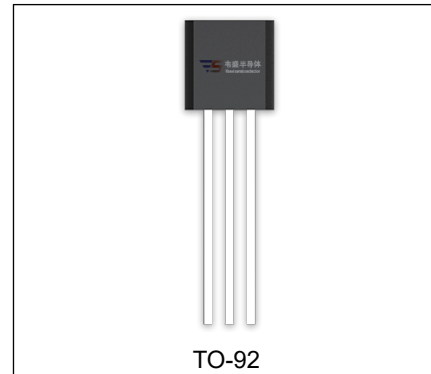


## VS78L08 Three-terminal positive voltage regulator

### FEATURES

- Maximum output current  
 $I_{OM}$ : 0.1A
- Output voltage  
 $V_O$ : 8V
- Continuous total dissipation  
 $P_D$ : 0.625 W ( $T_a = 25\text{ }^{\circ}\text{C}$ )



### ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
VS78L08	TO-92	Bulk	1000pcs/Bag
VS78L08-TA	TO-92	Tape	2000pcs/Box

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

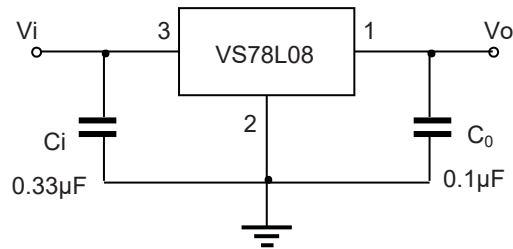
Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	30	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	160	$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature Range	$T_{OPR}$	-40~+125	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-65~+150	$^{\circ}\text{C}$

**T<sub>a</sub>=25 °C unless otherwise specified** (V<sub>i</sub>=14V, I<sub>o</sub>=40mA, C<sub>i</sub>=0.33μF, C<sub>o</sub>=0.1μF, unless otherwise specified )

