

Features

- Micropower operation
- 2.5V to 5.5V battery operation
- Offset Canceling Technology
- Superior temperature stability
- Extremely Low Switch-Point Drift
- Insensitive to Physical Stress
- -40°C to 85°C operating temperature
- Lead Free packages: SIP-3L and SC59 (Commonly known as SOT23 in Asia) (Note 1)
- SC59: Available in "Green" Molding Compound (No Br, Sb)
- Lead Free Finish / RoHS Compliant (Note 2)

General Description

AH182/AH183 is a three-terminal Hall effect sensor device with an output driver, mainly designed for battery-operation, hand-held equipment (such as cellular and cordless phones, and PDA's) The total operation power is down to 15uW in the 2.75V supply.

The south pole of sufficient strength will turn the output on in SIP-3L but the north pole of sufficient strength will turn the output on in SC59 package. The output will be turned off under no magnetic field.

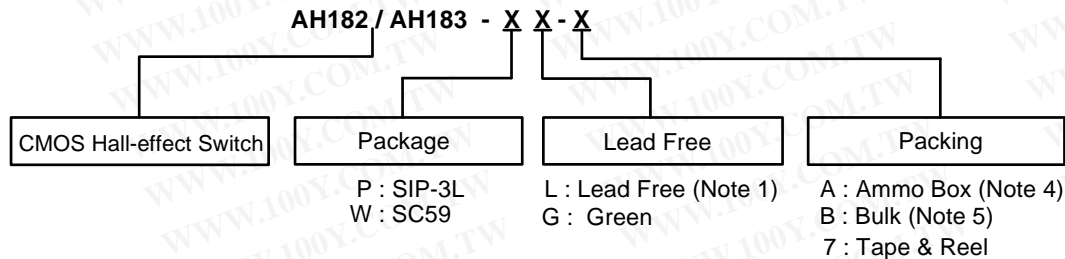
While the magnetic flux density (**B**) is larger than operation point (**Bop**), the output will be turned on (low), the output is held until **B** is lower than the release point (**Brp**), then turned off. The difference between AH182 and AH183 is that the former consumes less power than that of the latter in the Hall sensor operation.

Applications

- Cover detector
- Speed measurement
- Home safety

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Ordering Information



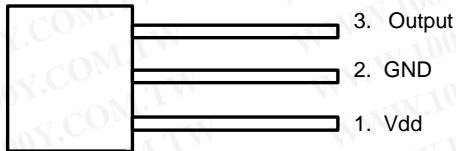
Device	Package Code	Packaging (Note 3)	Bulk		7" Tape and Reel		Ammo Box	
			Quantity	Part Number Suffix	Quantity	Part Number Suffix	Quantity	Part Number Suffix
AH182/AH183-PL-A	P	SIP-3L	NA	NA	NA	NA	4000/Box	-A
AH182/AH183-PL-B	P	SIP-3L	1000	-B	NA	NA	NA	NA
AH182/AH183-WL-7	W	SC59	NA	NA	3000/Tape & Reel	-7	NA	NA
AH182/AH183-WG-7	W	SC59	NA	NA	3000/Tape & Reel	-7	NA	NA

- Notes:
1. SIP-3L is available in "Lead Free" product only.
 2. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.
 3. 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>.
 4. Ammo Box is for SIP-3L Spread Lead.
 5. Bulk is for SIP-3L Straight Lead.

Pin Assignments

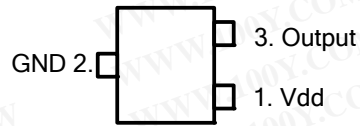
(1) SIP-3L

(Top view)



(2) SC59

(Top view)

