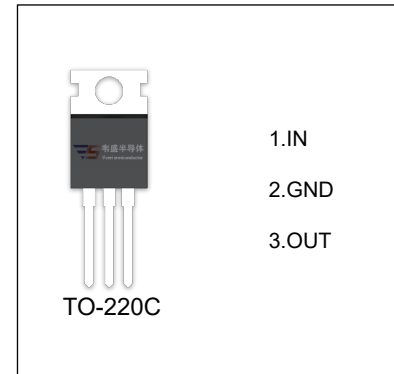


VS78D10 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
 $I_{OM}: 1.0\text{ A}$
- Output voltage
 $V_O: 10\text{ V}$
- 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)

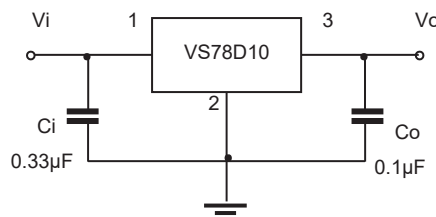
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	66.7	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_{OPR}	-40~+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=17\text{V}$, $I_o=500\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_J=25^\circ\text{C}$	9.7	10.0	10.3	V
		$I_o=5\text{mA}-1\text{A}$, $13.5\text{V} \leq V_i \leq 25\text{V}$	9.6	10.0	10.4	V
Load Regulation	ΔV_o	$I_o=5\text{mA}-1.0\text{A}$, $T_J=25^\circ\text{C}$			200	mV
		$I_o=250\text{mA}-750\text{mA}$, $T_J=25^\circ\text{C}$			100	mV
Line Regulation	ΔV_o	$12.5\text{V} \leq V_i \leq 28\text{V}$, $T_J=25^\circ\text{C}$			200	mV
		$14\text{V} \leq V_i \leq 20\text{V}$, $T_J=25^\circ\text{C}$			100	mV
Quiescent Current	I_q	$T_J=25^\circ\text{C}$		4.3	8.0	mA
Quiescent Current Change	ΔI_q	$5.0\text{mA} \leq I_o \leq 1.0\text{A}$			0.5	mA
		$13\text{V} \leq V_i \leq 28\text{V}$, $I_o=500\text{mA}$			0.8	mA
Output Voltage Drift	$\Delta V_o / \Delta T$	$I_o=5\text{mA}$		1.3		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	$f=120\text{Hz}$, $13\text{V} \leq V_i \leq 23\text{V}$		61		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.

