1.Description

The KIA78L09 is monolithic fixed voltage regulator integrated circuit.It is suitable for applications that required supply current up to 100mA.

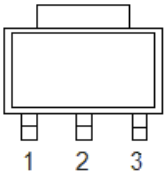
2.Features

- Output current up to 100mA
- No external part needed
- Thermal overload shutdown protection
- Short circuit current limiting
- SOT89 package

3.Applications

- Battery-powered circuitry
- Post regulator for switching power supply

4. Pinning information



SOT-89Front View

Pin	Description
1	V_{OUT}
2	GND
3	V_{IN}

5. Maximum ratings

(Ta=25°C,unless otherwise notes)

Parameter	Symbol	Rating	Units
Input voltage	V_{IN}	30	V
Power dissipation	P_D	500	mW
Junction temperature	T_J	-20~+125	°C
Operating temperature	T_{OPR}	-20~+85	°C
Storage temperature	T_{STG}	-65~+150	°C

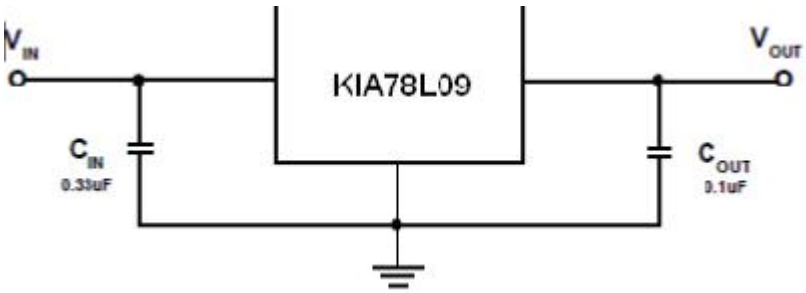
6. Electrical characteristics

(V_{IN}=15V,I_{OUT}=40mA,C_{IN}=0.33uF,C_{OUT}=0.1uF,T_J=25°C,unless otherwise notes)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Output voltage	V_{OUT}		8.64	9.0	9.36	V
		11.4V≤V_{IN}≤24V 1.0mA≤I_{OUT}≤40mA	8.55	9.0	9.45	V
		1.0mA≤I_{OUT}≤70mA	8.37	9.0	9.63	V
Line regulation	Reg line	11.4V≤V_{IN}≤24V	-	80	200	mV
		12V≤V_{IN}≤24V	-	20	160	mV
Load regulation	Reg load	1.0mA≤I_{OUT}≤100mA	-	15	90	mV
		1.0mA≤I_{OUT}≤40mA	-	7.0	45	mV
Quiescent current	I_Q		-	3.1	6.5	mA
Quiescent current change	ΔI_Q	12V≤V_{IN}≤24V	-	0.15	1.5	mA
		1.0mA≤I_{OUT}≤40mA	-	0.08	0.1	mA
Output noise voltage	V_{ON}	10Hz≤f≤100KHz	-	50	-	uVrm
Ripple rejection ratio	RR	12V≤V_{IN}≤24V, f=120Hz	39	44	-	dB
Dropout voltage	V_D		-	1.7	-	V

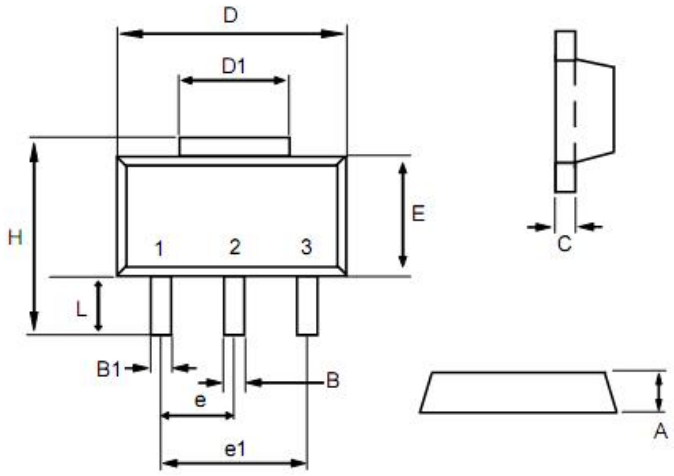
Note1:The maximum steady state usable output current is dependent on input voltage,heat sinking,lead length of the package and copper patten of PCB.

7. Appllcation circuits



Note1:The input voltage must remain typically 1.7V above the output voltage.
Note2:Bypass capacitors are recommended for optimum stability and transient reponse and should be located as close as possible to the regulators.

8. Package outline



Dim	min	max
A	1.40	1.60
B	0.40	0.56
B1	0.35	0.48
C	0.35	0.44
D	4.40	4.60
D1	1.35	1.83
e	1.50 BSC	
e1	3.00 BSC	
E	2.29	2.60
H	3.75	4.25
L	0.80	1.20

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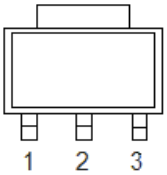

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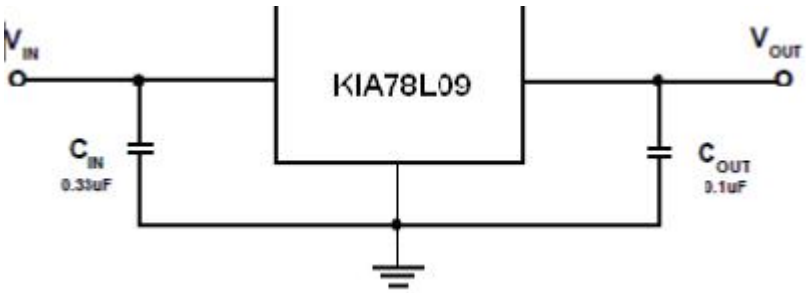

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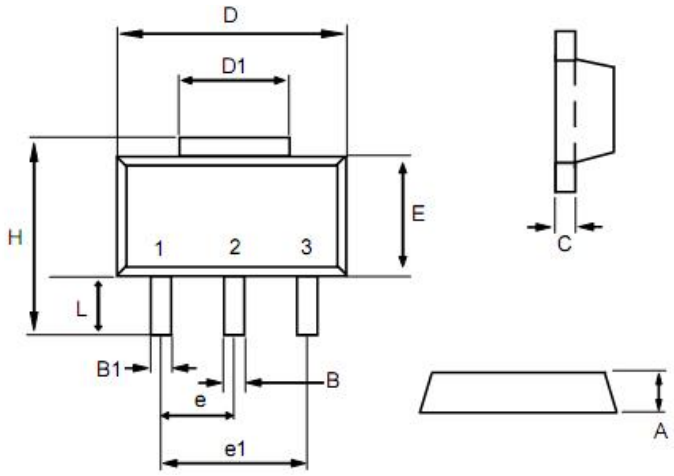

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