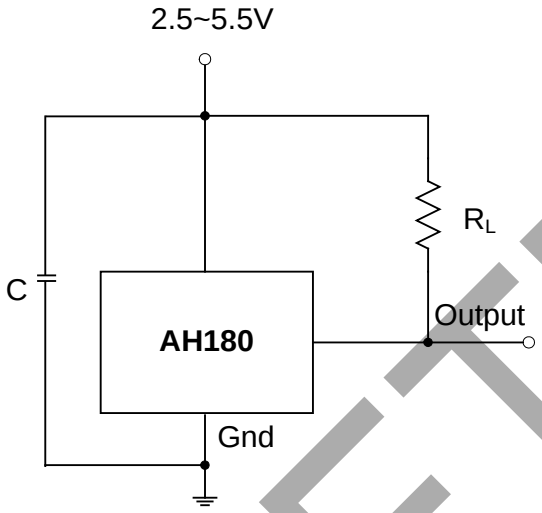
Typical Application Circuit

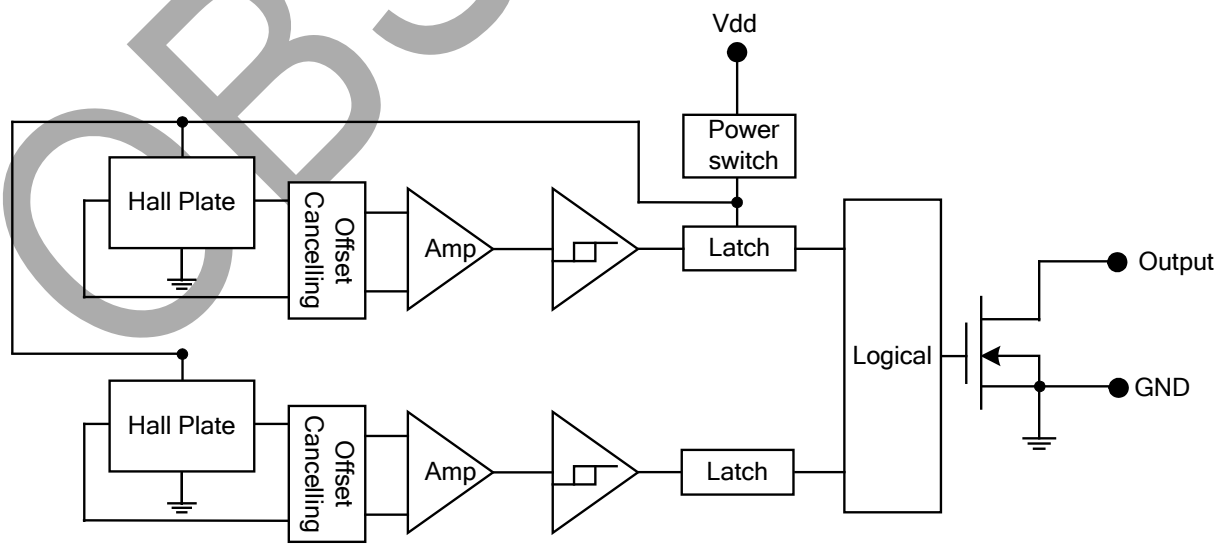


Note: C is for power stabilization and to strengthen the noise immunity, the recommended capacitance is 10nF~100nF.
R_L is the pull-up resistor, the recommended resistance is 10Kohm~100Kohm.

Pin Descriptions

Pin Name	P/I/O	Description
Vdd	P/I	Power Supply Input
GND	P/I	Ground
Output	O	Output Pin
NC	NC	No Connected

Functional Block Diagram



Absolute Maximum Ratings (T_A = +25°C)

Symbol	Characteristics		Values	Unit
Vdd	Supply voltage		7	V
B	Magnetic flux density		Unlimited	
Ts	Storage Temperature Range		-65 to +150	°C
P_D	Package Power Dissipation	SIP-3L	550	mW
		SC59-3L/ DFN2020-6/ DFN2020-3	230	mW
T_J	Maximum Junction Temperature		150	°C

