



# H7806AA

# H7806BA

3-TERMINAL POSITIVE VOLTAGE REGULATOR

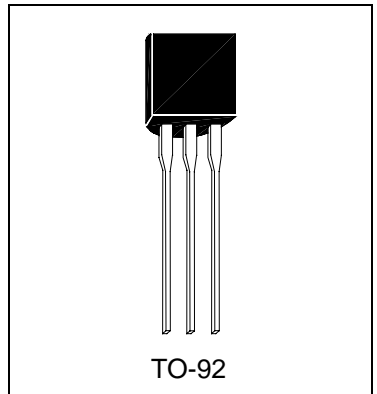
## Description

These regulators employ internal current-limiting and thermal-shutdown, making them essentially indestructible. They can deliver up to 100mA output current. if the case temperature can keep in  $T_c=25^{\circ}\text{C}$ .

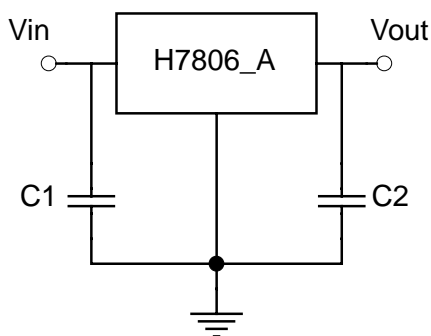
They are intended as fixed voltage regulators in a wide range of applications including local (on-card) regulation for elimination of noise and distribution problems associated with single-point regulation. In addition, they can be used with power pass elements to make high-current voltage regulators. The H7806\_A used as a Zener diode/resistor combination replacement, offers an effective output impedance improvement of typically two orders of magnitude, along with lower quiescent current and lower noise.

## Absolute Maximum Ratings ( $T_a=25^{\circ}\text{C}$ )

- Input Voltage..... 35 V
- Total Power Dissipation..... Internally limited
- Operating Temperature Range ..... 0 °C to +125 °C
- Maximum Junction Temperature..... +125 °C
- Storage Temperature Range..... -55 °C to +150 °C
- Lead Temperature (Soldering 10S)..... +260 °C



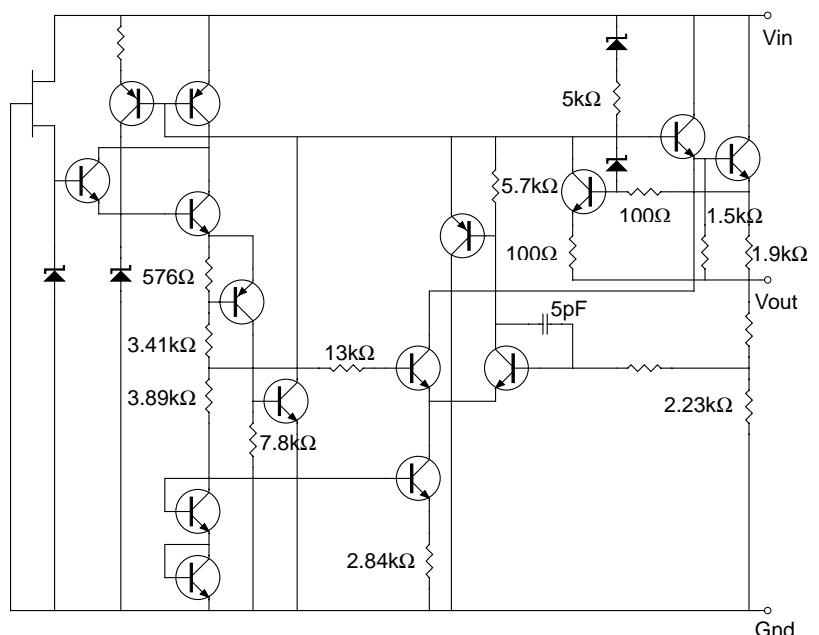
## Typical Application



### Note:

C1 and C2 are required if regulator is located far from power supply filter and load, or oscillation may induced on the loop.

