

Three-terminal positive Voltage Regulator

BL78M09

FEATURES

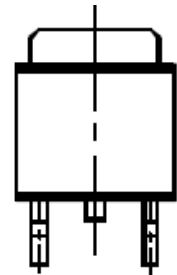
- Output Current in Excess of 1A
- Output Voltage is 9V
- Internal thermal Overload protection
- Internal Short Circuit Current Limiting

PIN CONNECTION

1.INPUT

2. GND

3. OUTPUT



1 2 3

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Characteristics	Symbol	Value	Unit
Input Voltage	V_i	40	V
Power dissipation	PD	12	W
Operating Temperature	T_{opr}	0 ~ 125	°C
Storage Temperature Range	T_{stg}	-65 ~ 150	°C

ELECTRICAL CHARACTERISTICS

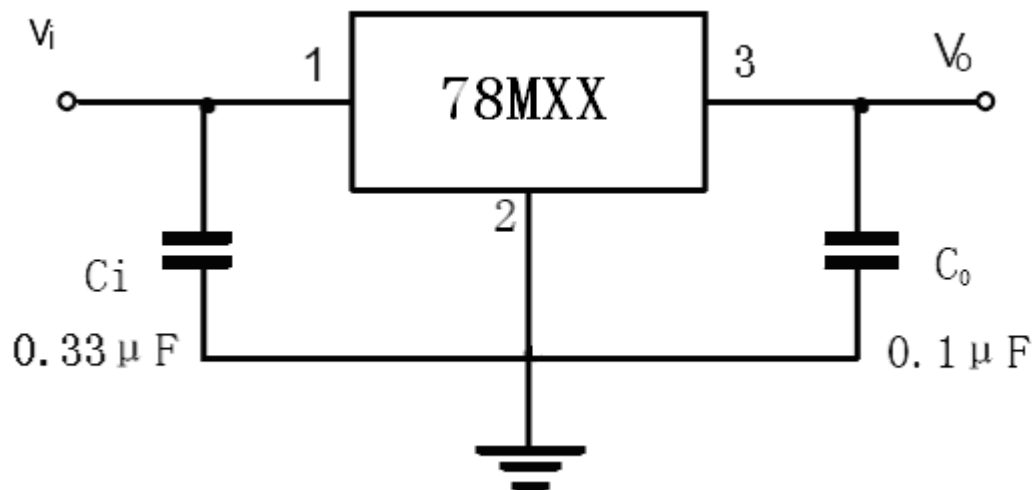
(unless otherwise noted, $V_i=15V$, $I_o=500mA$, $0^\circ C < T_j < 125^\circ C$, $C_1=0.33\mu F$, $C_o=0.1\mu F$)

Characteristics	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_o	$T_j=25^\circ C$, $I_o=100mA$	8.64	9.0	9.36	V
		$11.5V \leq V_i \leq 26V$, $I_o=5mA \sim 1A$	8.55	9.0	9.45	
Load Regulation	ΔV_o	$T_j=25^\circ C$, $I_o=5mA \sim 1A$			180	mV
		$T_j=25^\circ C$, $I_o=250mA \sim 750mA$			90	
Line Regulation	ΔV_o	$11.5V \leq V_i \leq 26V$, $I_o=500mA$, $T_j=25^\circ C$			180	mV
		$13V \leq V_i \leq 19V$, $I_o=500mA$, $T_j=25^\circ C$			90	
Quiescent Current	I_q	$T_j=25^\circ C$		4.2	8	mA
Quiescent Current Charge	ΔI_q	$7V \leq V_i \leq 25V$, $I_o=500mA$			1.3	mA
		$5mA \leq I_o \leq 1A$			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		μV
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

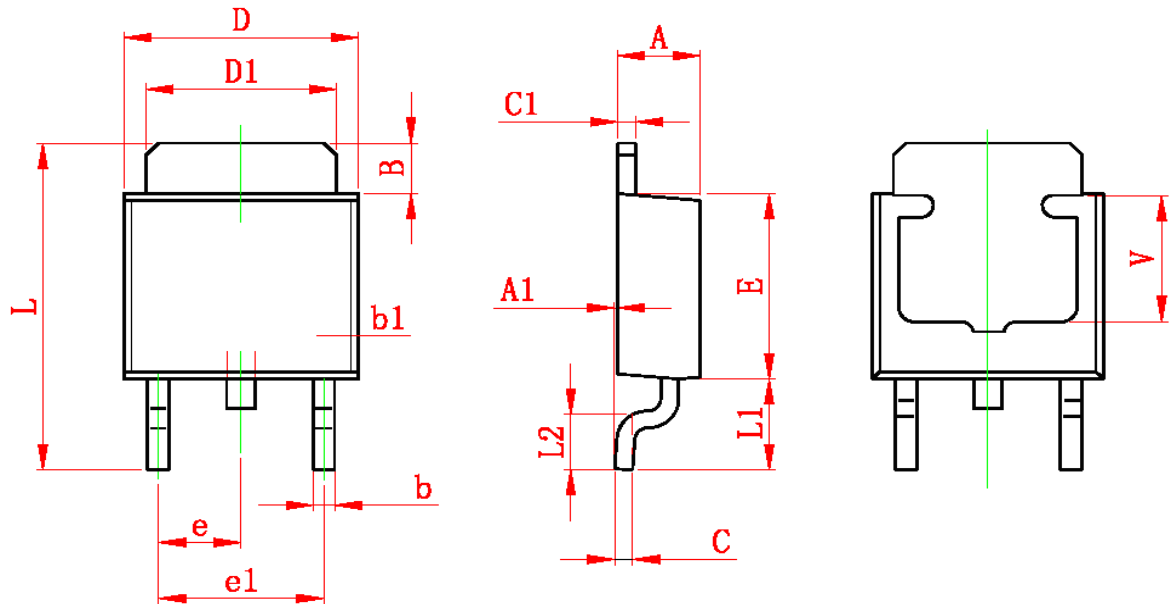
APPLICATION CIRCUIT



*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	