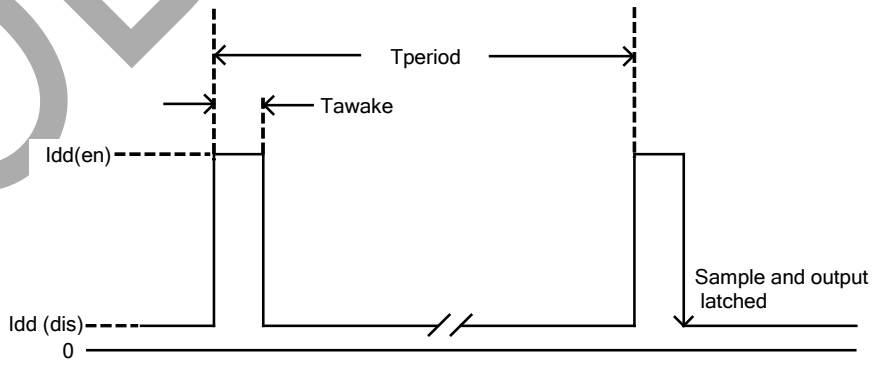
Recommended Operating Conditions

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°C, Vdd = 3V; unless otherwise specified)

Symbol	Characteristic	Conditions	Min	Typ.	Max	Unit
Vout	Output On Voltage	Iout =1mA	—	0.1	0.3	V
Ioff	Output Leakage Current	Vout =5.5V, Output off	—	<0.1	1	μA
Idd(en)	Supply Current	Chip enable, T_A = +25°C, Vdd = 3V	—	3	6	mA
Idd(en)		Chip enable, T_A = -40~85°C, Vdd = 2.5~5.5V	—	3	9	mA
Idd(dis)		Chip disable, T_A = +25°C, Vdd = 3V	—	5	10	μA
Idd(dis)		Chip disable, T_A = -40~85°C, Vdd = 2.5~5.5V	—	5	15	μA
Idd(avg)		Average supply current, T_A = +25°C, Vdd = 3V	—	8	16	μA
Idd(avg)		Average supply current, T_A = -40~85°C, Vdd = 2.5~5.5V	—	8	24	μA
Tawake	Awake Time	(Note 2)	—	75	125	μs
Tperiod	Period	(Note 2)	—	75	125	ms
D.C.	Duty Cycle		—	0.1	—	%

Note: 2. When power is initially turned on, Vdd must be within its correct operating range (2.5V to 5.5V) to guarantee the output sampling. The output state is valid after the second operating phase (typical 150ms).



Magnetic Characteristics (T_A = +25°C, Vdd = 3V, Notes 3 & 4)

Option 1: (1mT=10 Gauss)

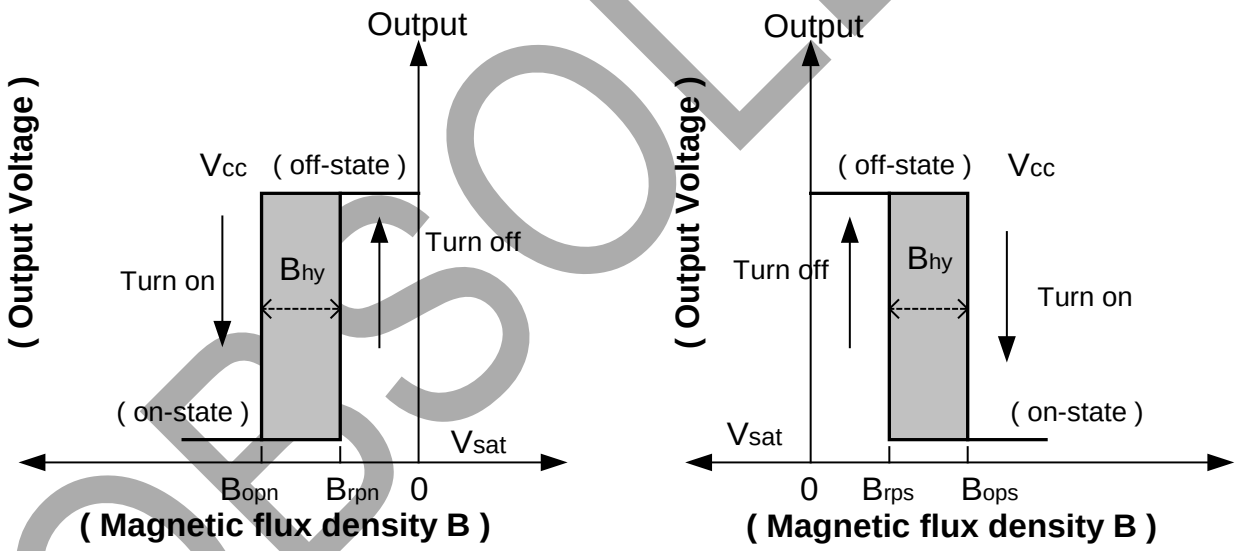
Symbol	Parameter	Min	Typ.	Max	Unit
Bops (south pole to brand side)	Operation Point	-	40	60	Gauss
Bopn (north pole to brand side)		-60	-40	-	
Brps (south pole to brand side)	Release Point	10	30	-	
Brpn (north pole to brand side)		-	-30	-10	
Bhy (|Bopx|-|Brpx|)	Hysteresis	-	15	-	

