



## 3-Terminal 1A Positive Voltage Regulator

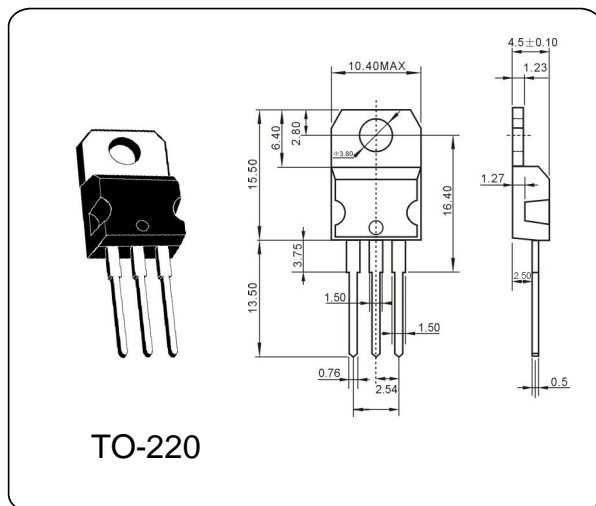
LM7805

### GENERAL DESCRIPTION

The LM7805 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	$V_O$	5.0	V
Peak Current	$I_{PK}$	2.2	A
Operating Temperature Range	$T_{OPR}$	0~125	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-65~150	$^{\circ}\text{C}$



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

(Refer to test circuit,  $I_o = 500\text{mA}$ ,  $V_i = 10\text{V}$ ,  $C_i = 0.33\mu\text{F}$ ,  $C_o = 0.1\mu\text{F}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$	$V_I = 8\text{V to } 20\text{V}$	4.85	5.0	5.15	V
Line Regulation (Note1)	Regline	$V_O = 8\text{V to } 25\text{V}$		4.0	100	mV
		$V_I = 8\text{V to } 12\text{V}$		1.6	50	
Load Regulation (Note1)	Regload	$I_o = 5.0\text{mA to } 1.5\text{A}$		9	100	mV
		$I_o = 250\text{mA to } 750\text{mA}$		4	50	
Quiescent Current	$I_Q$	$T_J = +25^{\circ}\text{C}$		5	8	mA
Ripple Rejection	RR	$f = 120\text{Hz}$ , $V_O = 8\text{V to } 18\text{V}$	62	73		dB
Dropout Voltage	$V_{Drop}$	$I_o = 1\text{A}$ , $T_J = +25^{\circ}\text{C}$		2		V
Output Resistance	$r_O$	$f = 1\text{KHz}$		0.015		$\Omega$
Short Circuit Current	$I_{SC}$	$V_I = 35\text{V}$ , $T_A = +25^{\circ}\text{C}$		230		mA
Peak Current	$I_{PK}$	$T_J = +25^{\circ}\text{C}$		2.2		A