



SOT-89 Encapsulate Three Terminal Voltage Regulator

**78L09** Three-terminal positive voltage regulator

**FEATURES**

**Maximum output current**

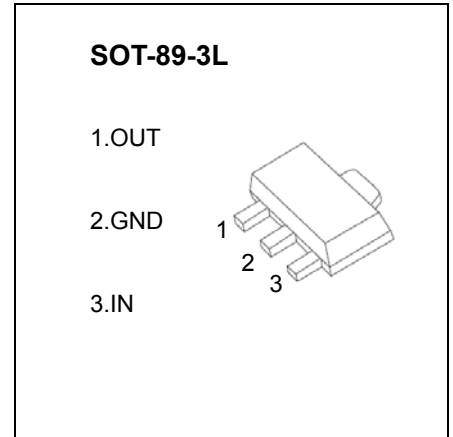
$I_{OM}$ : 0.1 A

**Output voltage**

$V_o$ : 9 V

**Continuous total dissipation**

$P_D$ : 0.5W



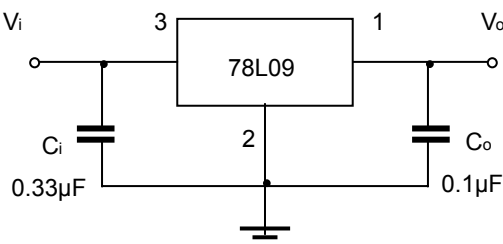
**ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)**

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

**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°C	8.64	9.0	9.36	V	
		0-125°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°C	19	90	mV	
		$I_o=1mA-40mA$	25°C	11	40	mV	
Line regulation	$\Delta V_o$	$12V \leq V_i \leq 24V$	25°C	45	175	mV	
		$13V \leq V_i \leq 24V$	25°C	40	125	mV	
Quiescent Current	$I_q$		25°C	4.1	6.0	mA	
Quiescent Current Change	$\Delta I_q$	$13V \leq V_i \leq 24V$	0-125°C		1.5	mA	
	$\Delta I_q$	$1mA \leq I_o \leq 40mA$	0-125°C		0.1	mA	
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100KHz$	25°C	58		uV	
Ripple Rejection	RR	$15V \leq V_i \leq 25V, f=120Hz$	0-125°C	45		dB	
Dropout Voltage	$V_d$		25°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.