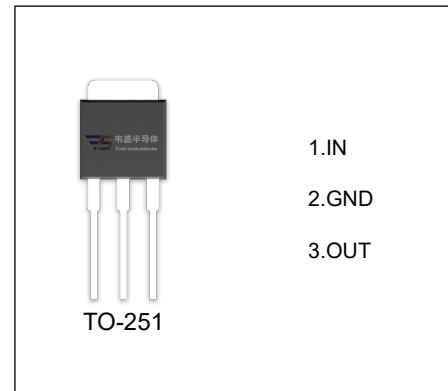


VS78M08 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
 $I_{OM}: 0.5\text{ A}$
- Output voltage
 $V_O: 8\text{ V}$
- Continuous total dissipation
 $P_D: 1.25\text{ W}(T_a=25\text{ }^\circ\text{C})$



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

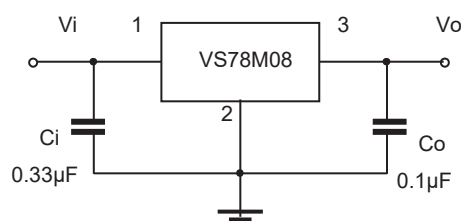
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	80	$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	T_{OPR}	-40~+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=14\text{ V}, I_o=350\text{ mA}, C_i=0.33\mu\text{ F}, C_o=0.1\mu\text{ F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_J=25^\circ\text{C}$	7.76	8	8.24	V
		$10.5\text{ V} \leq V_i \leq 23\text{ V}, I_o=5\text{ mA}-350\text{ mA}$	7.6	8	8.4	V
Load Regulation	ΔV_o	$I_o=5\text{ mA}-500\text{ mA}, T_J=25^\circ\text{C}$		20	160	mV
		$I_o=5\text{ mA}-200\text{ mA}, T_J=25^\circ\text{C}$		10	80	mV
Line Regulation	ΔV_o	$10.5\text{ V} \leq V_i \leq 25\text{ V}, I_o=200\text{ mA}, T_J=25^\circ\text{C}$		6	100	mV
		$11\text{ V} \leq V_i \leq 25\text{ V}, I_o=200\text{ mA}, T_J=25^\circ\text{C}$		2	50	mV
Quiescent Current	I_q	$T_J=25^\circ\text{C}$		4.6	6	mA
Quiescent Current Change	ΔI_q	$10.5\text{ V} \leq V_i \leq 25\text{ V}, I_o=200\text{ mA}$			0.8	mA
	ΔI_q	$5\text{ mA} \leq I_o \leq 350\text{ mA}$			0.5	mA
Output Noise Voltage	V_N	$10\text{ Hz} \leq f \leq 100\text{ KHz}, T_J=25^\circ\text{C}$		52		$\mu\text{V}/V_o$
Ripple Rejection	RR	$11.5\text{ V} \leq V_i \leq 21.5\text{ V}, f=120\text{ Hz}, I_o=300\text{ mA}$	56	80		dB
Dropout Voltage	V_d	$I_o=350\text{ mA}, T_J=25^\circ\text{C}$		2		V
Short Circuit Current	I_{sc}	$V_i=14\text{ V}, T_J=25^\circ\text{C}$		250		mA
Peak Current	I_{pk}	$T_J=25^\circ\text{C}$		0.5		A

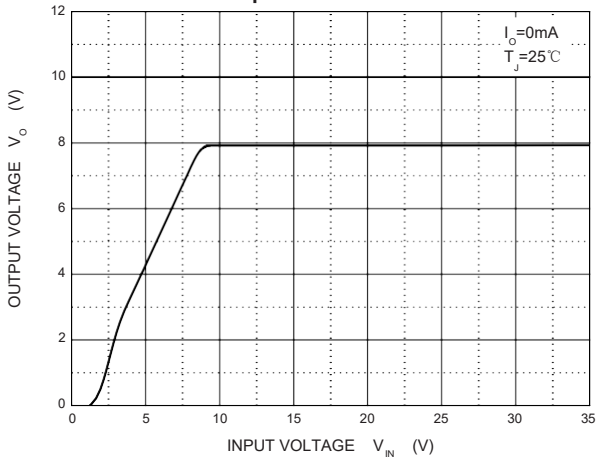
* Pulse test.

