



**WS78L09** Three-terminal positive voltage regulator

**FEATURES**

**Maximum Output current**

$I_{OM}$ : 0.1 A

**Output voltage**

$V_o$ : 9 V

**Continuous total dissipation**

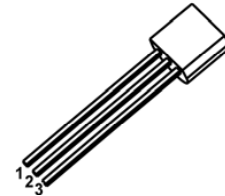
$P_D$ : 0.625 W

**TO-92**

1. OUT

2. GND

3. IN



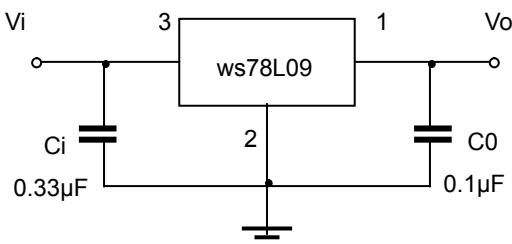
**ABSOLUTE MAXIMUM RATINGS** (Operating temperature range applies unless otherwise specified)

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
		$12V \leq V_i \leq 24V, I_o=1mA-40mA$	0-125°C	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		$\mu V$
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.