



Competitiveness

竞争力强

Quality

质量高

Expertise

专家

Reactivity

反应迅捷

ELOY & BECKER**Bipolar Hall-Effect Latch****EB3172X**

The Hall-effect latch is a temperature-stable and stress-resistant sensor especially suited for electronic commutation in brushless dc motors using multipole ring magnets. Each device includes a voltage regulator, quadratic Hall voltage generator, temperature compensation circuit, signal amplifier, Schmitt trigger, and an open-collector output on a single silicon chip. The on-board regulator permits operation with supply voltages of 4.5 volts to 24 volts. The switch output can sink to 25mA. With suitable output pull up, they can be used directly with bipolar or MOS logic circuits.

TYPICAL APPLICATION

- . Contactless switch
- . Position control
- . Speed measurement
- . Revolution detection
- . Isolation measurement
- . Brushless DC motor
- . Automotive ignitor

FEATURES

- . Wide supply voltage range
- . Fast response time
- . Wide frequency and temperature range
- . Long operating life
- . Small size, convenient installing
- . Output compatible with all digital logic families

ABSOLUTE MAXIMUM RATING

Parameter	Symbol	Value	Unit
Supply voltage	V_{CC}	24	V
Magnetic Flux Density	B	Unlimited	mT
Output OFF voltage	V_{CE}	40	V
Continuous Output Current	I_{OL}	25	mA
Operating Temperature Range	T_A	-40~150	°C
Storage Temperature Range	T_S	-55~150	°C

ELECTRICAL CHARACTERISTICS $T_A=25^{\circ}\text{C}$

Parameter	Symbol	Test Condition	Type and Value			Unit
			Min.	Typ.	Max.	
Supply voltage	V_{CC}	-	4.5	-	24	V
Output Saturation Voltage	V_{OL}	$I_{out}=20\text{mA } B>B_{OP}$	-	200	400	mV
Output Leakage Current	I_{OH}	$V_{out}=24\text{V } B<B_{RP}$	-	0.1	10	μA
Supply Current	I_{CC}	$V_{CC}=24\text{V}$ Output open	-	-	10	mA
Output Rise Time	t_r	$R_L=820\Omega$ $CL=20\text{pF}$	-	0.12	-	μS
Output Fall Time	t_f	$R_L=820\Omega$ $CL=20\text{pF}$	-	0.18	-	μS

MAGNETIC CHARACTERISTICS $V_{CC}=4.5\sim 24\text{V}$

Parameter	Symbol	EB3172X			Unit
		Min.	Typ.	Max.	
Operate Point	B_{OP}	-	-	80	mT
Release Point	B_{RP}	-80	-	-	mT
Hysteresis	B_H	3	-	-	mT

Note: 1mT=10Gs



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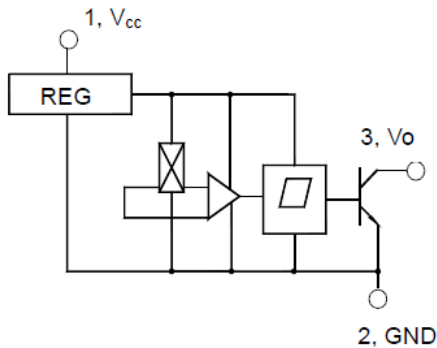
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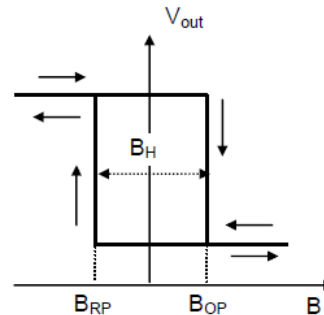
Reactivity
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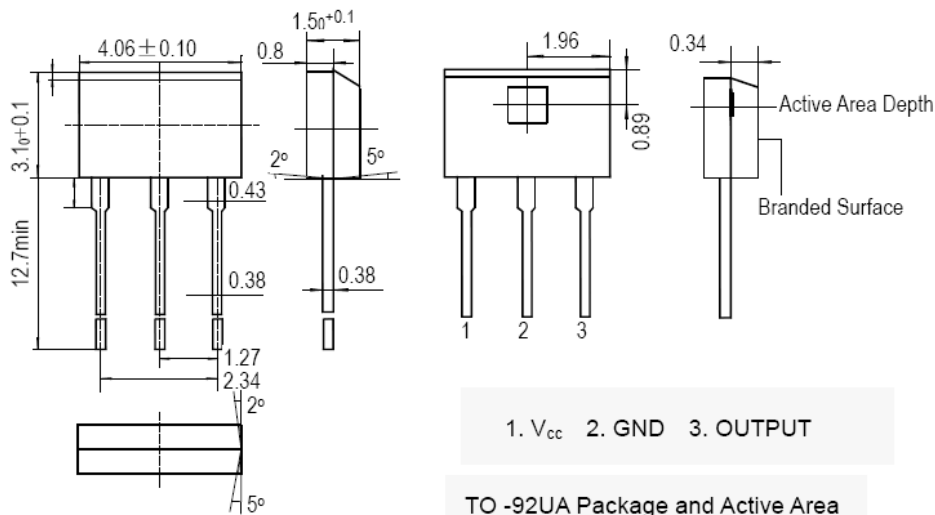
BLOCK DIAGRAM



MAGNETIC-ELECTRICAL TRANSFER CHARACTERISTICS



DIMENSIONS (in mm)



1. V_{cc} 2. GND 3. OUTPUT

TO -92UA Package and Active Area

Cautions

1. Keep the mechanical stress on the Hall IC to a minimum during installation, to avoid any negative impact on the operate point and release point.
2. The welding should be done at low temperature during a short time.