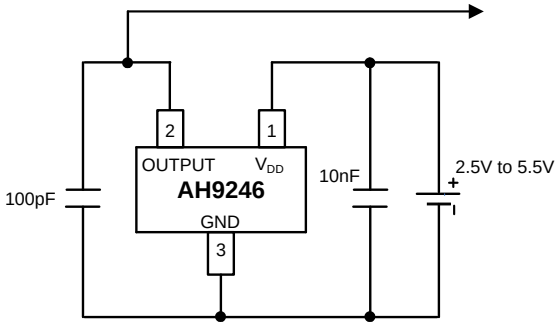
NEW PRODUCT

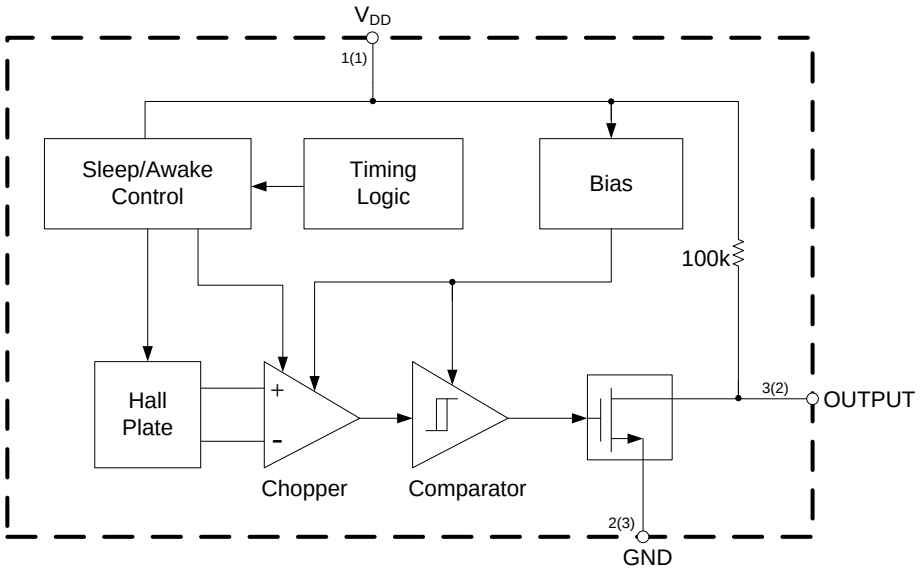
Typical Applications Circuit



Pin Descriptions

Pin Number		Pin Name	Function
TO92S	SC59		
1	1	V_{DD}	Power supply pin
2	3	GND	Ground pin
3	2	OUTPUT	Output pin

Functional Block Diagram



A (B)
A for TO92S
B for SC59

NEW PRODUCT

Absolute Maximum Ratings (Note 4) (@T_A = +25°C, unless otherwise specified.)

Symbol	Parameter	Rating		Unit
V_{DD}	Supply Voltage (Note 5)	7		V
I_{DD}	Supply Current (Fault)	6		mA
V_{OUT}	Output Voltage	7		V
I_{OUT}	Output Current	2		mA
B	Magnetic Flux Density	Unlimited		Gauss
P_D	Power Dissipation	TO92S	230	mW
		SC59	230	
T_{STG}	Storage Temperature	-55 to +150		°C
T_J	Junction Temperature	+150		°C
–	ESD (Human Body Model) (Note 6)	5000		V
–	ESD (Machine Model) (Note 6)	400		V

Notes:
4. Stresses greater than the 'Absolute Maximum Ratings' specified above may cause permanent damage to the device. These are stress ratings only; functional operation of the device at these or any other conditions exceeding those indicated in this specification is not implied. Device reliability may be affected by exposure to absolute maximum rating conditions for extended periods of time.
5. The absolute maximum V_{DD} of 7V is a transient stress rating and is not meant as a functional operating condition. It is not recommended to operate the device at the absolute maximum rated conditions for any period of time.
6. Electronic semiconductor products are sensitive to Electro Static Discharge (ESD). Always observe Electro Static Discharge control procedures whenever handling semiconductor products.

