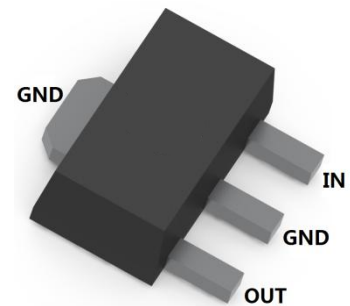


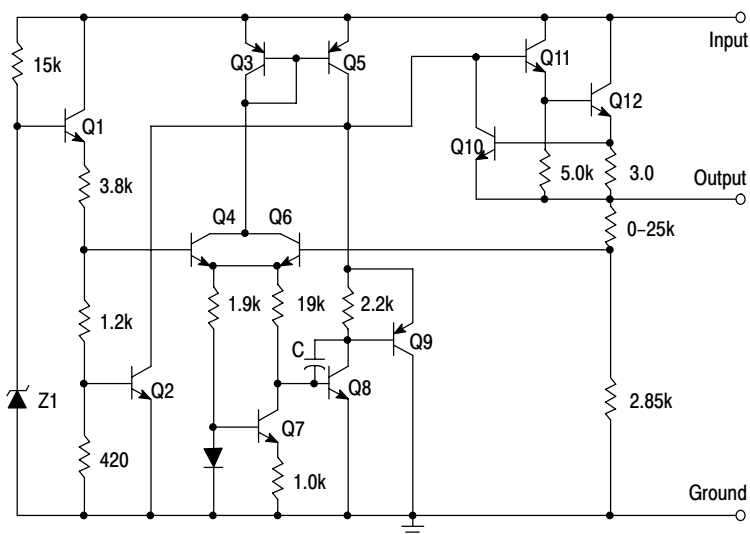
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

FEATURES

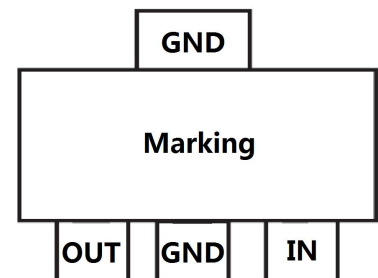
- Maximum Output Current I_o : 0.1 A
- Output Voltage V_o : 9 V
- Surface Mount device



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	30	V
Power Dissipation	P_D	Internally Limited	
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	166.7	°C/W
Operating Temperature	T_{opr}	-25~+125	°C
Storage Temperature Range	T_{STG}	-65 ~+150	°C

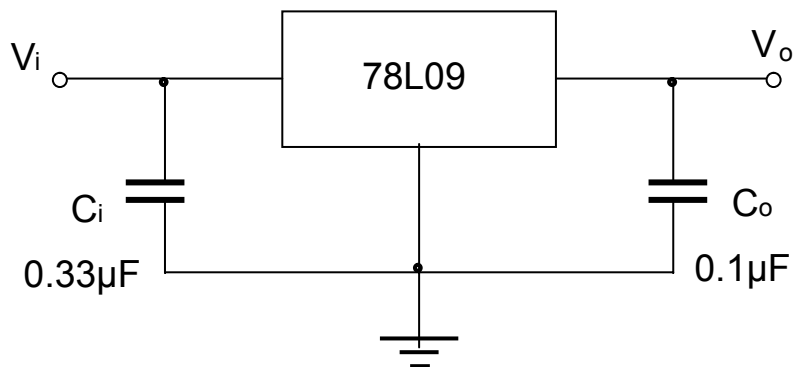
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=16V, I_o=40mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	V_o	8.64	9.0	9.36	V	$T_J=+25^{\circ}C$
		8.55	9.0	9.45	V	$12V \leq V_i \leq 24V, I_o=1mA \sim 40mA, 0^{\circ}C \leq T_J \leq +125^{\circ}C$
		8.55	9.0	9.45	V	$12V \leq V_i \leq 24V, I_o=1mA \sim 70mA, 0^{\circ}C \leq T_J \leq +125^{\circ}C$
Load Regulation	ΔV_o		19	90	mV	$I_o=1mA \sim 100mA, T_J=+25^{\circ}C$
			11	40	mV	$I_o=1mA \sim 40mA, T_J=+25^{\circ}C$
Line regulation	ΔV_o		45	175	mV	$12V \leq V_i \leq 24V$
			40	125	mV	$13V \leq V_i \leq 24V, T_J=+25^{\circ}C$
Quiescent Current	I_q		4.1	6.0	mA	$T_J=+25^{\circ}C$
Quiescent Current Change	ΔI_q			1.5	mA	$13V \leq V_i \leq 24V, 0^{\circ}C \leq T_J \leq +125^{\circ}C$
				0.1	mA	$1mA \leq I_o \leq 40mA, 0^{\circ}C \leq T_J \leq +125^{\circ}C$
Output Noise Voltage	V_N	58			$\mu V/V_o$	$10Hz \leq f \leq 100kHz, T_J=+25^{\circ}C$
Ripple Rejection	RR		45		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

