VS78L12 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
  I_{OM}: 0.1A
- Output voltage
  V_O: 12V
- Continuous total dissipation
  P_D: 0.6 W (T_a= 25 ℃)

1.OUT
2.GND
3.IN

SOT-89

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

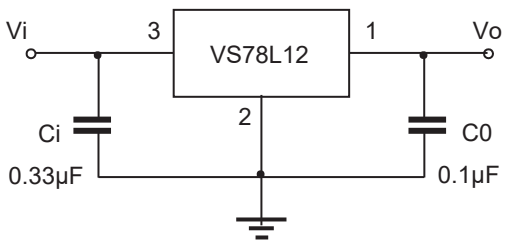
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	166.7	℃/W
Operating Junction Temperature Range	T_{OPR}	-40~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE (VI=19V, Io=40mA, Ci=0.33μF,Co=0.1μF, unless otherwise specified)

Pa rameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	Vo	T_J=25℃	11.64	12	12.36	V
		14V≤V_I≤27V, Io=1mA-40mA	11.4	12	12.6	V
		Io=1mA-70mA	11.4	12	12.6	V
Load Regulation	△Vo	Io=1mA-100mA,T_J=25℃		22	100	mV
		Io=1mA-40mA,T_J=25℃		13	50	mV
Line regulation	△Vo	14.5V≤V_I≤27V,T_J=25℃		55	250	mV
		16V≤V_I≤27V,T_J=25℃		49	200	mV
Quiescent Current	Iq	T_J=25℃		4.3	6.5	mA
Quiescent Current Change	△Iq	16V≤V_I≤27V			1.5	mA
	△Iq	1mA≤I_O≤40mA			0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz,T_J=25℃		70		μV/Vo
Ripple Rejection	RR	15V≤V_I≤25V,f=120Hz	37	42		dB
Dropout Voltage	Vd	T_J=25℃		1.7		V

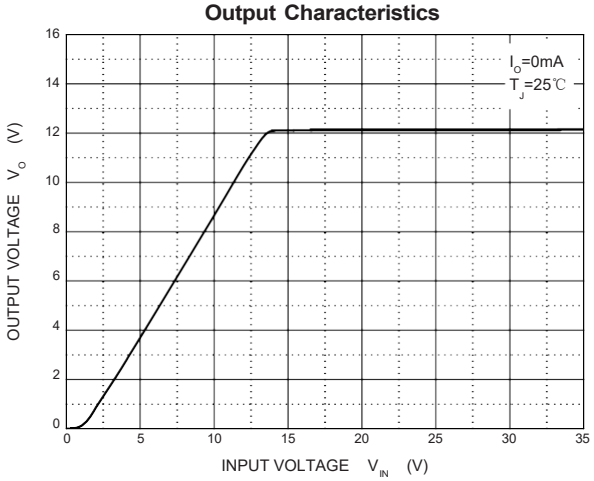
* Pulse test.

TYPICA L APPLICATION

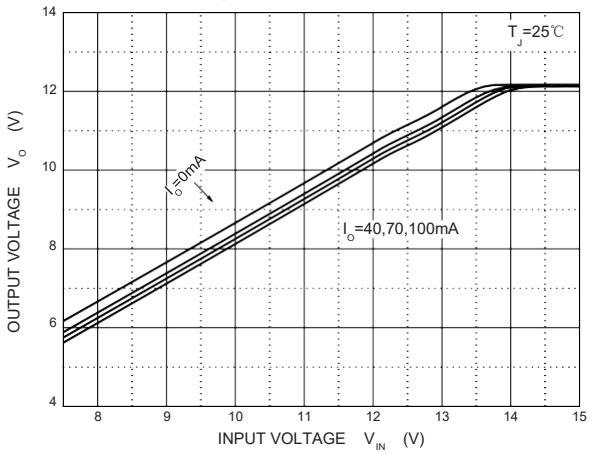


Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

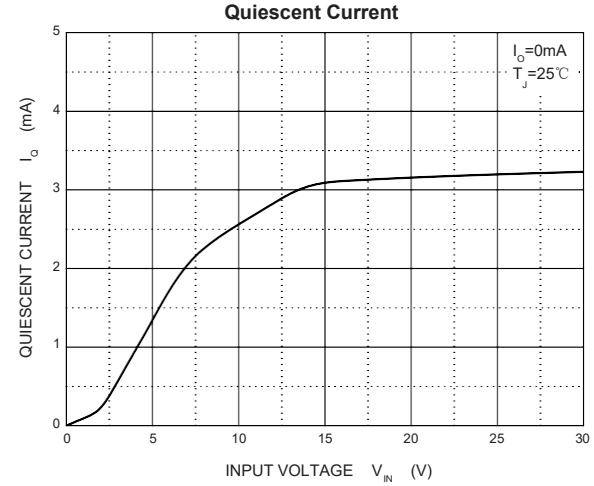
Output Characteristics



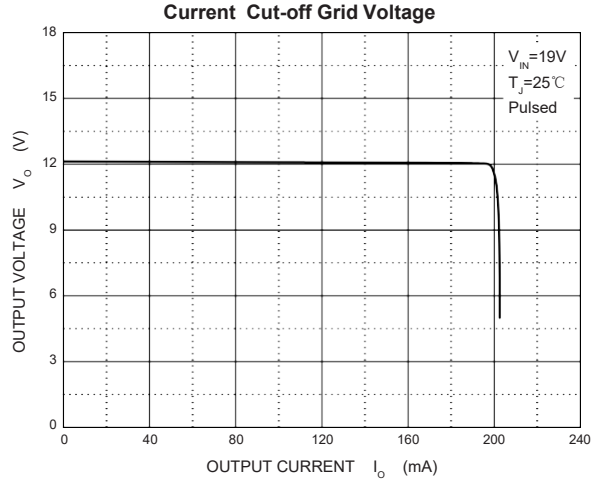
Dropout Characteristics



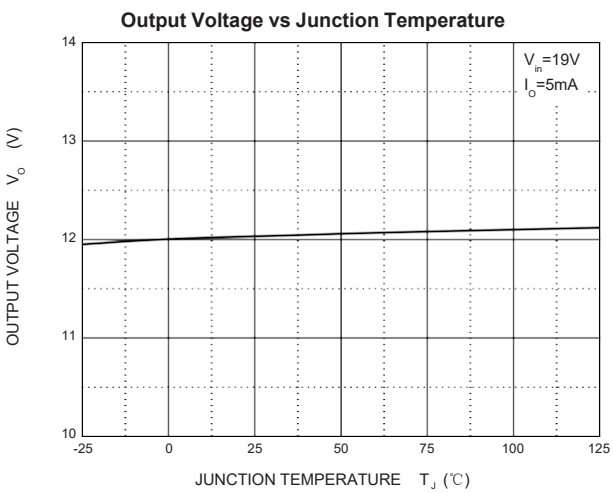
Quiescent Current



Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature



Power Derating Curve