TK78M09

Three-terminal positive voltage regulator

FEATURES

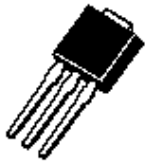
Maximum Output current

I_{OM}: 0.5 A

Output voltage

V_o: 9V

TO-251
TO-252-2L



1.IN

2.GND

3.OUT



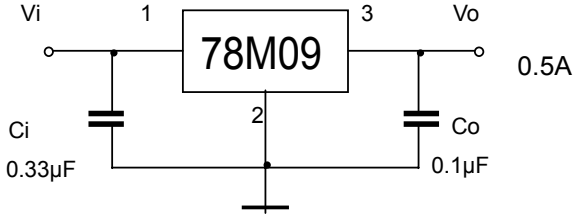
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Operating Junction Temperature Range	T_{OPR}	0-+125	℃
Storage Temperature Range	T_{STG}	-65-+150	℃

ELECTRICAL CHARACTERISTICS(Vi=16V,Io=350mA,0℃<Tj<125℃,Ci=0.33μF,Co=0.1μF, unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	Vo	Tj=25℃	8.65	9	9.35	V
		11.5≤V_i≤24V, Io=5mA-350mA Po≤ 15W	8.55	9	9.45	V
Load Regulation	ΔVo	Tj=25℃, Io=5mA-500mA		20	180	mV
		Tj=25℃, Io=5mA-200mA		10	90	mV
Line regulation	ΔVo	11.5V≤V_i≤26V, Io=200mA		6	100	mV
		12V≤V_i≤26V, Io=200mA		2	50	mV
Quiescent Current	Iq	Tj=25℃		4.6	6	mA
Quiescent Current Change	ΔIq	11.5V≤V_i≤26V, Io=200mA			0.8	mA
	ΔIq	5mA≤I_O≤350mA			0.5	mA
Output Noise Voltage	V_N	10Hz≤ f ≤100KHz		60		uV
Ripple Rejection	RR	13≤V_i≤23V,f=120Hz,Io=300mA Tj=25℃		56	80	dB
Dropout Voltage	Vd	Tj=25℃, Io=350mA		2		V
Short Circuit Current	Isc	Vi=16V, Ta=25℃		250		mA
Peak Current	Ipk	Tj=25℃		0.7		A

