

**Features**

- 4.2V to 28V DC Operation Voltage
- Temperature Compensation
- Wide Operating Voltage Range
- Open Drain Pre-Driver
- 25mA Maximum Sinking Output Current
- Lead Free Finish/RoHS Compliant for Lead Free products (Note 1)
- Package: SIP-3L, SC59

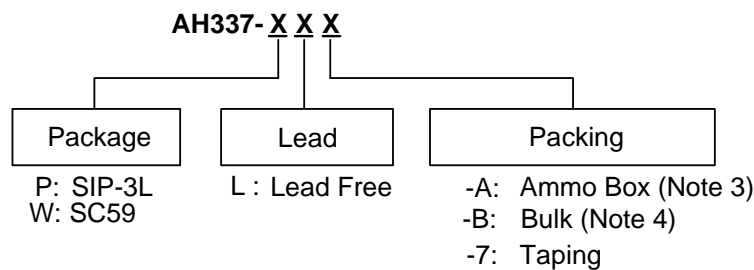
**General Description**

AH337 is a switched Hall-Effect IC that 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 band-gap regulator allows a wide operating voltage range. If a magnetic flux density larger than threshold Bop, DO is turned on (low). The output state is held until a magnetic flux density reversal falls below Brp causing DO to be turned off (high).

**Applications**

- VCD/DVD Loader, CD/DVD ROM
- Cover Detector
- Speed Measurement
- Home Appliances
- Home Safety

**Ordering Information**

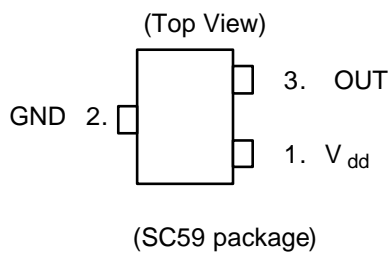
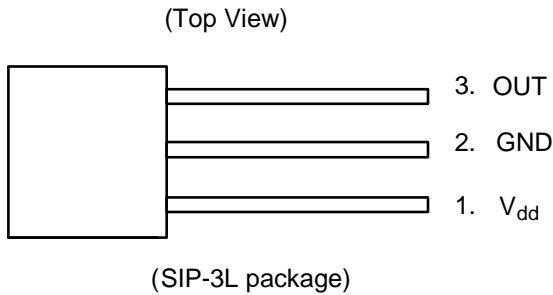


Note: 1. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.

Device	Package Code	Packaging (Note 2)	Tube/Bulk		7" Tape and Reel		Ammo Box	
			Quantity	Part Number Suffix	Quantity	Part Number Suffix	Quantity	Part Number Suffix
AH337-P	P	SIP-3L	1000	-B	NA	NA	4000/Box	-A
AH337-W	W	SC59	NA	NA	3000/Tape & Reel	-7	NA	NA

- Note: 2. Pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
3. Ammo Box is for SIP-3 Spread Lead.
4. Bulk is for SIP-3 Straight Lead.

