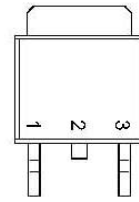


ST 7809R

3-terminal 1 A positive voltage regulator

Features

- Output current up to 1 A
- Internal thermal overload protection
- Output transistor safe operating area protection



1. INPUT 2.GND 3.OUTPUT



TO-252

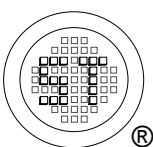
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Units
Input Voltage	V_I	36	V
Thermal Resistance Junction-Air	$R_{\theta JA}$	100	$^\circ\text{C}/\text{W}$
Operating Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 65 to + 150	$^\circ\text{C}$

Electrical Characteristics

($-40^\circ\text{C} < T_J < 125^\circ\text{C}$, $I_O = 1\text{ A}$, $V_I = 15\text{ V}$, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	$T_J = 25^\circ\text{C}$	8.82	-	9.18	V
		$I_O = 5\text{ mA to } 1\text{ A}$, $P_O \leq 15\text{ W}$ $V_I = 11.5\text{ V to } 23\text{ V}$	8.65	-	9.35	
Line Regulation	Regline	$T_J = 25^\circ\text{C}$ $V_I = 11.5\text{ V to } 23\text{ V}$ $I_O = 500\text{ mA}$	-	-	90	mV
Load Regulation	Regload	$T_J = 25^\circ\text{C}$ $V_I = 14\text{ V}$ $I_O = 5\text{ mA to } 1\text{ A}$	-	-	100	mV
Quiescent Current	I_Q	$V_I = 15\text{ V}$, $I_O = 0\text{ A}$	-	-	6	mA
Quiescent Current Change	ΔI_Q	$I_O = 500\text{ mA}$, $V_I = 11.5\text{ V to } 23\text{ V}$ $T_J = 25^\circ\text{C}$	-	-	0.8	mA
		$I_O = 5\text{ mA to } 1\text{ A}$, $T_J = 25^\circ\text{C}$	-	-	0.5	
Output Voltage Temperature Coefficient	$\Delta V_O/\Delta T$ $(\Delta V_O/V_O)/\Delta T$		-	0.72	-	$\text{mV}/^\circ\text{C}$ $\text{ppm}/^\circ\text{C}$
Output Noise Voltage	V_N	$f = 10\text{ Hz to } 100\text{ KHz}$, $T_A = 25^\circ\text{C}$	-	10	-	μV
Ripple Rejection	RR	$f = 120\text{ Hz}$, $V_I = 11.5\text{ V to } 21.5\text{ V}$ $I_O = 500\text{ mA}$	-	61	-	dB
Dropout Voltage	V_{Drop}	$I_O = 1\text{ A}$, $\Delta V_O = 1\%$, $T_J = 25^\circ\text{C}$	-	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}	$V_I = 15\text{ V}$, $T_J = 25^\circ\text{C}$	-	2.2	-	A



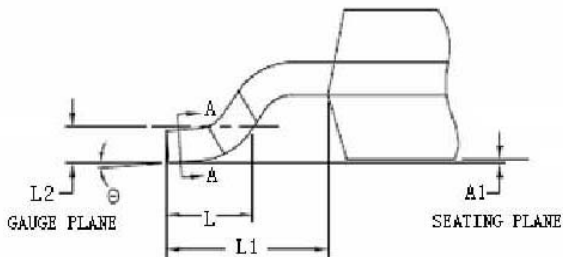
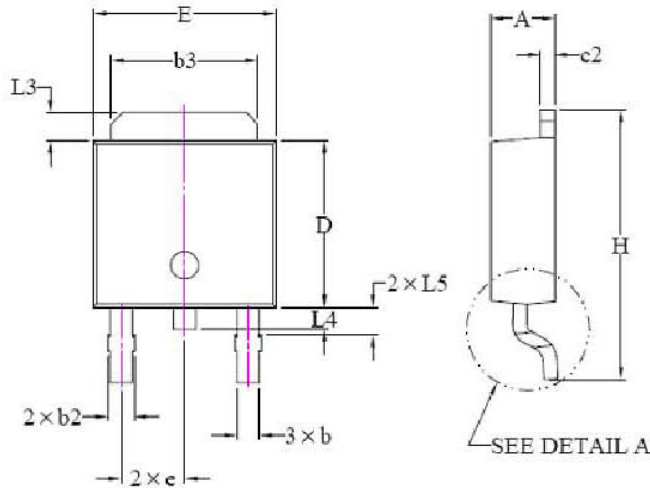
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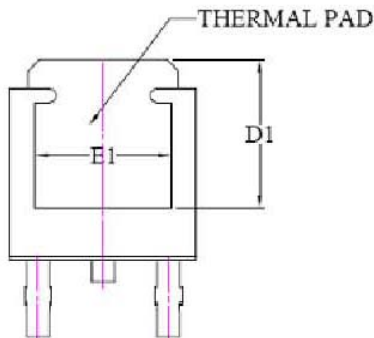
ST 7809R

TO-252 PACKAGE OUTLINE

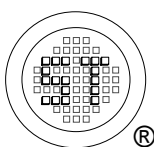
Unit: mm



DETAIL A



Item	Min.	Max.
A	2.220	2.420
A1	0	0.125
b	0.550	0.670
b2	0.760	0.960
b3	5.200	5.400
c2	0.450	0.550
D	5.950	6.250
D1	4.200	4.500
E	6.400	6.700
E1	4.750	4.850
e	2.280REF	
H	9.440	10.140
L	1.370	1.670
L1	2.590	2.890
L2	0.500 REF	
L3	0.900	1.000
L4	0.650	0.950
L5	1.140	1.520
θ	0°	6°



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Dated: 15/12/2011 Rev: 01