TYPICAL APPLICATION



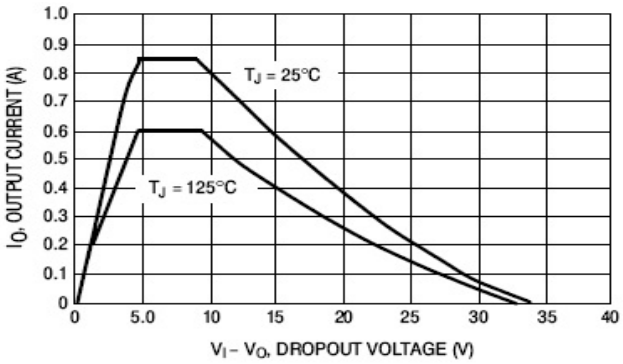


Figure 1.Peak Output Current versus Dropout Voltage

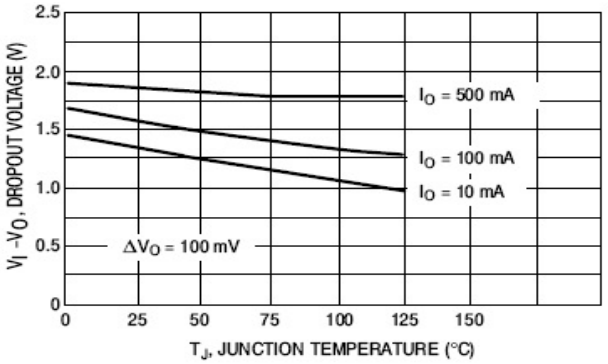


Figure 2. Dropout Voltage versus Junction Temperature

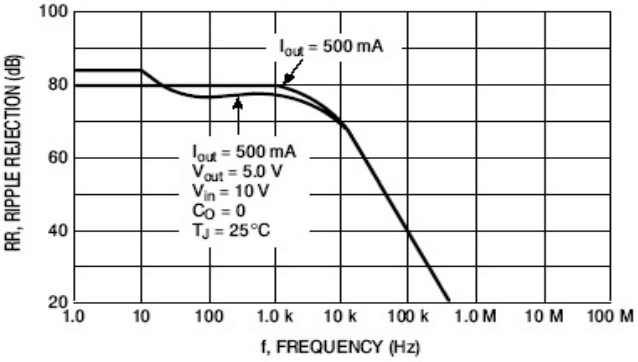


Figure 3. Ripple Rejection versus Frequency

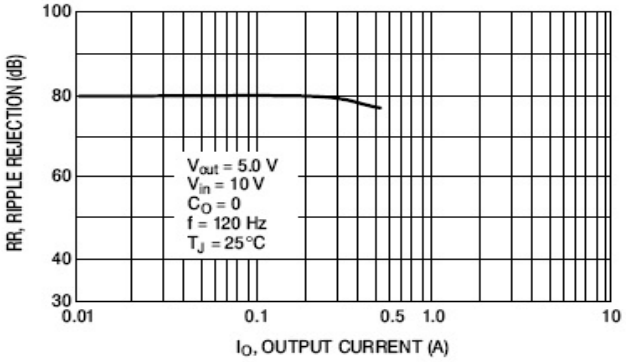


Figure 4. Ripple Rejection versus Output Current

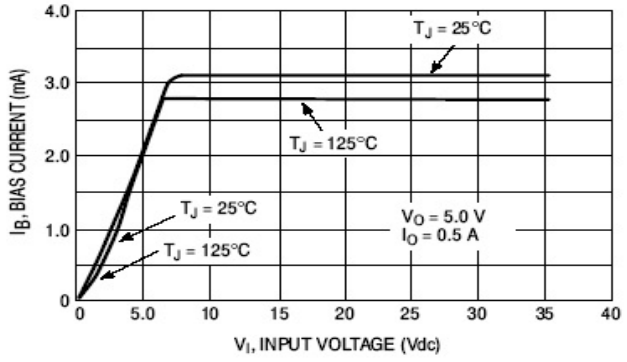


Figure 5. Bias Current versus Input Voltage

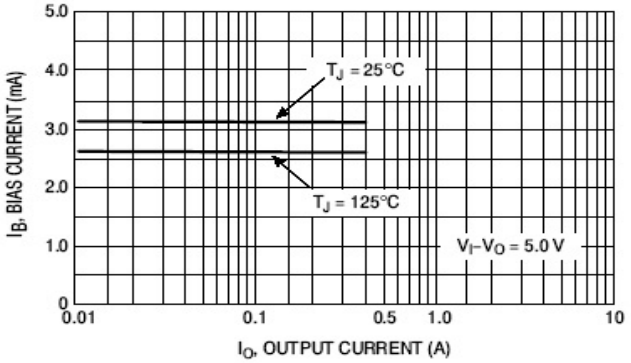
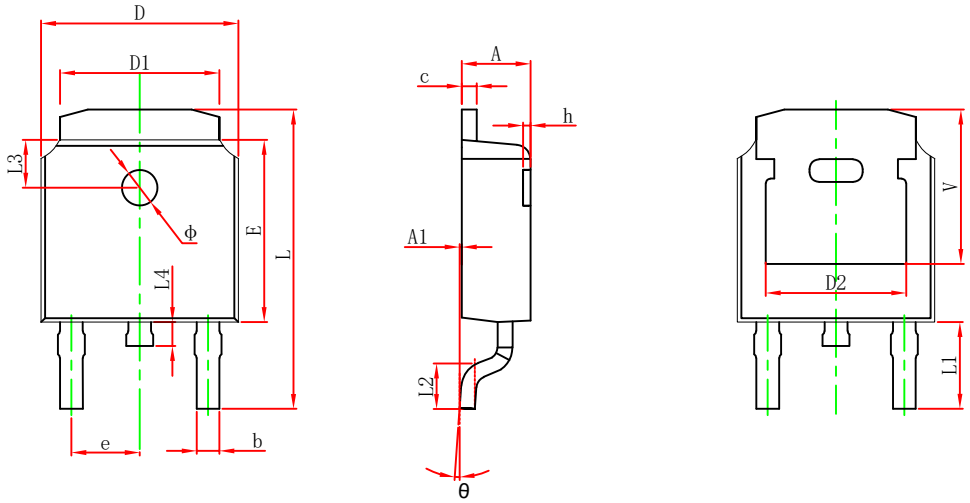
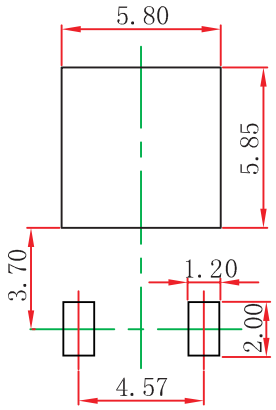


