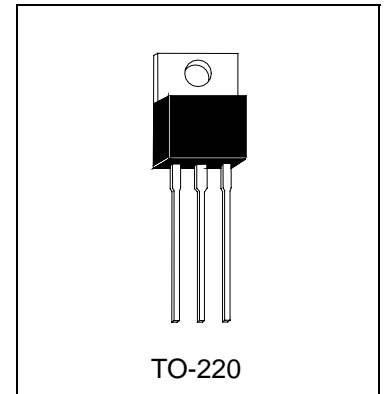




H7912AE

H7912BE

3-TERMINAL NEGATIVE VOLTAGE REGULATOR



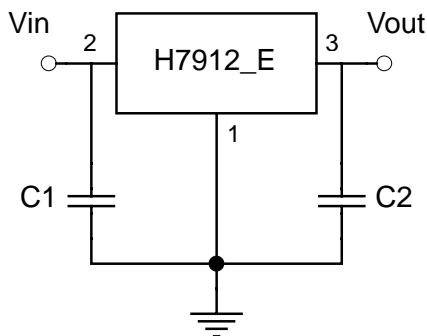
Description

The H7912_E series of three-terminal negative regulators are available in the TO-220AB package. They can provide local on-card regulation, eliminating the distribution problems associated with single point regulation; furthermore, having the same voltage options as the H7912_E positive standard series, they are particularly suited for split power supplies. If adequate heat sinking is provided, the H7912_E series can deliver an output current in excess of 1A although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltage and currents.

Absolute Maximum Ratings (Ta=25°C)

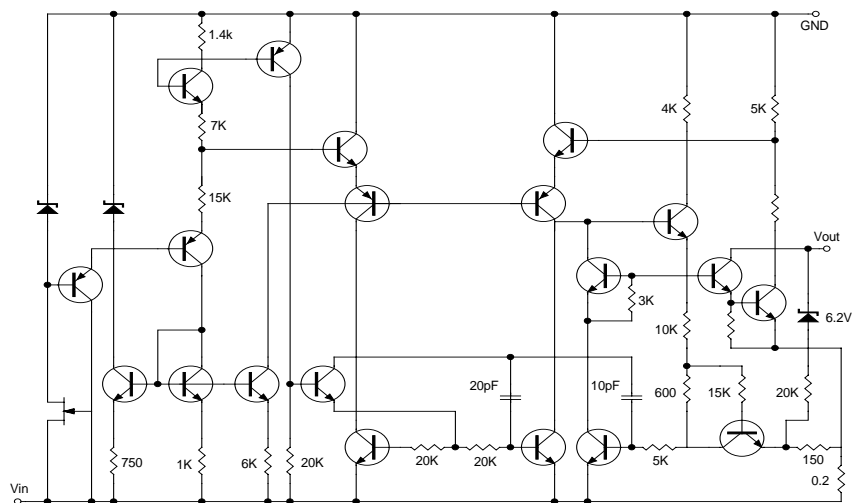
- Input Voltage..... -35 V
- Total Power Dissipation..... Internally limited
- Operating Junction Temperature..... 0 °C to +125 °C
- Maximum Junction Temperature..... 125 °C
- Storage Temperature Range..... -55 °C to +150 °C
- Lead Temperature (Soldering 10S)..... 230 °C

Typical Application



Note:
 By pass Capacitors are recommended for optimum stability and transient response and should be locate as close as possible to the regulator.