Option 2: (1mT=10 Gauss)

Symbol	Parameter	Min	Typ.	Max	Unit
Bops (south pole to brand side)	Operation Point	-	40	60	Gauss
Bopn (north pole to brand side)		-60	-40	-	
Brps (south pole to brand side)	Release Point	20	30	-	
Brpn (north pole to brand side)		-	-30	-20	
Bhy (|Bopx|-|Brpx|)	Hysteresis	-	15	-	

Notes: 3. Typical data is at T_A = +25°C, Vdd = 3V, and for design information only.
4. Magnetic characteristics may vary with supply voltage, operating temperature and after soldering.

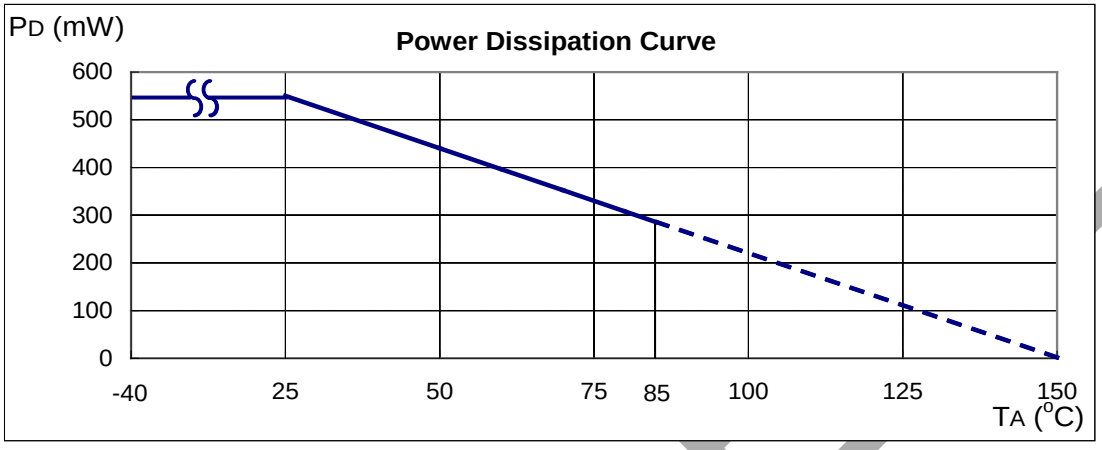
Operating Characteristics



Performance Characteristics

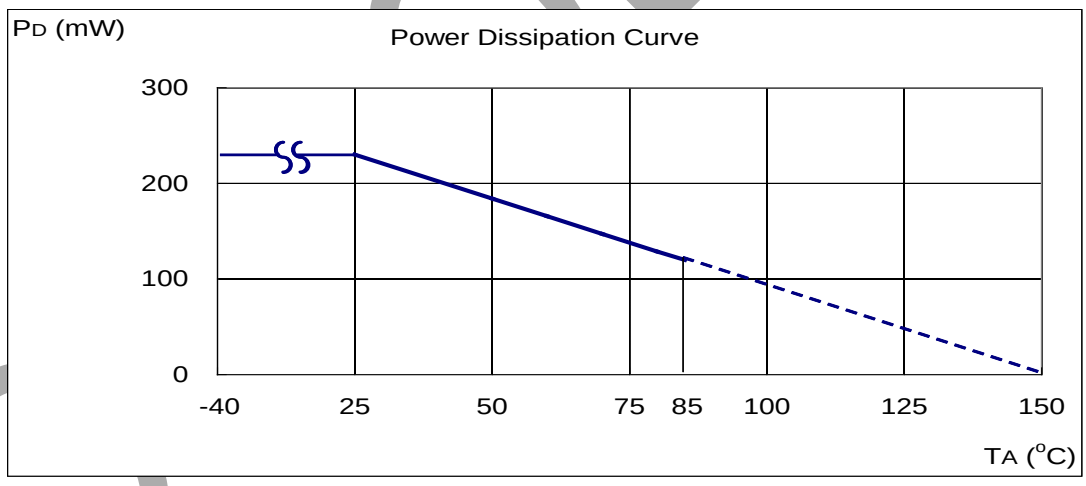
(1) SIP-3L

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



(2) SC59 (commonly known as SOT23 in Asia), DFN2020-6 and DFN2020-3

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



OBSOLETE – PART DISCONTINUED

Ordering Information

AH 180 - XX X - X X

Package	Lead Free	Packing	Magnetic Characteristics
P : SIP-3L W : SC59 SN : DFN2020-6 FJ : DFN2020-3	G : Green (Note 5, 6)	A : Ammo Box (Note 9) B : Bulk (Note 10) 7 : Tape & Reel	(Note 11) Blank : Option 1 -S : Option 2

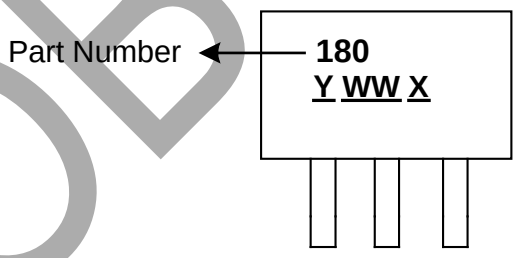
Device	Status (Note)	Package Code	Packaging (Notes 7 & 8)	Bulk		7" Tape and Reel		Ammo Box		Magentic Characteristics (Note 11)
