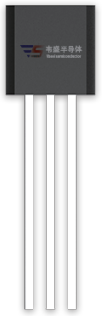
VS78L09 Three-terminal positive voltage regulator



TO-92

FEATURES

- Maximum output current
  I_{OM}: 0.1A
- Output voltage
  V_O: 9V
- Continuous total dissipation
  P_D: 0.625 W (T_a= 25 ℃)

ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
VS78L09	TO-92	Bulk	1000pcs/Bag
VS78L09-TA	TO-92	Tape	2000pcs/Box

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

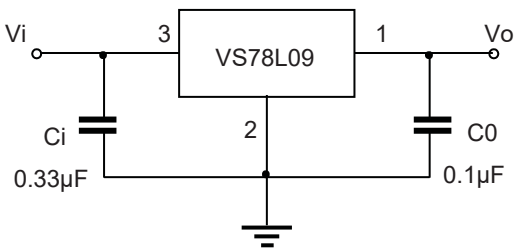
Parameter	Symbol	Value	Unit
Input Voltage	V_i	30	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	160	℃/W
Operating Junction Temperature Range	T_{OPR}	-40~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

T_a=25℃ unless otherwise specified (Vi=16V,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℃	8.73	9.0	9.27	V
		12V≤V_I≤24V, Io=1mA-40mA	8.55	9.0	9.45	V
		Io=1mA-70mA	8.55	9.0	9.45	V
Load Regulation	ℰVo	Io=1mA-100mA,T_J=25℃		19	90	mV
		Io=1mA-40mA,T_J=25℃		11	40	mV
Line regulation	ℰVo	12V≤V_I≤24V,T_J=25℃		45	175	mV
		13V≤V_I≤24V,T_J=25℃		40	125	mV
Quiescent Current	Iq	T_J=25℃		4.1	6.0	mA
Quiescent Current Change	ℰIq	13V≤V_I≤24V			1.5	mA
	ℰIq	1mA≤I_O≤40mA			0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz,T_J=25℃		58		μV/Vo
Ripple Rejection	RR	15V≤V_I≤25V,f=120Hz		45		dB
Dropout Voltage	Vd	T_J=25℃		1.7		V

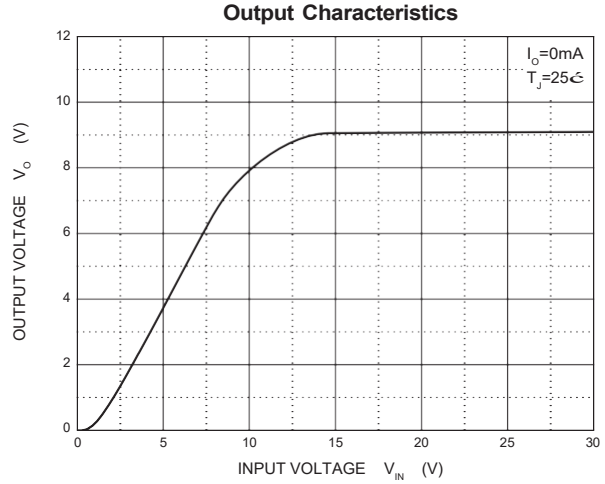
* Pulse test.

TYPICA L APPLICATION

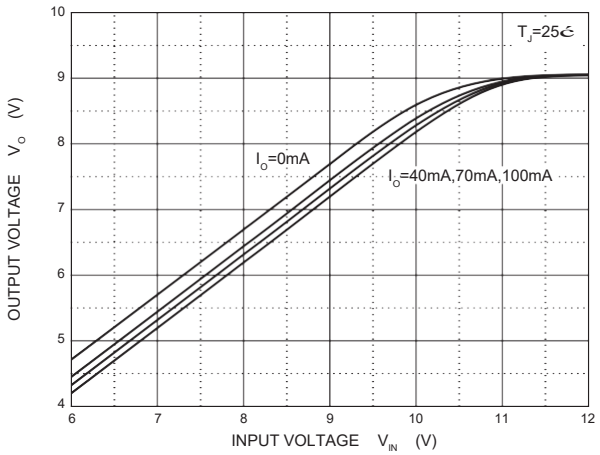


Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

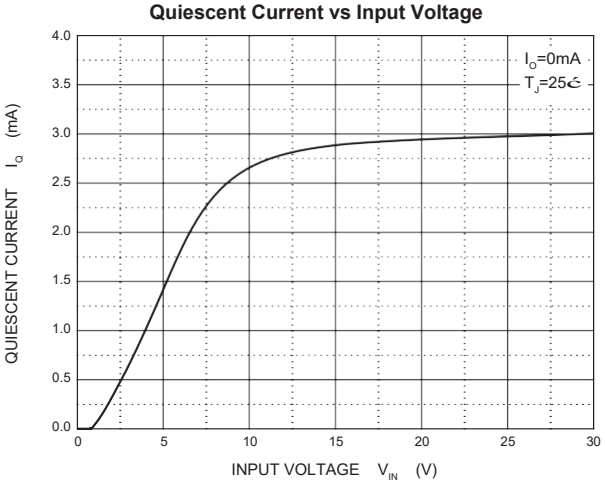
Output Characteristics



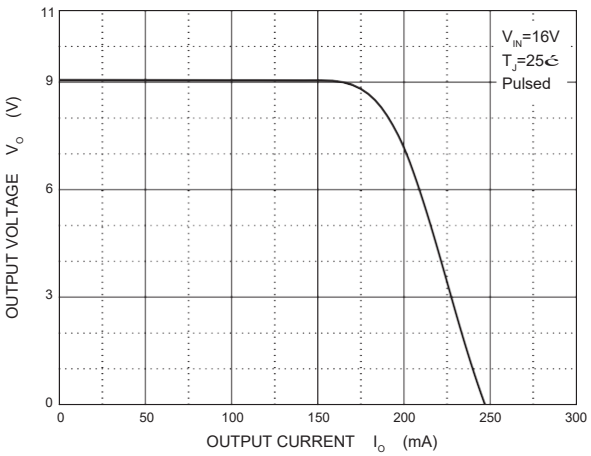
Dropout Characteristics



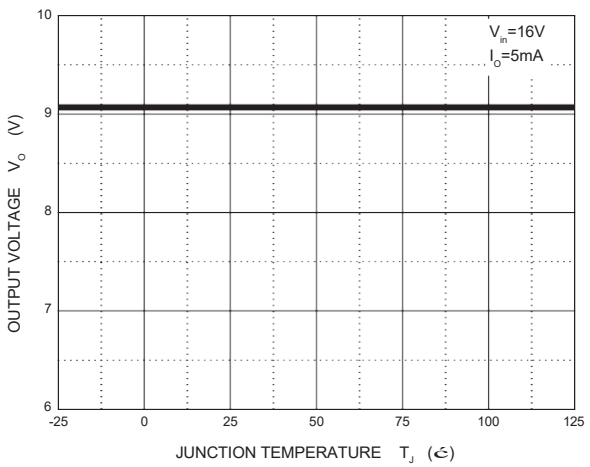
Quiescent Current vs Input Voltage



Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature



Power Derating Curve