



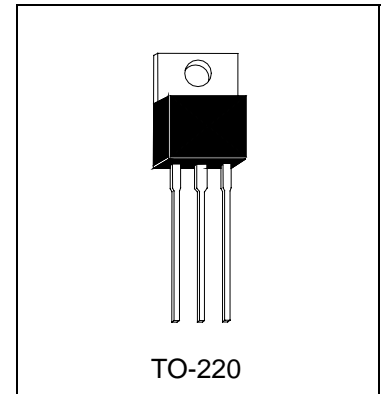
# H7905AE

# H7905BE

## 3-TERMINAL NEGATIVE VOLTAGE REGULATOR

### Description

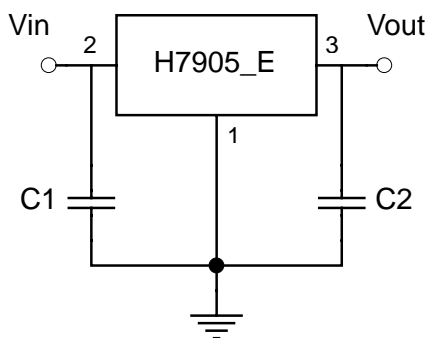
The H7905\_E series of three-terminal negative regulators are available in the TO-220AB package. They can provide local on-card regulation, eliminating the distribution problems associated with single point regulation; furthermore, having the same voltage options as the H7905\_E positive standard series, they are particularly suited for split power supplies. If adequate heat sinking is provided, the H7905\_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)

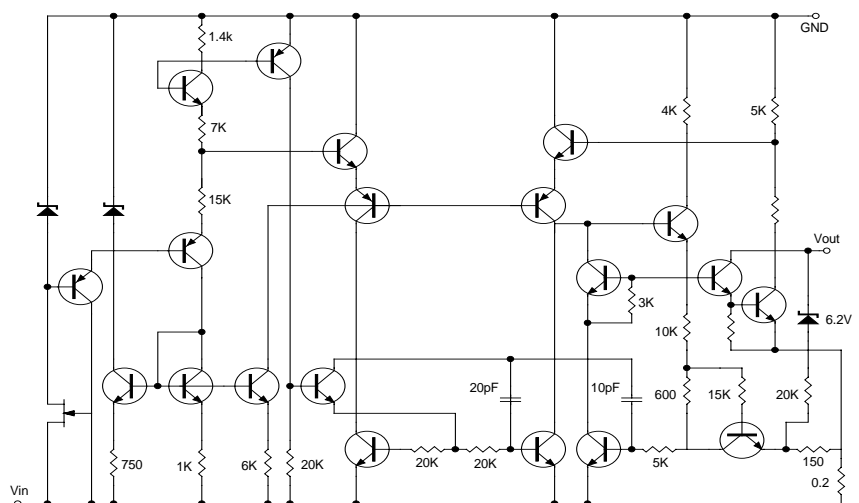
- Input Voltage..... -35 V
- Total Power Dissipation..... Internally limited
- Operating Junction Temperature..... 0 °C to +125 °C
- Maximum Junction Temperature..... 125 °C
- Storage Temperature Range..... -55 °C to +150 °C
- Lead Temperature (Soldering 10S)..... 230 °C

