



### 3-Terminal Positive Voltage Regulator

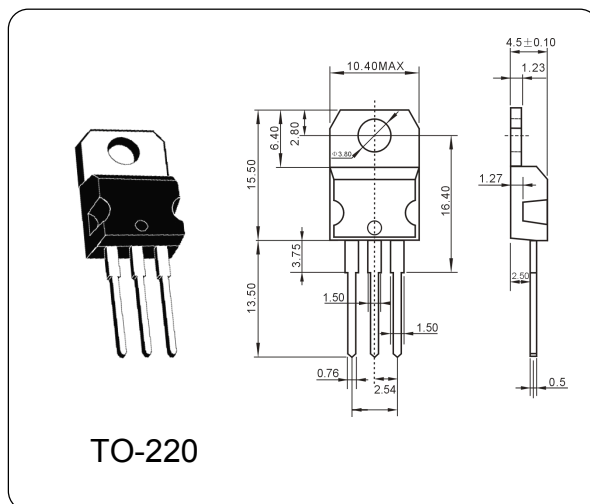
### LM7909

#### GENERAL DESCRIPTION

The LM7909 series of three terminal positive 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 operating area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 1A output current. Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltages and currents.

#### ABSOLUTE MAXIMUM RATINGS ( Ta = 25 °C)

Parameter	Symbol	Typ	Unit
Input Voltage	$V_I$	-35	V
Output Voltage	$V_O$	-9.0	V
Peak Current	$I_{PK}$	-2.2	A
Operating Temperature Range	$T_{OPR}$	0~125	°C
Storage Temperature Range	$T_{STG}$	-65~150	°C



#### ELECTRICAL CHARACTERISTICS ( Ta = 25 °C)

(Refer to test circuit,  $I_o = -500mA$ ,  $V_i = -15V$ ,  $C_i = 2.2\mu F$ ,  $C_o = 1.0\mu F$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_o$	$V_i = -12V$ to $-23V, P_o \leq 15W$	-8.6	-9.0	-9.4	V
Line Regulation (Note1)	Regline	$V_i = -12V$ to $-25V$	—	-10	-180	mV
		$V_i = -13V$ to $-18V$	—	-5	-90	
Load Regulation (Note1)	Regload	$I_o = -5.0mA$ to $-1.5A$	—	-12	-180	mV
		$I_o = -250mA$ to $-750mA$	—	-4	-90	
Quiescent Current	$I_q$	$T_J = +25\text{ °C}$	—	-3	-6	mA
Quiescent Current Change	$\Delta I_q$	$I_o = -5mA$ to $-1A$	—	—	-0.5	mA
		$V_i = -12V$ to $-25V$	—	—	-1.0	
Ripple Rejection	RR	$f = 120Hz, \Delta V_i = 10V$	54	60	—	dB
Dropout Voltage	$V_{Drop}$	$I_o = -1A, T_J = +25\text{ °C}$	—	-2	—	V
Short Circuit Current	$I_{SC}$	$V_i = -35V, T_A = +25\text{ °C}$	—	-300	—	mA
Peak Current	$I_{PK}$	$T_J = +25\text{ °C}$	—	-2.2	—	A