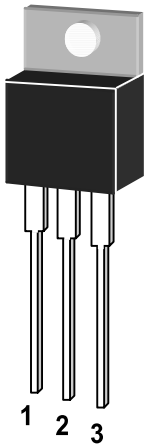
SD7805

3-terminal 1A positive voltage regulator

DESCRIPTION

The SD7805 series of three terminal positive regulators are available in the TO-220/D-PAK 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.



1. Output 2. Common 3. Input

TO-220 Plastic Package

Features

- Output Current up to 1A.
- Thermal Overload Protection.
- Short Circuit Protection.
- Output Transistor Safe Operating area Protection.

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Value	Units
Thermal Resistance Junction-Cases	$R_{\upsilon JC}$	5	^{O}C /W
Thermal Resistance Junction-Air	$R_{\upsilon JA}$	65	^{O}C /W
Operating Temperature Range(SD78XXCT/MC78XXCT/MC78XXCDT)	T_{OPR}	0 to +125	^{O}C
Storage Temperature Range	T_S	-65 to +150	^{O}C

Electrical Characteristics (SD7805)

(Refer to test circuit, 0^{o}C'T_J'125^{o}C, I_O=500mA, V_I=10V, C_I=0.33μF, C_O=0.1μF, unless otherwise specified)

Parameter	Symbol	Conditions		SD7805 Min.	SD7805 Typ.	SD7805 Max.	Unit
Output Voltage	V_O	T_J=+25^{o}C		4.8	5.0	5.2	V
		5.0mA≤I_O≤1.0A,P_O≤15W V_I=7V to 20V					
		V_I=8V to 20V		4.75	5.0	5.25	
Line Regulation	ΔV_O	T_J=+25^{o}C	V_O=7V to 20V	-	4.0	100	mV
			V_I=8V to 12V	-	1.6	50	
Load Regulation	ΔV_O	T_J=+25^{o}C	I_O=5.0mA to 1.5A	-	9	100	mV
			I_O=250mA to 750mA	-	4	50	
Quiescent Current	I_Q	T_J=+25^{o}C		-	5.0	8	mA
Quiescent Current Change	ΔI_Q	I_O=5.0mA to 1.0A		-	0.03	0.5	mA
		V_I=7V to 25V		-	0.3	1.3	
Output Voltage Drift	$\Delta V_O/\Delta T$	I_O=5.0mA		-	-0.8	-	mV/^{o}C
Output Noise Voltage	V_N	f=10Hz to100KHz,T_A=+25^{o}C		-	42	-	μV
Ripple Rejection	RR	f=120Hz,V_O=8V to18V		62	73	-	dB
Dropout Voltage	V_O	I_O=1A, T_J=+25^{o}C		-	2	-	V
Output Resistance	R_O	f=1KHz		-	15	-	mς
Short Circuit Current	I_{SC}	V_I=35V, T_A=+25^{o}C		-	230	-	mA
Peak Current	I_{PK}	T_J=+25^{o}C		-	2.2	-	A

Load and line regulation are specified at constant junction temperature, Changes in Vo due to heating effects must be taken into account separately, Pulse testing with low duty is used.