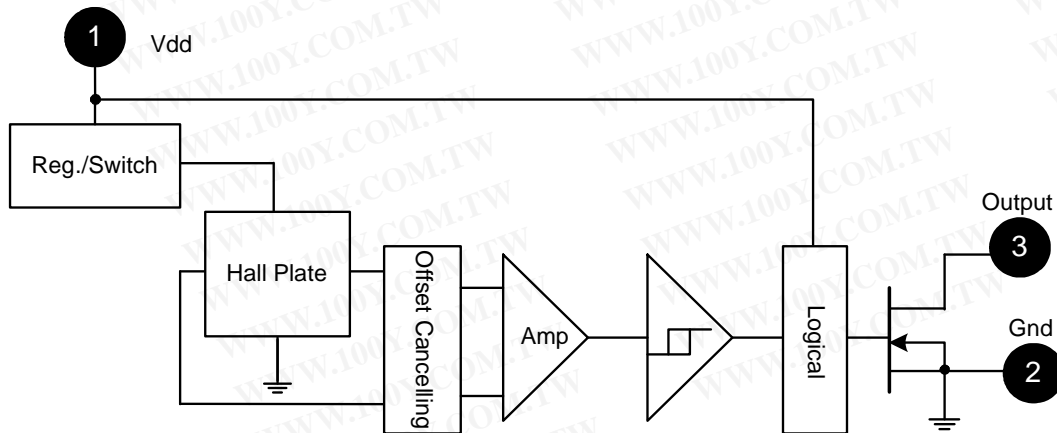


Pin Description

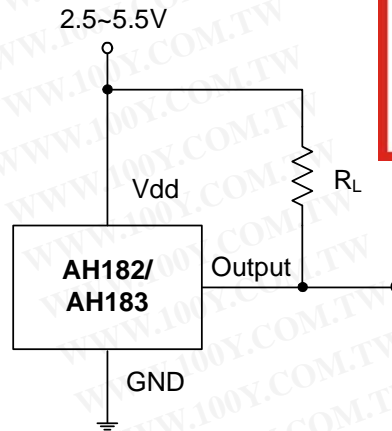
Pin Name	P/I/O	Pin #	Description
Vdd	P/I	1	Power Supply Input
GND	P	2	Ground
Output	O	3	Output Pin

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Block Diagram



Typical Circuit



勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

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

Symbol	Parameter	Rating	Unit
Vdd	Supply Voltage	7	V
B	Magnetic Flux Density	Unlimited	
I _{OUT}	Output current	10	
P _D	Power Dissipation	SIP-3L	550 mW
		SC59	230 mW
T _{J(MAX)}	Maximum Junction Temperature	150	°C
T _{ST}	Storage Temperature Range	-65 to +150	°C

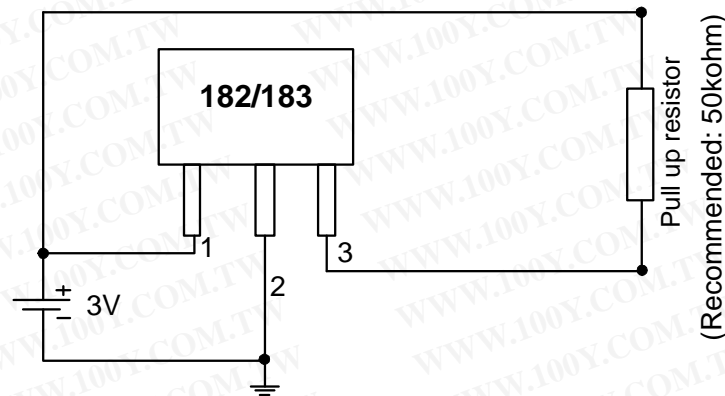
Recommended Operating Conditions ($T_A = 25^\circ\text{C}$)

Symbol	Parameter	Conditions	Min	Max	Unit
Vdd	Supply Voltage	Operating	2.5	5.5	V
T _A	Operating Ambient Temperature	Operating	-40	85	°C

Electrical Characteristics ($T_A = 25^\circ\text{C}$, $V_{DD} = 3\text{V}$)

Symbol	Characteristic	Conditions	Min	Typ.	Max	Unit
V_{OUT}	Output On Voltage	$I_{OUT} = 1\text{mA}$	-	0.1	0.3	V
I_{off}	Output Leakage Current	$V_{OUT} = 5.5\text{V}$, $B < Brp$	-	<0.1	1	μA
$I_{dd(en)}$	Supply Current	Chip enable	-	-	2.0	mA
$I_{dd(dis)}$		Chip disable	-	-	8.0	μA
$I_{dd(ave)}$		AH182: average supply current	-	5	10	μA
$I_{dd(ave)}$		AH183: average supply current	-	280	500	μA
Tawake	Awake Time		-	50	100	μs
Tperiod	Period	AH182	-	50	100	ms
		AH183	-	200	400	μs
D.C.	Duty Cycle	AH182	-	0.1	-	%
		AH183	-	25	-	%