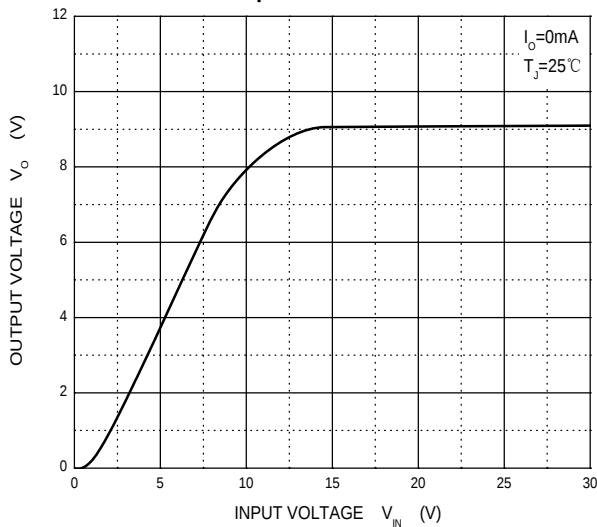


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

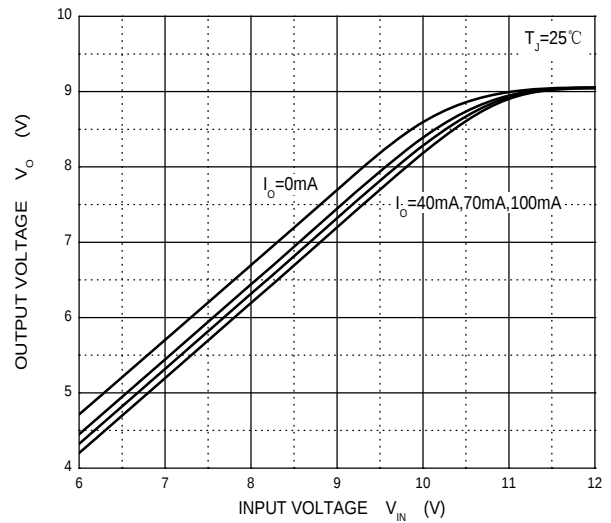
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

