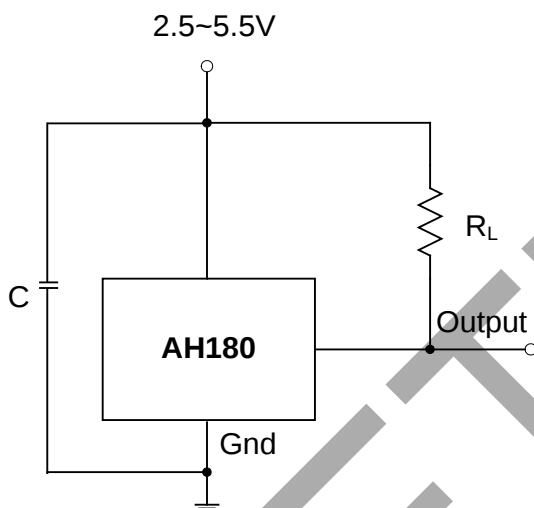


Typical Application Circuit

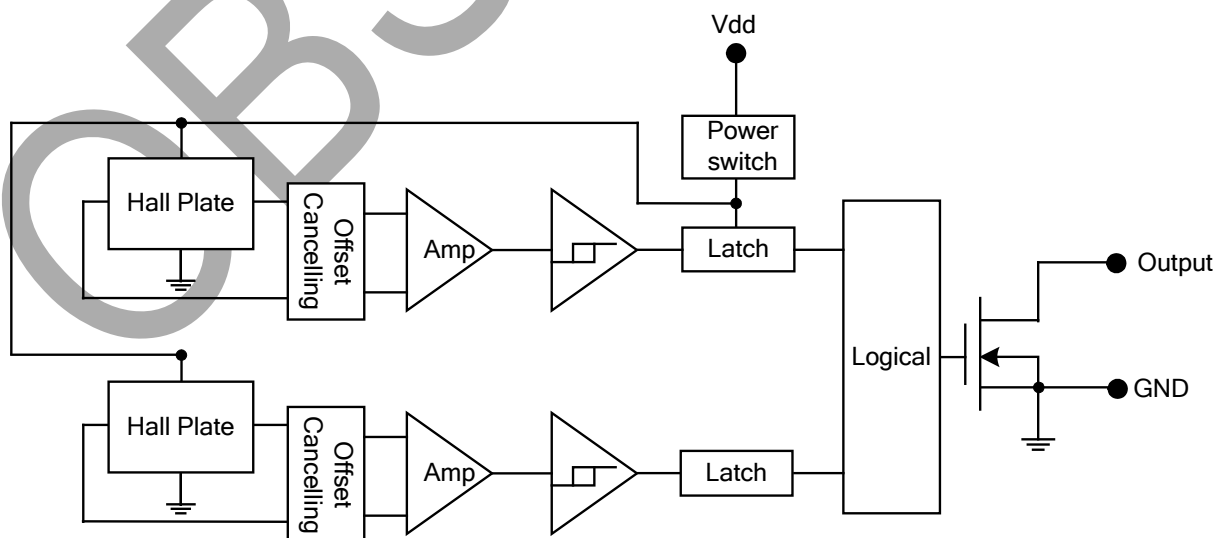


Note: C is for power stabilization and to strengthen the noise immunity, the recommended capacitance is 10nF~100nF.
RL is the pull-up resistor, the recommended resistance is 10Kohm~100Kohm.