Recommended Operating Conditions

Symbol	Characteristic	Conditions	Min	Max	Unit
V_{DD}	Supply Voltage	Operating	2.5	5.5	V
T_A	Operating Temperature Range	Operating	-40	+85	°C

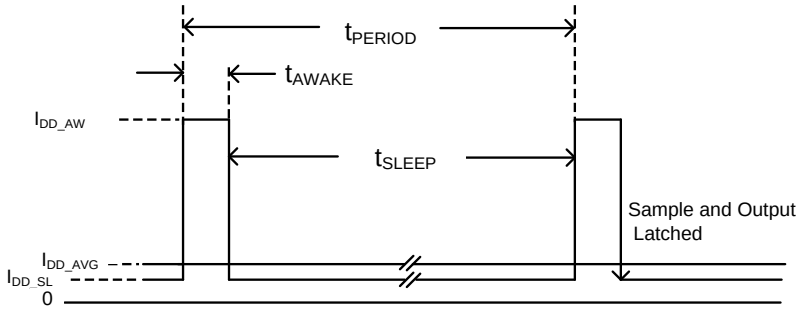
Electrical Characteristics (Note 7) (@T_A = +25°C, V_{DD} = 3V, unless otherwise specified.)

Symbol	Characteristic	Conditions	Min	Typ	Max	Unit
V_{DD}	Supply Voltage	Operating	2.5	3	5.5	V
I_{DD_AW}	Supply Current During "Awake" Period	T_A = -40 to +85°C, V_{DD} = 2.5V to 5.5V	–	1.8	3	mA
I_{DD_SL}	Supply Current During "Sleep" Period	T_A = -40 to +85°C, V_{DD} = 2.5V to 5.5V	–	4	10	µA
I_{DD_AVG}	Average Supply Current	T_A = -40 to +85°C, V_{DD} = 2.5V to 5.5V	–	8	15	µA
I_{OUT}	Output Current	–	–	–	1.0	mA
I_{OFF}	Output Leakage Current	V_{OUT} = 5.5V, Output off	–	<0.1	1	µA
V_{OL}	Output Low Voltage (On)	I_{OUT} = 1.0mA	–	–	0.4	V
V_{OH}	Output High Voltage (Off)	I_{OUT} = -1.0mA	V_{DD}-0.2	V_{DD}-0.1	–	V
t_{AW}	Awake Mode Time	Operating	–	150	–	µs
t_{SL}	Sleep Mode Time	Operating	–	100	–	ms
D	Duty Cycle	–	–	0.15	–	%
f_C	Chopper Frequency	–	–	15	–	kHz

Note:
7. Parameters values over operating temperature range are not tested in production, they are guaranteed by design, process control and characterization. The magnetic characteristics may vary with supply voltage, operating temperature and after soldering.

NEW PRODUCT

Electrical Characteristics (Cont.) (@T_A = +25°C, V_{DD} = 3V, unless otherwise specified.)



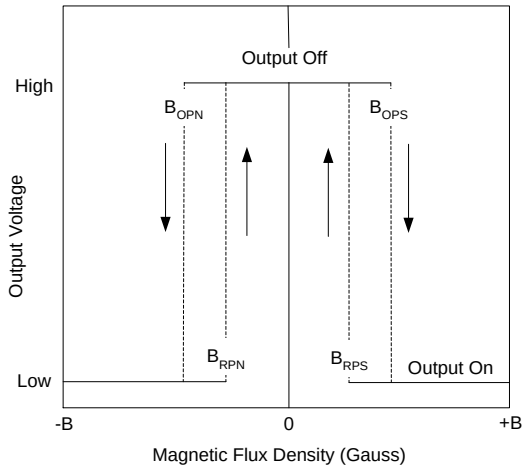
Magnetic Characteristics (Notes 8 & 9) (@T_A = -40°C to +85°C, V_{DD} = 3V, unless otherwise specified.)