				Quantity	Part Number Suffix	Quantity	Part Number Suffix	Quantity	Part Number Suffix	
AH180-PG-B	NRND	P	SIP-3L	1000	-B	NA	NA	NA	NA	Blank
AH180-PG-A	NRND	P	SIP-3L	NA	NA	NA	NA	-A	4000/Box	Blank
AH180-PG-B-S	NRND	P	SIP-3L	1000	-B	NA	NA	NA	NA	S
AH180-PG-A-S	NRND	P	SIP-3L	NA	NA	NA	NA	-A	4000/Box	S
AH180-WG-7	NRND	W	SC59	NA	NA	3000/Tape & Reel	-7	NA	NA	Blank
AH180-SNG-7	NRND	SN	DFN2020-6	NA	NA	3000/Tape & Reel	-7	NA	NA	Blank
AH180-FJG-7	NRND	FJ	DFN2020-3	NA	NA	3000/Tape & Reel	-7	NA	NA	Blank

Notes:
5. SIP-3L,SC59, DFN2020-6 and DFN2020-3 are available in "Green"
6. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at http://www.diodes.com/products/lead_free.html.
7. 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.
8. Reverse taping as shown on Diodes Inc. Surface Mount (SMD) Packaging document AP02007, which can be found on our website http://www.diodes.com/datasheets/ap02007.pdf.
9. Ammo Box is for SIP-3L Spread Lead.
10. Bulk is for SIP-3L Straight Lead.
11. Please refer the Magnetic Characteristics table, option 2 is available in SIP-3L package only.
12 NRND = Not Recommended for New Design

Marking Information

(1) SIP-3L

(Top View)

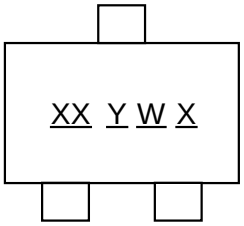


Y : Year : 0~9
WW : Week : 01~52, "52" represents 52 and 53 week
X : Internal Code : A~Z : Green
a~z : Lead Free

Marking Information (cont.)