### 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

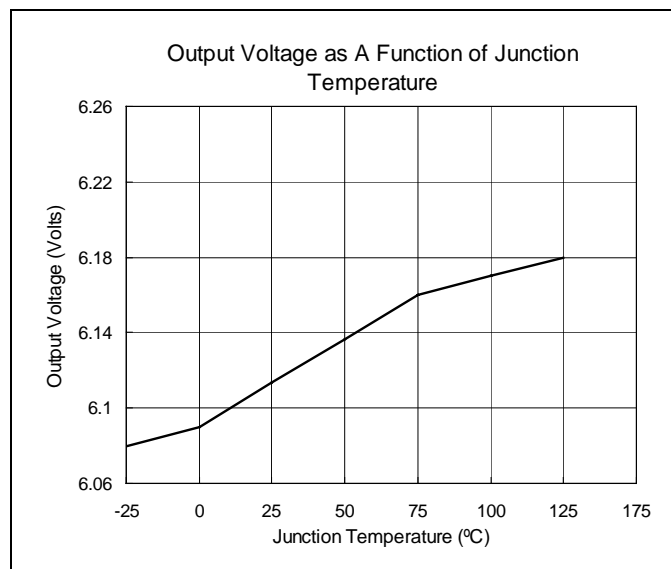
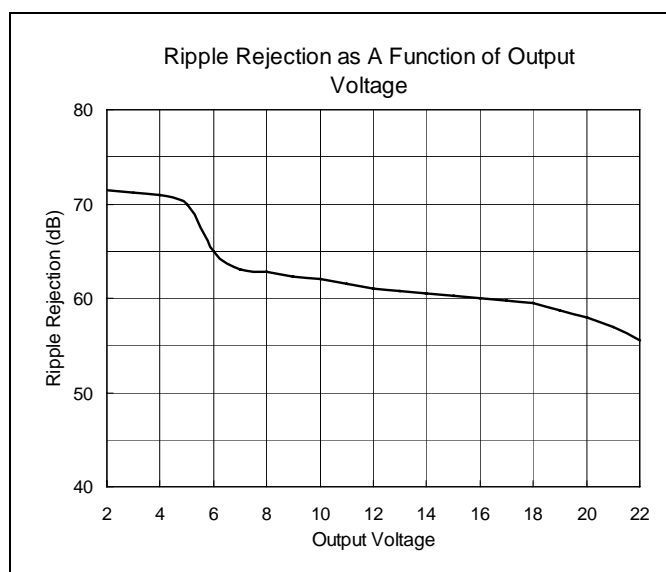
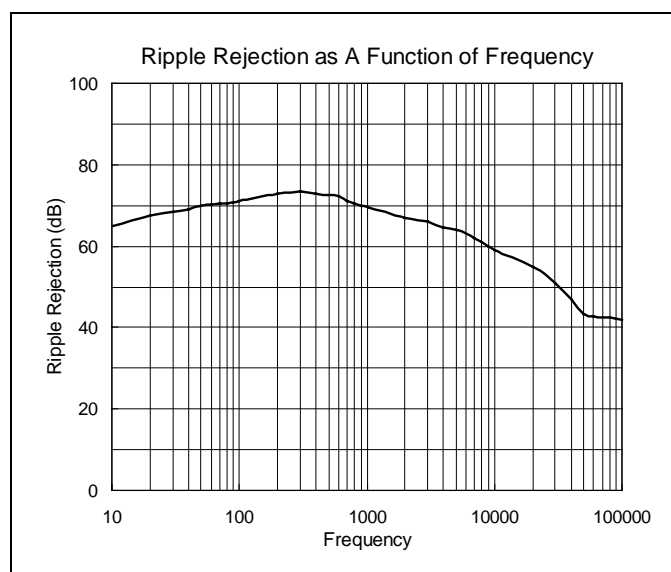
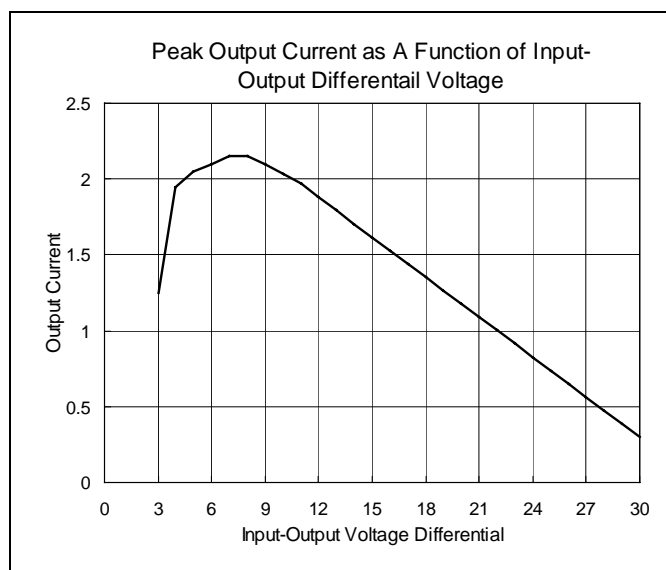
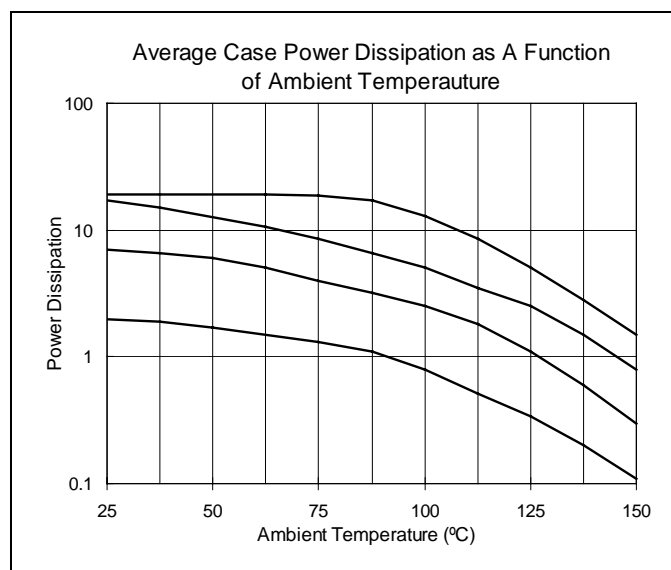
$V_{in} = -10V$ ,  $I_o = 500mA$ ,  $C_{in} = 2.2\mu F$ ,  $C_{out} = 1\mu F$ ,  $0^\circ C \leq T_j \leq 125^\circ C$  (unless otherwise noted)

