VS78D10 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
  I_{OM}:1.0 A
- Output voltage
  V_O: 10 V
- Continuous total dissipation
  P_D: 1.25 W (T_a= 25 ℃)

1.IN
2.GND
3.OUT

TO-252

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

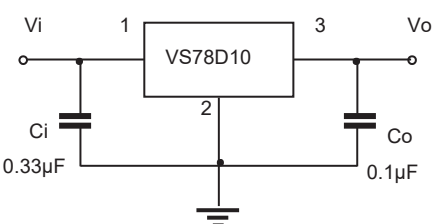
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	80	℃/W
Operating Junction Temperature Range	T_{OPR}	-40~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

ELECTRICALCHARACTERISTICSAT SPECIFIED VIRTUAL JINCTION TEMPERATURE (Vi=17V, Io=500mA, Ci=0.33μF, Co=0.1μF, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	Vo	T_J=25℃	9.7	10.0	10.3	V
		Io= 5mA-1A, 13.5V≤ V_i ≤25V	9.6	10.0	10.4	V
Load Regulation	ΔVo	I_O=5mA -1.0A,T_J=25℃			200	mV
		I_O=250mA - 750mA,T_J=25℃			100	mV
Line Regulation	ΔVo	12.5V≤ Vi ≤28V,T_J=25℃			200	mV
		14V≤V_i≤20V,T_J=25℃			100	mV
Quiescent Current	Iq	T_J=25℃		4.3	8.0	mA
Quiescent Current Change	ΔIq	5.0mA≤ I_O ≤1.0A			0.5	mA
		13V ≤V_i≤ 28V,I_O=500mA			0.8	mA
Output Voltage Drift	△Vo/△T	I_O=5mA		1.3		mV/℃
Output Noise Voltage	V_N	f =10Hz to 100KHz,T_J=25℃		42		μV/Vo
Ripple Rejection	RR	f =120Hz, 13V≤ V_i ≤23V		61		dB
Dropout Voltage	V_d	I_O=1.0A,T_J=25℃		2.0		V
Output Resistance	R_O	f = 1KHz		18		mΩ
Short Circuit Current	Isc	T_J=25℃		200		mA

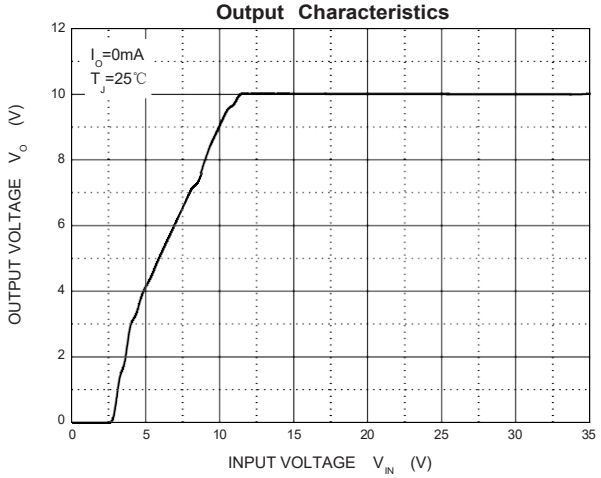
* Pulse test.

TYPICAL APPLICATION

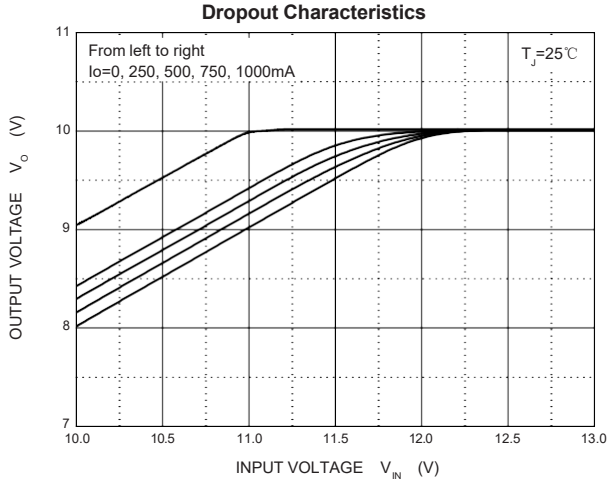


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

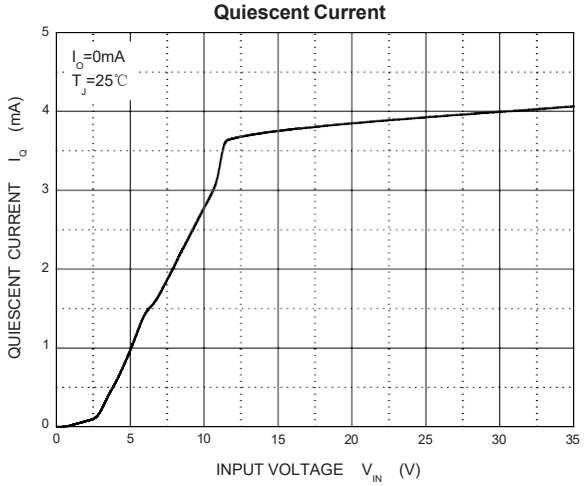
Output Characteristics



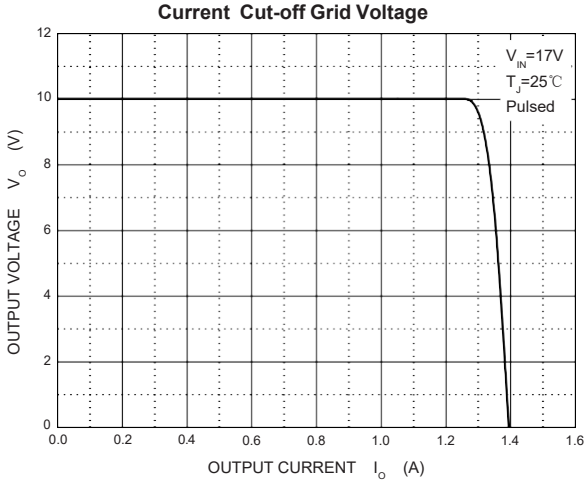
Dropout Characteristics



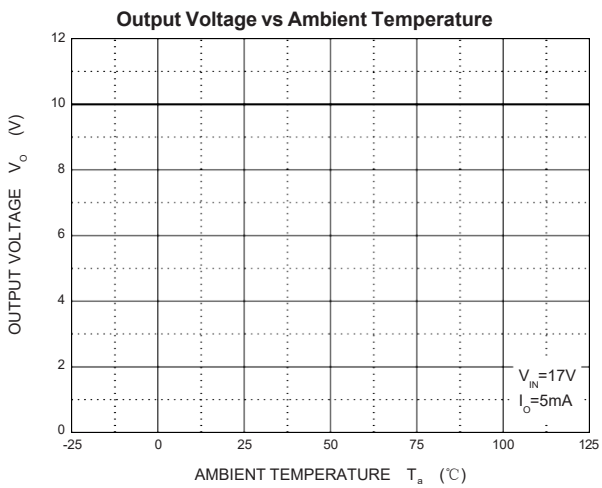
Quiescent Current



Current Cut-off Grid Voltage



Output Voltage vs Ambient Temperature



Power Derating Curve