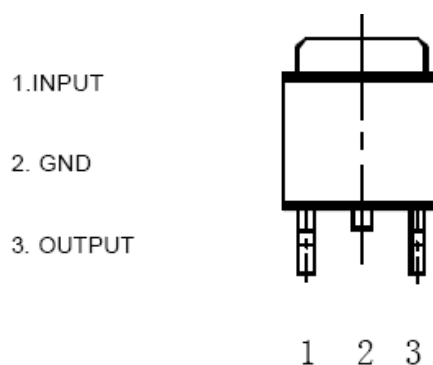


## Three-terminal positive Voltage Regulator BL78M09

### FEATURES

- Output Current in Excess of 1A
- Output Voltage is 9V
- Internal thermal Overload protection
- Internal Short Circuit Current Limiting

### PIN CONNECTION



### ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Characteristics	Symbol	Value	Unit
Input Voltage	Vi	40	V
Power dissipation	PD	12	W
Operating Temperature	Topr	0~125	°C
Storage Temperature Range	Tstg	-65~150	°C

### ELECTRICAL CHARACTERISTICS

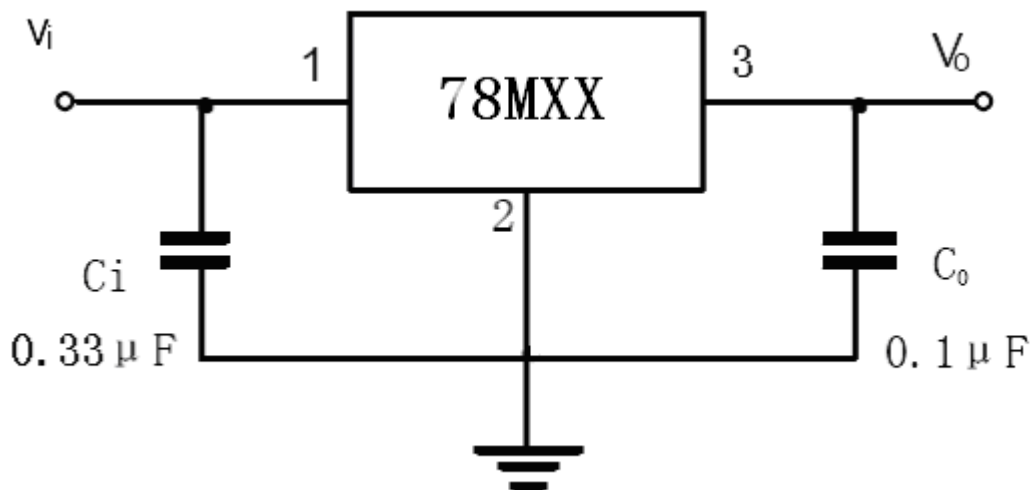
(unless otherwise noted, Vi=15V, Io=500mA, 0°C < Tj < 125°C, C1=0.33μF, Co=0.1μF)

Characteristics	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Output Voltage	Vo	Tj=25°C, Io=100mA	8.64	9.0	9.36	V
		11.5V ≤ Vi ≤ 26V, Io=5mA ~ 1A	8.55	9.0	9.45	
Load Regulation	ΔVo	Tj=25°C, Io=5mA ~ 1A			180	mV
		Tj=25°C, Io=250mA ~ 750mA			90	
Line Regulation	ΔVo	11.5V ≤ Vi ≤ 26V, Io=500mA, Tj=25°C			180	mV
		13V ≤ Vi ≤ 19V, Io=500mA, Tj=25°C			90	
Quiescent Current	Iq	Tj=25°C		4.2	8	mA
Quiescent Current Charge	ΔIq	7V ≤ Vi ≤ 25V, Io=500mA			1.3	mA
		5mA ≤ Io ≤ 1A			1.3	

Continues:

Characteristics	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Output Noise Voltage	$V_N$	$10\text{Hz} \leq f \leq 100\text{kHz}$ , $T_j=25^\circ\text{C}$		75		$\mu\text{V}$
Dropout Voltage	$V_d$	$T_j=25^\circ\text{C}$ , $I_o=1\text{A}$		2		V
Ripple Rejection	RR	$12.5\text{V} \leq V_i \leq 22.5\text{V}$ , $f=120\text{Hz}$ , $I_o=50\text{mA}$ , $T_j=25^\circ\text{C}$	56	72		dB
Short Circuit Current Limit	$I_{sc}$	$T_j=25^\circ\text{C}$ , $V_i=35\text{V}$		1		A

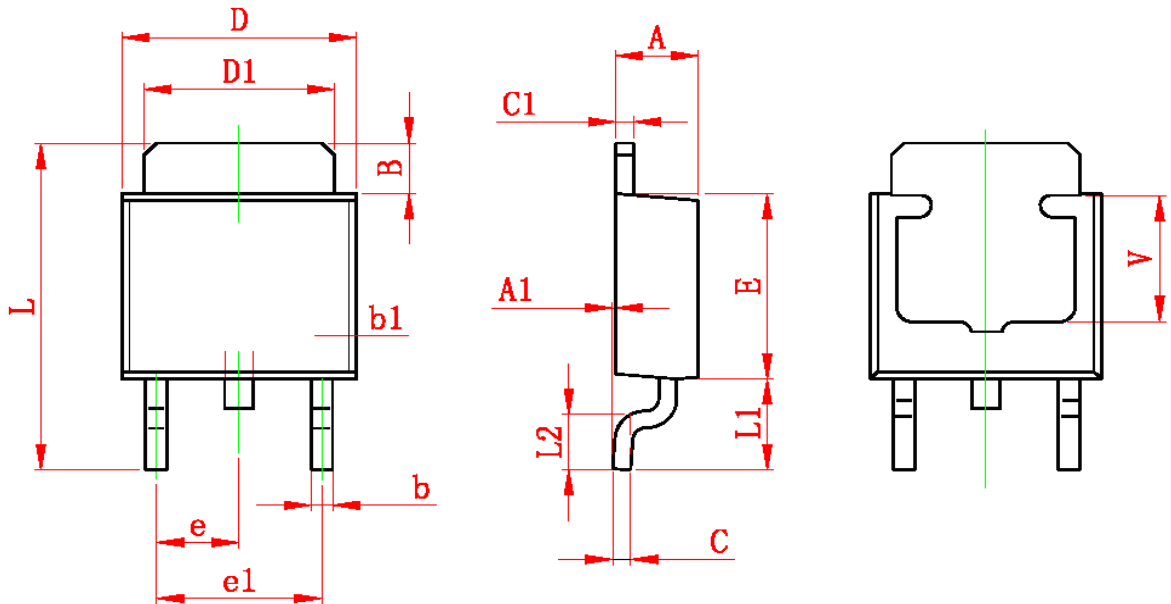
**APPLICATION CIRCUIT**



\*Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

OUTLINE DRAWING

TO-252-2L



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	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	9.500	9.900	0.374	0.390
L1	2.550	2.900	0.100	0.114
L2	1.400	1.780	0.055	0.070
V	3.80 REF		0.150 REF	