



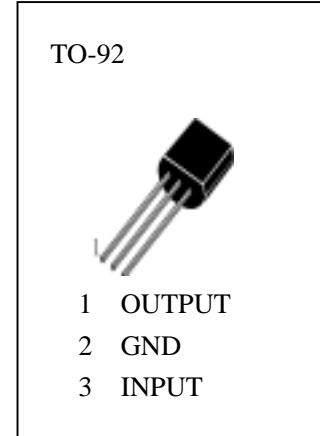
# H78L09

## Description

H78L09 is the three terminal positive Regulators with single chip, and in a wide range of applications. It supplies fixed output voltages of 9V, deliver over 100mA output current, and employs internal current limiting, thermal shut down and safe operating area protection, making it essentially indestructible.

## Features

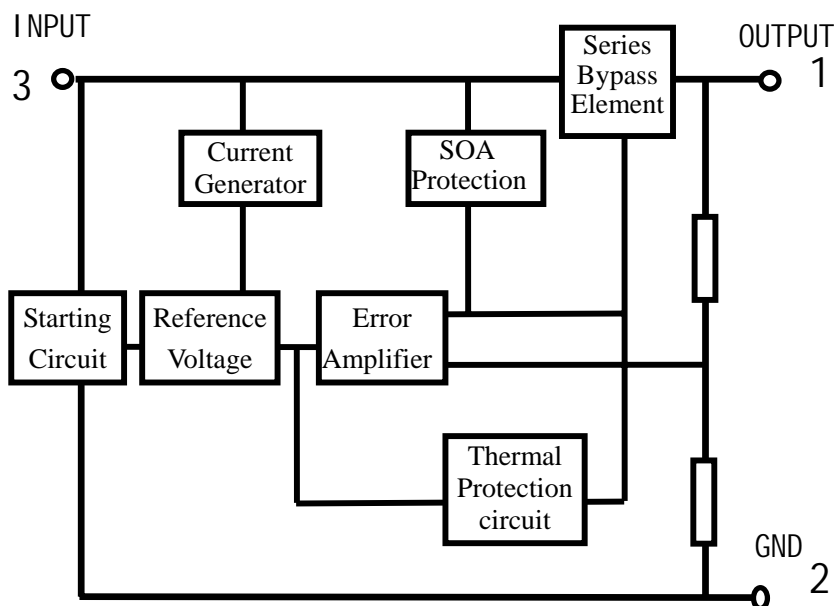
- Output current up to 100mA
- Low noise
- High Ripple Rejection
- Power Amplify Output Protection
- Thermal Overload Protection
- Current Overload Protection and Short Circuit Protection



## Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

$V_{IN}$	— Input Voltage .....	3.0 V
$T_{amb}$	— Operating Temperature Range.....	-20~85
$T_{stg}$	— Storage Temperature Range.....	-55~150
$T_j$	— Junction Temperature.....	-55~150

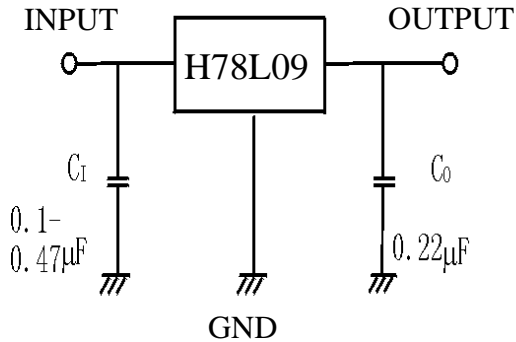
## Internal Block Diagram





# H78L09

## Typical Application



## ELECTRICAL CHARACTERISTICS

( Unless otherwise specified,  $V_{IN}=15V, I_o=40mA, T_j = 125^\circ C, C_{IN}=0.33\mu F, C_{OUT}=0.1\mu F$  )

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
$V_o$	Output Voltage	8.64	9.0	9.36	V	$T_j=25$
		8.55		9.45		$11.5V \leq V_{IN} \leq 24V, I_o = 40mA$
		8.55		9.45		$11.5V \leq V_{IN} \leq V_{MAX}, I_o = 70mA$
$V_o$	Line Regulation		90	200	mV	$T_j=25, 11.5V \leq V_{IN} \leq 24V$
			100	150		$T_j=25, 13V \leq V_{IN} \leq 24V$
$V_o$	Load Regulation		20	90	mV	$T_j=25, I_o = 1mA \rightarrow 100mA$
			10	45		$T_j=25, I_o = 1mA \rightarrow 40mA$
$I_o$	Quiescent Current		2.1	6.0	mA	$T_j=25$
$I_o$	Quiescent Current Change			1.5	mA	$13V \leq V_{IN} \leq 24V,$
				0.1		$1mA \leq I_o \leq 40mA$
$V_n$	Output Noise Voltage		70		$\mu V$	$T_j=25, 10Hz \leq f \leq 100kHz$
RR	Ripple Rejection	38	44		dB	$T_j=25, 12V \leq V_{IN} \leq 22V, f=120Hz$
$V_o/T$	Temperature coefficient of $V_o$		1.7		V	$T_j=25$