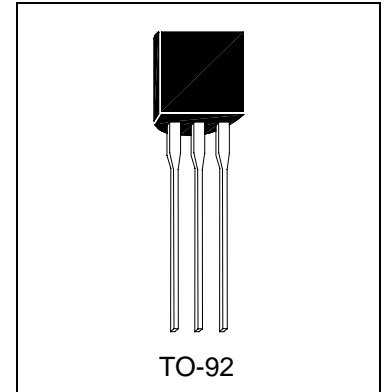




H7812AA

H7812BA

3-TERMINAL POSITIVE VOLTAGE REGULATOR



Description

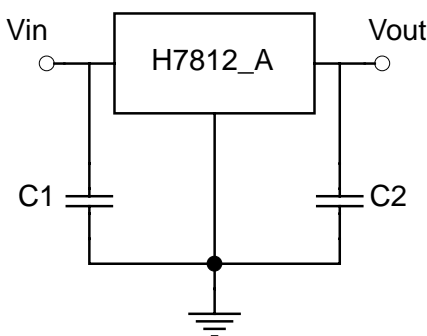
These regulators employ internal current-limiting and thermal-shutdown, making them essentially indestructible. They can deliver up to 100mA output current, if the case temperature can keep in $T_c=25^\circ\text{C}$.

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 H7812_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

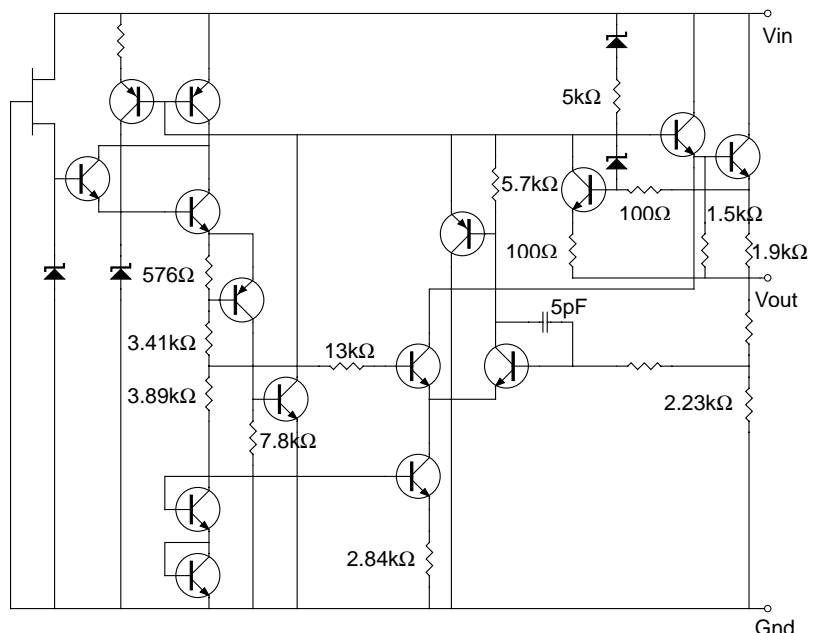
Typical Application



Note:

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

Schematic Diagram





Electrical Characteristics

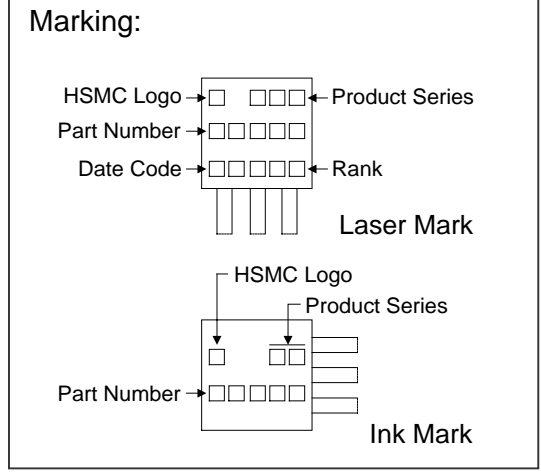
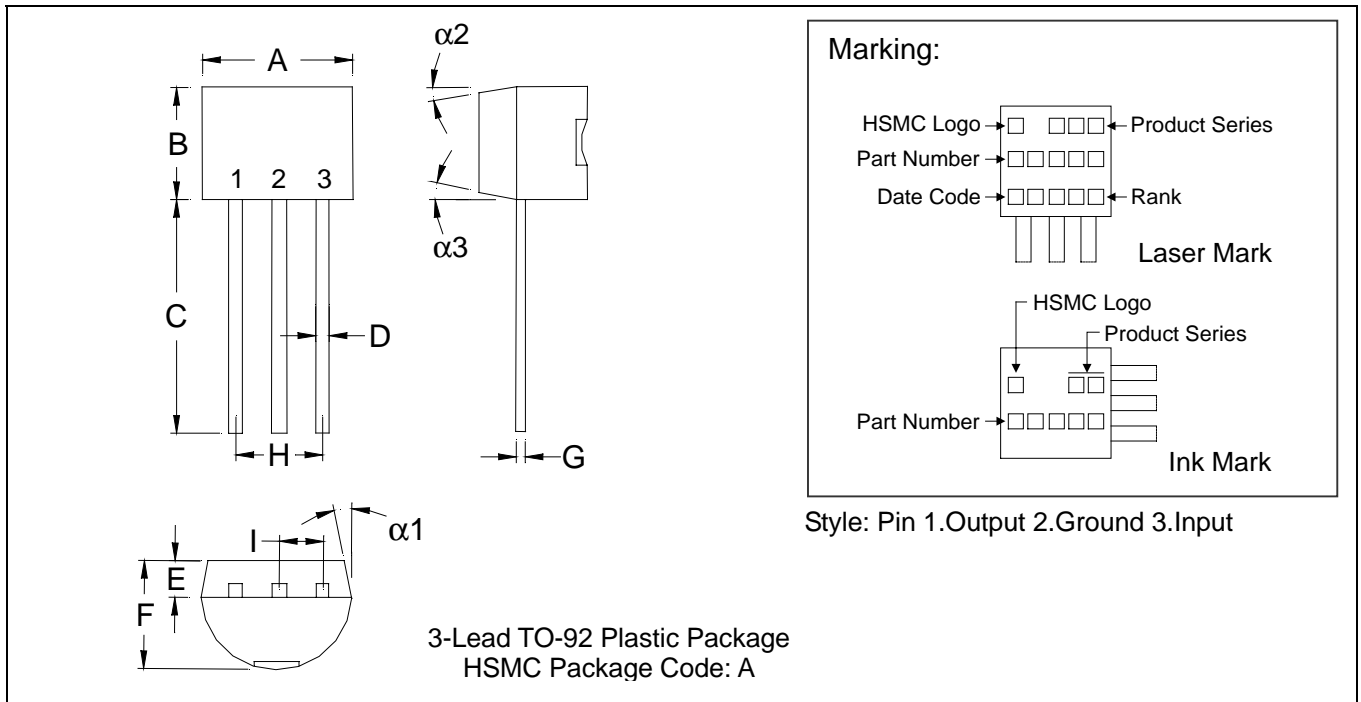
$V_{in}=19V$, $I_{out}=40mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in}=0.33\mu F$, $C_{out}=0.1\mu F$ (unless otherwise noted)