Test Circuit

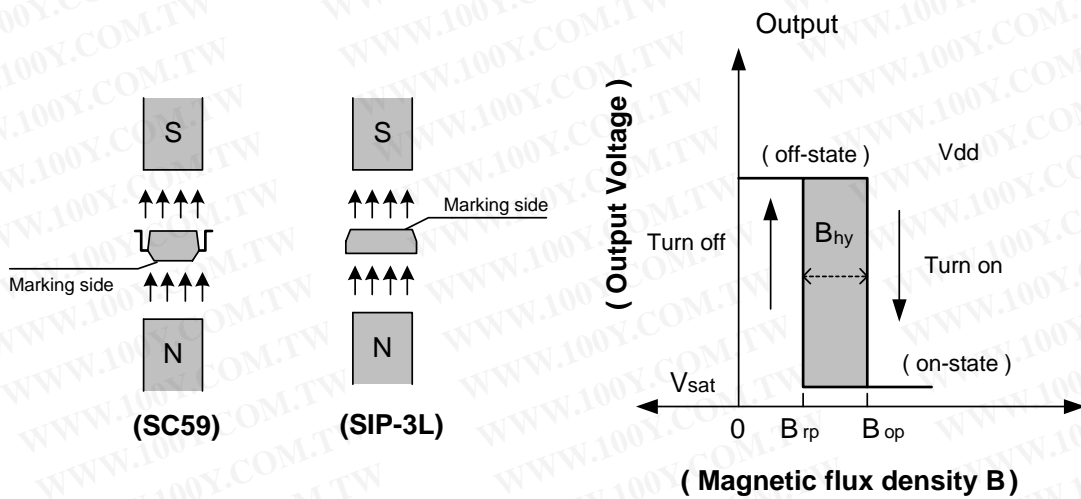


勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Magnetic Characteristics ($T_A = 25^\circ\text{C}$, $V_{dd} = 3\text{V}$)

(1mT = 10 Gauss)

Symbol	Characteristic	Min	Typ.	Max	Unit
Bops(south pole to brand side)	Operation Point	-	40	60	Gauss
Brps(south pole to brand side)	Release Point	10	30	-	
Bhy($ B_{opx} - B_{rpx} $)	Hysteresis	-	10	-	

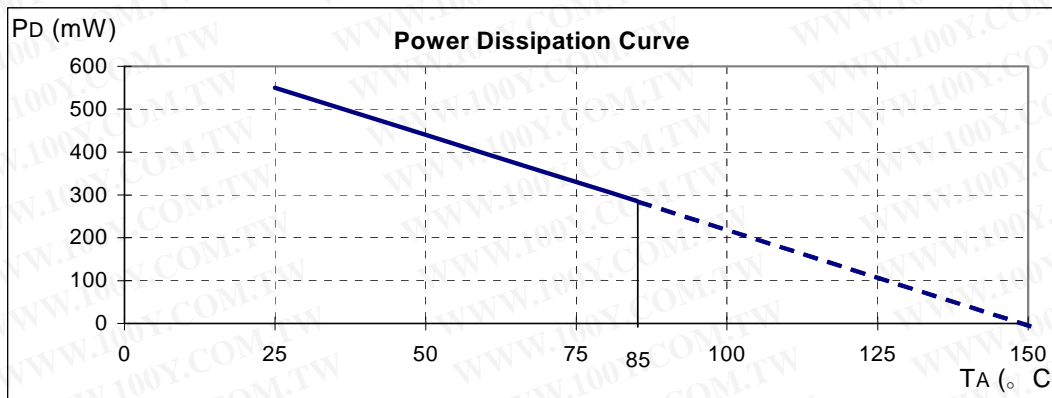


勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Performance Characteristics

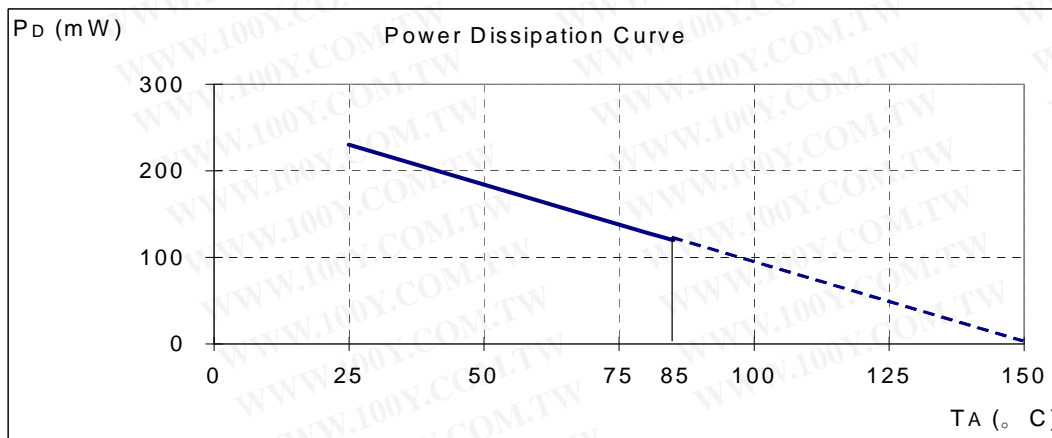
(1) SIP-3L

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



(2) SC59 (Commonly known as SOT23 in Asia)