Schematic Diagram





Electrical Characteristics

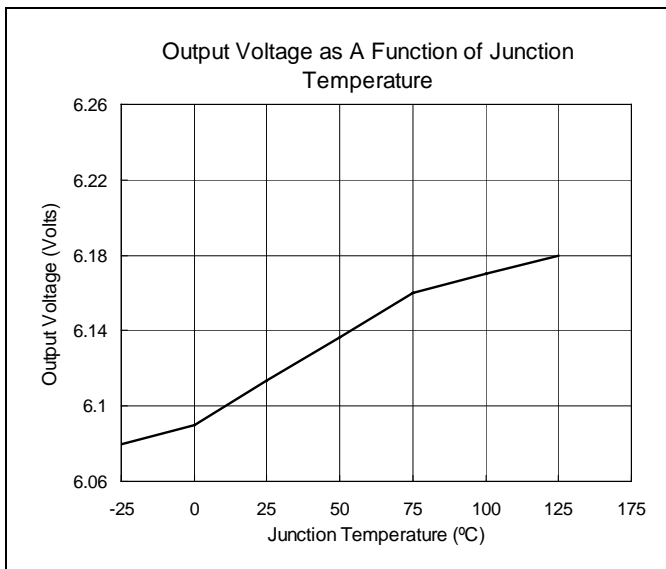
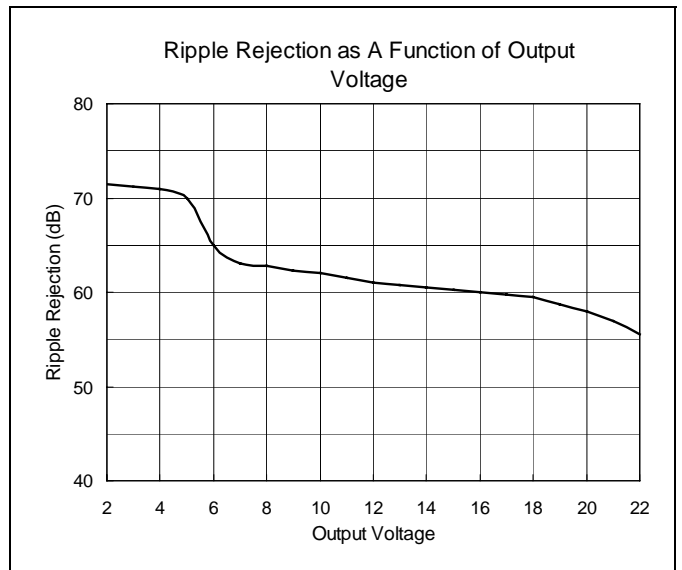
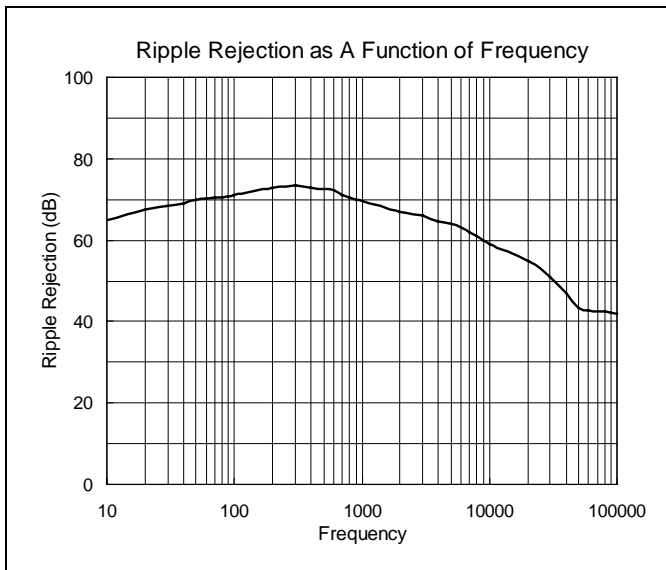
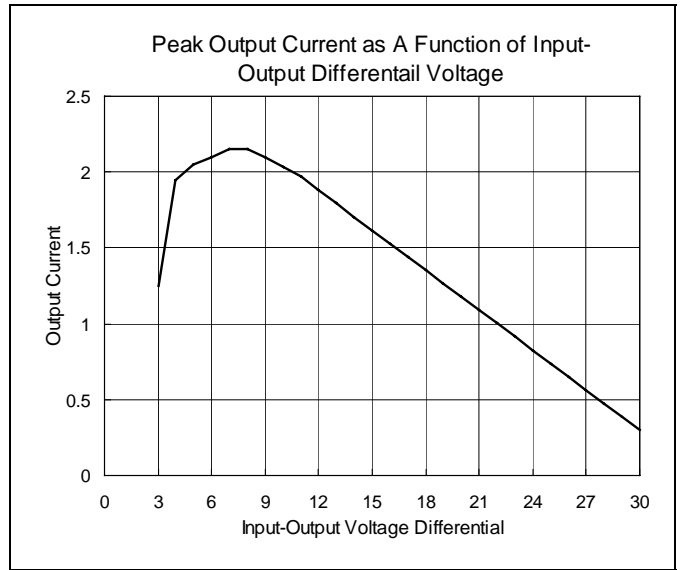
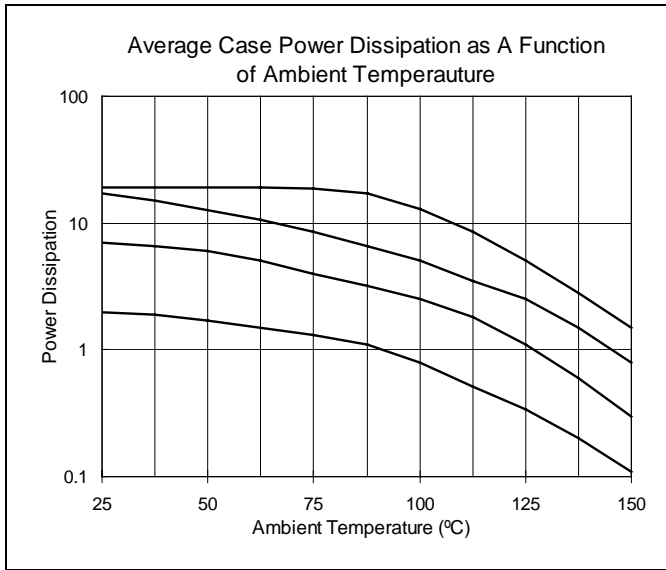
$V_{in} = -19V$, $I_o = 500mA$, $C_{in} = 2.2\mu F$, $C_{out} = 1\mu F$, $0^\circ C \leq T_j \leq 125^\circ C$ (unless otherwise noted)

