



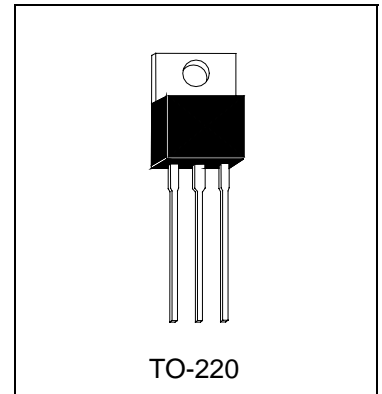
H7824AE

H7824BE

3-TERMINAL POSITIVE VOLTAGE REGULATOR

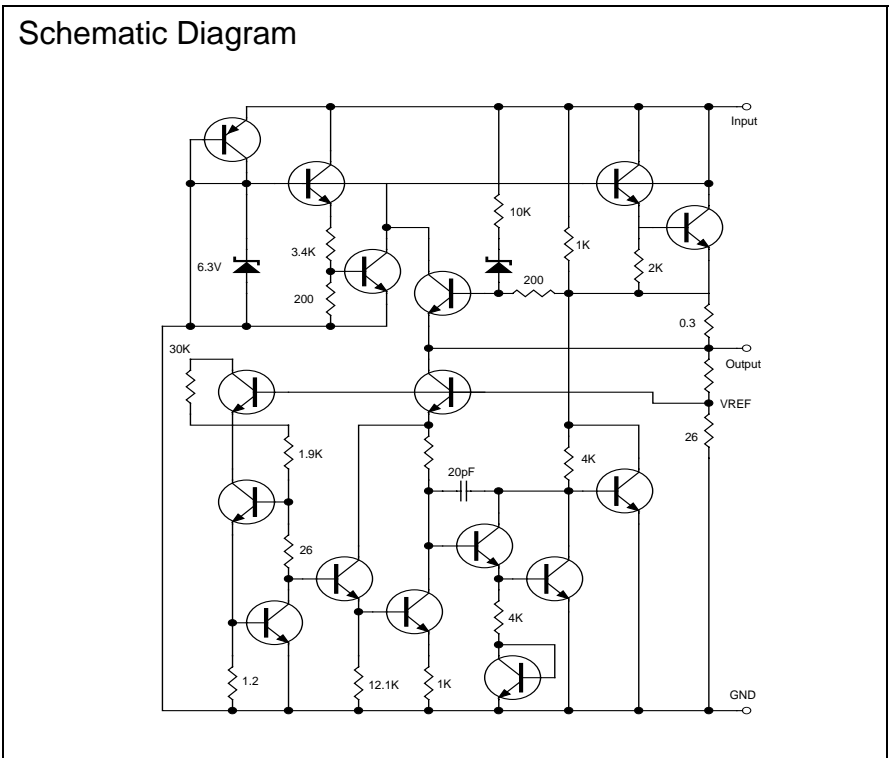
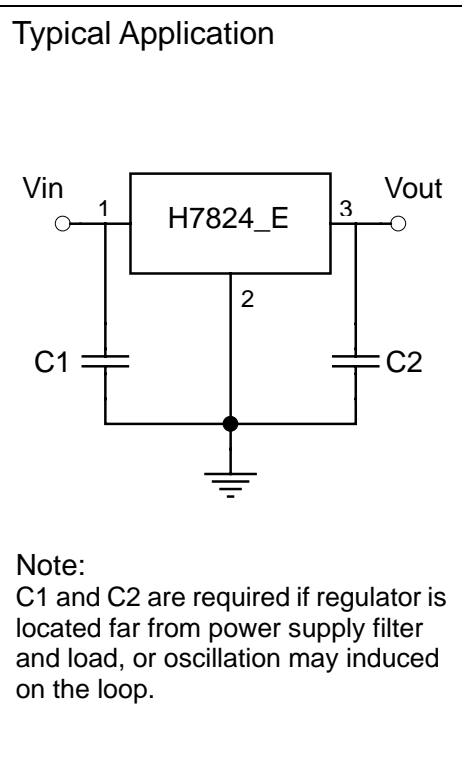
Description

The H7824_E series of three-terminal positive regulators are available in the TO-220AB package. These regulators can provide local on-card regulation, eliminating the distribution problems associated with single point regulation. Each employs internal current limiting, thermal shut-down and safe operating area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 1A output current. Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltages and currents. H7824_E is characterized for operation from 0°C to +125°C, and if operating temperature is always high, please refer to the power dissipation curve.



