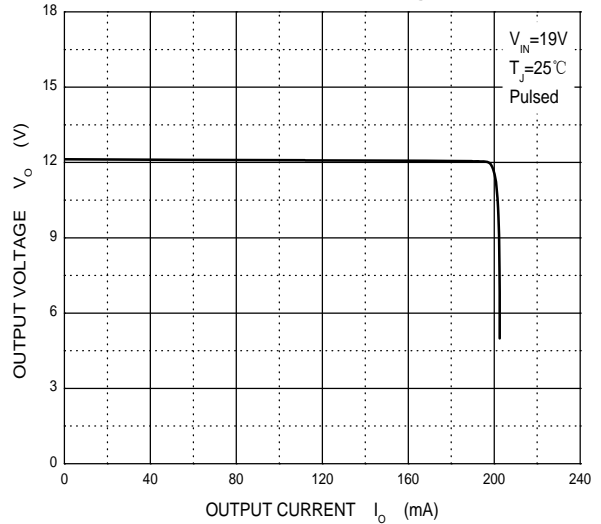
**Dropout Characteristics**



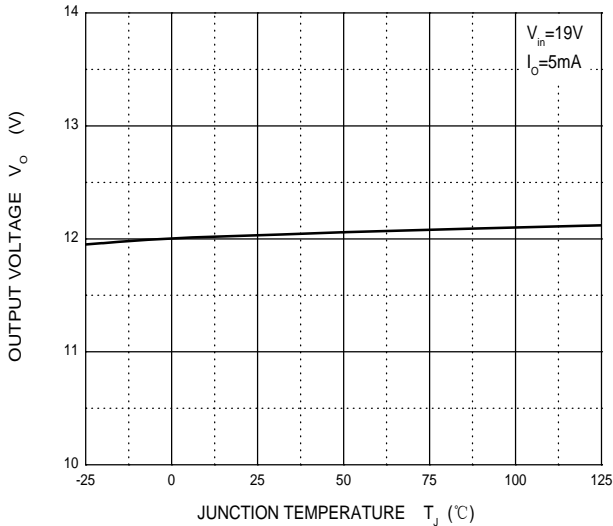
**Quiescent Current**



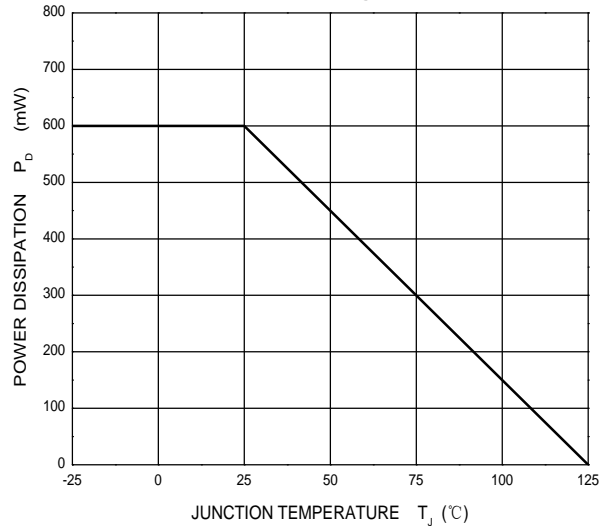
**Current Cut-off Grid Voltage**



**Output Voltage vs Junction Temperature**

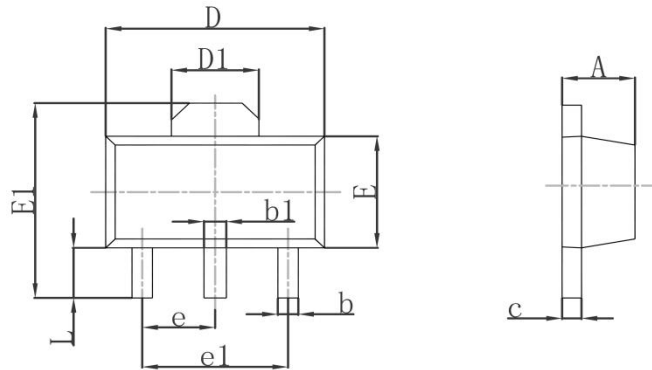


**Power Derating Curve**



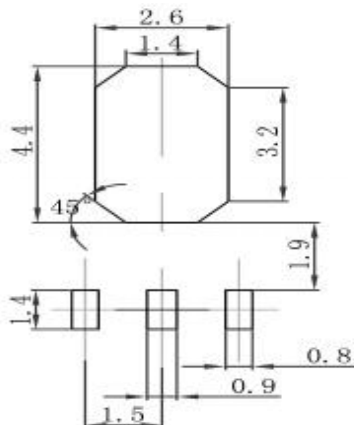
**PLASTIC-ENCAPSULATE VOLTAGE REGULATORS**

**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**



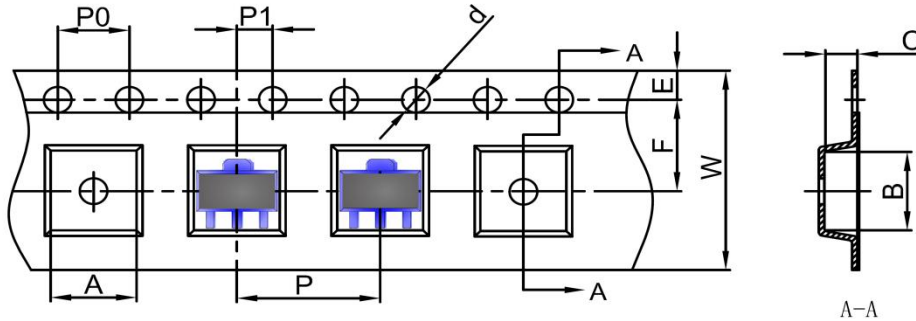
