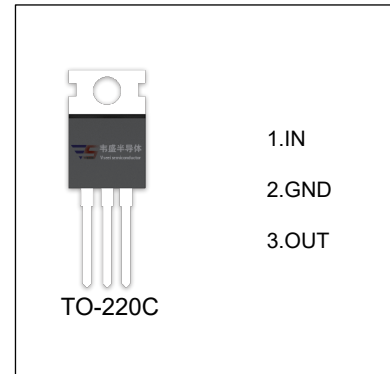


## VS78D08 Three-terminal positive voltage regulator

### FEATURES

- Maximum output current  
 $I_{OM}: 1.0\text{ A}$
- Output voltage  
 $V_O: 8\text{ V}$
- Continuous total dissipation  
 $P_D: 1.5\text{ W}$  ( $T_a = 25\text{ }^\circ\text{C}$ )



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

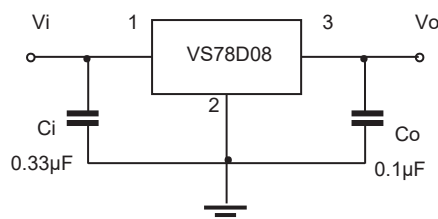
Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	66.7	$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_{OPR}$	-40~+125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i=14\text{V}$ ,  $I_o=500\text{mA}$ ,  $C_i=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$ , unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	$V_o$	$T_J=25^\circ\text{C}$	7.76	8.0	8.24	V
		$I_o=5\text{mA}-1\text{A}$ , $11.5\text{V} \leq V_i \leq 23\text{V}$	7.68	8.0	8.32	V
Load Regulation	$\Delta V_o$	$I_o=5\text{mA}-1.0\text{A}$ , $T_J=25^\circ\text{C}$			160	mV
		$I_o=250\text{mA}-750\text{mA}$ , $T_J=25^\circ\text{C}$			80	mV
Line Regulation	$\Delta V_o$	$10.5\text{V} \leq V_i \leq 25\text{V}$ , $T_J=25^\circ\text{C}$			160	mV
		$11\text{V} \leq V_i \leq 17\text{V}$ , $T_J=25^\circ\text{C}$			80	mV
Quiescent Current	$I_q$	$T_J=25^\circ\text{C}$	4.3		8.0	mA
Quiescent Current Change	$\Delta I_q$	$5.0\text{mA} \leq I_o \leq 1.0\text{A}$			0.5	mA
		$11.5\text{V} \leq V_i \leq 25\text{V}$			0.8	mA
Output Voltage Drift	$\Delta V_o/\Delta T$	$I_o=5\text{mA}$		1.0		$\text{mV}/^\circ\text{C}$
Output Noise Voltage	$V_N$	$f=10\text{Hz}$ to $100\text{KHz}$ , $T_J=25^\circ\text{C}$		42		$\mu\text{V}/V_o$
Ripple Rejection	RR	$f=120\text{Hz}$ , $11.5\text{V} \leq V_i \leq 21.5\text{V}$		62		dB
Dropout Voltage	$V_d$	$I_o=1.0\text{A}$ , $T_J=25^\circ\text{C}$		2.0		V
Output Resistance	$R_o$	$f=1\text{KHz}$		18		$\text{m}\Omega$
Short Circuit Current	$I_{sc}$	$T_J=25^\circ\text{C}$		200		mA

\* 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.