## Schematic Diagram





### Electrical Characteristics

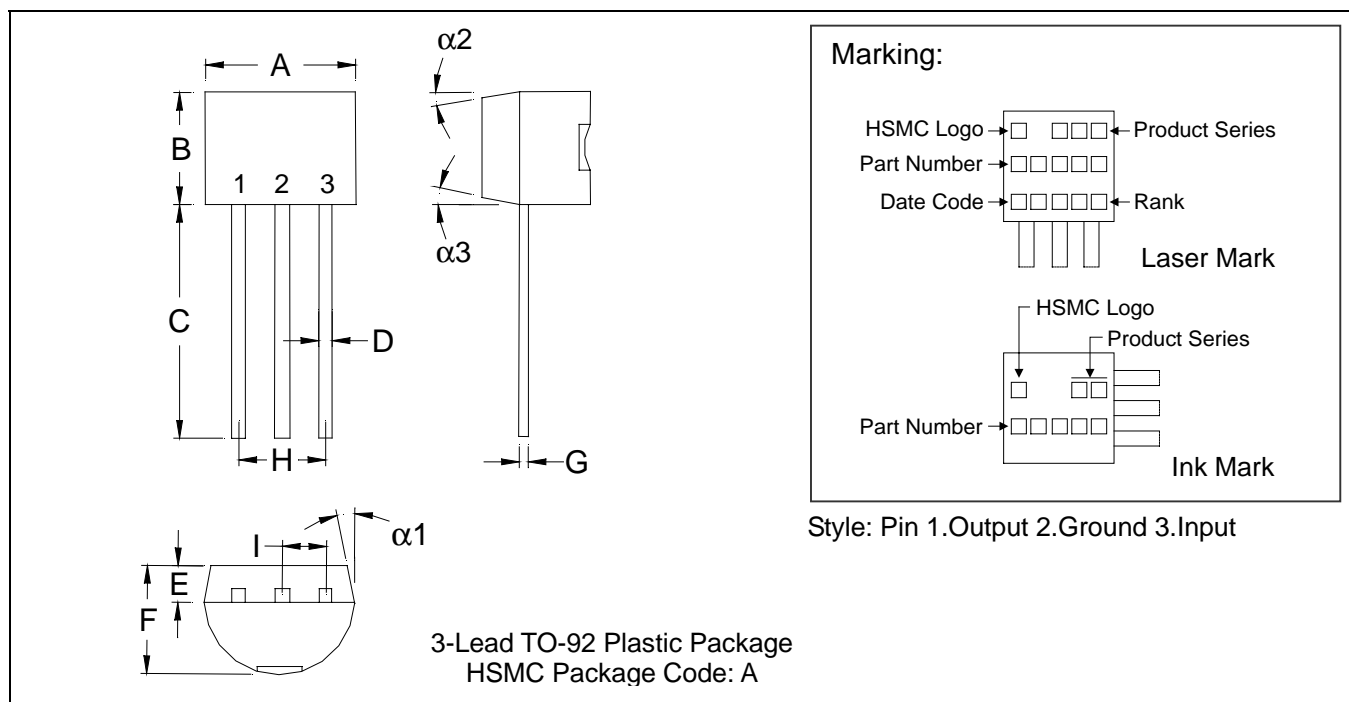
$V_{in}=11V$ ,  $I_{out}=40mA$ ,  $0^{\circ}C \leq T_j \leq 125^{\circ}C$ ,  $C_{in}=0.33\mu F$ ,  $C_{out}=0.1\mu F$  (unless otherwise noted)

