78L09

Three-terminal positive voltage regulator

FEATURES

Maximum output current IOM: 0.1A
Output voltage VO: 9V

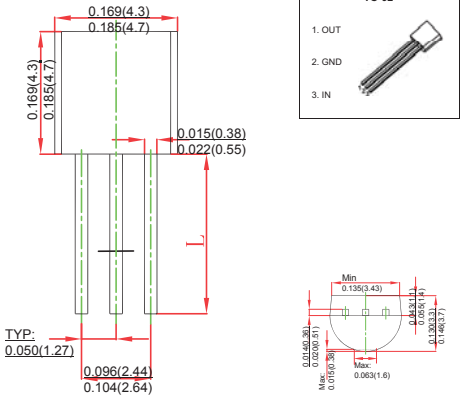
Continuous total dissipation

PD: 0.625W (T a = 25 ℃)

MECHANICAL DATA

- Case: TO-92 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any

TO-92



ABSOLUTE MAXIMUM RATINGS

(Operating temperature range applies unless otherw ise specified)

Parameter	Symbol	Value	Unit
Input Voltage	V_i	30	V
Thermal ˝ esistance from Junction to Ambient	$R_{\theta JA}$	160	℃/W
Operating Junction Temperature Range	T_{OPR}	-25~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

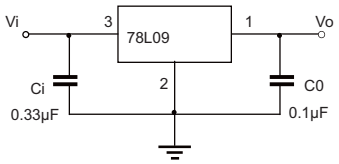
ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE

(V i=16V,Io=40mA,Ci=0.33μF,Co=0.1μF, unless otherwise specified)

Pa rameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output voltage	Vo		25℃	8.64	9.0	9.36	V
		12V≤V I≤24V, Io=1mA-40mA	Ꮆ-125℃	8.55	9.0	9.45	V
		Io=1mA-70mA		8.55	9.0	9.45	V
Load Regulation	△Vo	Io=1mA-100mA	25℃		19	90	mV
		Io=1mA-40mA	25℃		11	40	mV
Line regulation	△Vo	12V≤V I≤24V	25℃		45	175	mV
		13V≤V I≤24V	25℃		40	125	mV
Quiescent Current	Iq		25℃		4.1	6.0	mA
Quiescent Current Change	△Iq	13V≤V I≤24V	Ꮆ-125℃			1.5	mA
	△Iq	1mA≤I O≤40mA	Ꮆ-125℃			0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz	25℃		58		7V/Vo
Ripple Rejection	RR	15V≤V I≤25V,f=120Hz	Ꮆ-125℃		45		dB
Dropout Voltage	Vd		25℃		1.7		V

* Pulse test.

TYPICA L APPLICATION

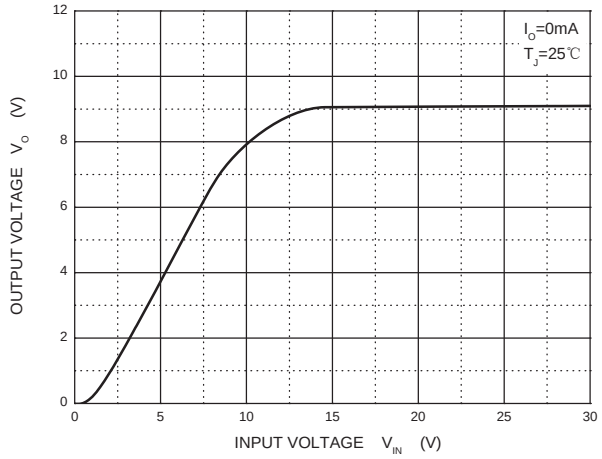


Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

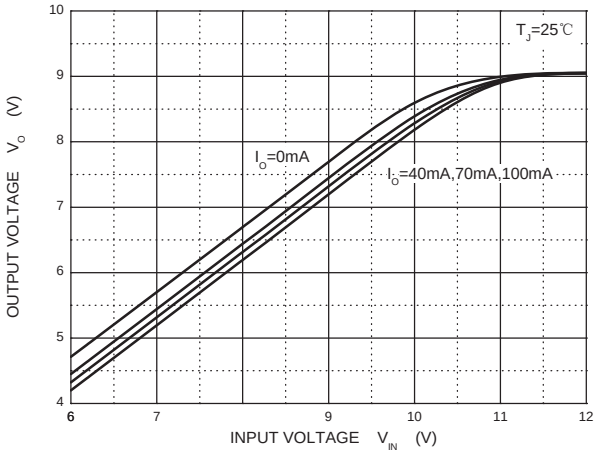
RATINGS AND CHARACTERISTIC CURVES

■ Typical Characteristics

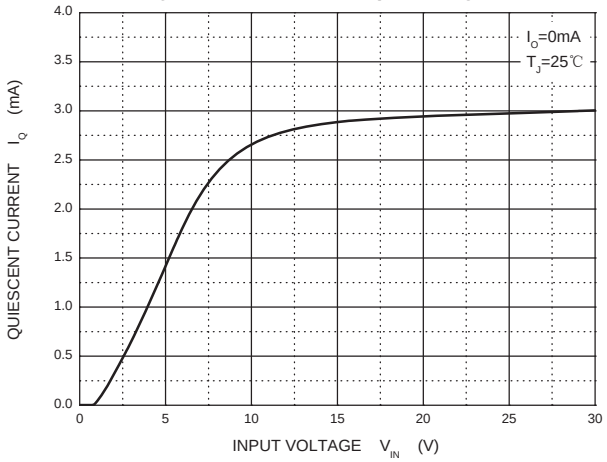
Output Characteristics



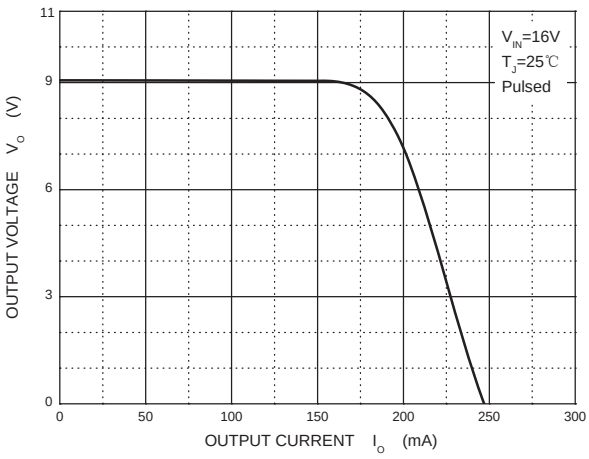
Dropout Characteristics



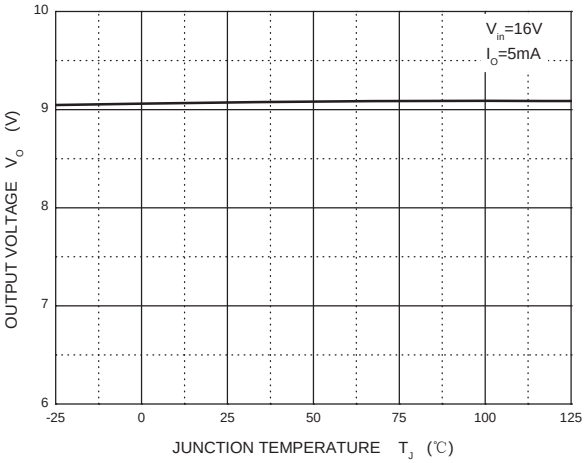
Quiescent Current vs Input Voltage



Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature



Power Derating Curve