



3-Terminal 1A Positive Voltage Regulator

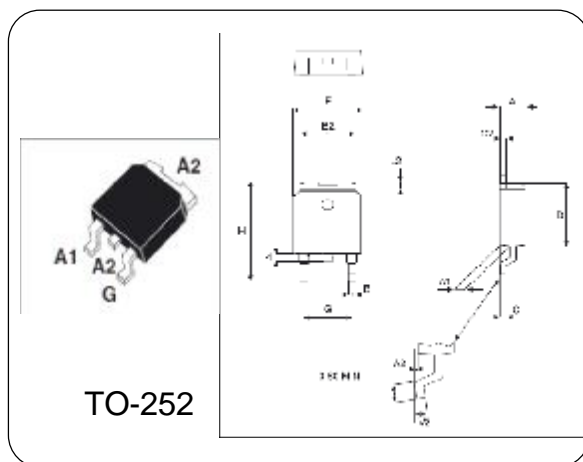
LM7809J

GENERAL DESCRIPTION

The LM7809 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 ($T_a = 25^{\circ}\text{C}$)

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	$^{\circ}\text{C}$
Storage Temperature Rang	T_{STG}	-65~150	$^{\circ}\text{C}$



ELECTRICAL CHARACTERISTICS ($T_a = 25^{\circ}\text{C}$)

(Refer to test circuit, $I_o = 500\text{mA}$, $V_i = 15\text{V}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_O	$V_i = 11.5\text{V to } 25\text{V}$	8.73	9.0	9.27	V
Line Regulation (Note1)	Regline	$V_i = 11.5\text{V to } 25\text{V}$	—	6.0	180	mV
		$V_i = 12\text{V to } 17\text{V}$	—	2.0	90	
Load Regulation (Note1)	Regload	$I_o = 5.0\text{mA to } 1.5\text{A}$	—	12	180	mV
		$I_o = 250\text{mA to } 750\text{mA}$	—	4	90	
Quiescent Current	I_Q	$T_J = +25^{\circ}\text{C}$	—	5	8	mA
Ripple Rejection	RR	$f = 120\text{Hz}$, $V_O = 11\text{V to } 21\text{V}$	56	71	—	dB
Dropout Voltage	V_{Drop}	$I_o = 1\text{A}$, $T_J = +25^{\circ}\text{C}$	—	2	—	V
Output Resistance	r_O	$f = 1\text{KHz}$	—	0.017	—	Ω
Short Circuit Current	I_{SC}	$V_i = 35\text{V}$, $T_A = +25^{\circ}\text{C}$	—	250	—	mA
Peak Current	I_{PK}	$T_J = +25^{\circ}\text{C}$	—	2.2	—	A