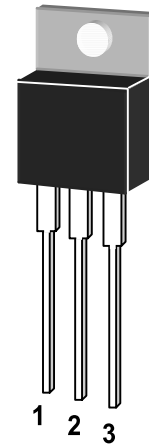


SD7805

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.

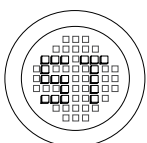


1. Output 2. Common 3. Input

TO-220 Plastic Package

Features

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



®

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SD7805

Absolute Maximum Ratings (Ta=25°C)

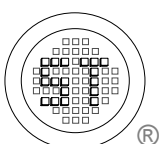
Parameter	Symbol	Value	Units
Thermal Resistance Junction-Cases	R_{JJC}	5	$^{\circ}\text{C}/\text{W}$
Thermal Resistance Junction-Air	R_{JJA}	65	$^{\circ}\text{C}/\text{W}$
Operating Temperature Range(SD78XXCT/MC78XXCT/MC78XXCDT)	T_{OPR}	0 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{S}	-65 to +150	$^{\circ}\text{C}$

Electrical Characteristics (SD7805)

(Refer to test circuit, $0^{\circ}\text{C} < T_{\text{J}} < 125^{\circ}\text{C}$, $I_{\text{O}}=500\text{mA}$, $V_{\text{I}}=10\text{V}$, $C_{\text{I}}=0.33\mu\text{F}$, $C_{\text{O}}=0.1\mu\text{F}$, unless otherwise specified)

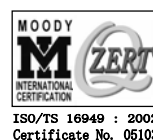
Parameter	Symbol	Conditions	SD7805			Unit
			Min.	Typ.	Max.	
Output Voltage	V_{O}	$T_{\text{J}}=+25^{\circ}\text{C}$	4.8	5.0	5.2	V
		$5.0\text{mA} \leq I_{\text{O}} \leq 1.0\text{A}$, $P_{\text{O}} \leq 15\text{W}$ $V_{\text{I}}=7\text{V}$ to 20V $V_{\text{I}}=8\text{V}$ to 20V	4.75	5.0	5.25	
Line Regulation	ΔV_{O}	$T_{\text{J}}=+25^{\circ}\text{C}$	-	4.0	100	mV
		$V_{\text{O}}=7\text{V}$ to 20V $V_{\text{I}}=8\text{V}$ to 12V	-	1.6	50	
Load Regulation	ΔV_{O}	$T_{\text{J}}=+25^{\circ}\text{C}$	-	9	100	mV
		$I_{\text{O}}=5.0\text{mA}$ to 1.5A $I_{\text{O}}=250\text{mA}$ to 750mA	-	4	50	
Quiescent Current	I_{Q}	$T_{\text{J}}=+25^{\circ}\text{C}$	-	5.0	8	mA
Quiescent Current Change	ΔI_{Q}	$I_{\text{O}}=5.0\text{mA}$ to 1.0A	-	0.03	0.5	mA
		$V_{\text{I}}=7\text{V}$ to 25V	-	0.3	1.3	
Output Voltage Drift	$\Delta V_{\text{O}}/\Delta T$	$I_{\text{O}}=5.0\text{mA}$	-	-0.8	-	$\text{mV}/^{\circ}\text{C}$
Output Noise Voltage	V_{N}	$f=10\text{Hz}$ to 100KHz , $T_{\text{A}}=+25^{\circ}\text{C}$	-	42	-	μV
Ripple Rejection	RR	$f=120\text{Hz}$, $V_{\text{O}}=8\text{V}$ to 18V	62	73	-	dB
Dropout Voltage	V_{O}	$I_{\text{O}}=1\text{A}$, $T_{\text{J}}=+25^{\circ}\text{C}$	-	2	-	V
Output Resistance	R_{O}	$f=1\text{KHz}$	-	15	-	$\text{m}\Omega$
Short Circuit Current	I_{SC}	$V_{\text{I}}=35\text{V}$, $T_{\text{A}}=+25^{\circ}\text{C}$	-	230	-	mA
Peak Current	I_{PK}	$T_{\text{J}}=+25^{\circ}\text{C}$	-	2.2	-	A

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



SEMTECH ELECTRONICS LTD.

(Subsidiary of Semtech International Holdings Limited, acompany
listed on the Hong Kong Stock Exchange, Stock Code: 724)



Dated : 07/12/2002