Absolute Maximum Ratings (Ta=25°C)

- Input Voltage..... 40 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)..... 230 °C





Electrical Characteristics

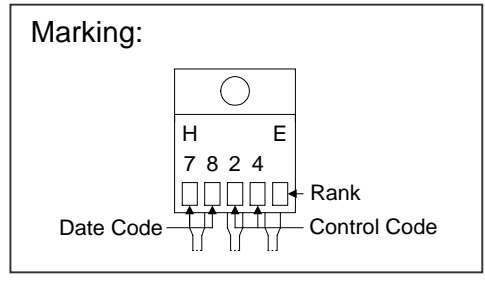
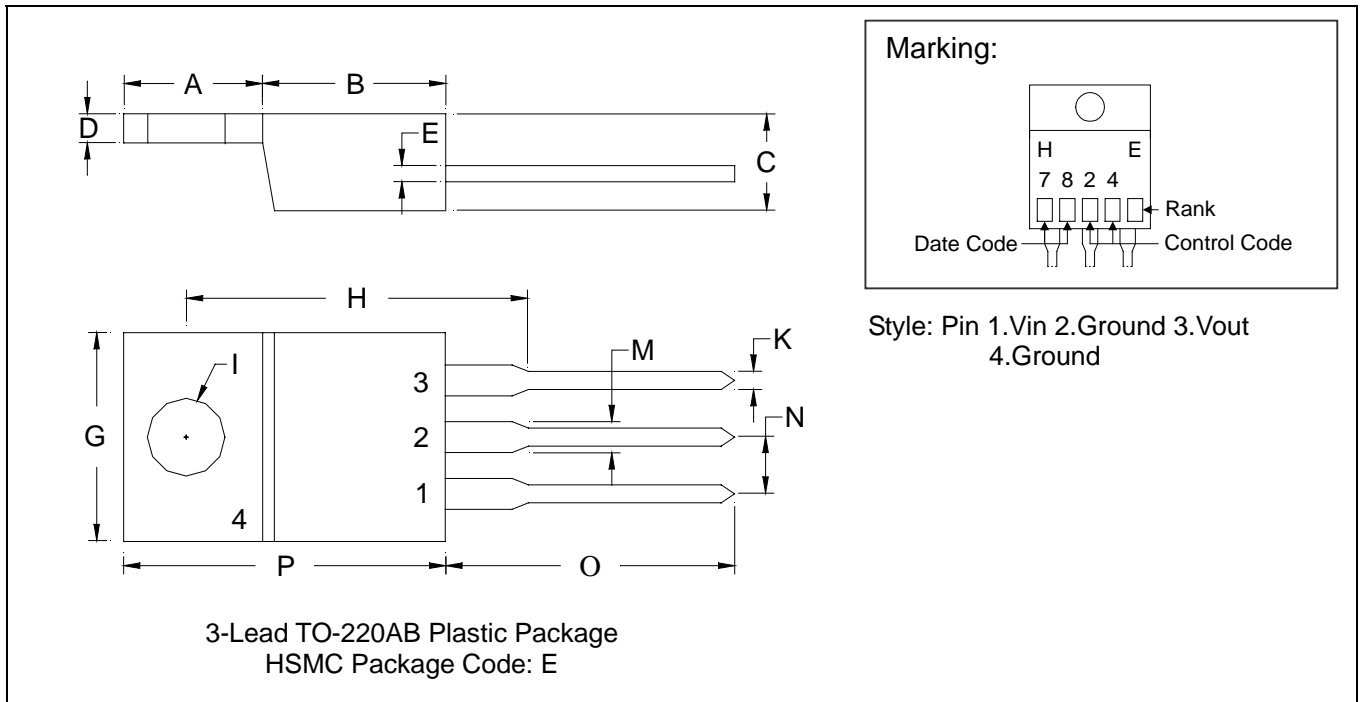
$V_{in}=33V$, $I_o=500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$ (unless otherwise noted)

