

■ **General Description**

A3144E is a switched Hall-Effect IC, which is for contactless switching applications. The device includes an on-chip Hall voltage generator for magnetic sensing, an amplifier that amplifies the Hall voltage, a Schmitt trigger to provide switching hysteresis for noise rejection, and an open-collector output. The bandgap regulator allows a wide operating voltage range. A3144E is rated for operating temperature range from -40°C to 150°C and voltage range from 3.8V to 40V. A3144E are capable of continuous 20mA sinking out and maybe cycled as high as 50mA maximum.

■ **Features**

- High temp Unipolar Hall Effect Switch Sensor
- Wide operating voltage range: 3.8V~40V
- Open Collector Pre-Driver
- Maximum output sink current: 50mA
- Chip Power Reverse-Connection Protection
- Operating Temperature: -40°C~+150°C
- Small Size Package: SIP3L

■ **Applications**

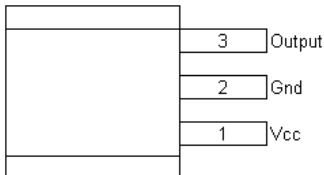
- Non-Contact Switch
- Automotive Ignition
- Braker ICs
- Position Control
- Revolution Detection
- Safe Alarm Device
- Textile Control System

■ **Ordering Information**

PART NUMBER	TEMPERATURE RANGE	PACKAGE	TAPE & REEL
A3144EUA	-40°C to 150°C	SIP3	-T

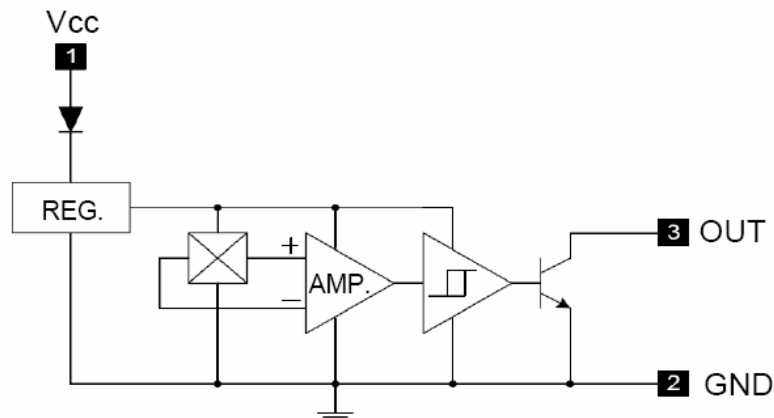
■ **Pin Configuration**

(Top View)



Name	No.	Status	Description
Vcc	1	P	Input Power Supply
Gnd	2	P	Ground
Output	3	O	Output Stage of Open Collector

■ **Functional Block Diagram**



■ **Absolute Maximum Ratings**

Parameter	Symbol	Rating
Supply Voltage	VCC	-40 V to +40VDC
Voltage externally applied to output	Vout (off)	+40 VDC max, OFF condition only -0.5 V min., OFF or ON condition
Output "ON" Current	Io (sink)	50 mA
Power Dissipation	PD	450mW (SIP3L)
Operation Temperature Range	Top	-40 to +150°C
Storage Temperature Range	Tst	-65 to +150°C
Magnetic Flux	B	No limit.

Note : Absolute Maximum Rating are those values beyond which the life of a device may be impaired.

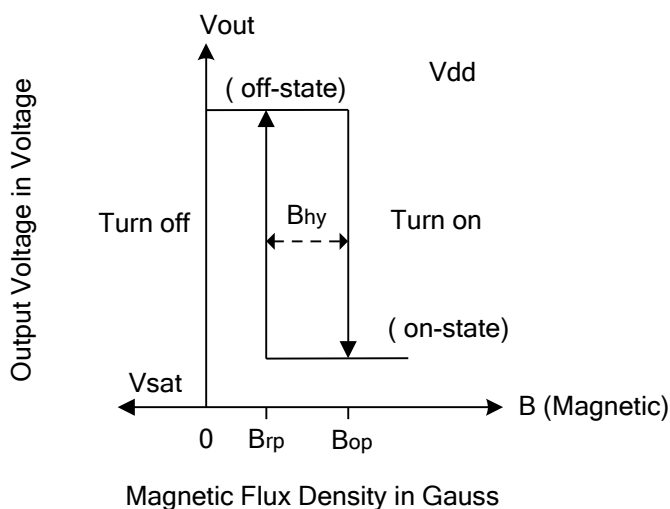
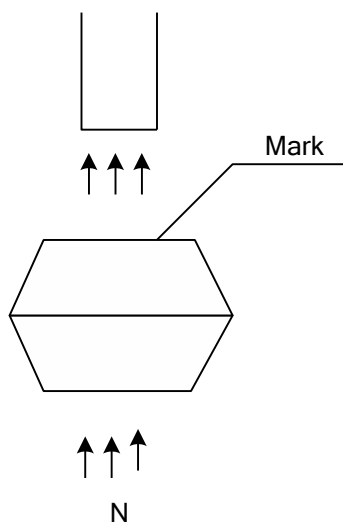
■ **Electrical Characteristics(Ta=25°C)**