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

(Top View)

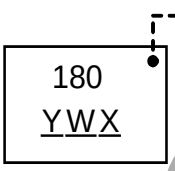


XX : Identification code
Y : Year 0~9
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents
52 and 53 week
X : A~Z : Green

Part Number	Package	Identification Code
AH180	SC59	K0

(3) DFN2020-6

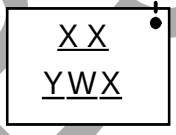
(Top View)



Pin 1 indicator
Y : Year : 0~9
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents
52 and 53 week
X : A~Z : Green

(4) DFN2020-3

(Top View)

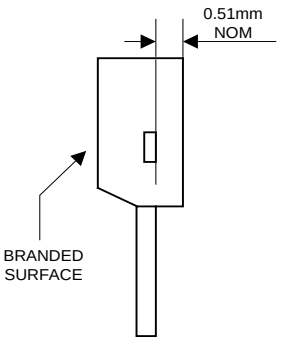


Pin 1 indicator
XX : Identification Code
Y : Year : 0~9
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents
52 and 53 week
X : A~Z : Green

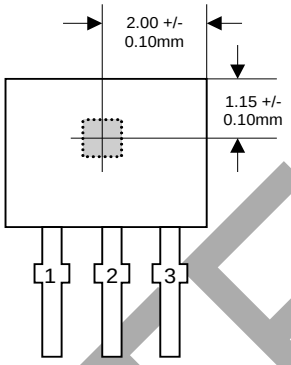
Part Number	Package	Identification Code
AH180	DFN2020-3	K0

Package Outline Dimensions (All Dimensions in mm)

