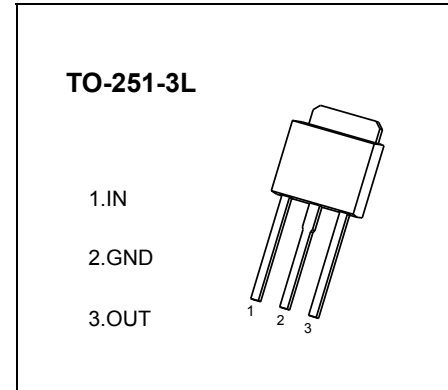


VC78M09 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
 $I_{OM}: 0.5\text{ A}$
- Output voltage
 $V_O: 9\text{ V}$
- Continuous total dissipation
 $P_D: 1.25\text{ W}(T_a=25\text{ }^\circ\text{C})$



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

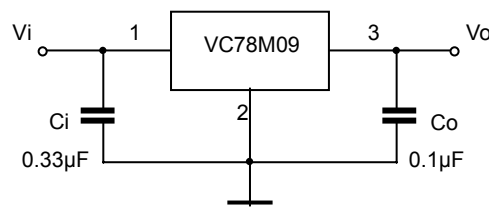
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	80	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_{OPR}	-25~+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=16\text{ V}, I_o=350\text{ mA}, C_i=0.33\mu\text{ F}, C_o=0.1\mu\text{ F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output Voltage	V_o	25°C	8.65	9	9.35	V	
		$11.5\text{ V} \leq V_i \leq 24\text{ V}, I_o=5\text{ mA}-350\text{ mA}$	-25-125 $^\circ\text{C}$	8.55	9	9.45	V
Load Regulation	ΔV_o	$I_o=5\text{ mA}-500\text{ mA}$	25°C		20	180	mV
		$I_o=5\text{ mA}-200\text{ mA}$	25°C		10	90	mV
Line Regulation	ΔV_o	$11.5\text{ V} \leq V_i \leq 26\text{ V}, I_o=200\text{ mA}$	25°C		6	100	mV
		$12\text{ V} \leq V_i \leq 26\text{ V}, I_o=200\text{ mA}$	25°C		2	50	mV
Quiescent Current	I_q		25°C	4.6	6	mA	
Quiescent Current Change	ΔI_q	$11.5\text{ V} \leq V_i \leq 26\text{ V}, I_o=200\text{ mA}$	-25-125 $^\circ\text{C}$		0.8	mA	
	ΔI_q	$5\text{ mA} \leq I_o \leq 350\text{ mA}$	-25-125 $^\circ\text{C}$		0.5	mA	
Output Noise Voltage	V_N	$10\text{ Hz} \leq f \leq 100\text{ KHz}$	25°C	60		$\mu\text{V}/V_o$	
Ripple Rejection	RR	$13 \leq V_i \leq 23\text{ V}, f=120\text{ Hz}, I_o=300\text{ mA}$	-25-125 $^\circ\text{C}$	56	80	dB	
Dropout Voltage	V_d	$I_o=350\text{ mA}$	25°C	2		V	
Short Circuit Current	I_{sc}	$V_i=16\text{ V}$	25°C	250		mA	
Peak Current	I_{pk}		25°C	0.5		A	

