

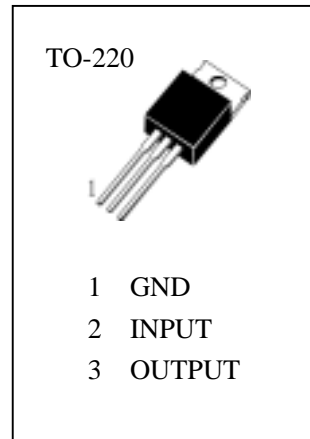


## 3-TERMINAL 1A NEGATIVE VOLTAGE REGULATORS

The H7909 series of three terminal negative regulators are available in the TO-220 package and with several fixed output voltages, making them useful in a wide range of applications. Each type employs internal current limiting, Thermal shut down and safe area protection, making it essentially indestructible.

### Features

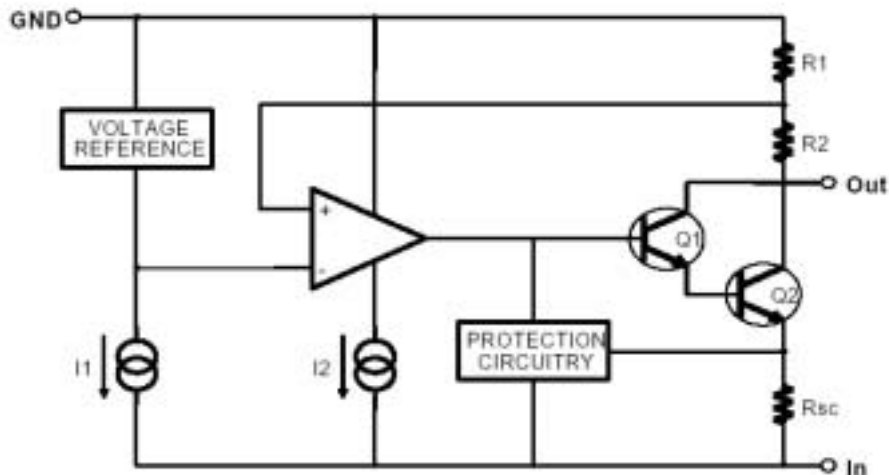
- Output current in Excess of 1A
- Output Voltages of -9V
- Internal Thermal Overload Protection
- Short Circuit Protection
- Output Transistor Safe-Area Compensation



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

- $V_I$ —Input Voltage..... -35V  
 $R_{JC}$ —Thermal Resistance Junction-Cases..... 5 /W  
 $R_{JA}$ —Thermal Resistance Junction-Air..... 65 /W  
 $T_{OPR}$ —Operating Temperature Range..... 0~125  
 $T_{STG}$ —Storage Temperature Range..... -65~150

### BLOCK DIAGRAM





( unless otherwise specified , 0  $T_J$  125 ,  $I_o=500mA$ ,  $V_i=14V$ ,  $C_i=2.2 \mu F$ ,  $C_o=1 \mu F$  )

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
$V_o$	Output Voltage	-8.7	-9.0	-9.3	V	$T_J=25$
		-8.6	-9.0	-9.4		$I_o=5.0mA$ to $1.0A$ , $P_o \leq 15W$ , $V_i=-11.5V$ to $-23V$
$V_o$	Line Regulation (Note1)		10	180	mV	$T_J=25$ , $V_i=-10.5V$ to $-25V$
			5	90		$T_J=25$ , $V_i=-11V$ to $-17V$
$V_o$	Load Regulation (Note1)		12	180	mV	$T_J=25$ , $I_o=1.5A$ to $5.0mA$
			4	90		$T_J=25$ , $I_o=250mA$ to $750mA$
$I_o$	Quiescent Current		3	6	mA	$T_J=25$
$I_o$	Quiescent Current Change		0.05	0.5	mA	$I_o=5mA$ to $1.0A$
			0.1	1		$V_i=-11.5V$ to $-25V$
$V_o/ T$	Output Voltage Drift		-0.6		mV/	$I_o=5mA$
$V_N$	Output Noise Voltage		175		$\mu V$	$T_A=25$ , $f=10Hz$ to $100kHz$
RR	Ripple Rejection	54	60		dB	$f=120Hz$ , $V_i=10V$
$V_D$	Dropout Voltage		2		V	$T_J=25$ , $I_o=1A$ ,
$I_{SC}$	Short Circuit Current		300		mA	$T_J=25$ , $V_i=-35V$
$I_{PK}$	Peak Current		2.2		A	$T_J=25$



