



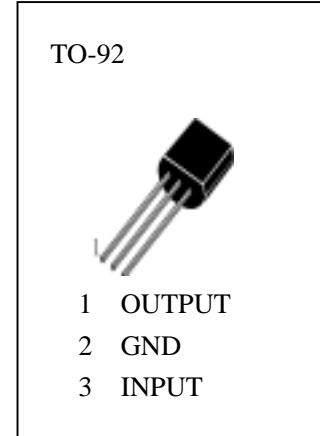
# H78L24

## Description

H78L24 is the three terminal positive Regulators with single chip, and in a wide range of applications. It supplies fixed output voltages of 24V, deliver over 100mA output current, and employs internal current limiting, thermal shut down and safe operating area protection, making it essentially indestructible.

## Features

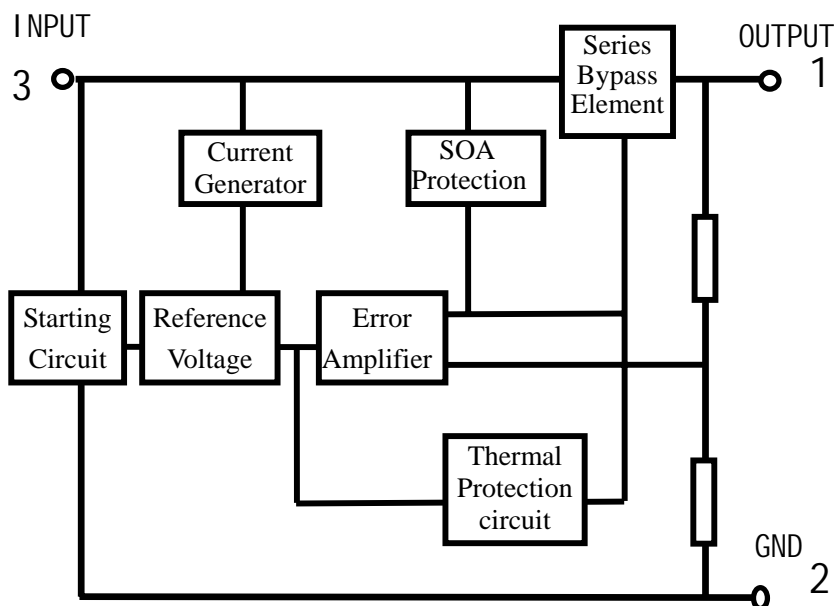
- Output current up to 100mA
- Low noise
- High Ripple Rejection
- Power Amplify Output Protection
- Thermal Overload Protection
- Current Overload Protection and Short Circuit Protection



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

$V_{IN}$	— Input Voltage .....	3.5 V
$T_{amb}$	— Operating Temperature Range.....	-20~85
$T_{stg}$	— Storage Temperature Range.....	-55~150
$T_j$	— Junction Temperature.....	-55~150

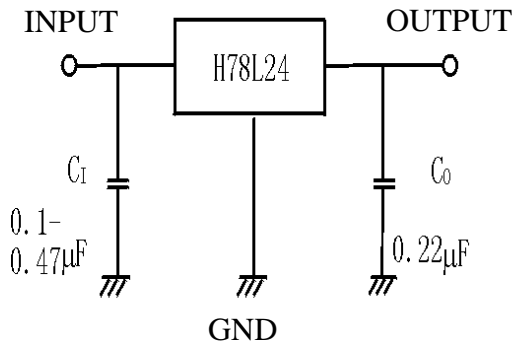
## Internal Block Diagram





# H78L24

## Typical Application



## ELECTRICAL CHARACTERISTICS

( Unless otherwise specified,  $V_{IN}=33V, I_o=40mA, 0 \leq T_j \leq 125$ ,  $C_{IN}=0.33 \mu F, C_{OUT}=0.1 \mu F$  )

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
$V_o$	Output Voltage	23	24	25	V	$T_j=25$
		22.8		25.2		$27V \leq V_{IN} \leq 38V, 1mA \leq I_o \leq 40mA$
		22.8		25.2		$11.5V \leq V_{IN} \leq V_{MAX}, 1mA \leq I_o \leq 70mA$
$V_o$	Line Regulation		160	300	mV	$T_j=25$ , $27V \leq V_{IN} \leq 38V$
			150	250		$T_j=25$ , $28V \leq V_{IN} \leq 38V$
$V_o$	Load Regulation		40	200	mV	$T_j=25$ , $1mA \leq I_o \leq 100mA$
			20	100		$T_j=25$ , $1mA \leq I_o \leq 40mA$
$I_o$	Quiescent Current		2.2	6.0	mA	$T_j=25$
$I_o$	Quiescent Current Change			1.5	mA	$28V \leq V_{IN} \leq 38V,$
				0.1		$1mA \leq I_o \leq 40mA$
$V_n$	Output Noise Voltage		200		$\mu V$	$T_j=25$ , $10Hz \leq f \leq 100kHz$
RR	Ripple Rejection	34	45		dB	$T_j=25$ , $28V \leq V_{IN} \leq 38V,$ $f=120Hz$
$V_o$	Dropout Voltage		1.7		V	$T_j=25$
$V_o/T$	Temperature coefficient of $V_o$		-2.0		mV/	$I_o=5mA$