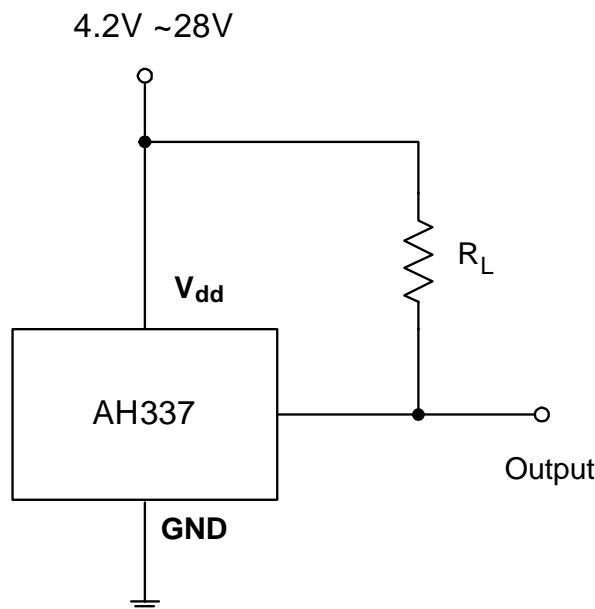
**Pin Assignments**



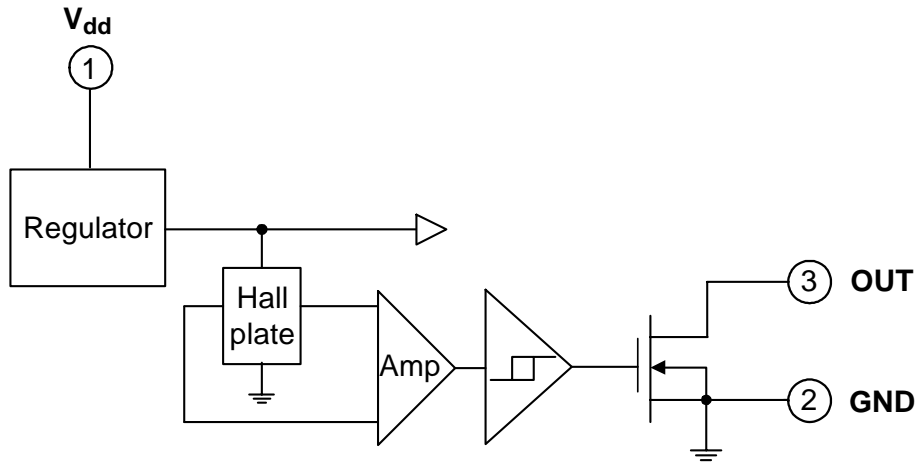
**Pin Descriptions**

Name	P/I/O	Pin #	Description
$V_{dd}$	P	1	Positive Power Supply
GND	P	2	Ground
OUT	O	3	Output Pin

**Typical Application Circuit**



**Functional Block Diagrams**



**Absolute Maximum Ratings** ( $T_A = 25^\circ\text{C}$ )

Characteristics	Symbol	Values	Unit
Supply Voltage	$V_{dd}$	30	V
Magnetic Flux Density	B	Unlimited	
Output OFF Voltage	$V_{DS}$	30	V
Output "ON" Current	Continuous	$I_d$	25 mA
Operating Temperature Range	$T_A$	-40~+125	$^\circ\text{C}$
Storage Temperature Range	$T_s$	-65~+150	$^\circ\text{C}$
Maximum Junction Temperature	$T_j$	150	$^\circ\text{C}$
Package Power Dissipation	SIP-3L	$P_D$	550 mW
	SC59		230 mW

**Electrical Characteristics** ( $T_A = +25^\circ\text{C}$ ,  $V_{dd} = 12\text{V}$ )

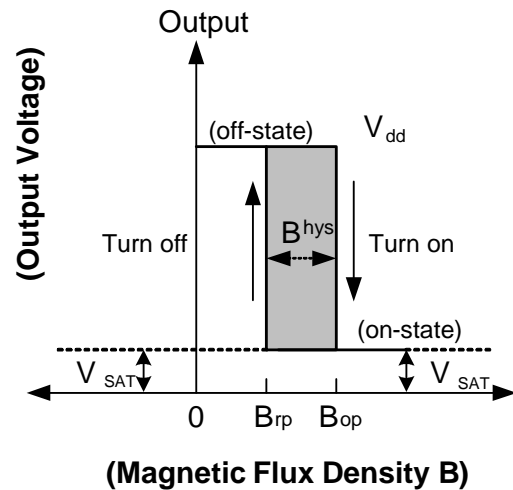
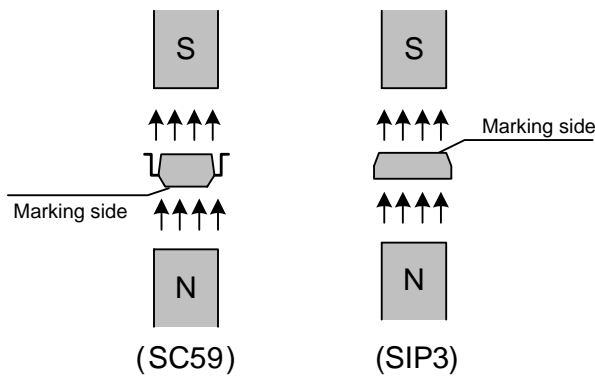
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units
Supply Voltage	$V_{dd}$		4.2(Note 5)	-	28	V
Output Saturation Voltage	$V_{DS(SAT)}$	$I_{out} = 10\text{mA}$ , $B > B_{op}$	-	300	400	mV
Output Leakage Current	$I_{off}$	$B < B_{rp}$	-	< 0.1	10	$\mu\text{A}$
Supply Current	$I_{dd}$	Output Open	-	2	4	mA

Note: 5. The output of IC will be switched after the supply voltage is over 4.2V, but the magnetic characteristics won't be normal until the supply is over 4.5V.