Typical Characteristics

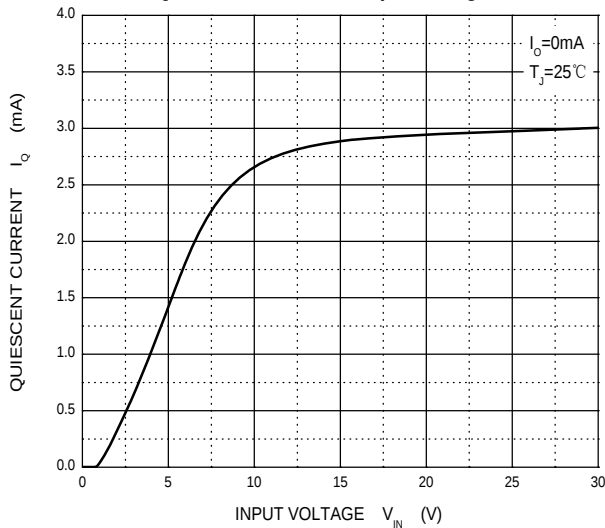
Output Characteristics



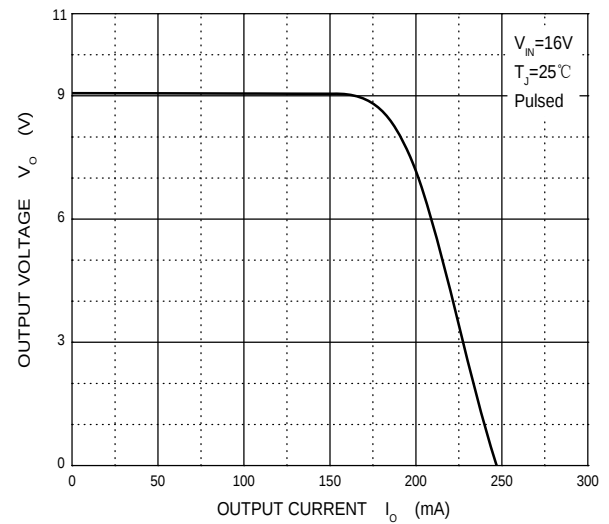
Dropout Characteristics



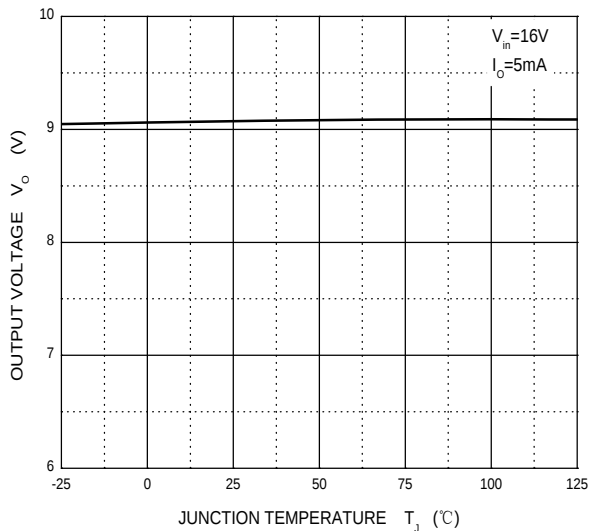
Quiescent Current vs Input Voltage



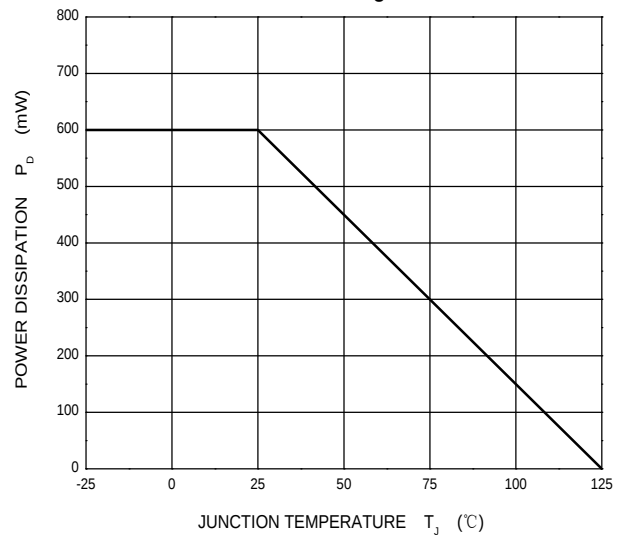
Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature

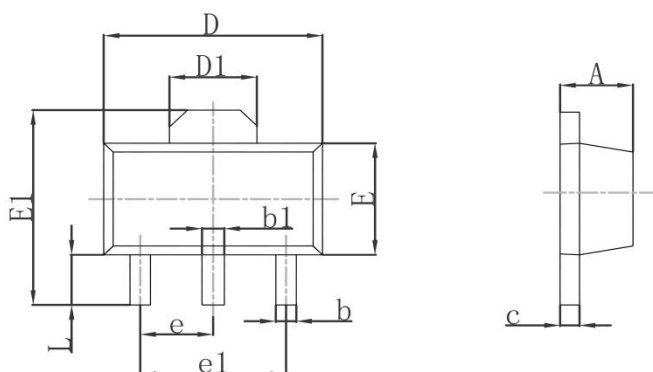


Power Derating Curve



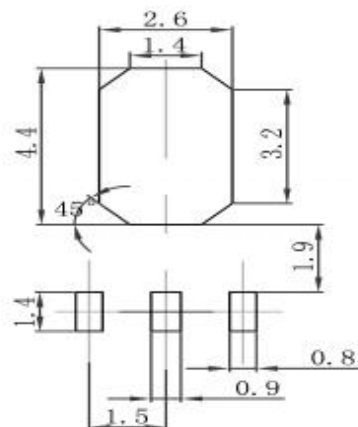
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

