

### FEATURES

Maximum output current

$I_{OM}$ : 0.1 A

Output voltage

$V_o$ : 9 V

Continuous total dissipation

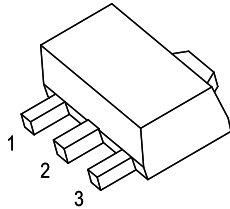
$P_D$ : 0.5W

### SOT-89-3L

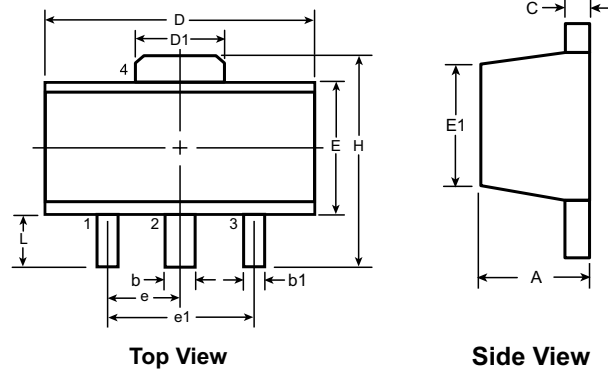
1. OUT

2. GND

3. IN



### SOT-89 PACKAGE OUTLINE



Symbol	A	b	b1	C	D	D1	E	E1	e	e1	H	L
Dimensions (mm)	MIN	1.40	0.44	0.36	0.3	4.40	1.50	2.29	2.00'	1.50	3.94	0.89
	NOM	-	-	-	-	-	-	-	-	3.00	-	-
	MAX	1.60	0.56	0.48	0.5	4.60	1.75	2.60	2.29	1.50	4.25	1.20

Dimensions in mm

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

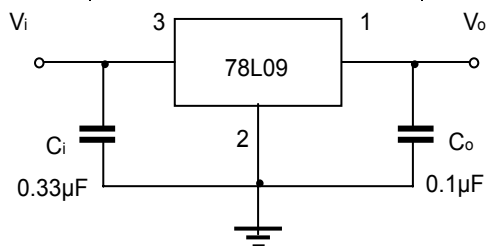
Parameter	Symbol	Value	Units
Input Voltage	$V_I$	30	V
Operating Junction Temperature Range	$T_{OPR}$	0~+150	°C
Storage Temperature Range	$T_{STG}$	-55~+150	°C

# 78L09

**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	Test conditions	Min	Typ	Max	Unit	
Output voltage	$V_o$	$25^\circ C$	8.64	9.0	9.36	V	
		$0-125^\circ C$	$12V \leq V_i \leq 24V, I_o=1mA-40mA$	8.55	9.0	9.45	V
			$I_o=1mA-70mA$	8.55	9.0	9.45	V
Load Regulation	$\Delta V_o$	$I_o=1mA-100mA$	$25^\circ C$	19	90	mV	
		$I_o=1mA-40mA$	$25^\circ C$	11	40	mV	
Line regulation	$\Delta V_o$	$12V \leq V_i \leq 24V$	$25^\circ C$	45	175	mV	
		$13V \leq V_i \leq 24V$	$25^\circ C$	40	125	mV	
Quiescent Current	$I_q$	$25^\circ C$	4.1	6.0	mA		
Quiescent Current Change	$\Delta I_q$	$13V \leq V_i \leq 24V$	$0-125^\circ C$		1.5	mA	
	$\Delta I_q$	$1mA \leq I_o \leq 40mA$	$0-125^\circ C$		0.1	mA	
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100KHz$	$25^\circ C$	58		$\mu V$	
Ripple Rejection	RR	$15V \leq V_i \leq 25V, f=120Hz$	$0-125^\circ C$	45		dB	
Dropout Voltage	$V_d$	$25^\circ C$		1.7		V	