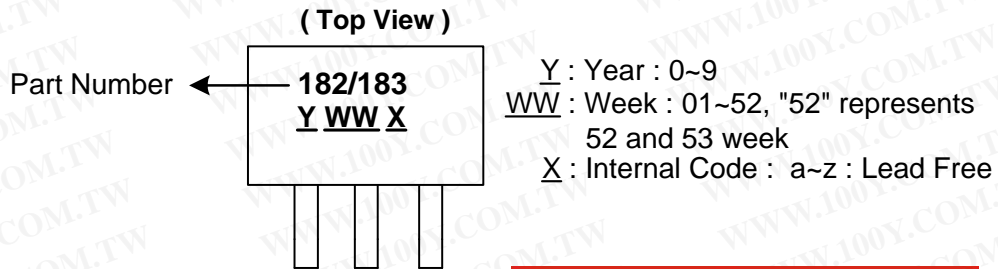
TA (°C)	25	50	60	70	80	85	90	100	110	120	130	140	150
PD (mW)	230	184	166	147	129	120	110	92	74	55	37	18	0



勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

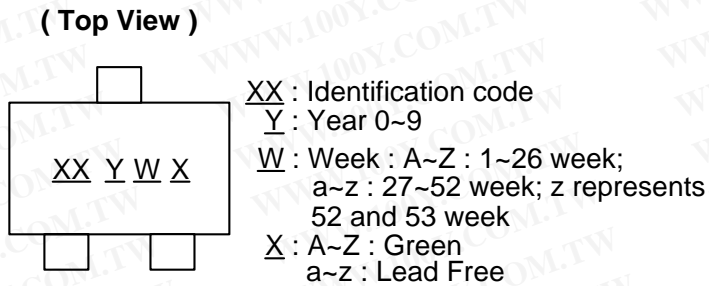
Marking Information

(1) SIP-3L



勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

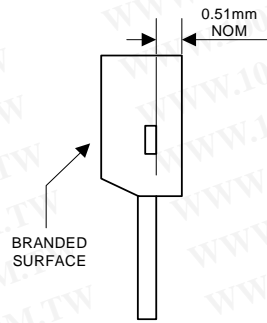
(2) SC59 (Commonly known as SOT23 in Asia)



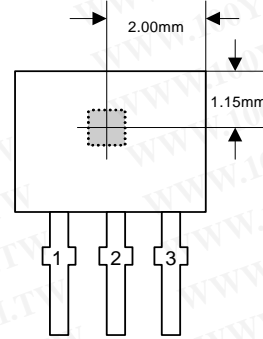
Part Number	Package	Identification Code
AH182	SC59	K2
AH183	SC59	K3

Package Information (All Dimensions in mm)