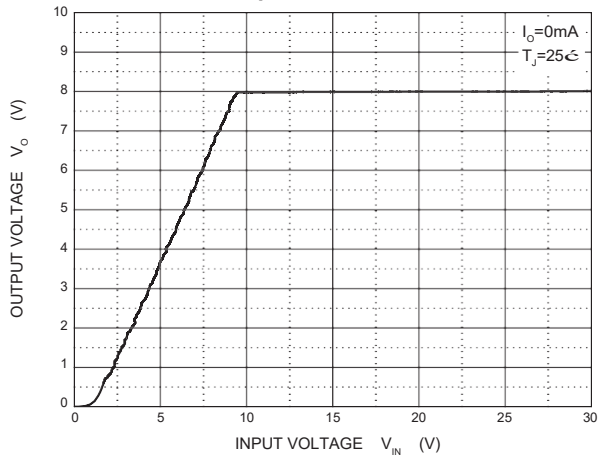
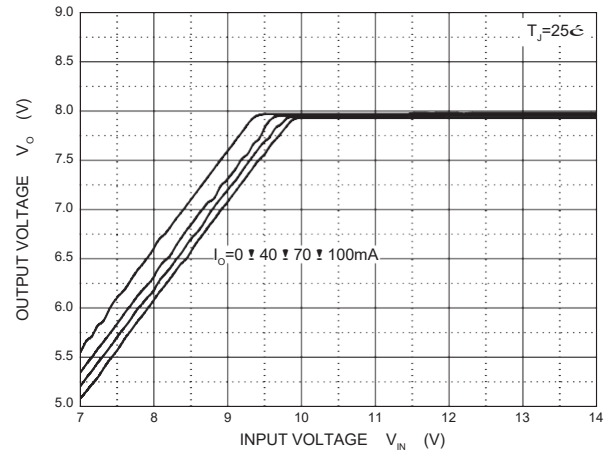
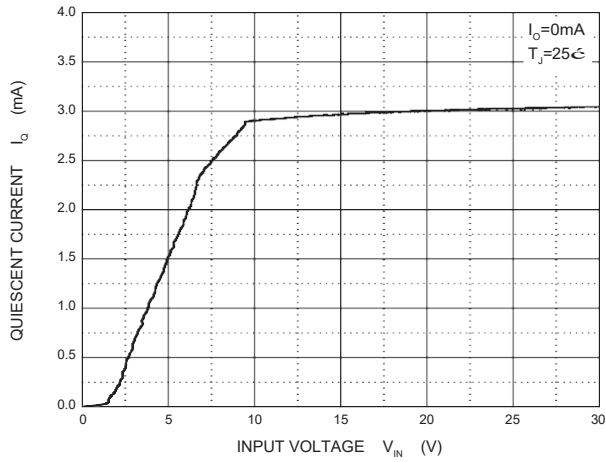
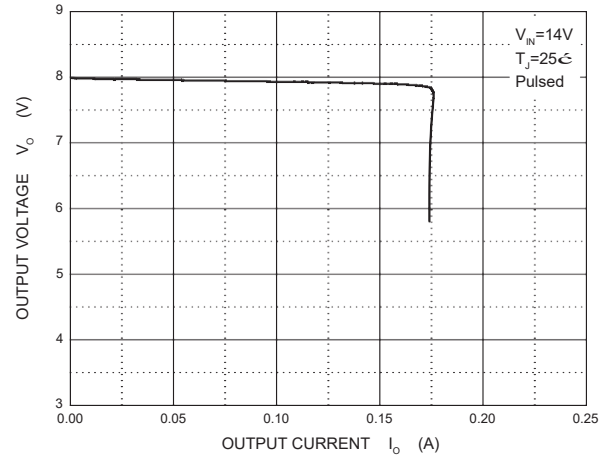
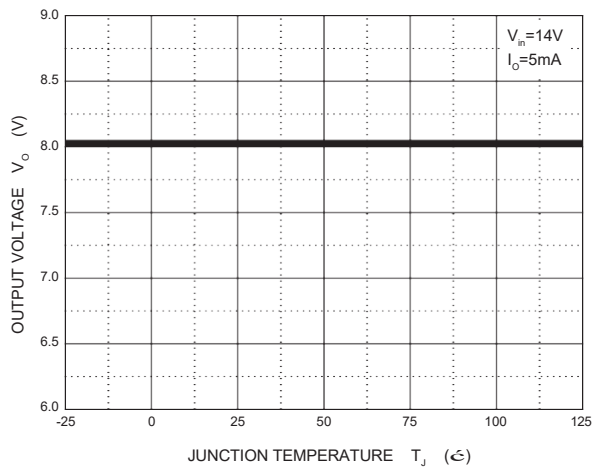
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	V <sub>o</sub>	T <sub>J</sub> =25°C	7.76	8.0	8.24	V
		10.5V≤V <sub>i</sub> ≤23V, I <sub>o</sub> =1mA~40mA	7.6	8.0	8.4	V
		I <sub>o</sub> =1mA~70mA	7.6	8.0	8.4	V
Load Regulation	ΔV <sub>o</sub>	I <sub>o</sub> =1mA~100mA, T <sub>J</sub> =25°C		18	80	mV
		I <sub>o</sub> =1mA~40mA, T <sub>J</sub> =25°C		10	40	mV
Line regulation	ΔV <sub>o</sub>	10.5V≤V <sub>i</sub> ≤23V, T <sub>J</sub> =25°C		42	175	mV
		11V≤V <sub>i</sub> ≤23V, T <sub>J</sub> =25°C		36	125	mV
Quiescent Current	I <sub>q</sub>	T <sub>J</sub> =25°C		4	6	mA
Quiescent Current Change	ΔI <sub>q</sub>	11V≤V <sub>i</sub> ≤23V			1.5	mA
	ΔI <sub>q</sub>	1mA≤I <sub>o</sub> ≤40mA			0.1	mA
Output Noise Voltage	V <sub>N</sub>	10Hz≤f≤100KHz, T <sub>J</sub> =25°C		54		μV/V <sub>o</sub>
Ripple Rejection	RR	13V≤V <sub>i</sub> ≤23V, f=120Hz	37	46		dB
Dropout Voltage	V <sub>d</sub>	T <sub>J</sub> =25°C		1.7		V

\* 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 vs Input Voltage**

**Current Cut-off Grid Voltage**

**Output Voltage vs Junction Temperature**

**Power Derating Curve**