Symbol	Parameter	Conditions	H7824AE			Units
			Min	Typ	Max	
Vo	Output Voltage	$T_j=25^{\circ}C$	23.28	24	24.72	V
		$PD \leq 15W$, $5mA \leq I_o \leq 1A$	23.28	24	24.72	
ΔV_o	Line Regulation	$T_j=25^{\circ}C$, $27V \leq V_{in} \leq 38V$	-	18	240	mV
		$T_j=25^{\circ}C$, $30V \leq V_{in} \leq 36V$	-	6	240	
ΔV_o	Load Regulation	$5mA \leq I_o \leq 1.5A$	-	-	240	mV
		$250mA \leq I_o \leq 750mA$	-	-	120	
IQ	Quiescent Current	$I_o \leq 1A$, $T_j=25^{\circ}C$	-	5.5	8	mA
ΔIQ	Quiescent Current Change	$5mA \leq I_o \leq 1A$	-	-	0.5	mA
		$27V \leq V_{in} \leq 38V$	-	-	1.3	
Vn	Output Noise Voltage	$T_a=25^{\circ}C$, $10Hz \leq f \leq 100KHz$	-	-	200	μV
RR	Ripple Rejection	$28V \leq V_{in} \leq 38V$, $f=120Hz$	-	68	-	dB
VD	Dropout Voltage	$T_j=25^{\circ}C$, $I_o=1A$	-	2	-	V
Isc	Short Circuit Current	$T_j=25^{\circ}C$	-	1.5	-	A
Ipk	Peak Output Current	$T_j=25^{\circ}C$	1.7	-	-	A
$\Delta V_o / \Delta T$	Average Tc of Vout	$0^{\circ}C \leq T_j \leq +125^{\circ}C$, $I_o=5mA$	-	-0.8	-	$mV/^{\circ}C$

Symbol	Parameter	Conditions	H7824BE			Units
			Min	Typ	Max	
Vo	Output Voltage	$T_j=25^{\circ}C$	23	24	25	V
		$PD \leq 15W$, $5mA \leq I_o \leq 1A$	23.8	24	25.2	
ΔV_o	Line Regulation	$T_j=25^{\circ}C$, $27V \leq V_{in} \leq 38V$	-	18	480	mV
		$T_j=25^{\circ}C$, $30V \leq V_{in} \leq 36V$	-	6	240	
ΔV_o	Load Regulation	$5mA \leq I_o \leq 1.5A$	-	-	480	mV
		$250mA \leq I_o \leq 750mA$	-	-	240	
IQ	Quiescent Current	$I_o \leq 1A$, $T_j=25^{\circ}C$	-	5.5	8	mA
ΔIQ	Quiescent Current Change	$5mA \leq I_o \leq 1A$	-	-	0.5	mA
		$27V \leq V_{in} \leq 38V$	-	-	1.3	
Vn	Output Noise Voltage	$T_a=25^{\circ}C$, $10Hz \leq f \leq 100KHz$	-	-	300	μV
RR	Ripple Rejection	$28V \leq V_{in} \leq 38V$, $f=120Hz$	62	73	-	dB
VD	Dropout Voltage	$T_j=25^{\circ}C$, $I_o=1A$	-	2.5	-	V
Isc	Short Circuit Current	$T_j=25^{\circ}C$	-	1.5	-	A
Ipk	Peak Output Current	$T_j=25^{\circ}C$	1.7	-	-	A
$\Delta V_o / \Delta T$	Average Tc of Vout	$0^{\circ}C \leq T_j \leq +125^{\circ}C$, $I_o=5mA$	-	-0.8	-	$mV/^{\circ}C$



TO-220AB Dimension



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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