(1mT=10 Gauss)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
B_{OPS} (South Pole to Part Marking Side)	Operating Point	B>B_{OPS},V_{OUT}=Low (output on)	9	18	27	Gauss
B_{OPN} (North Pole to Part Marking Side)		B>B_{OPN},V_{OUT}=Low (output on)	-27	-18	-9	Gauss
B_{RPS} (South Pole to Part Marking Side)	Releasing Point	B<B_{RPS},V_{OUT}=High (output off)	4	12	22	Gauss
B_{RPN} (North Pole to Part Marking Side)		B<B_{RPN},V_{OUT}=High (output off)	-22	-12	-4	Gauss
B_{HYS} (| B_{OPX} - B_{RPX} |)	Hysteresis	(Note 9)	–	6	–	Gauss

Notes: 8. Parameters values over operating temperature range are not tested in production, they are guaranteed by design, process control and characterization. The magnetic characteristics may vary with supply voltage, operating temperature and after soldering.
9. Maximum and minimum hysteresis is guaranteed by design and characterization.
B_{OPX}=operating point (output turns on); B_{RPX}=releasing point (output turns off)

Operating Characteristics

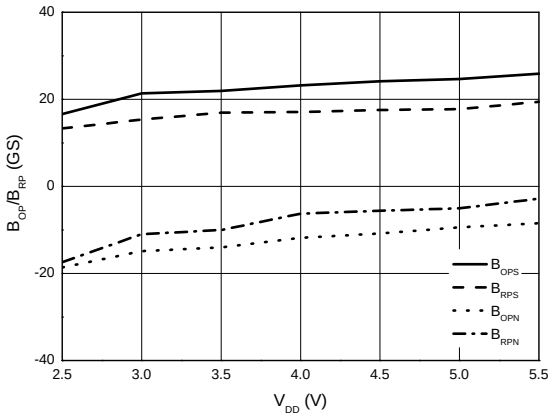


Output Voltage vs. Magnetic Flux Density

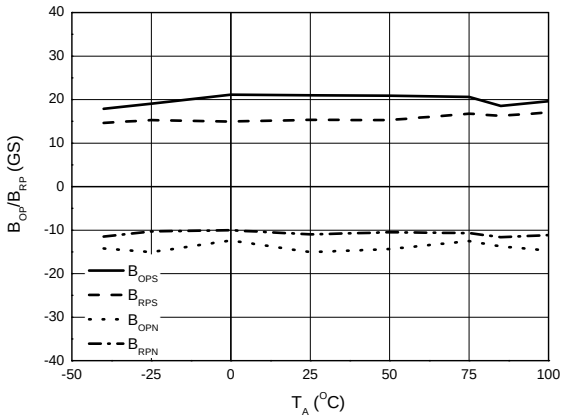
NEW PRODUCT

Performance Characteristics

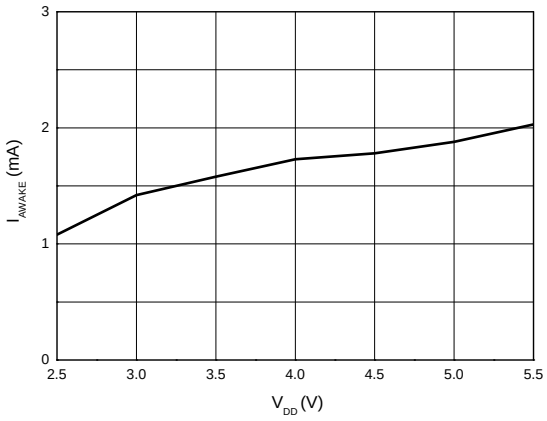
B_{OP}/B_{RP} vs. Supply Voltage



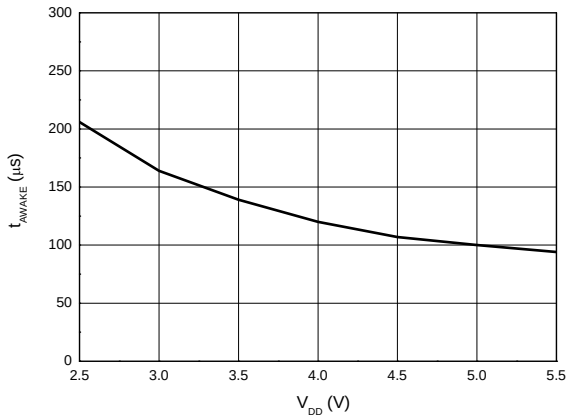
B_{OP}/B_{RP} vs. Ambient Temperature



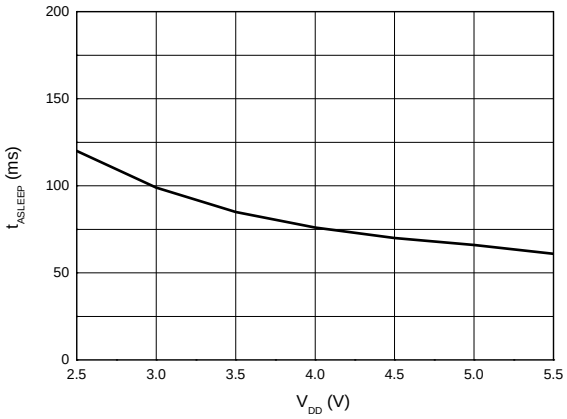
Average Supply Current vs. Supply Voltage



Awake Mode Time vs. Supply Voltage



Sleep Mode Time vs. Supply Voltage



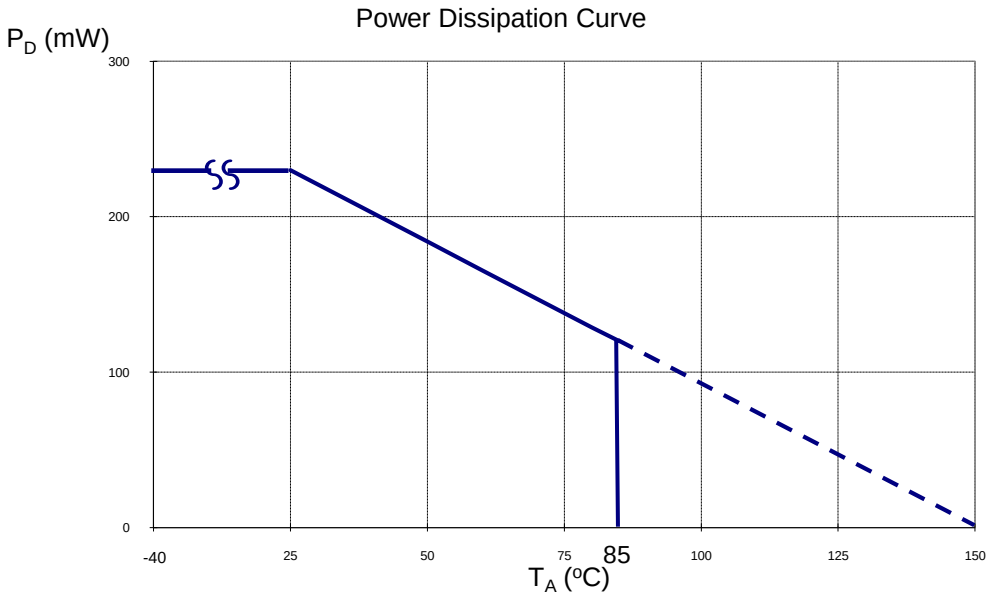
NEW PRODUCT

Thermal Performance

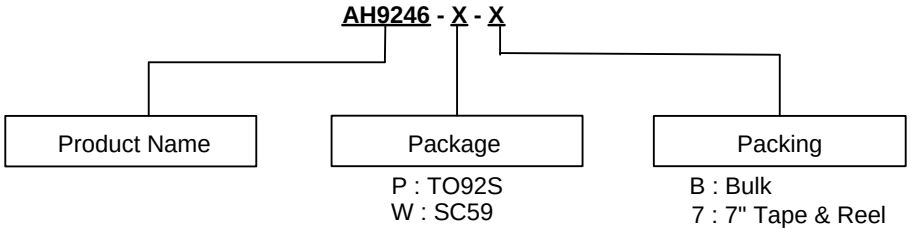
Power Dissipation De-rating Curve

(1) Package Types: SC59 and TO92S

T_A (°C)	-40	0	25	50	60	70	80	85	90	100	110	120	130	140	150
P_D (mW)	230	230	230	184	166	147	129	120	110	92	74	55	37	18	0