Figure 6. Bias Current versus Output Current



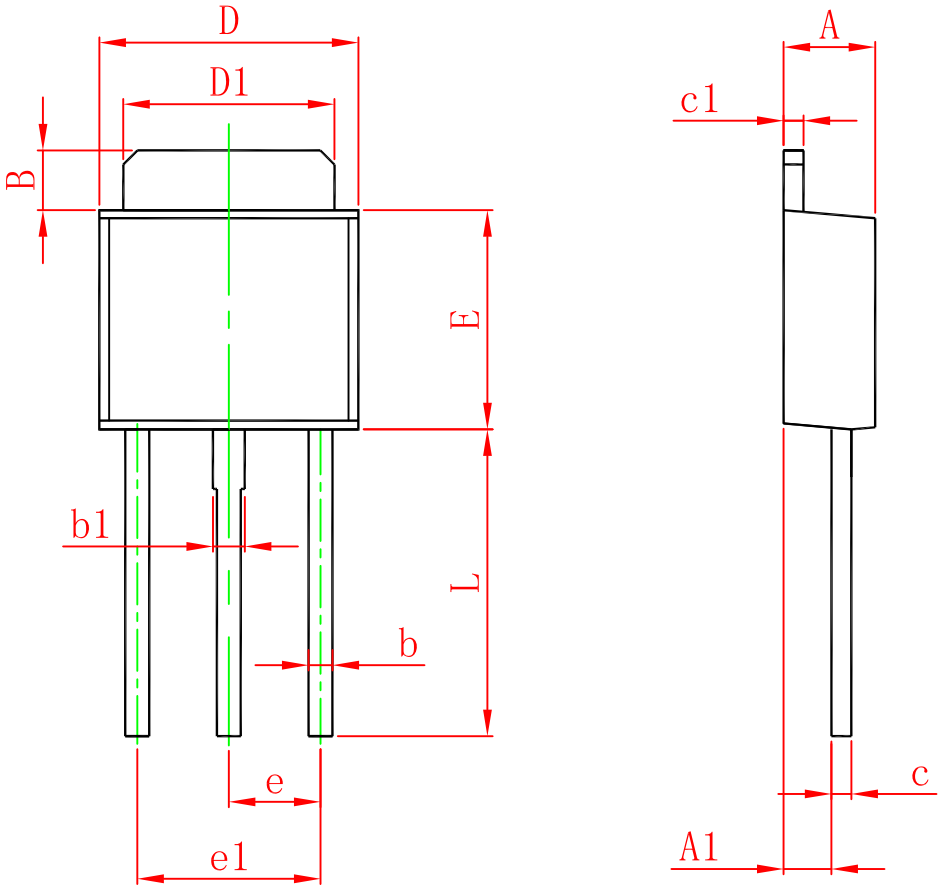
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	

TO-252-2L Suggest Pad Layout



NOTE:

1. Controlling dimension: in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purposes only.



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