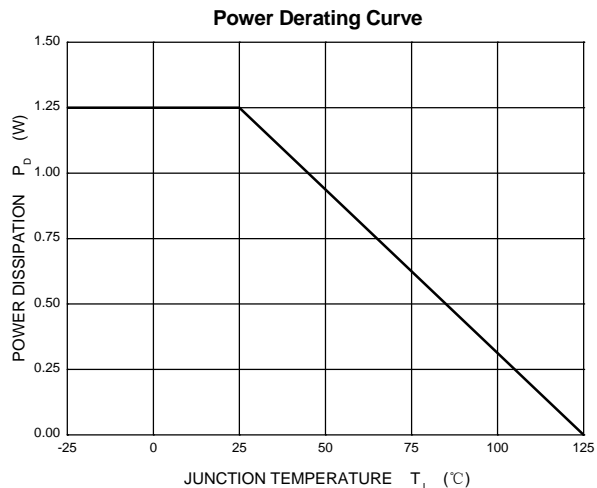
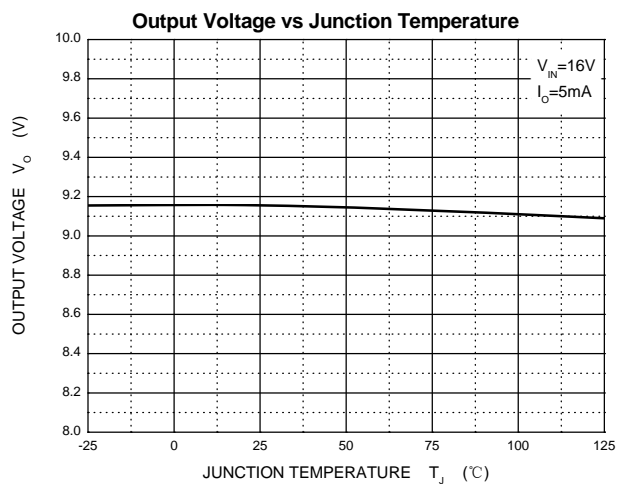
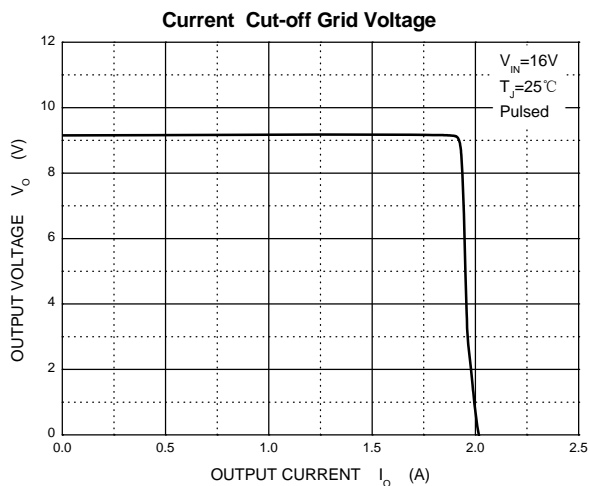
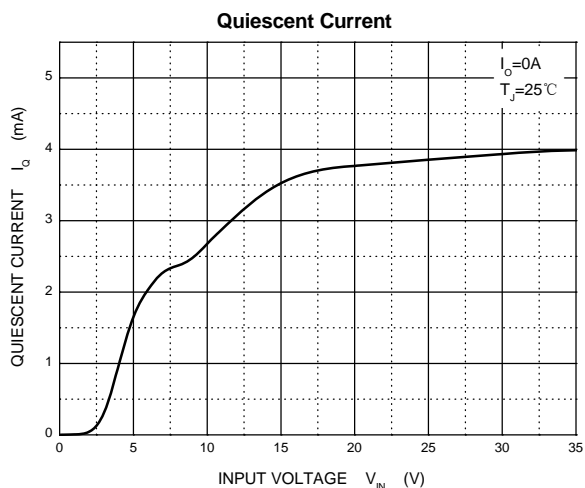
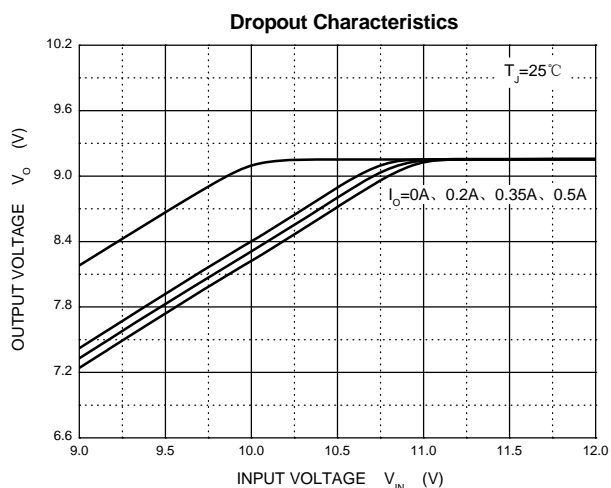
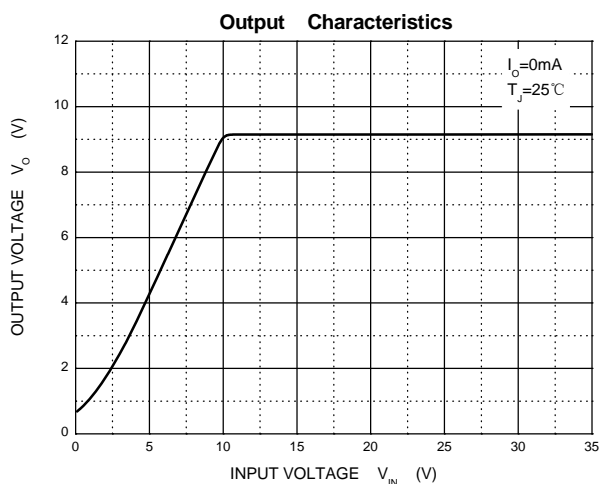
* Pulse test.

