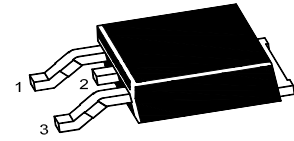


7808R

3-Terminal 1 A Positive Voltage Regulator

Features

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



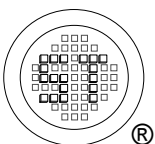
1. Input 2. Gnd 3. Output
TO-252 Plastic Package

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Input Voltage	V_I	36	V
Thermal Resistance Junction-Cases	$R_{\theta JC}$	5	$^\circ\text{C/W}$
Thermal Resistance Junction-Air	$R_{\theta JA}$	65	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	- 40 to + 125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 65 to + 150	$^\circ\text{C}$

Electrical Characteristics ($-40^\circ\text{C} < T_J < 125^\circ\text{C}$, $I_o = 1\text{ A}$, $V_I = 14\text{ V}$, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	$T_J = 25^\circ\text{C}$	7.84	8	8.16	V
		$I_o = 5\text{ mA to } 1\text{ A}$, $V_I = 10.6\text{ V to } 23\text{ V}$, $P_D \leq 15\text{ W}$	7.7	8	8.3	
Line Regulation	Regline	$V_I = 10.6\text{ V to } 23\text{ V}$, $I_o = 500\text{ mA}$, $T_J = 25^\circ\text{C}$	-	-	75	mV
Load Regulation	Regload	$V_I = 14\text{ V}$, $I_o = 5\text{ mA to } 1\text{ A}$, $T_J = 25^\circ\text{C}$	-	-	75	mV
Quiescent Current	I_Q	$V_I = 14\text{ V}$, $I_o = 0$	-	-	6	mA
Quiescent Current Change	ΔI_Q	$V_I = 10.6\text{ V to } 23\text{ V}$, $I_o = 500\text{ mA}$, $T_J = 25^\circ\text{C}$	-	-	0.8	mA
		$I_o = 5\text{ mA to } 1\text{ A}$, $T_J = 25^\circ\text{C}$	-	-	0.5	
Output Noise Voltage	V_N	$f = 10\text{ Hz to } 100\text{ KHz}$, $T_A = 25^\circ\text{C}$	-	10	-	$\mu\text{V}/V_O$
Ripple Rejection	RR	$V_I = 11.5\text{ V to } 21.5\text{ V}$, $I_o = 500\text{ mA}$, $f = 120\text{ Hz}$	-	62	-	dB
Dropout Voltage	V_{Drop}	$\Delta V_O = 1\%$, $I_o = 1\text{ A}$, $T_J = 25^\circ\text{C}$	-	2	-	V
Output Resistance	R_O	$f = 1\text{ KHz}$	-	10	-	$\text{m}\Omega$
Short Circuit Current	I_{SC}	$V_I = 35\text{ V}$, $T_A = 25^\circ\text{C}$	-	0.2	-	A
Peak Current	I_{PK}	$V_I = 14\text{ V}$, $T_J = 25^\circ\text{C}$	-	2.2	-	A



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Typical Performance Characteristics