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 ($T_A = +25^\circ\text{C}$)

Symbol	Characteristics	Values	Unit
V _{dd}	Supply voltage	7	V
B	Magnetic flux density	Unlimited	
T _s	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

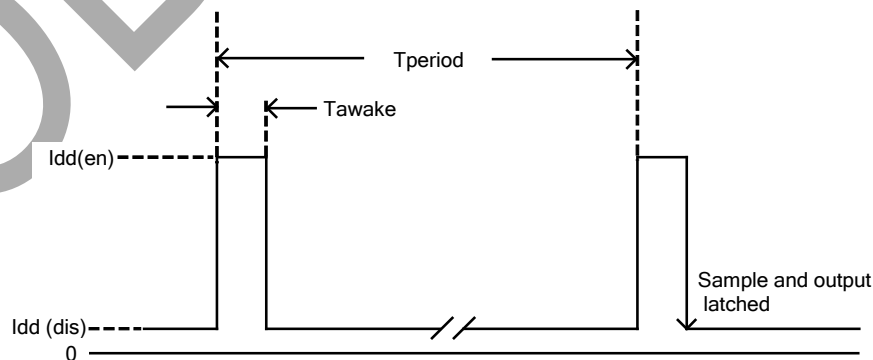
Recommended Operating Conditions

Symbol	Parameter	Conditions	Min	Max	Unit
V _{dd}	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} = 3V; unless otherwise specified)

Symbol	Characteristic	Conditions	Min	Typ.	Max	Unit
V _{out}	Output On Voltage	I _{out} = 1mA	—	0.1	0.3	V
I _{off}	Output Leakage Current	V _{out} = 5.5V, Output off	—	<0.1	1	μA
I _{dd(en)}	Supply Current	Chip enable, T _A = +25°C, V _{dd} = 3V	—	3	6	mA
I _{dd(en)}		Chip enable, T _A = -40~85°C, V _{dd} = 2.5~5.5V	—	3	9	mA
I _{dd(dis)}		Chip disable, T _A = +25°C, V _{dd} = 3V	—	5	10	μA
I _{dd(dis)}		Chip disable, T _A = -40~85°C, V _{dd} = 2.5~5.5V	—	5	15	μA
I _{dd(avg)}		Average supply current, T _A = +25°C, V _{dd} = 3V	—	8	16	μA
I _{dd(avg)}		Average supply current, T _A = -40~85°C, V _{dd} = 2.5~5.5V	—	8	24	μA
T _{awake}	Awake Time	(Note 2)	—	75	125	μs
T _{period}	Period	(Note 2)	—	75	125	ms
D.C.	Duty Cycle		—	0.1	—	%

Note: 2. When power is initially turned on, V_{dd} 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 ($T_A = +25^\circ\text{C}$, $V_{DD} = 3\text{V}$, 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 ($ B_{opx} - B_{rpx} $)	Hysteresis	-	15	-	

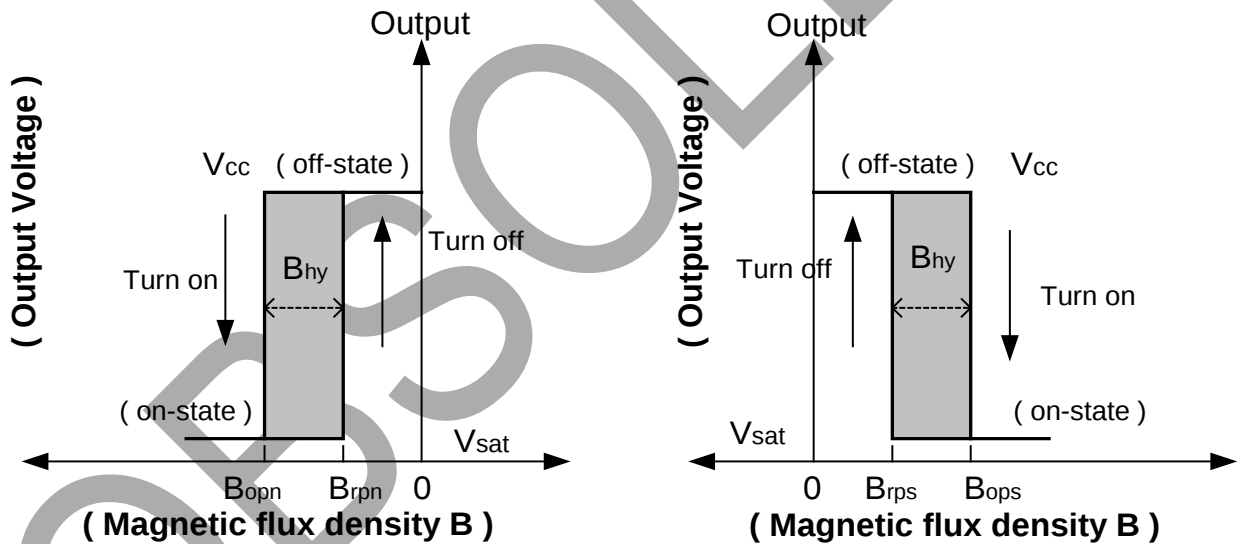
Option 2:

