

**L7809**

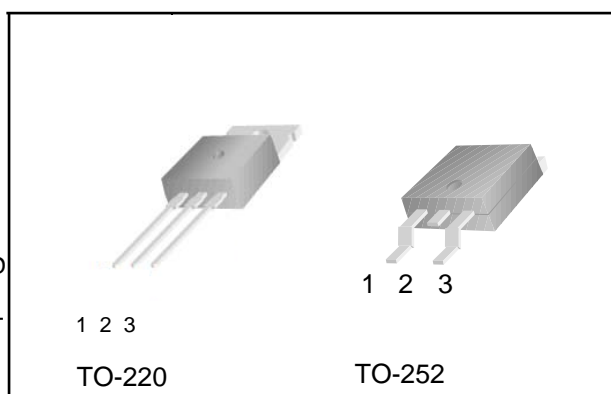
**3 TERMINAL 1.5A POSITIVE VOLTAGE REGULATORS**

L7809 Three-terminal positive voltage regulator

**FEATURES**

- Maximum output current  
 $I_{OM}$ : 1.5 A
- Output voltage  
 $V_O$ : 9V

1.IN  
2.GND  
3.OUT



**ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)**

Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	35	V
Thermal Resistance from Junction to Air	$R_{\theta JA}$	65	$^{\circ}C/W$
Operating Junction Temperature Range	$T_{OPR}$	-20~+125	$^{\circ}C$
Storage Temperature Range	$T_{STG}$	-65~+150	$^{\circ}C$

**L7809 ELECTRICAL CHARACTERISTICS**

(Refer to test circuits,  $0 < T_j < 125^{\circ}C$ ,  $I_o = 500mA$ ,  $V_i = 15V$ ,  $C_i = 0.33\mu F$ ,  $C_o = 0.1\mu F$ , unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units
Output voltage	$V_o$	$T_j = 25^{\circ}C$	8.65	9.00	9.35	V
		$5.0mA < I_o < 1.0A$ , $P_D < 15W$ $V_i = 11.5V$ to $24V$	8.6	9.0	9.4	V
Line regulation	$\Delta V_o$	$T_j = 25^{\circ}C$ , $V_i = 11.5V$ to $25V$	-	6	180	mV
		$T_j = 25^{\circ}C$ , $V_i = 12V$ to $25V$	-	2	90	mV
Load regulation	$\Delta V_o$	$T_j = 25^{\circ}C$ , $I_o = 5.0mA$ to $1.5A$	-	12	180	mV
		$T_j = 25^{\circ}C$ , $I_o = 250mA$ to $750mA$	-	5	90	mV
Quiescent current	$I_q$	$T_j = 25^{\circ}C$	-	5.0	8	mA
Quiescent current change	$\Delta I_q$	$I_o = 5mA$ to $1.0A$	-	-	0.5	mA
		$V_i = 12V$ to $26V$	-	-	0.8	mA
Output voltage drift	$\Delta V_o / \Delta T$	$I_o = 5mA$	-	1.3	-	$mV/^{\circ}C$
Output noise voltage	$V_N$	$f = 10Hz$ to $100kHz$ , $T_a = 25^{\circ}C$	-	58	-	$\mu V$
Ripple rejection	RR	$f = 120Hz$ , $V_i = 13V$ to $23V$	55	66	-	dB
Dropout voltage	$V_o$	$I_o = 1.0A$ , $T_j = 25^{\circ}C$	-	2	-	V
Output resistance	$R_o$	$f = 1kHz$	-	15	-	$m\Omega$
Short circuit current	$I_{sc}$	$V_i = 35V$ , $T_a = 25^{\circ}C$	-	230	-	mA
peak current	$I_{pk}$	$T_j = 25^{\circ}C$	-	2.2	-	A

