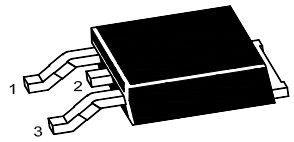
7808R

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 °C)

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

Electrical Characteristics (-40 °C < T_J < 125 °C, I_O = 1 A, V_I = 14 V, unless otherwise specified)

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

Typical Performance Characteristics

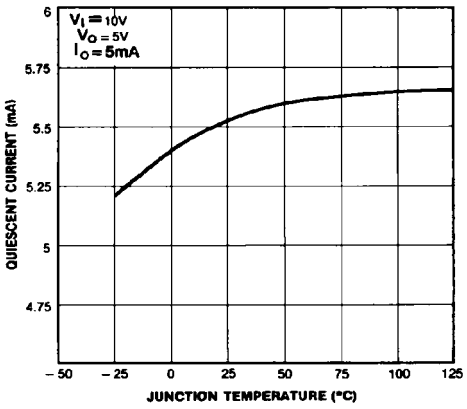


Figure 1. Quiescent Current

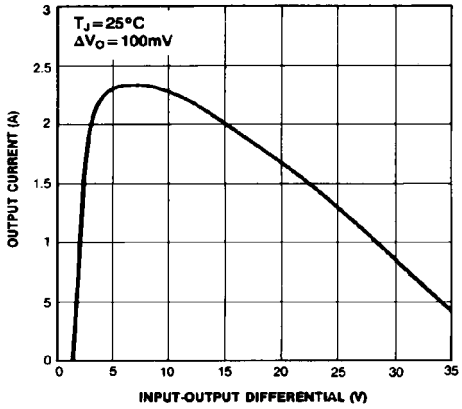


Figure 2. Peak Output Current

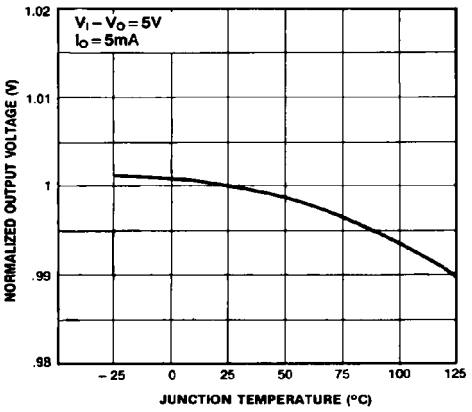


Figure 3. Output Voltage

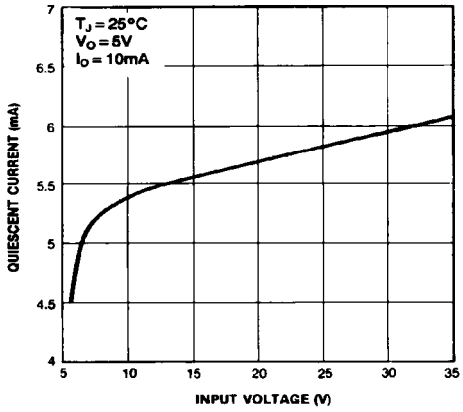
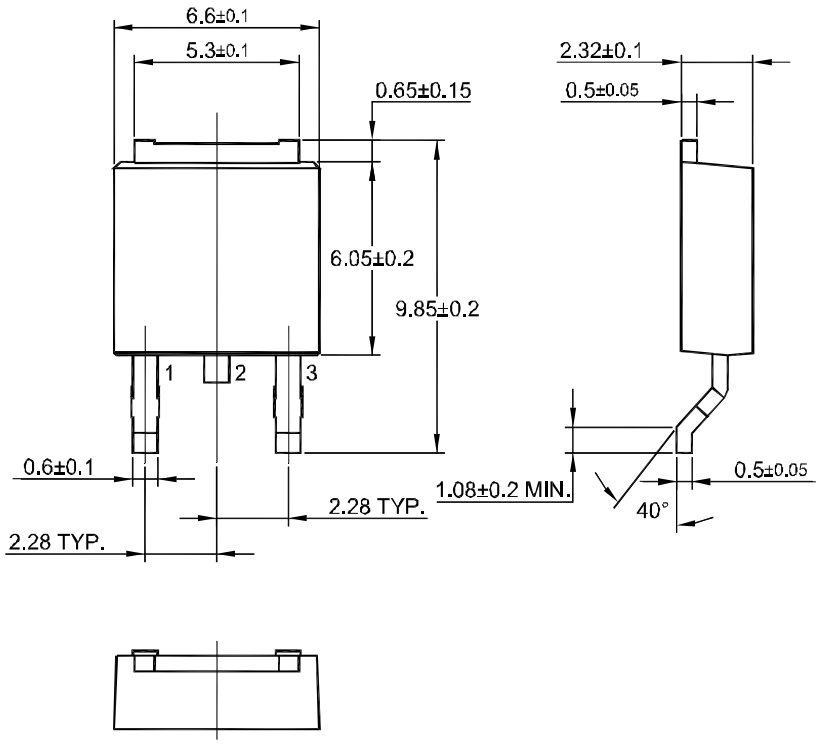


Figure 4. Quiescent Current

TO-252 PACKAGE OUTLINE



Dimensions in mm