(1) Package Type: SIP-3L for Bulk only

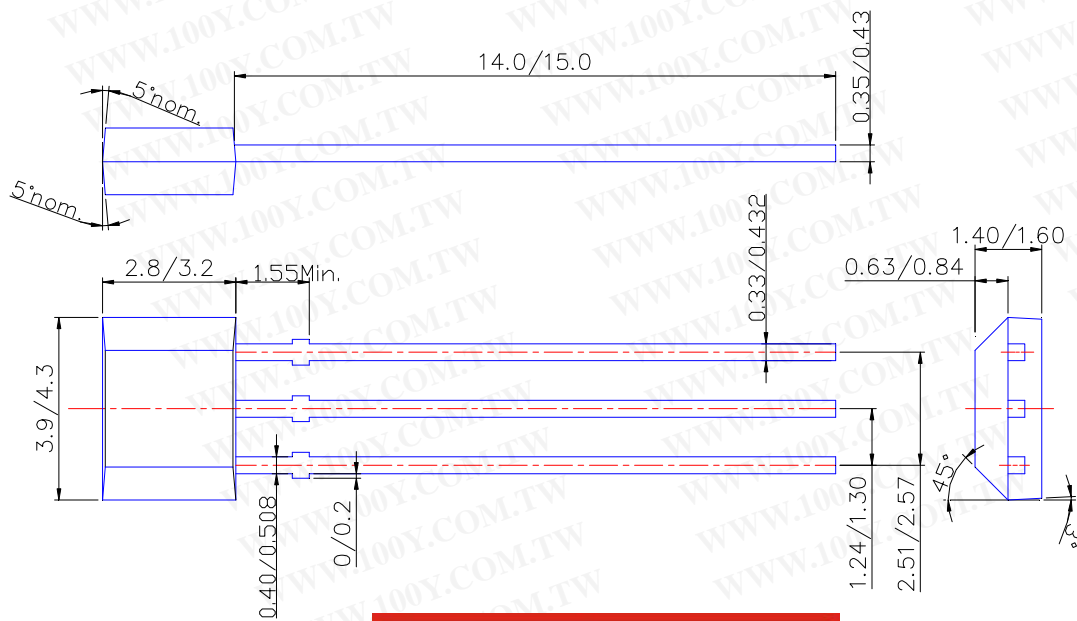


Active Area Depth



Sensor Location

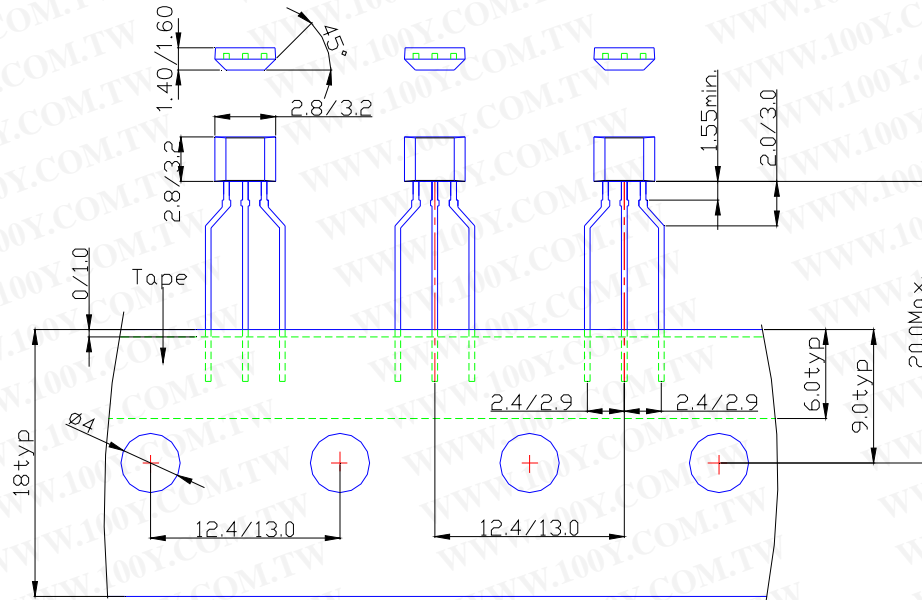
Package Dimension



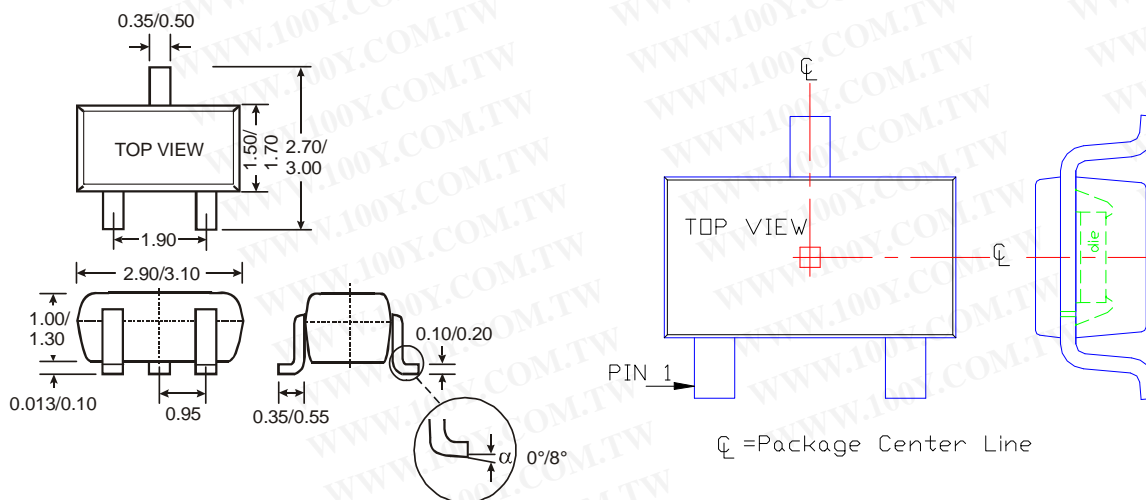
勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Package Information (Continued)

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



(3) Package Type: SC59 (commonly known as SOT23 in Asia)



勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-54151736
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)