TYPICAL APPLICATION

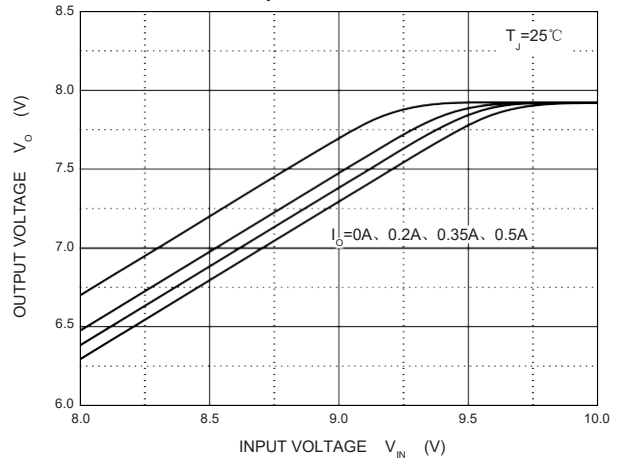


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

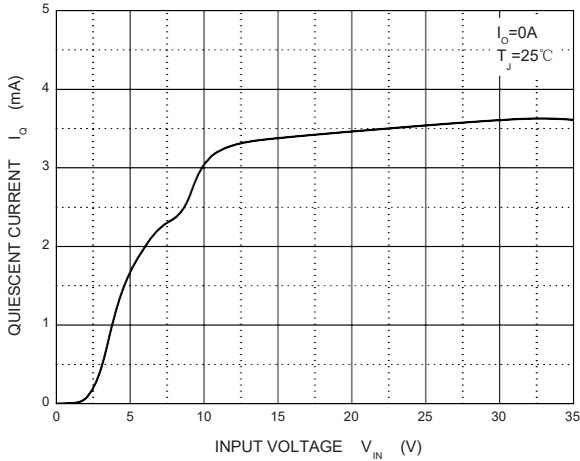
Output Characteristics



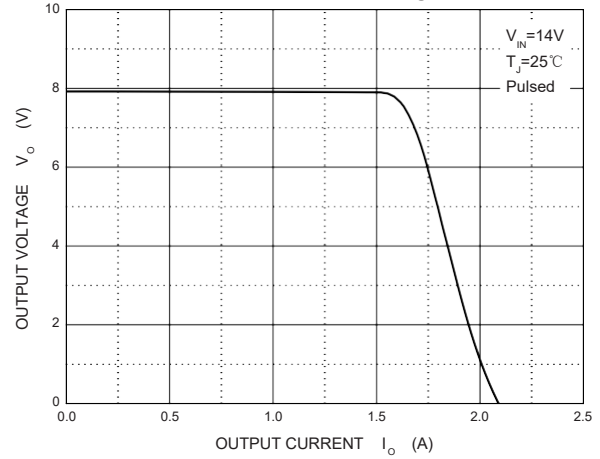
Dropout Characteristics



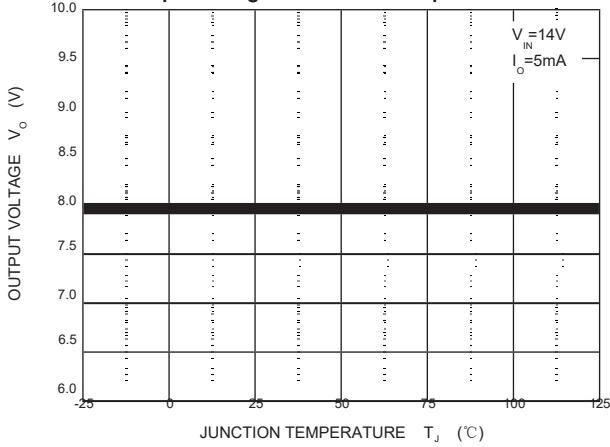
Quiescent Current



Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature



Power Derating Curve