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

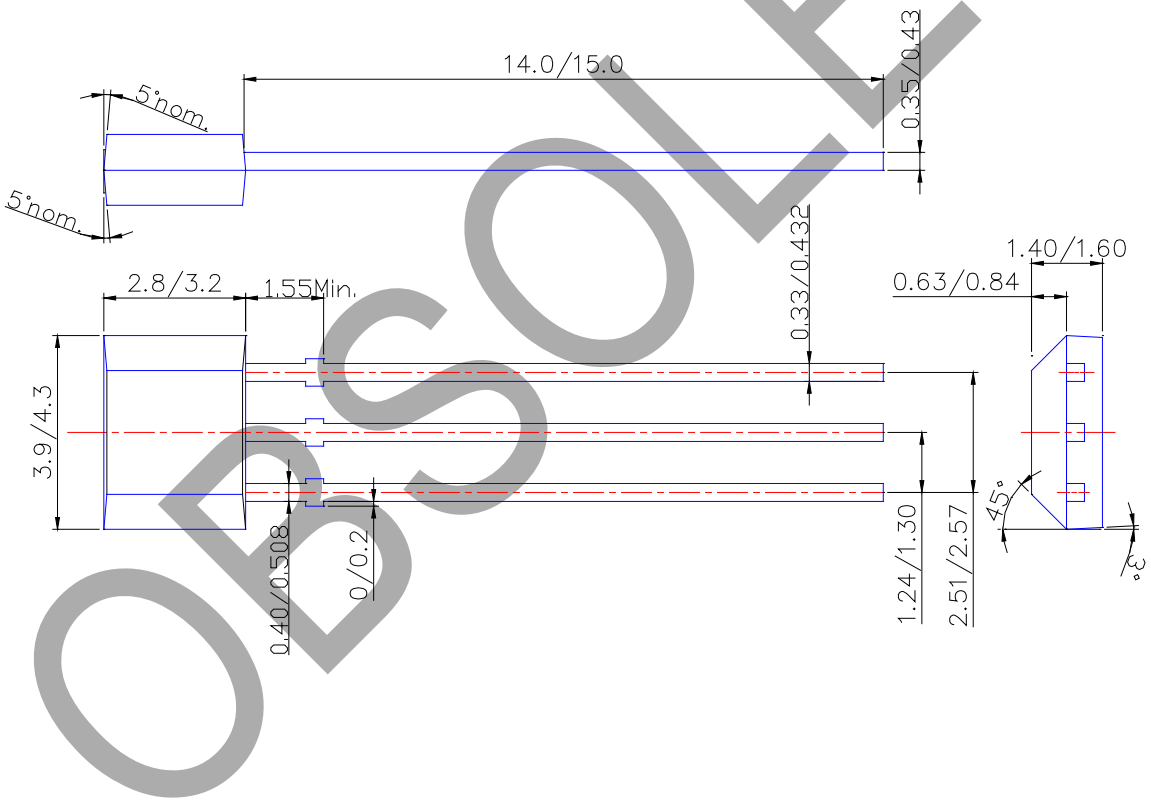


Active Area Depth



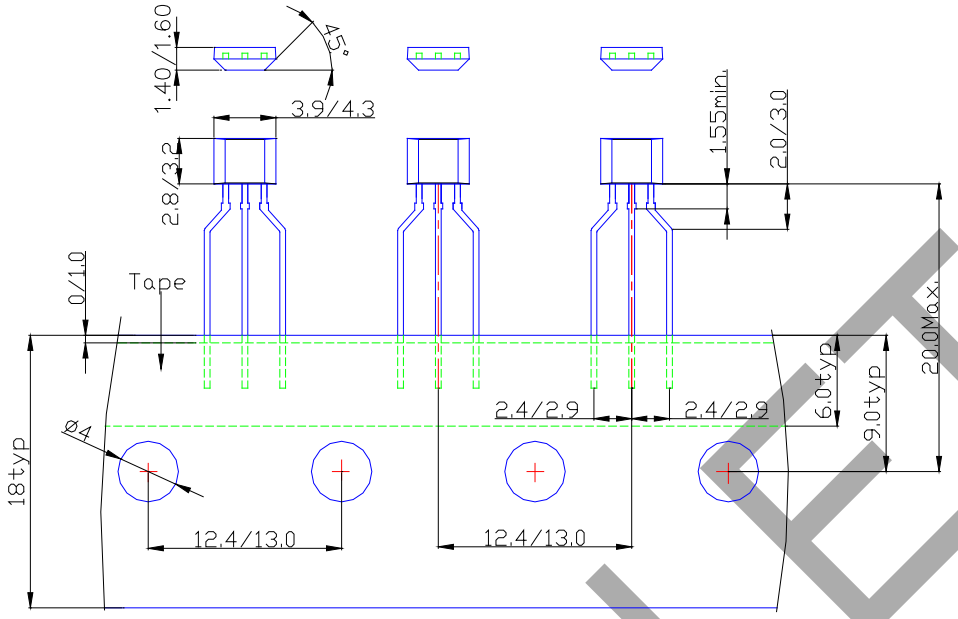
Sensor Location

Package Dimension