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



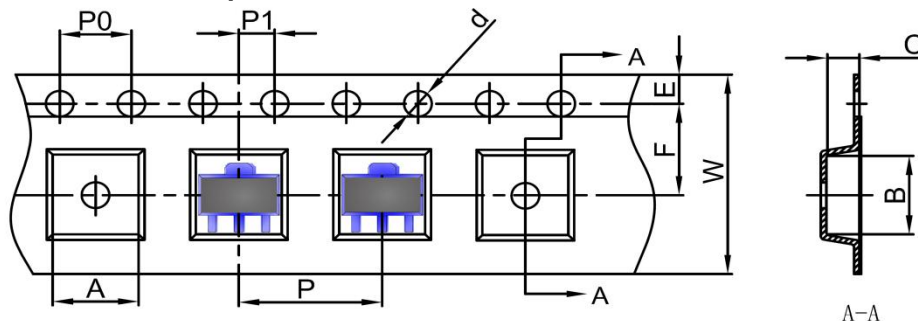
Note:

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

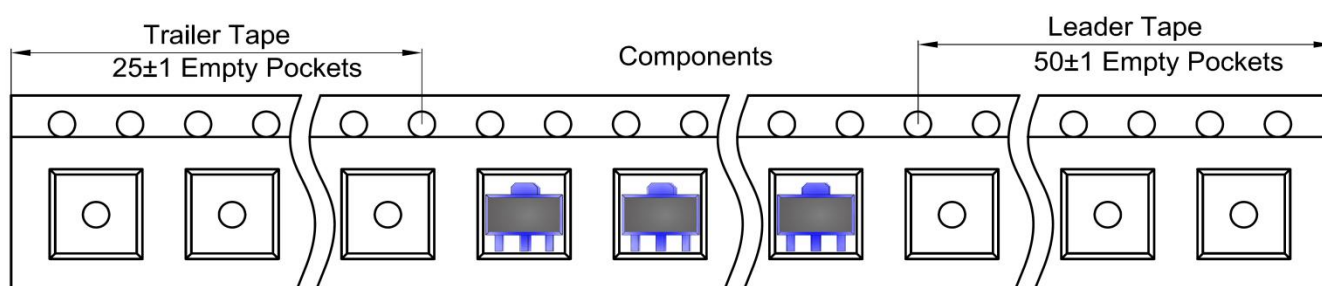
SOT-89 Tape and Reel

SOT-89 Embossed Carrier Tape

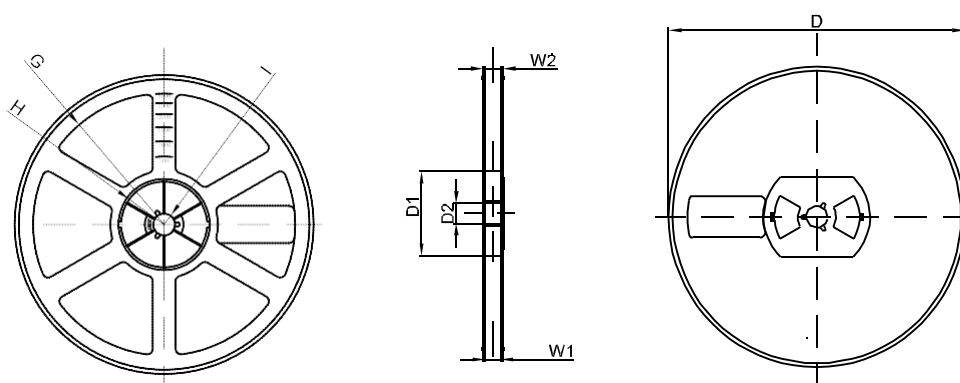


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-89	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

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