Symbol	Parameter	Conditions	H7905AE			Units
			Min	Typ	Max	
$V_o$	Output Voltage	$T_j = 25^\circ C$	-4.9	-5	-5.1	V
		$PD \leq 15W$ , $5mA \leq I_o \leq 1A$ $V_i = -8V$ to $-20V$	-4.85	-5	-5.15	
$\Delta V_o$	Line Regulation	$T_j = 25^\circ C$ , $-7V \leq V_{in} \leq -25V$	-	-	50	mV
		$T_j = 25^\circ C$ , $-8V \leq V_{in} \leq 12V$	-	-	25	
$\Delta V_o$	Load Regulation	$5mA \leq I_o \leq 1.5A$	-	-	100	mV
		$250mA \leq I_o \leq 750mA$	-	-	50	
$I_Q$	Quiescent Current	$I_o \leq 1A$ , $T_j = 25^\circ C$	-	3	8	mA
$\Delta I_Q$	Quiescent Current Change	$5mA \leq I_o \leq 1A$	-	-	0.5	mA
		$-8V \leq V_{in} \leq -25V$	-	-	1.3	
$\Delta V_o / \Delta T$	Output Voltage Drift	$I_o = 5mA$	-	-0.4	-	mV/ $^\circ C$
$V_n$	Output Noise Voltage	$T_a = 25^\circ C$ , 10Hz to 100KHz	-	100	-	$\mu V$
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	H7905BE			Units
			Min	Typ	Max	
$V_o$	Output Voltage	$T_j = 25^\circ C$	-4.8	-5	-5.2	V
		$PD \leq 15W$ , $5mA \leq I_o \leq 1A$ $V_i = -8V$ to $-20V$	-4.75	-5	-5.25	
$\Delta V_o$	Line Regulation	$T_j = 25^\circ C$ , $-7V \leq V_{in} \leq -25V$	-	10	100	mV
		$T_j = 25^\circ C$ , $-8V \leq V_{in} \leq 12V$	-	5	50	
$\Delta V_o$	Load Regulation	$5mA \leq I_o \leq 1.5A$	-	-	100	mV
		$250mA \leq I_o \leq 750mA$	-	-	50	
$I_Q$	Quiescent Current	$I_o \leq 1A$ , $T_j = 25^\circ C$	-	3	8	mA
$\Delta I_Q$	Quiescent Current Change	$5mA \leq I_o \leq 1A$	-	-	0.5	mA
		$-8V \leq V_{in} \leq -25V$	-	-	1.3	
$\Delta V_o / \Delta T$	Output Voltage Drift	$I_o = 5mA$	-	-0.4	-	mV/ $^\circ C$
$V_n$	Output Noise Voltage	$T_a = 25^\circ C$ , 10Hz to 100KHz	-	100	-	$\mu V$
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

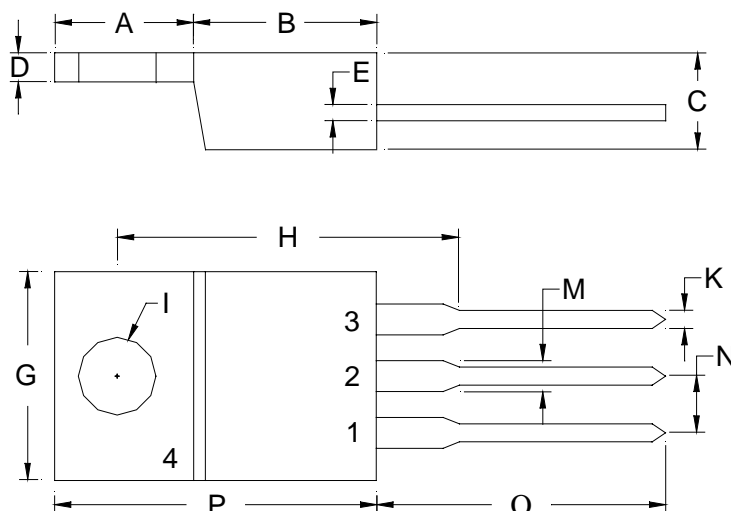


### Characteristics Curve



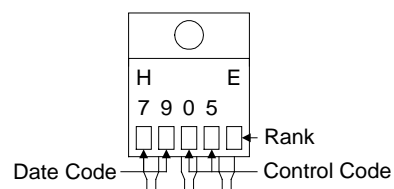


### TO-220AB Dimension



3-Lead TO-220AB Plastic Package  
HSMC Package Code: E

#### Marking:



Style: Pin 1.Vin 2.Ground 3.Vout  
4.Ground

\*: 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

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