**Magnetic Characteristics** ( $T_A = 25^\circ\text{C}$ ,  $V_{dd} = 4.5\text{V to }28\text{V}$ )

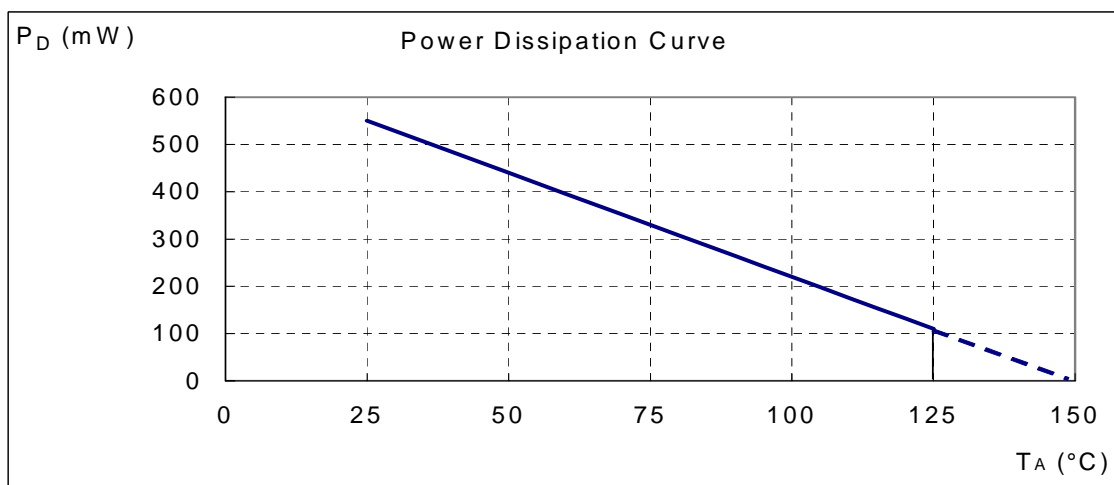
(1mT = 10 Gauss)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operation Point	B <sub>op</sub>	90	120	150	Gauss
Release Point	B <sub>rp</sub>	30	60	90	Gauss
Hysteresis	B <sub>hys</sub>	-	60	-	Gauss



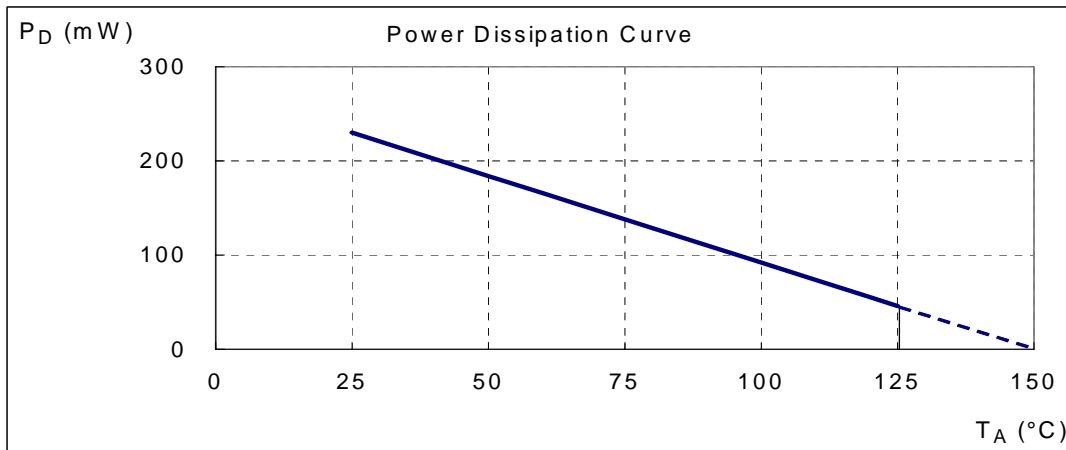
**Performance Characteristics (SIP-3L)**