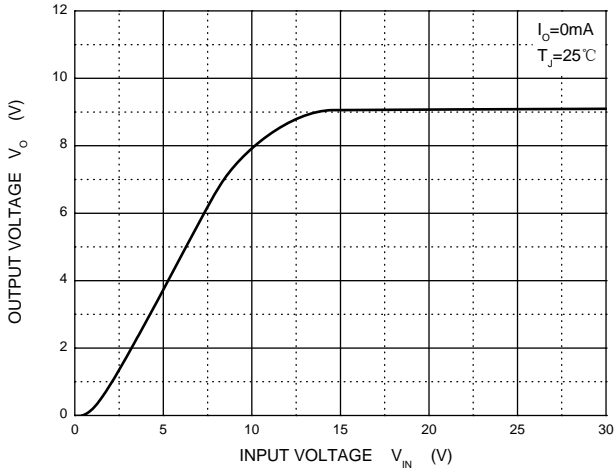
## TYPICAL APPLICATION



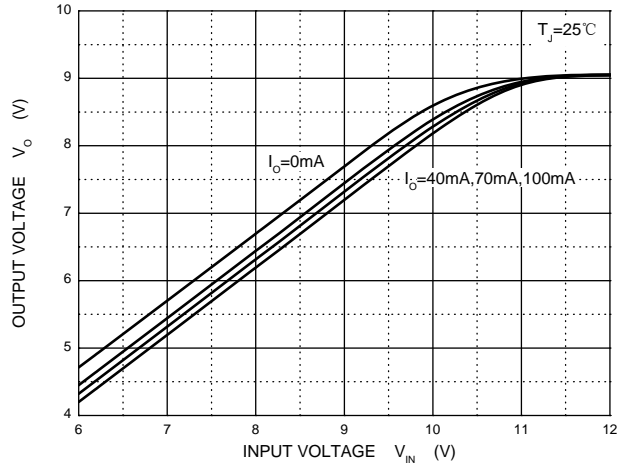
Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

# RATING AND CHARACTERISTIC CURVES (78L09)

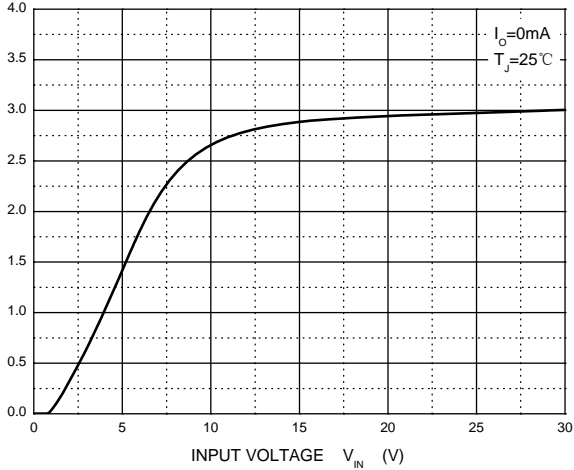
**Output Characteristics**



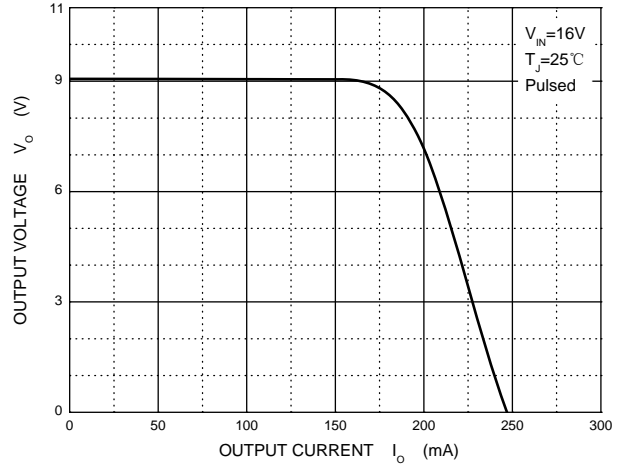
**Dropout Characteristics**



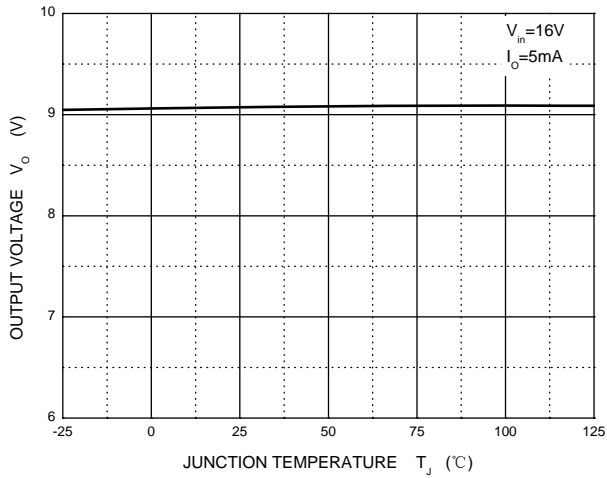
**Quiescent Current vs Input Voltage**



**Current Cut-off Grid Voltage**



**Output Voltage vs Junction Temperature**



**Power Derating Curve**