TYPICAL APPLICATION

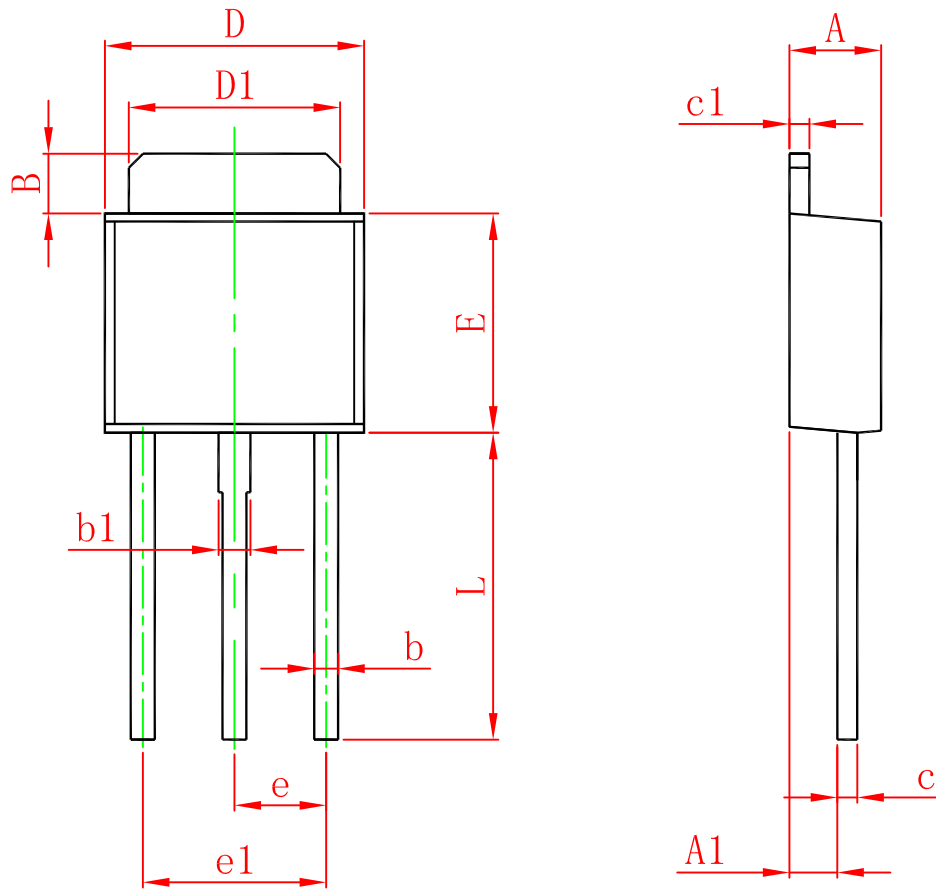


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics



TO-251-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	1.050	1.350	0.042	0.054
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP.		0.091 TYP.	
e1	4.500	4.700	0.177	0.185
L	7.500	7.900	0.295	0.311