Fig.1 Output Voltage

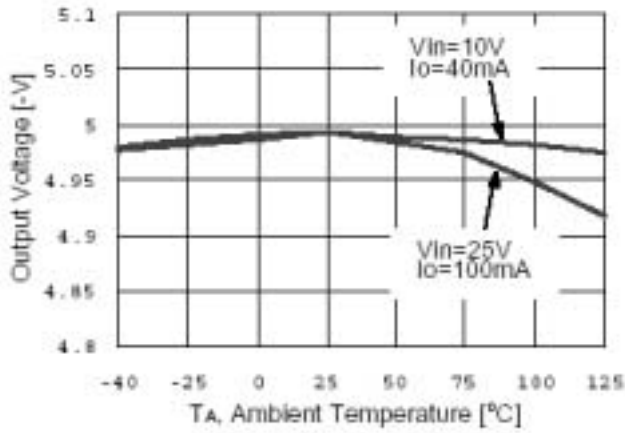


Fig. 2 Load Regulation

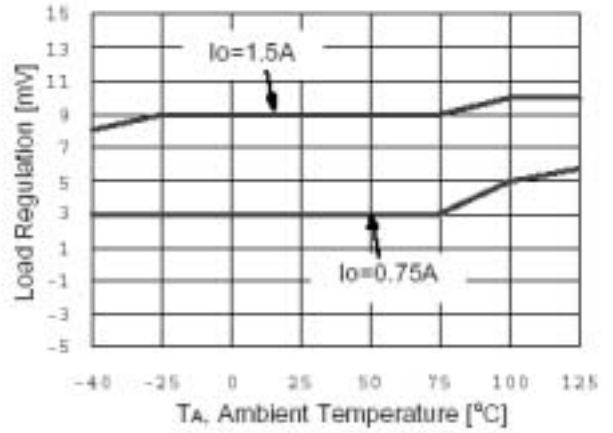


Fig.3 Quiescent Current

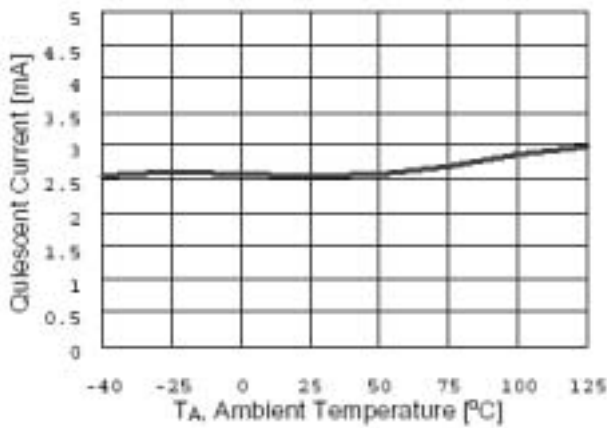


Fig. 4 Dropout Voltage

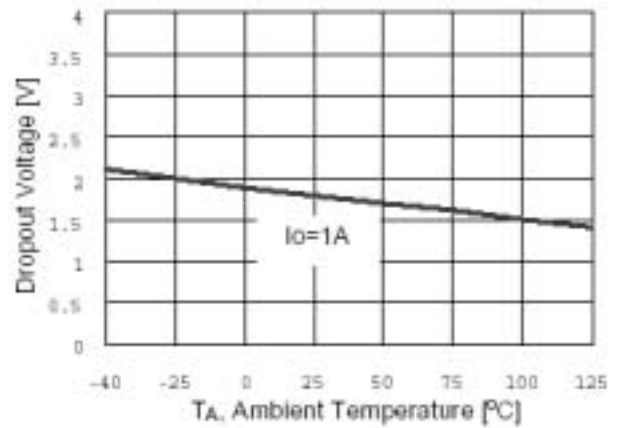


Fig.5 Short Circuit Current

