

## 1. Description

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

## 2. Features

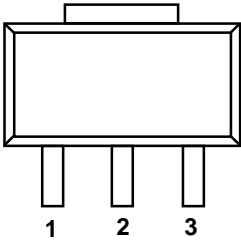
- Output current up to 100mA
- No external part needed
- Thermal overload shutdown protection
- Short circuit current limiting
- SOT89 package

## 3. Applications

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

## 4. Pinning information

Table1: Pinning-SOT89,simplified outline

Pin	Description	Simplified outline
1	$V_{OUT}$	 <p>(SOT89 Front View)</p>
2	GND	
3	$V_{IN}$	

## 5. Marking information

KIA 78L06 Marking 8B

## 6. Package information

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

## 7. Maximum ratings (Ta=25°C)

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	°C
Operating temperature	$T_{OPR}$	-20~+85	°C
Storage temperature	$T_{STG}$	-65~+150	°C

## 8. Electrical characteristics

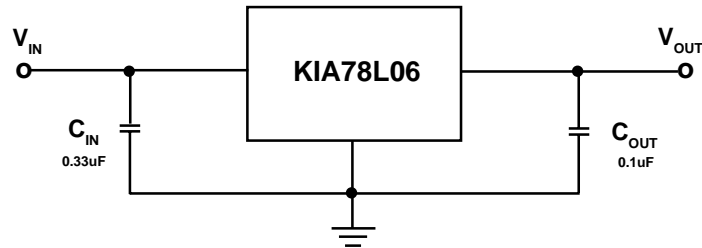
Table3: Electrical characteristics

( $V_{IN}=11V, I_{OUT}=40mA, C_{IN}=0.33\mu F, C_{OUT}=0.1\mu F, T_J=25^\circ C$ , Unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Output voltage	$V_{OUT}$		5.76	6.0	6.24	V
		$8.1V \leq V_{IN} \leq 21V$ $1.0mA \leq I_{OUT} \leq 40mA$	5.70	6.0	6.30	v
		$1.0mA \leq I_{OUT} \leq 70mA$	5.58	6.0	6.42	V
Line regulation	Reg line	$8.1V \leq V_{IN} \leq 21V$		50	150	mV
		$9V \leq V_{IN} \leq 21V$		45	110	mV
Load regulation	Reg load	$1.0mA \leq I_{OUT} \leq 100mA$		12	70	mV
		$1.0mA \leq I_{OUT} \leq 40mA$		5.5	35	mV
Quiescent current	$I_Q$			3.1	6.0	mA
Quiescent current change	$\Delta I_Q$	$9V \leq V_{IN} \leq 20V$		0.15	1.5	mA
		$1.0mA \leq I_{OUT} \leq 40mA$		0.08	0.1	mA
Output noise voltage	$V_{ON}$	$10Hz \leq f \leq 100KHz$		40		$\mu V_{Rm}$
Ripple rejection ratio	RR	$10V \leq V_{IN} \leq 20V$ $f=120Hz$	39	47		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



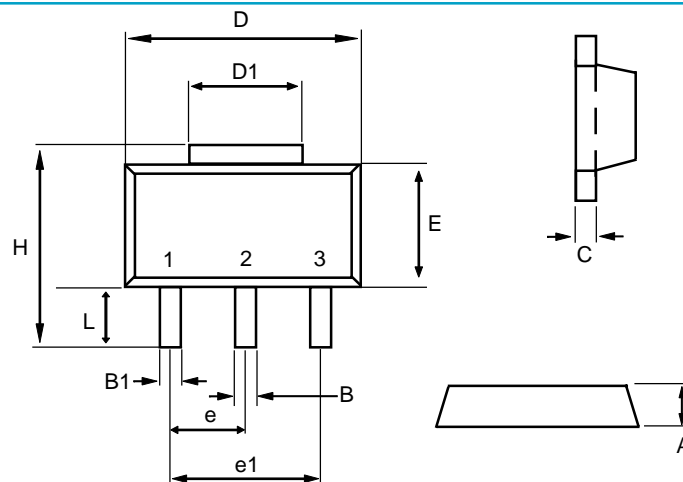
**Note1:** The input voltage must remain typically 1.7V above the output voltage.

**Note2:** Bypass capacitors are recommended for optimum stability and transient response 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			