$T_A$ (°C)	25	50	60	70	80	85	90	95	100
$P_D$ (mW)	550	440	396	352	308	286	264	242	220
$T_A$ (°C)	105	110	115	120	125	130	135	140	150
$P_D$ (mW)	198	176	154	132	110	88	66	44	0



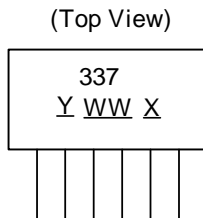
**Performance Characteristics (SC59)**

T <sub>A</sub> (°C)	25	50	60	70	80	90	100	110	120	125	130	140	150
P <sub>D</sub> (mW)	230	184	166	147	129	110	92	74	55	46	37	18	0



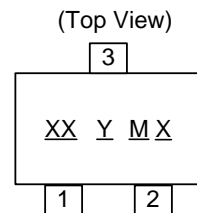
**Marking Information**

**(1) SIP-3L**



Y : Year: " 1 " = 2001  
 " 2 " = 2002  
WW : Nth Week 01~52  
X : Internal code a~z: Lead Free

**(2) SC59**

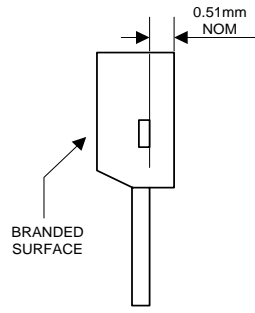


XX : P1: AH337  
Y : Year 0~9  
M : Month A~L  
X : Internal code a~z: Lead Free

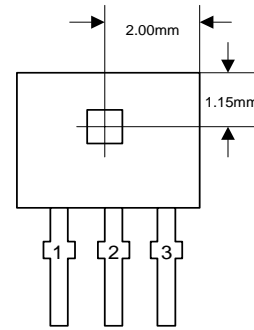
Part Number	Package	Identification Code
AH337	SC59	P1

