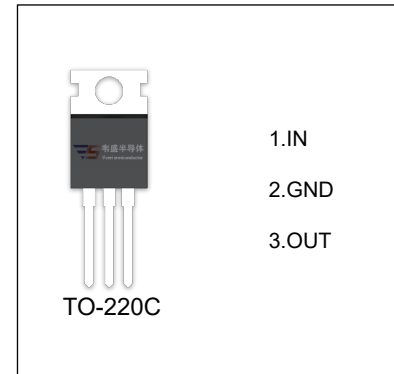


VS78D15 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
 $I_{OM}: 1.0\text{ A}$
- Output voltage
 $V_O: 15\text{ V}$
- Continuous total dissipation
 $P_D: 1.5\text{ W}$ ($T_a = 25^\circ\text{C}$)



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

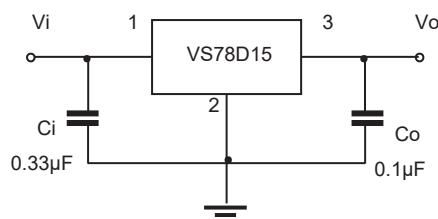
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	66.7	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_{OPR}	-40~+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=23\text{V}$, $I_o=500\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_J=25^\circ\text{C}$	14.55	15.0	15.45	V
		$I_o=5\text{mA}-1\text{A}$, $17.5\text{V} \leq V_i \leq 30\text{V}$	14.25	15.0	15.75	V
Load Regulation	ΔV_o	$I_o=5\text{mA}-1.0\text{A}$, $T_J=25^\circ\text{C}$			300	mV
		$I_o=250\text{mA}-750\text{mA}$, $T_J=25^\circ\text{C}$			150	mV
Line Regulation	ΔV_o	$17.5\text{V} \leq V_i \leq 30\text{V}$, $T_J=25^\circ\text{C}$			300	mV
		$20\text{V} \leq V_i \leq 26\text{V}$, $T_J=25^\circ\text{C}$			150	mV
Quiescent Current	I_q	$T_J=25^\circ\text{C}$		5.0	8.0	mA
Quiescent Current Change	ΔI_q	$5.0\text{mA} \leq I_o \leq 1.0\text{A}$			0.5	mA
		$18\text{V} \leq V_i \leq 30\text{V}$			0.8	mA
Output Voltage Drift	$\Delta V_o / \Delta T$	$I_o=5\text{mA}$		1.8		mV/ $^\circ\text{C}$
Output Noise Voltage	V_N	$f=10\text{Hz}$ to 100KHz , $T_J=25^\circ\text{C}$		42		$\mu\text{V}/V_o$
Ripple Rejection	RR	$f=120\text{Hz}$, $18.5\text{V} \leq V_i \leq 28.5\text{V}$		60		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		m Ω
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.