Symbol	Parameter	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Vcc	Supply Voltage	Operating	3.8		30	V
VO (SAT)	Output Saturation Voltage	Vcc = 12V, OUT "ON", Io = 20mA	-		400	mV
		Vcc = 24V, OUT "ON", Io = 20mA			400	mV
Icc	Supply Current	Vcc = 4.5V~24V, OUT "OFF"	-	4	10	mA
I <sub>LE</sub>	Output Leakage Current (Leakage into sensor output)	Released	-		10	μA
Tr	Output Switching Time	Rise Time		0.2		μS
Tf		Fall Time	RL=820Ω, CL=20pF		0.5	

■ **Magnetic Characteristics(Ta=25°C, Vcc=3.8~30V)**

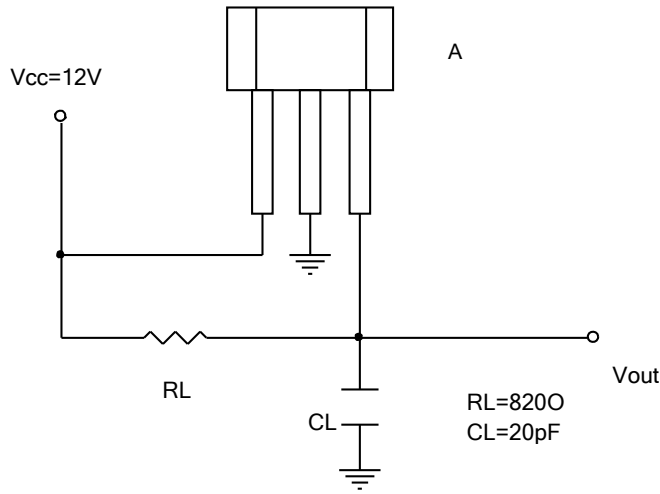
Symbol	Parameter	MIN.	TYP.	MAX.	UNIT
Bop	Operation Point	90		230	Gauss
Brp	Release Point	70		200	Gauss
Bhy	Hysteresis	20	50	80	Gauss

■ **Operating Characteristics**



■ **Test Circuits**

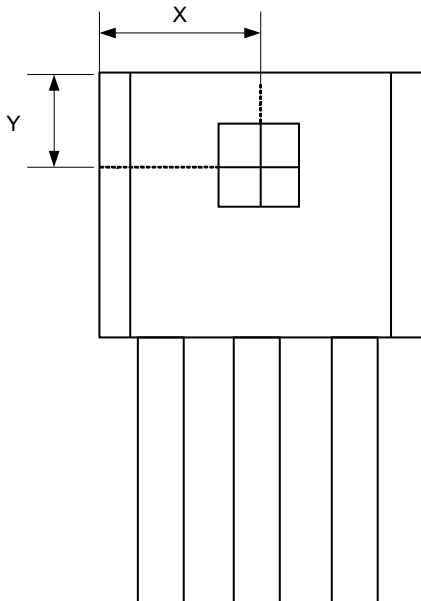
3144E



**Fig1**

■ **Hall Sensor Location**

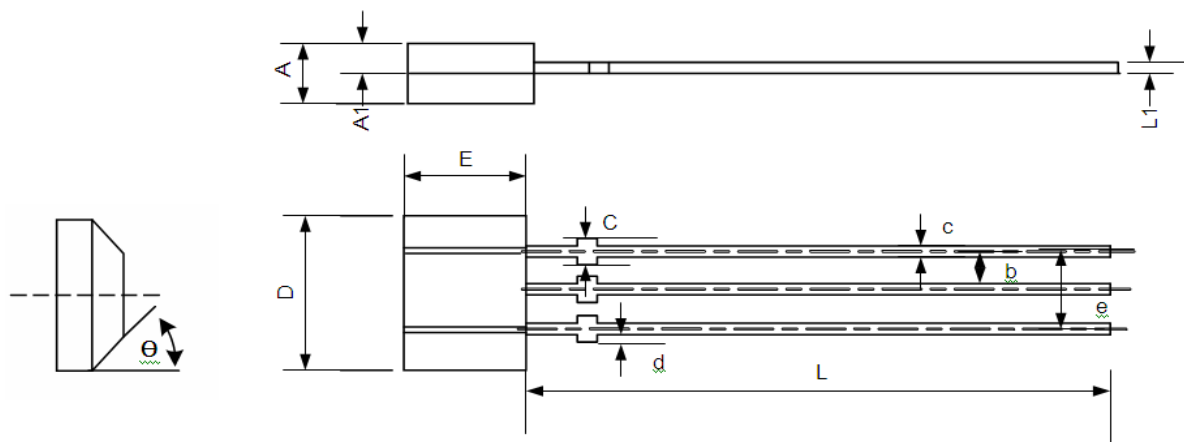
The Fig2 is hall sensor location, where marks the IC number.



		Unit
X	2.00	mm
Y	1.15	mm

**Fig2 A3144E Hall Sensor Location**

■ **Package Information**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.245	1.753	0.049	0.069
A1	0.750REF		0.030REF	
b	1.270REF		0.050REF	
C	0.406	0.508	0.016	0.020
c	0.330	0.432	0.013	0.017
D	3.960REF		0.156REF	
d		0.100		0.004
E	2.870	3.124	0.113	0.123
e	2.540REF		0.100REF	
L	13.60	15.60	0.535	0.614
L1	0.350	0.410	0.014	0.016
θ		45°		45°

■ **Packing Information**

1. Packing type: Box
2. Packing minimum: 1000pcs

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