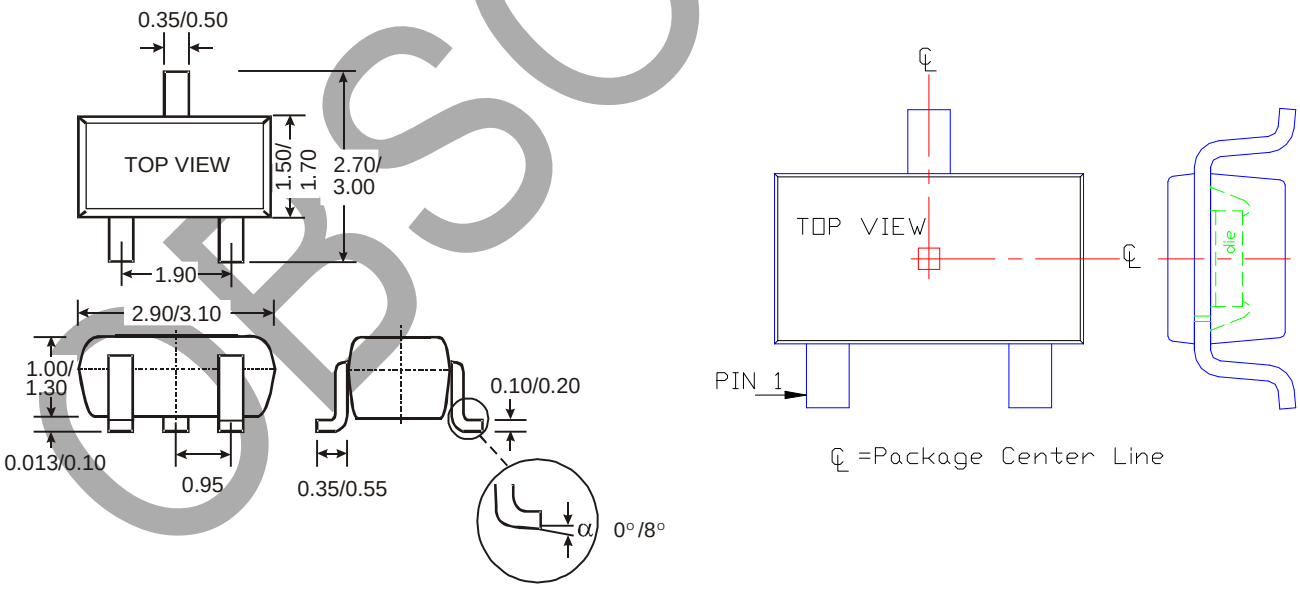


Package Outline Dimensions (Continued)

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

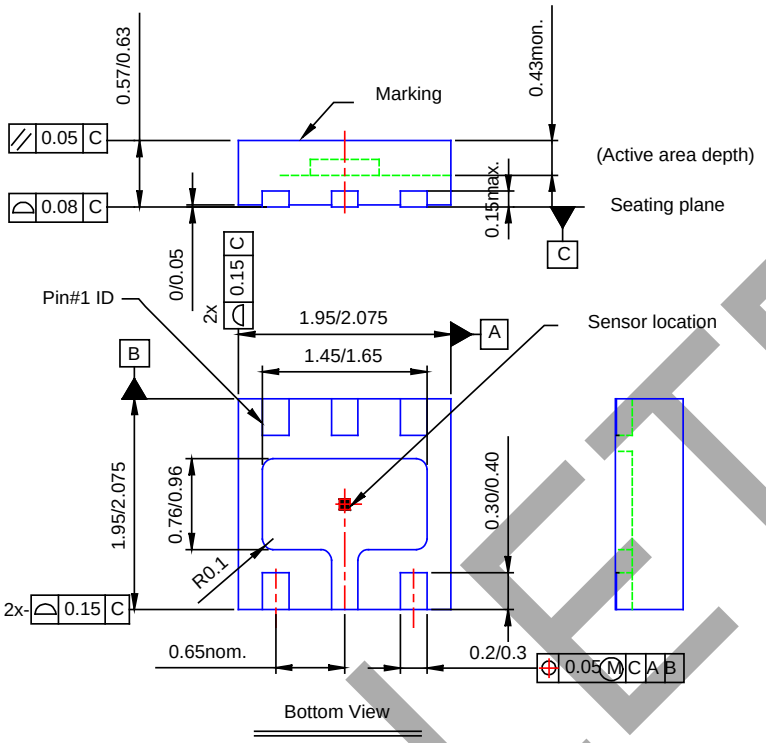


(3) SC59 (Commonly known as SOT23 in Asia)