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TEST CIRCUITS

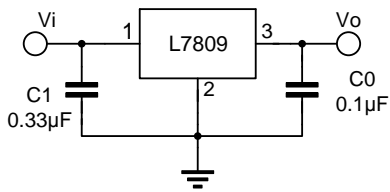


FIG.1 DC PARAMETERS

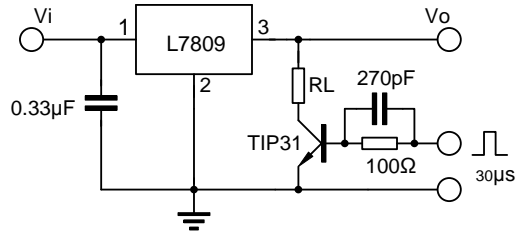


FIG.2 LOAD REGULATION

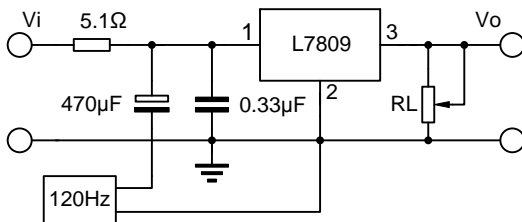


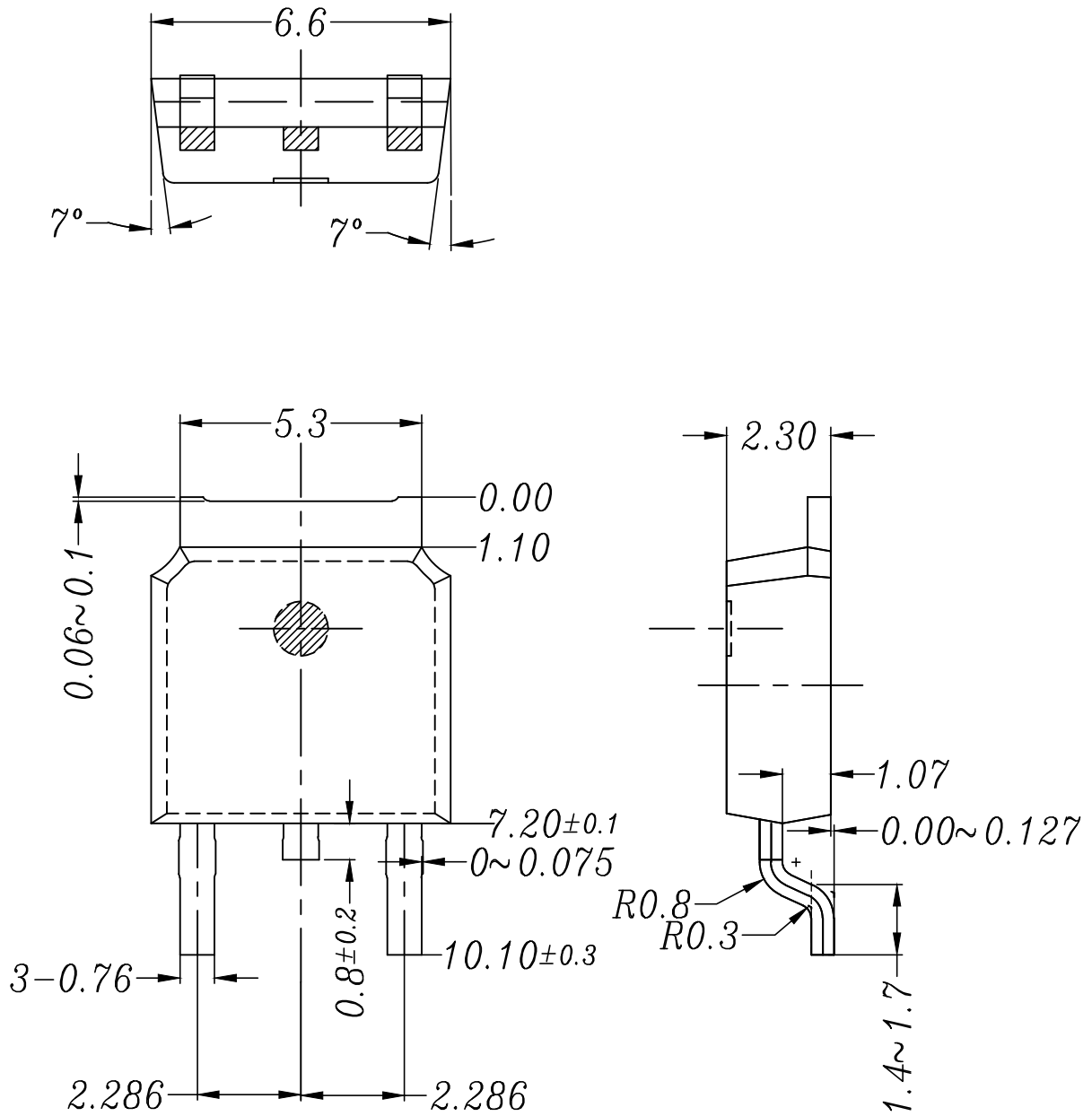
FIG.3 RIPPLE REJECTION

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### TO-252 Package Outline Dimensions

Package Outline Dimensions (Units: mm)



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### TO-220 Package Outline Dimensions

Package Outline Dimensions (Units: mm)

