VS7812 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
  I_{OM}: 1.5 A
- Output voltage
  V_O: 12 V
- Continuous total dissipation
  P_D: 1.25 W (T_a= 25 ℃)

TO-252

1.IN
2.GND
3.OUT

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

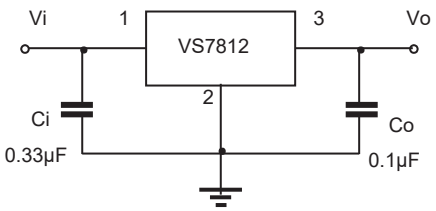
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	80	℃/W
Operating Junction Temperature Range	T_{OPR}	-40~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

ELECTRICALCHARACTERISTICSAT SPECIFIED VIRTUAL JINCTION TEMPERATURE (Vi=19V, Io=500mA, Ci=0.33μF, Co=0.1μF, unless otherwise specified)

Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output Voltage	Vo		25℃	11.64	12.0	12.36	V
		Io= 5mA-1A, 14.5V≤ V_i ≤27V	-25-125℃	11.4	12.0	12.6	V
Load Regulation	ΔVo	I_O=5mA -1.5A	25℃		10	240	mV
		I_O=250mA - 750mA	25℃		3	120	mV
Line Regulation	ΔVo	14.5V≤ Vi ≤30V	25℃		12	240	mV
		16V≤V_i≤22V	25℃		4	120	mV
Quiescent Current	Iq		25℃		4.3	8	mA
Quiescent Current Change	ΔIq	5.0mA≤ I_O ≤1.0A	-25-125℃			0.5	mA
		14.5V ≤V_i≤ 30V	-25-125℃			1.0	mA
Output Voltage Drift	△Vo/△T	I_O=5mA	-25-125℃		-1		mV/℃
Output Noise Voltage	V_N	f =10Hz to 100KHz	25℃		75		μV/Vo
Ripple Rejection	RR	f =120Hz, 15V≤ V_i ≤25V	-25-125℃	55	71		dB
Dropout Voltage	V_d	I_O=1.0A	25℃		2		V
Output Resistance	R_O	f = 1KHz	-25-125℃		18		mΩ
Short Circuit Current	Isc		25℃		350		mA
Peak Current	Ipk		25℃		2.2		A

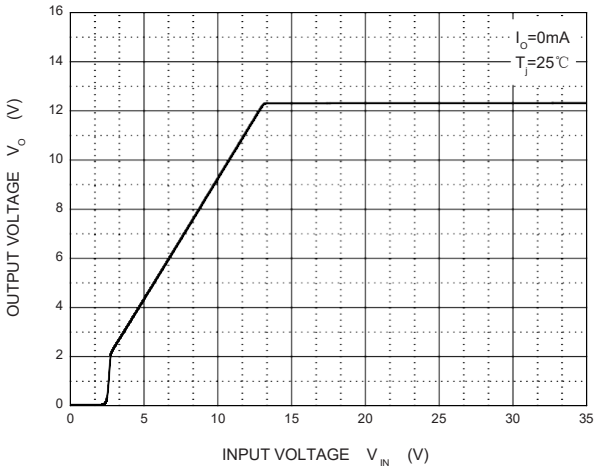
* Pulse test.

TYPICAL APPLICATION

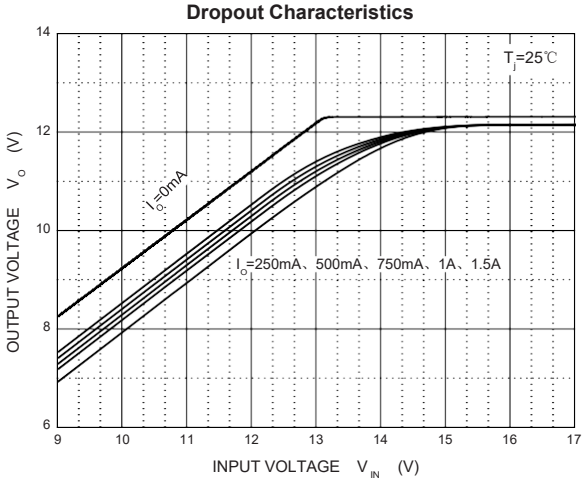


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

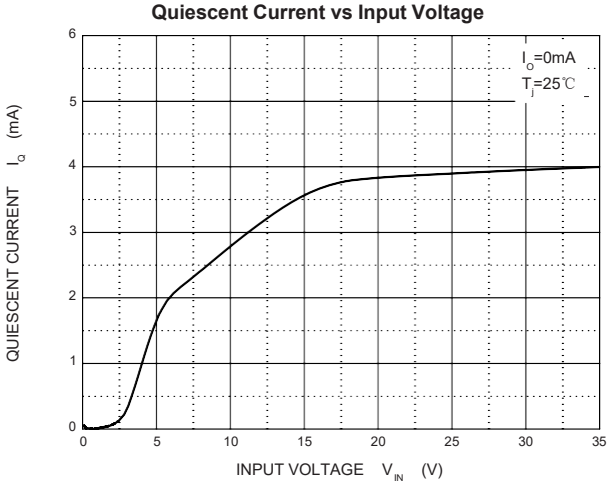
Output Characteristics



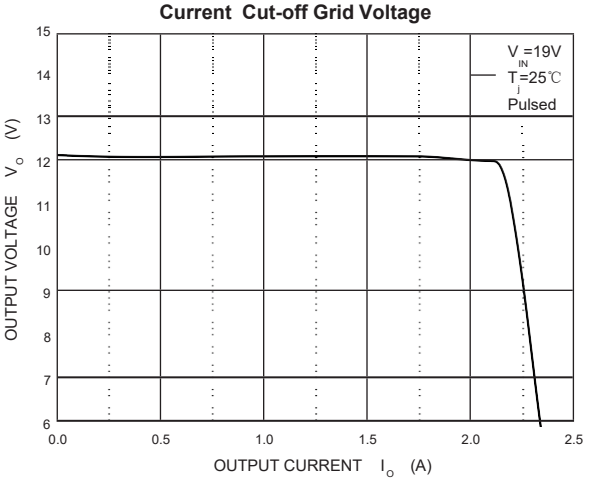
Dropout Characteristics



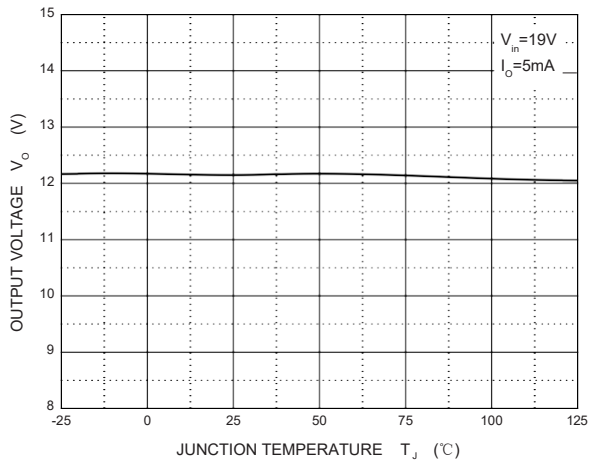
Quiescent Current vs Input Voltage



Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature



Power Derating Curve