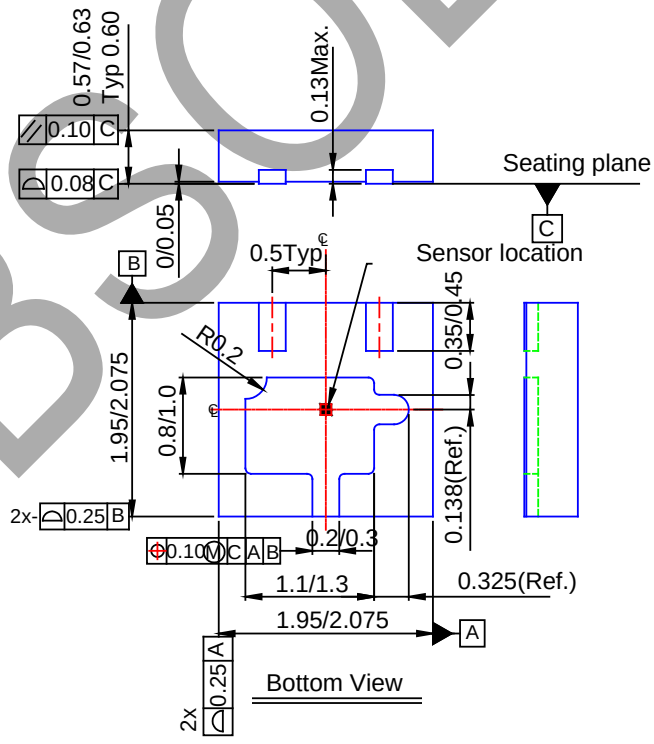


Package Outline Dimensions (Continued)

(4) Package Type: DFN2020-6

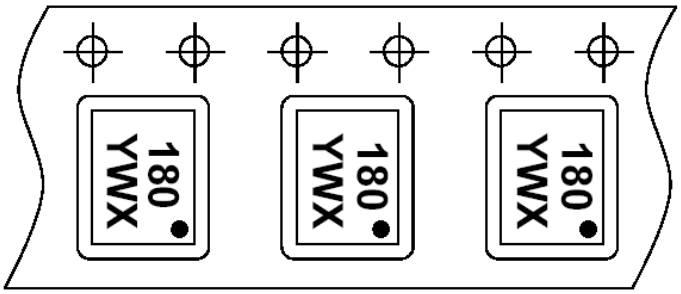


(5) Package Type: DFN2020-3

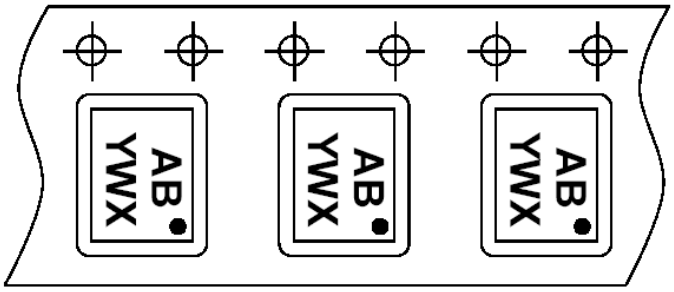


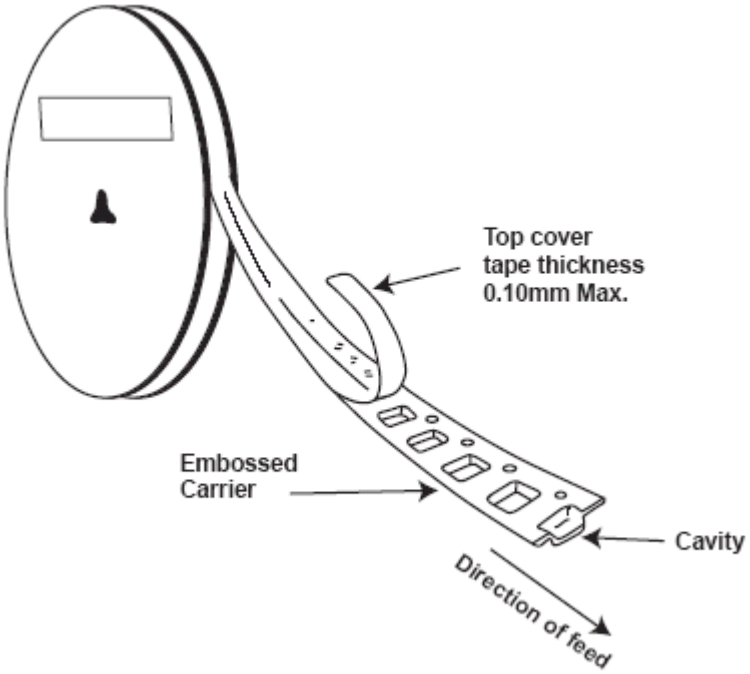
Taping Orientation (Note 12)

(1) DFN2020-6



(2) DFN2020-3





Note: 12. The taping orientation of the other package type can be found on our website at http://www.diodes.com/datasheets/ap02007.pdf.

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