Symbol	Parameter	Conditions	H7912AE			Units
			Min	Typ	Max	
Vo	Output Voltage	$T_j = 25^\circ C$	-11.64	-12	-12.36	V
		$PD \leq 15W$, $5mA \leq I_o \leq 1A$ $V_i = -14.5V$ to $-27V$	-11.58	-12	-12.42	
ΔV_o	Line Regulation	$T_j = 25^\circ C$, $-14.5V \leq V_{in} \leq -30V$	-	-	120	mV
		$T_j = 25^\circ C$, $-16V \leq V_{in} \leq 22V$	-	-	30	
ΔV_o	Load Regulation	$5mA \leq I_o \leq 1.5A$	-	-	150	mV
		$250mA \leq I_o \leq 750mA$	-	-	75	
IQ	Quiescent Current	$I_o \leq 1A$, $T_j = 25^\circ C$	-	3	8	mA
ΔIQ	Quiescent Current Change	$5mA \leq I_o \leq 1A$	-	-	0.5	mA
		$-14.5V \leq V_{in} \leq -30V$	-	-	1.3	
$\Delta V_o / \Delta T$	Output Voltage Drift	$I_o = 5mA$	-	-0.4	-	mV/ $^\circ C$
Vn	Output Noise Voltage	$T_a = 25^\circ C$, 10Hz to 100KHz	-	100	-	μV
RR	Ripple Rejection	$\Delta V_i = 10V$, $f = 120Hz$	54	68	-	dB
VD	Dropout Voltage	$T_j = 25^\circ C$, $I_o = 1A$	-	2	-	V
Isc	Short Circuit Current	$T_j = 25^\circ C$, $V_i = -35V$	-	2.2	-	A
Ipk	Peak Output Current	$T_j = 25^\circ C$	1.3	2.2	-	A

Symbol	Parameter	Conditions	H7912BE			Units
			Min	Typ	Max	
Vo	Output Voltage	$T_j = 25^\circ C$	-11.5	-12	-12.5	V
		$PD \leq 15W$, $5mA \leq I_o \leq 1A$ $V_i = -14.5V$ to $-27V$	-11.4	-12	-12.6	
ΔV_o	Line Regulation	$T_j = 25^\circ C$, $-14.5V \leq V_{in} \leq -30V$	-	10	240	mV
		$T_j = 25^\circ C$, $-16V \leq V_{in} \leq 22V$	-	5	120	
ΔV_o	Load Regulation	$5mA \leq I_o \leq 1.5A$	-	-	240	mV
		$250mA \leq I_o \leq 750mA$	-	-	120	
IQ	Quiescent Current	$I_o \leq 1A$, $T_j = 25^\circ C$	-	3	8	mA
ΔIQ	Quiescent Current Change	$5mA \leq I_o \leq 1A$	-	-	0.5	mA
		$-14.5V \leq V_{in} \leq -30V$	-	-	1.3	
$\Delta V_o / \Delta T$	Output Voltage Drift	$I_o = 5mA$	-	-0.4	-	mV/ $^\circ C$
Vn	Output Noise Voltage	$T_a = 25^\circ C$, 10Hz to 100KHz	-	100	-	μV
RR	Ripple Rejection	$\Delta V_i = 10V$, $f = 120Hz$	54	68	-	dB
VD	Dropout Voltage	$T_j = 25^\circ C$, $I_o = 1A$	-	2	-	V
Isc	Short Circuit Current	$T_j = 25^\circ C$, $V_i = -35V$	-	2.2	-	A
Ipk	Peak Output Current	$T_j = 25^\circ C$	1.3	2.2	-	A