**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

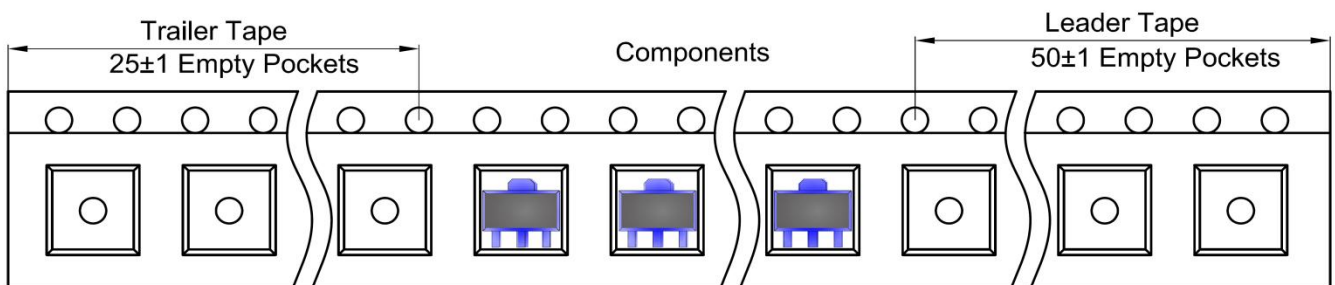
**SOT-89 Tape and Reel**

**SOT-89 Embossed Carrier Tape**

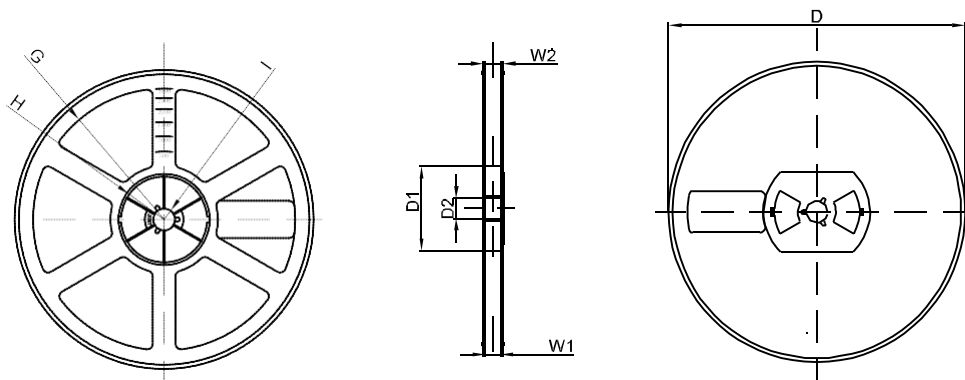


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-89	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

**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

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