

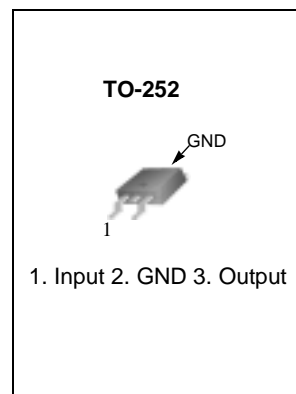
3-Terminal 1 A Positive Voltage Regulator

Features

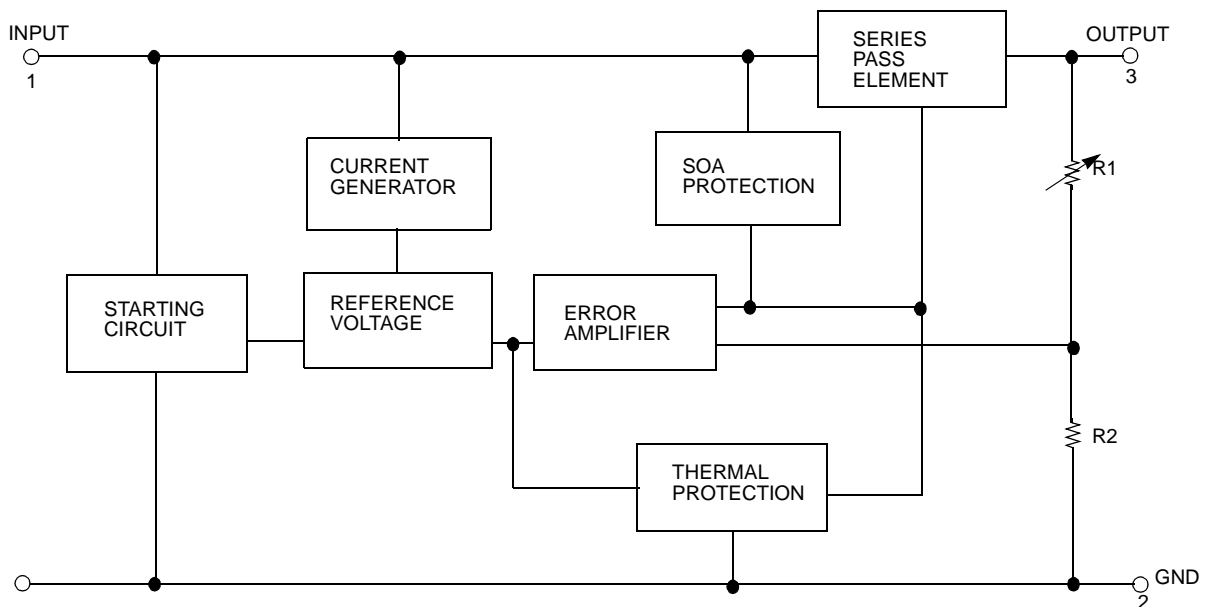
- Output Current up to 1 A
- Output Voltages of 8 V
- Thermal Overload Protection
- Short Circuit Protection
- Output Transistor Safe Operating Area (SOA) Protection

Description

The 78M08 series of three-terminal package with several fixed output voltages making it useful in a wide range of applications.



Internal Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage (for $V_O = 5V$ to $18V$) (for $V_O = 24V$)	V_I	30	V
Thermal Resistance Junction-Case (Note1) TO-220 ($T_c = +25^\circ C$)	$R_{\theta JC}$	2.5	$^\circ C/W$
Thermal Resistance Junction-Air (Note1, 2) TO-220 ($T_a = +25^\circ C$) D-PAK ($T_a = +25^\circ C$)	$R_{\theta JA}$	66 92	$^\circ C/W$
Operating Junction Temperature Range	TOPR	0 ~ +150	$^\circ C$
Storage Temperature Range	TSTG	-65 ~ +150	$^\circ C$

Note:

- Thermal resistance test board
Size: 76.2mm * 114.3mm * 1.6mm(1S0P)
JEDEC standard: JESD51-3, JESD51-7
- Assume no ambient airflow

Electrical Characteristics (78M08) (Continued)

(Refer to the test circuits, $0 \leq T_J \leq +125^\circ C$, $I_O = 350mA$, $V_I = 14V$, unless otherwise specified, $C_I = 0.33\mu F$, $C_O = 0.1\mu F$)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	$T_J = +25^\circ C$	7.7	8	8.3	V
		$I_O = 5mA$ to $350mA$ $V_I = 10.5V$ to $23V$	7.6	8	8.4	
Line Regulation (Note1)	ΔV_O	$I_O = 200mA$ $T_J = +25^\circ C$	-	-	100	mV
		$V_I = 10.5V$ to $25V$ $V_I = 11V$ to $25V$	-	-	50	
Load Regulation (Note1)	ΔV_O	$I_O = 5mA$ to $0.5A$, $T_J = +25^\circ C$	-	-	160	mV
		$I_O = 5mA$ to $200mA$, $T_J = +25^\circ C$	-	-	80	
Quiescent Current	I_Q	$T_J = +25^\circ C$	-	4.0	6.0	mA
Quiescent Current Change	ΔI_Q	$I_O = 5mA$ to $350mA$	-	-	1	mA
		$I_O = 200mA$ $V_I = 10.5V$ to $25V$	-	-	0.8	
Output Voltage Drift	RR	$I_O = 5mA$ $T_J = 0$ to $+125^\circ C$	-	-0.5	-	mV/ $^\circ C$
Output Noise Voltage	V_N	$f = 10Hz$ to $100kHz$	-	52	-	$\mu V/V_O$
Ripple Rejection	RR	$f = 120Hz$, $I_O = 300mA$ $V_I = 11.5V$ to $21.5V$, $T_J = +25^\circ C$	-	80	-	dB
Dropout Voltage	V_D	$T_J = +25^\circ C$, $I_O = 500mA$	-	2	-	V
Short Circuit Current	ISC	$T_J = +25^\circ C$, $V_I = 30V$	-	300	-	mA
Peak Current	IPK	$T_J = +25^\circ C$	-	700	-	mA

Note:

- Load and line regulation are specified at constant junction temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty is used.

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