(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 ($ B_{opx} - B_{rpx} $)	Hysteresis	-	15	-	

Notes: 3. Typical data is at $T_A = +25^\circ\text{C}$, $V_{DD} = 3\text{V}$, and for design information only.
4. Magnetic characteristics may vary with supply voltage, operating temperature and after soldering.

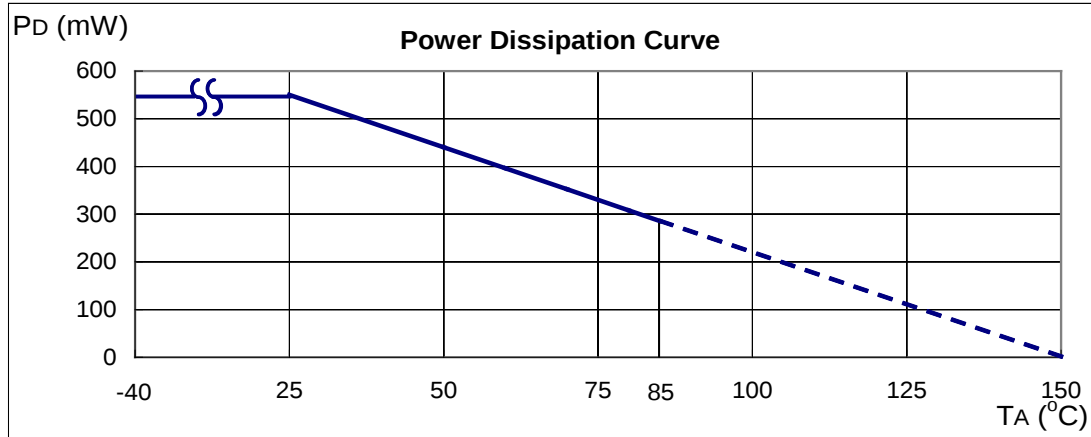
Operating Characteristics



Performance Characteristics

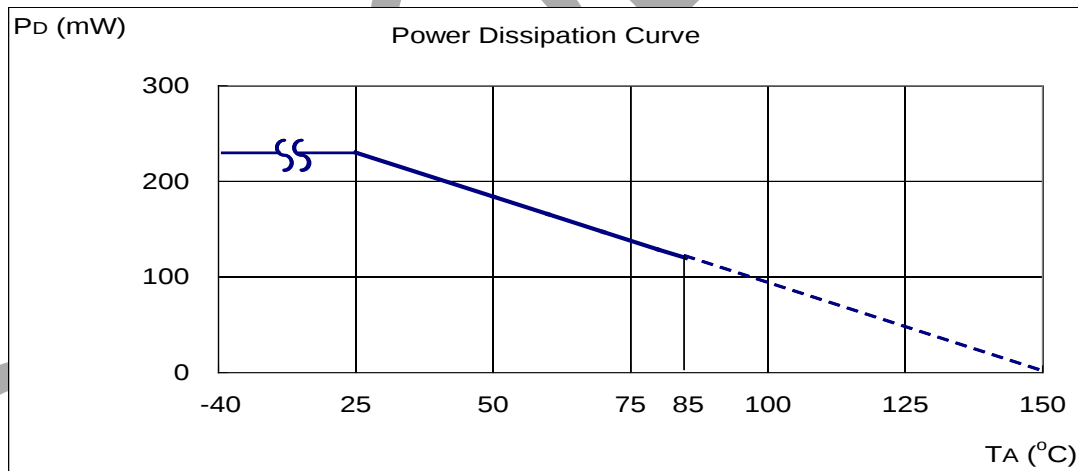
(1) SIP-3L

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

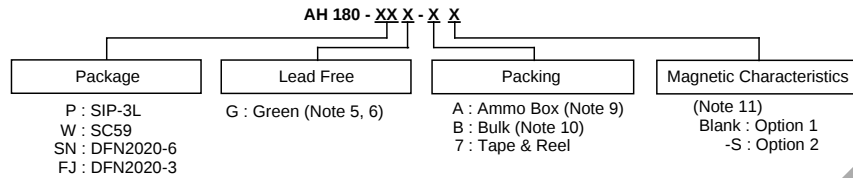


(2) SC59 (commonly known as SOT23 in Asia), DFN2020-6 and DFN2020-3

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



Ordering Information



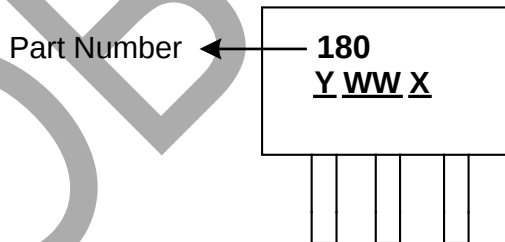
Device	Status (Note)	Package Code	Packaging (Notes 7 & 8)	Bulk		7" Tape and Reel		Ammo Box		Magnetic Characteristics (Note 11)
				Quantity	Part Number Suffix	Quantity	Part Number Suffix	Quantity	Part Number Suffix	
AH180-PG-B	NRND	P	SIP-3L	1000	-B	NA	NA	NA	NA	Blank