Symbol	Parameter	Conditions	H7812AA			Units
			Min	Typ	Max	
Vo	Output Voltage	$T_j=25^{\circ}C$	11.64	12	12.36	V
		$1mA \leq I_o \leq 70mA$	11.64	-	12.36	
		$1mA \leq I_o \leq 40mA$ and $14.5V \leq V_{in} \leq 27V$	11.64	-	12.36	
ΔV_o	Line Regulation	$T_j=25^{\circ}C$, $16V \leq V_{in} \leq 27V$	-	20	100	mV
		$T_j=25^{\circ}C$, $14.5V \leq V_{in} \leq 27V$	-	30	180	
ΔV_o	Load Regulation	$T_j=25^{\circ}C$, $1mA \leq I_o \leq 40mA$	-	10	50	mV
		$T_j=25^{\circ}C$, $1mA \leq I_o \leq 100mA$	-	30	100	
IQ	Quiescent Current	$T_j=25^{\circ}C$	-	3	5	mA
ΔIQ	Quiescent Current Change	$1mA \leq I_o \leq 40mA$	-	-	0.1	mA
		$16V \leq V_{in} \leq 27V$	-	-	1	
Vn	Output Noise Voltage	$T_a=25^{\circ}C$, $10Hz \leq f \leq 10KHz$	-	80	-	μV
$\Delta V_{in} / \Delta V_{out}$	Ripple Rejection	$f=120Hz$	40	54	-	dB
VD	Dropout Voltage	$T_j=25^{\circ}C$	-	1.7	-	V
	Input Voltage Require To Maintain Line Regulation	$T_j=25^{\circ}C$	14.5	-	-	V

Symbol	Parameter	Conditions	H7812BA			Units
			Min	Typ	Max	
Vo	Output Voltage	$T_j=25^{\circ}C$	11.5	12	12.5	V
		$1mA \leq I_o \leq 70mA$	11.4	-	12.6	
		$1mA \leq I_o \leq 40mA$ and $14.5V \leq V_{in} \leq 27V$	11.4	-	12.6	
ΔV_o	Line Regulation	$T_j=25^{\circ}C$, $16V \leq V_{in} \leq 27V$	-	20	100	mV
		$T_j=25^{\circ}C$, $14.5V \leq V_{in} \leq 27V$	-	30	180	
ΔV_o	Load Regulation	$T_j=25^{\circ}C$, $1mA \leq I_o \leq 40mA$	-	10	50	mV
		$T_j=25^{\circ}C$, $1mA \leq I_o \leq 100mA$	-	30	100	
IQ	Quiescent Current	$T_j=25^{\circ}C$	-	3	5	mA
ΔIQ	Quiescent Current Change	$1mA \leq I_o \leq 40mA$	-	-	0.1	mA
		$16V \leq V_{in} \leq 27V$	-	-	1	
Vn	Output Noise Voltage	$T_a=25^{\circ}C$, $10Hz \leq f \leq 10KHz$	-	80	-	μV
$\Delta V_{in} / \Delta V_{out}$	Ripple Rejection	$f=120Hz$	40	54	-	dB
VD	Dropout Voltage	$T_j=25^{\circ}C$	-	1.7	-	V
	Input Voltage Require To Maintain Line Regulation	$T_j=25^{\circ}C$	14.5	-	-	V



TO-92 Dimension



Style: Pin 1.Output 2.Ground 3.Input

*: 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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Head Office And Factory:

- **Head Office** (Hi-Sincerity Microelectronics Corp.): 10F.,No. 61, Sec. 2, Chung-Shan N. Rd. Taipei Taiwan R.O.C.
 Tel: 886-2-25212056 Fax: 886-2-25632712, 25368454
- **Factory 1:** No. 38, Kuang Fu S. Rd., Fu-Kou Hsin-Chu Industrial Park Hsin-Chu Taiwan. R.O.C
 Tel: 886-3-5983621~5 Fax: 886-3-5982931