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: 1.5W (T_a= 25 ℃)

TO-263

1.IN
2.GND
3.OUT

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

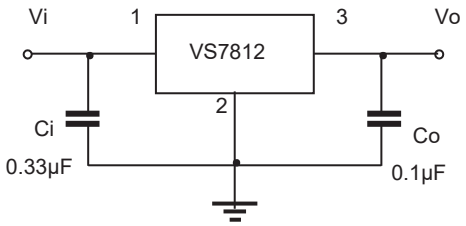
Parameter	Symbol	Valu	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	66.7	℃/W
Operating Junction Temperature Range	T_{OPR}	-40~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

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

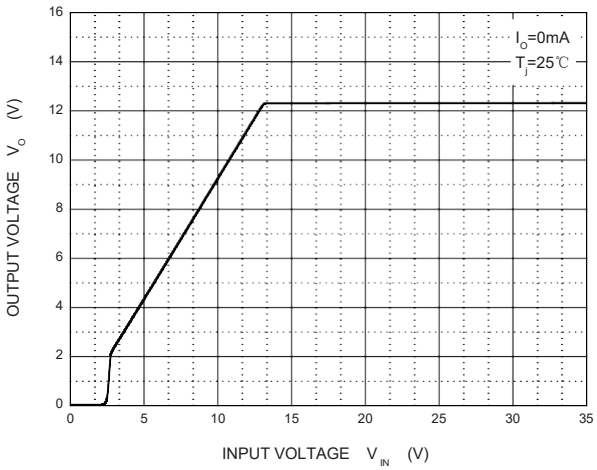
* Pulse test.

TYPICAL APPLICATION

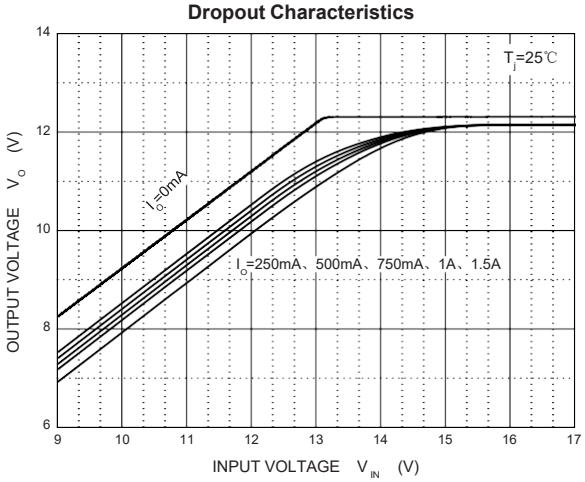


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

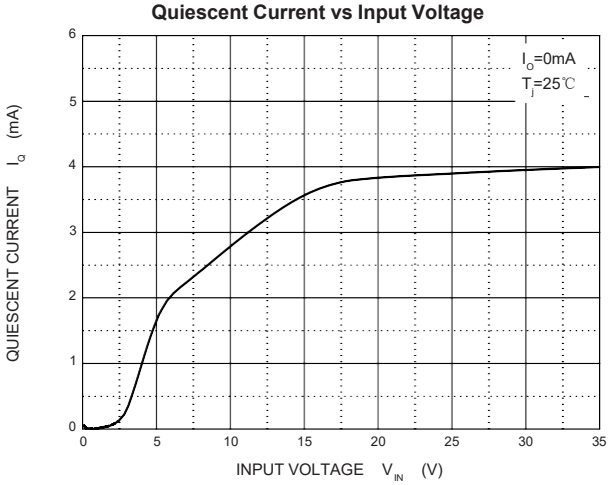
Output Characteristics



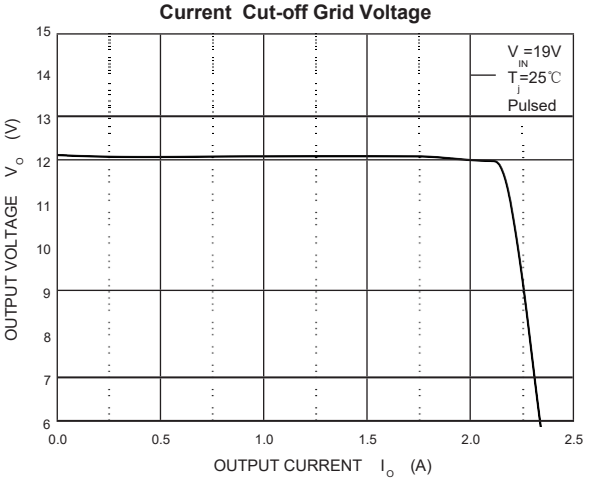
Dropout Characteristics



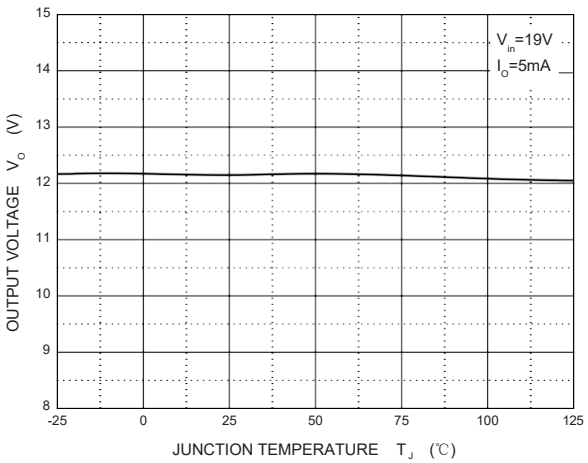
Quiescent Current vs Input Voltage



Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature



Power Derating Curve