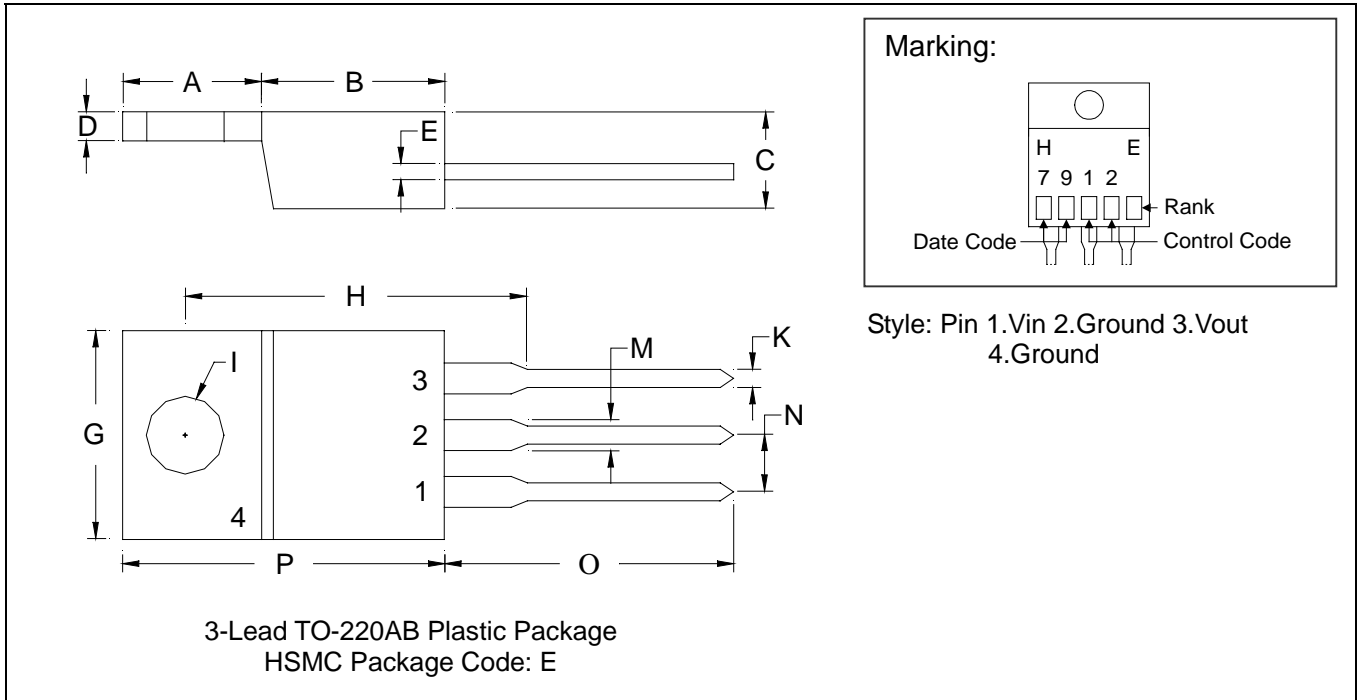


Characteristics Curve





TO-220AB Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.2197	0.2949	5.58	7.49	I	-	*0.1508	-	*3.83
B	0.3299	0.3504	8.38	8.90	K	0.0295	0.0374	0.75	0.95
C	0.1732	0.185	4.40	4.70	M	0.0449	0.0551	1.14	1.40
D	0.0453	0.0547	1.15	1.39	N	-	*0.1000	-	*2.54
E	0.0138	0.0236	0.35	0.60	O	0.5000	0.5618	12.70	14.27
G	0.3803	0.4047	9.66	10.28	P	0.5701	0.6248	14.48	15.87
H	-	*0.6398	-	*16.25					

- Notes:**
- 1.Dimension and tolerance based on our Spec. dated Sep. 07,1997.
 - 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

Important Notice:

- All rights are reserved. Reproduction in whole or in part is prohibited without the prior written approval of HSMC.
- HSMC reserves the right to make changes to its products without notice.
- **HSMC semiconductor products are not warranted to be suitable for use in Life-Support Applications, or systems.**
- HSMC assumes no liability for any consequence of customer product design, infringement of patents, or application assistance.

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