Symbol	Parameter	Conditions	H7806AA			Units
			Min	Typ	Max	
Vo	Output Voltage	$T_j=25^{\circ}C$	5.82	6	6.18	V
		$1mA \leq I_o \leq 70mA$	5.82	-	6.18	
		$1mA \leq I_o \leq 40mA$ and $8V \leq V_{in} \leq 21V$	5.82	-	6.18	
$\Delta V_o$	Line Regulation	$T_j=25^{\circ}C$ , $8V \leq V_{in} \leq 21V$	-	65	175	mV
		$T_j=25^{\circ}C$ , $9V \leq V_{in} \leq 21V$	-	55	125	
$\Delta V_o$	Load Regulation	$T_j=25^{\circ}C$ , $1mA \leq I_o \leq 40mA$	-	6	40	mV
		$T_j=25^{\circ}C$ , $1mA \leq I_o \leq 100mA$	-	13	80	
IQ	Quiescent Current	$T_j=25^{\circ}C$	-	-	5.5	mA
$\Delta IQ$	Quiescent Current Change	$1mA \leq I_o \leq 40mA$	-	-	0.1	mA
		$9V \leq V_{in} \leq 21V$	-	-	1.5	
Vn	Output Noise Voltage	$T_a=25^{\circ}C$ , $10Hz \leq f \leq 10KHz$	-	45	-	$\mu V$
$\Delta V_{in} / \Delta V_{out}$	Ripple Rejection	$9V \leq V_{in} \leq 18V$ , $f=120Hz$	44	59	-	dB
Isc	Peak Output / Short Circuit Current	$T_j=25^{\circ}C$	-	140	-	mA
VD	Dropout Voltage	$T_j=25^{\circ}C$	-	1.7	-	V

Symbol	Parameter	Conditions	H7806BA			Units
			Min	Typ	Max	
Vo	Output Voltage	$T_j=25^{\circ}C$	5.75	6	6.25	V
		$1mA \leq I_o \leq 70mA$	5.7	-	6.3	
		$1mA \leq I_o \leq 40mA$ and $8V \leq V_{in} \leq 21V$	5.7	-	6.3	
$\Delta V_o$	Line Regulation	$T_j=25^{\circ}C$ , $8V \leq V_{in} \leq 21V$	-	65	175	mV
		$T_j=25^{\circ}C$ , $9V \leq V_{in} \leq 21V$	-	55	125	
$\Delta V_o$	Load Regulation	$T_j=25^{\circ}C$ , $1mA \leq I_o \leq 40mA$	-	6	40	mV
		$T_j=25^{\circ}C$ , $1mA \leq I_o \leq 100mA$	-	13	80	
IQ	Quiescent Current	$T_j=25^{\circ}C$	-	-	5.5	mA
$\Delta IQ$	Quiescent Current Change	$1mA \leq I_o \leq 40mA$	-	-	0.1	mA
		$9V \leq V_{in} \leq 21V$	-	-	1.5	
Vn	Output Noise Voltage	$T_a=25^{\circ}C$ , $10Hz \leq f \leq 10KHz$	-	45	-	$\mu V$
$\Delta V_{in} / \Delta V_{out}$	Ripple Rejection	$9V \leq V_{in} \leq 18V$ , $f=120Hz$	44	59	-	dB
Isc	Peak Output / Short Circuit Current	$T_j=25^{\circ}C$	-	140	-	mA
VD	Dropout Voltage	$T_j=25^{\circ}C$	-	1.7	-	V



### TO-92 Dimension



\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1704	0.1902	4.33	4.83	G	0.0142	0.0220	0.36	0.56
B	0.1704	0.1902	4.33	4.83	H	-	*0.1000	-	*2.54
C	0.5000	-	12.70	-	I	-	*0.0500	-	*1.27
D	0.0142	0.0220	0.36	0.56	$\alpha 1$	-	*5°	-	*5°
E	-	*0.0500	-	*1.27	$\alpha 2$	-	*2°	-	*2°
F	0.1323	0.1480	3.36	3.76	$\alpha 3$	-	*2°	-	*2°

Notes: 1.Dimension and tolerance based on our Spec. dated Apr. 25,1996.

2.Controlling dimension: millimeters.

3.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.

4.If there is any question with packing specification or packing method, please contact your local HSMC sales office.

#### Material:

- Lead: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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