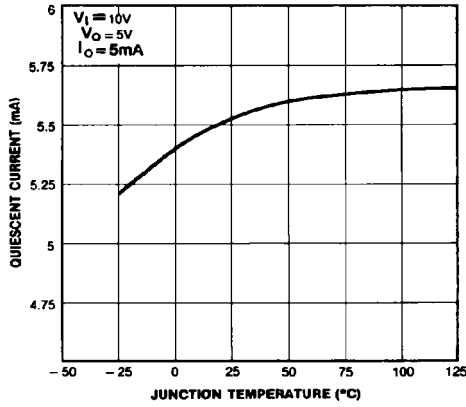


Figure 1. Quiescent Current

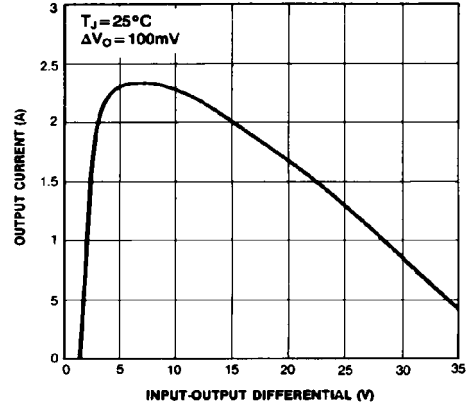


Figure 2. Peak Output Current

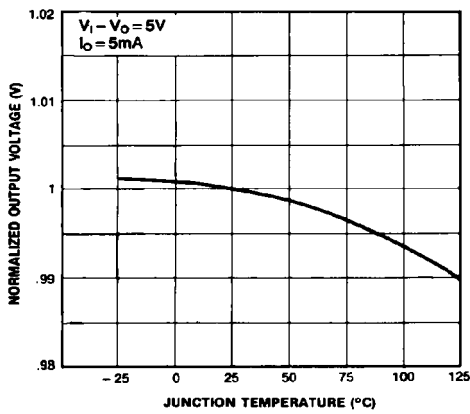


Figure 3. Output Voltage

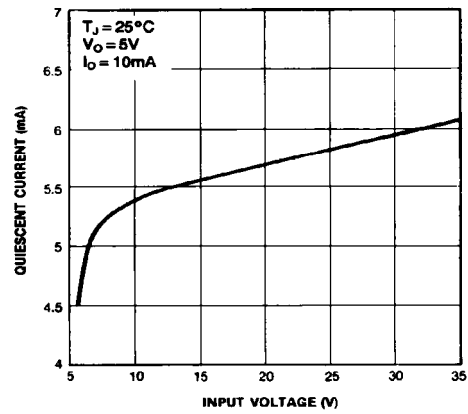
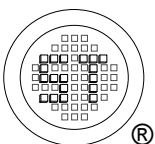


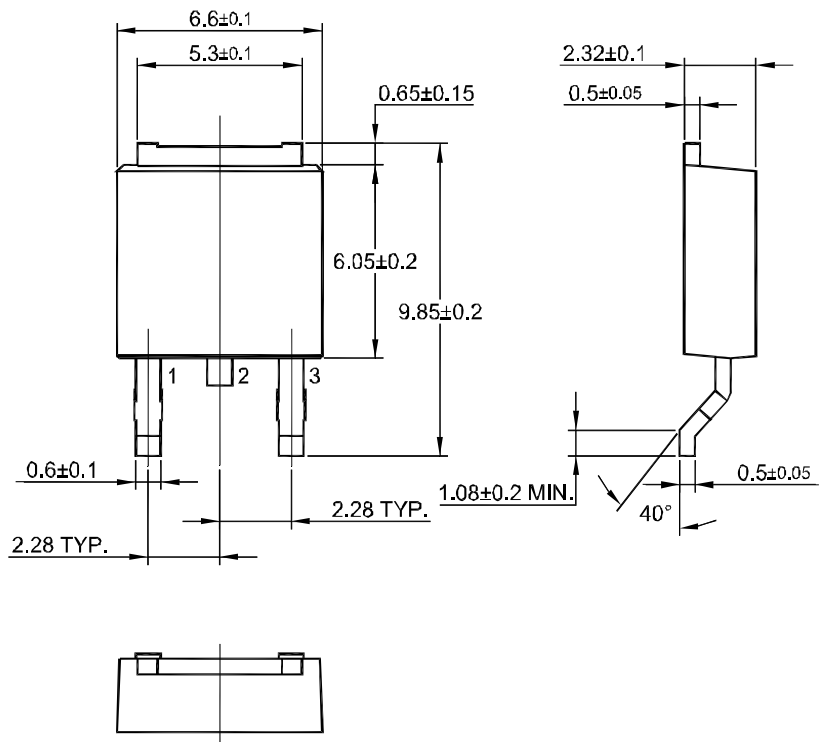
Figure 4. Quiescent Current



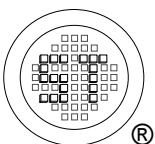
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TO-252 PACKAGE OUTLINE



Dimensions in mm



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