Ordering Information

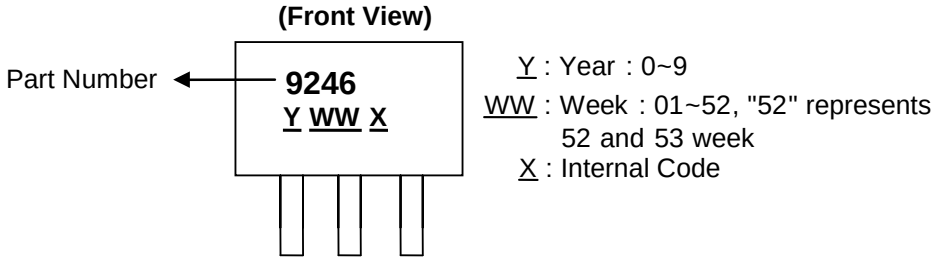


Device	Package Code	Packaging	Bulk	7" Tape and Reel
			Quantity	Quantity
AH9246-P-B	P	TO92S	1000/Bulk	NA
AH9246-W-7	W	SC59	NA	3000/Tape & Reel

NEW PRODUCT

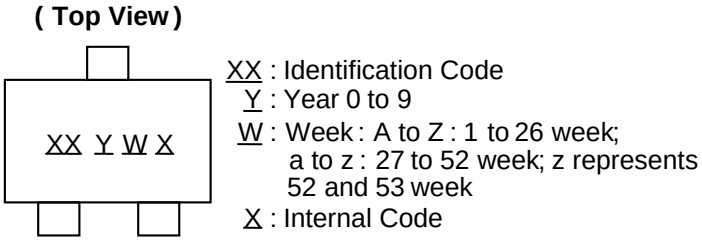
Marking Information

(1) Package Type: TO92S



Part Number	Package	Identification Code
AH9246	TO92S	9246

(2) Package Type: SC59



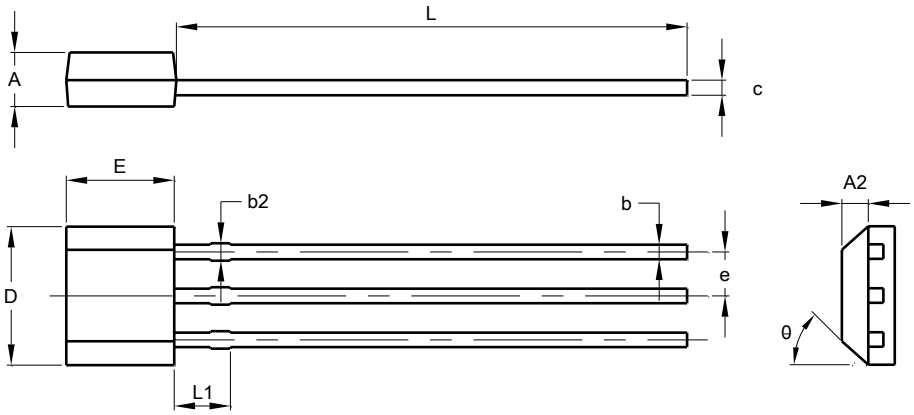
Part Number	Package	Identification Code
AH9246	SC59	H8

NEW PRODUCT

Package Outline Dimensions (All dimensions in mm.)