**Package Information** ( unit: mm )

**(1) Package Type: SIP-3L**

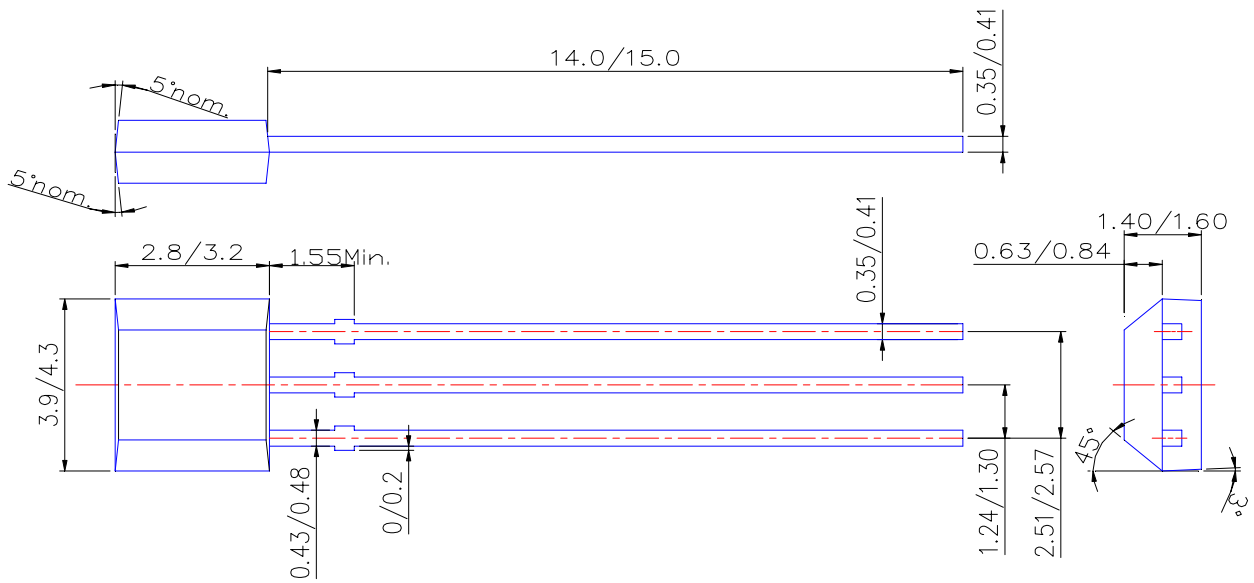


Active Area Depth



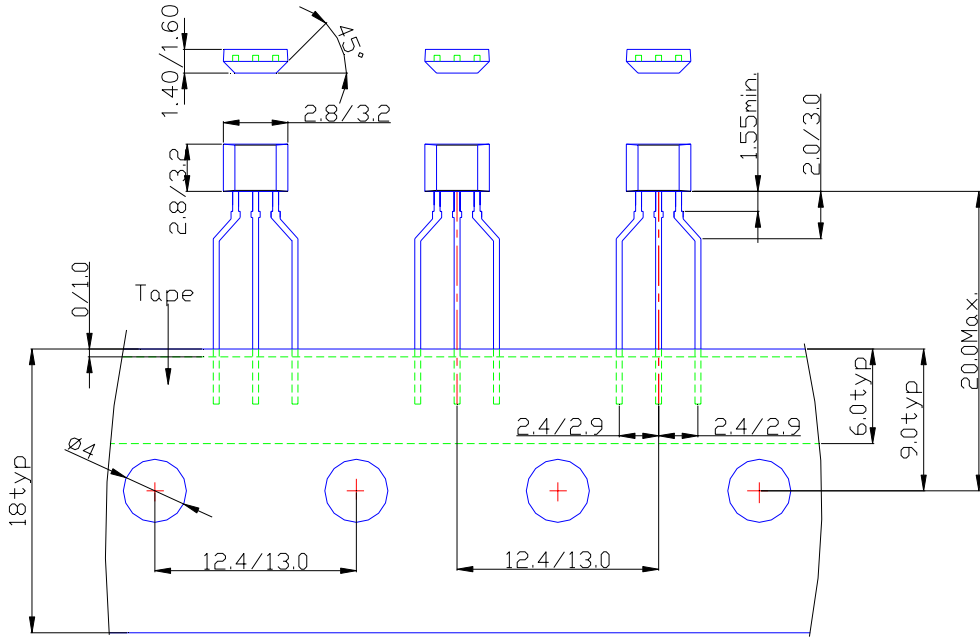
Sensor Location

**Package Dimension**

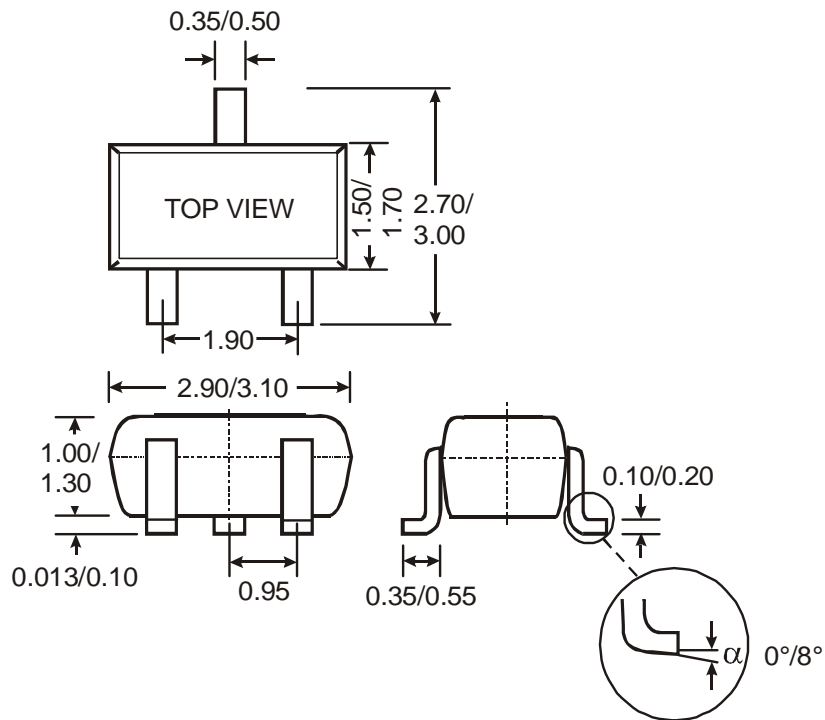


**Package Information** (Continued)

**(2) Package Type: SIP-3L for Ammo Pack-only**



**(3) Package Type: SC59**



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