1.Description

The KIA 78L08 is monolithic fixed voltage regulator integrated circuit. Tt is suitable for applications that required supply current up to 100mA.

2.Features

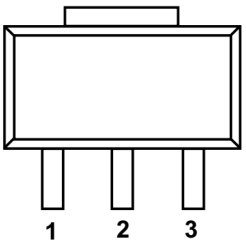
- Output current up to 100mA
- No external part needed
- Thermal overload shutdown protection
- Short circuit current limiting
- SOT89 package

3.Applications

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

4.Pinning information

Table1: Pinning-SOT89,simplified outline

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

1 2 3

(SOT89 Front View)

5.Marking information

KIA 78L08 Marking 8D

6.Package information

1K/Reel 8K/Box 40K/CTN

7.Maximum ratings(Ta=25℃)

Table2: Maximum ratings

Parameter	Symbol	Rating	Unit
Input voltage	V_{IN}	35	V
Power dissipation	P_D	500	mW
Junction temperature	T_J	-20~+125	℃
Operating temperature	T_{OPR}	-20~+85	℃
Storage temperature	T_{STG}	-65~+150	℃

8.Electrical characteristics

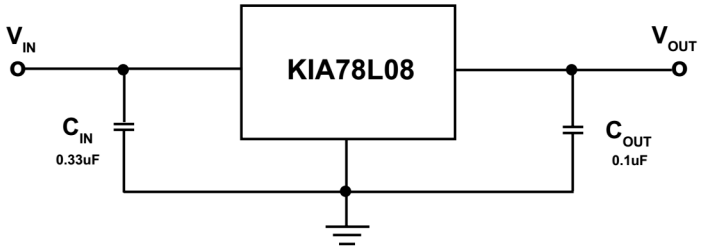
Table3: Electrical characteristics

(V_{IN}=14V,I_{OUT}=40mA,C_{IN}=0.33uF, C_{OUT}=0.1uF,T_J=25℃ ,Unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Output voltage	V_{OUT}		7.68	8.0	8.32	V
		10.5V≤V_{IN}≤23V 1.0mA≤I_{OUT}≤40mA	7.60	8.0	8.40	V
		1.0mA≤I_{OUT}≤70mA	7.44	8.0	8.56	V
Line regulation	Reg line	10.5V≤V_{IN}≤23V		20	175	mV
		11V≤V_{IN}≤23V		12	125	mV
Load regulation	Reg load	1.0mA≤I_{OUT}≤100mA		15	80	mV
		1.0mA≤I_{OUT}≤40mA		7.0	40	mV
Quiescent current	I_Q			3.1	6.5	mA
Quiescent current change	$\triangle I_Q$	11V≤V_{IN}≤23V		0.15	1.5	mA
		1.0mA≤I_{OUT}≤40mA		0.08	0.1	mA
Output noise voltage	V_{ON}	10Hz≤f≤100KHz		60		uVrm
Ripple rejection ratio	RR	12V≤V_{IN}≤23V f=120Hz	37	45		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 pattern of PCB.

9.Application circuit

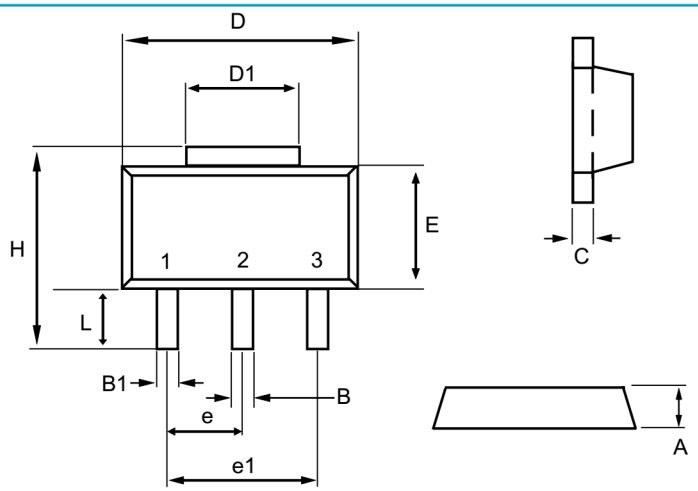


Note1: The input voltage must remain typically 1.7V above the output voltage.
Note2: Bypass capacitors are recommended for optimum stability and transient reponse and should be located as close as possible to the regulators

10.SOT89 package outline

Table4: SOT89 package outline

DIMENSIONS(mm are the original dimensions)



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