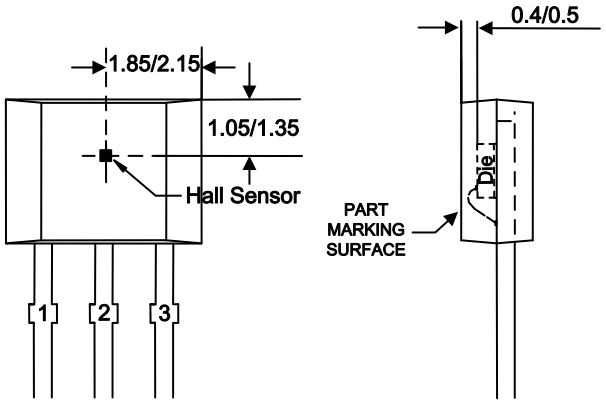
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.

(1) Package Type: TO92S(TYPE B)



TO92S (TYPE B)			
Dim	Min	Max	Typ
A	1.420	1.620	-
A2	-	-	0.750
b	0.360	0.480	-
b2	0.380	0.550	-
c	0.360	0.510	-
D	3.850	4.150	-
E	2.900	3.310	-
e	-	-	1.270
L	14.000	15.500	-
L1	-	-	1.600
θ	44°	46°	-
All Dimensions in mm			

Min/Max(in mm)



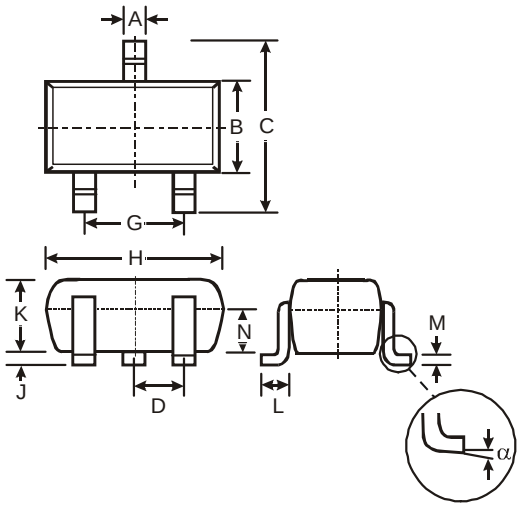
Sensor Location

NEW PRODUCT

Package Outline Dimensions (All dimensions in mm.) (Cont.)

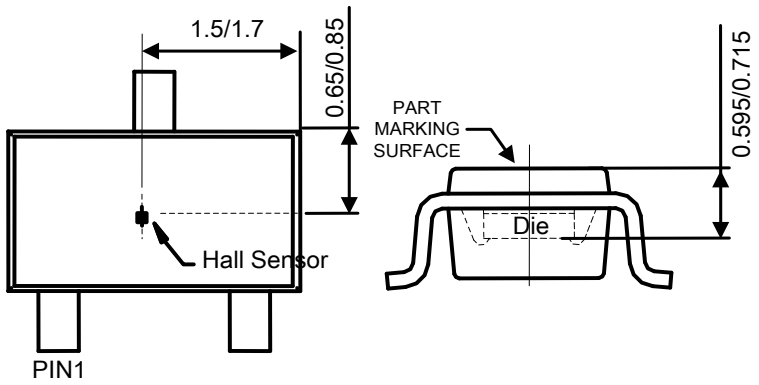
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.

(2) Package Type: SC59



SC59			
Dim	**Min**	**Max**	**Typ**
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	-	-	0.95
G	-	-	1.90
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
N	0.70	0.80	0.75
α	0°	8°	-
All Dimensions in mm			

Min/Max(in mm)



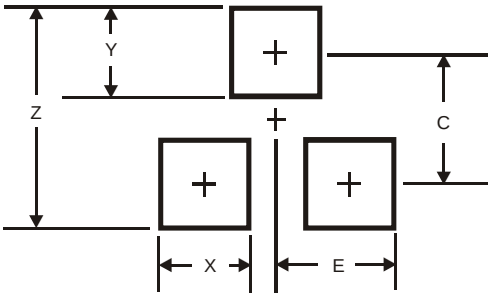
Sensor Location

NEW PRODUCT

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.

(1) Package Type: SC59



Dimensions	Value (in mm)
Z	3.4
X	0.8
Y	1.0
C	2.4
E	1.35