AH180-PG-A	NRND	P	SIP-3L	NA	NA	NA	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)

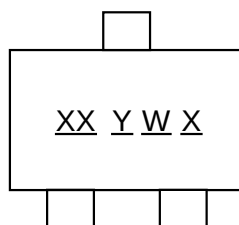


Y : Year : 0~9
WW : Week : 01~52, "52" represents
52 and 53 week
X : Internal Code : A~Z : Green
a~z : Lead Free

Marking Information (cont.)

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

(Top View)



XX : Identification code

Y : Year 0~9

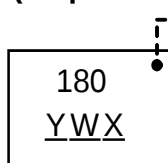
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents
52 and 53 week

X : A~Z : Green

Part Number	Package	Identification Code
AH180	SC59	K0

(3) DFN2020-6

(Top View)



Pin 1 indicator

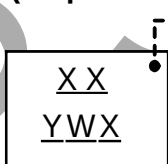
Y : Year : 0~9

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

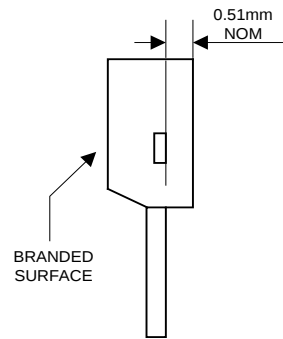
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents
52 and 53 week

X : A~Z : Green

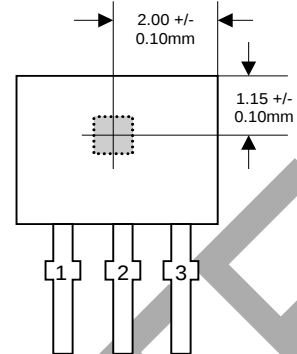
Part Number	Package	Identification Code
AH180	DFN2020-3	K0

Package Outline Dimensions (All Dimensions in mm)

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

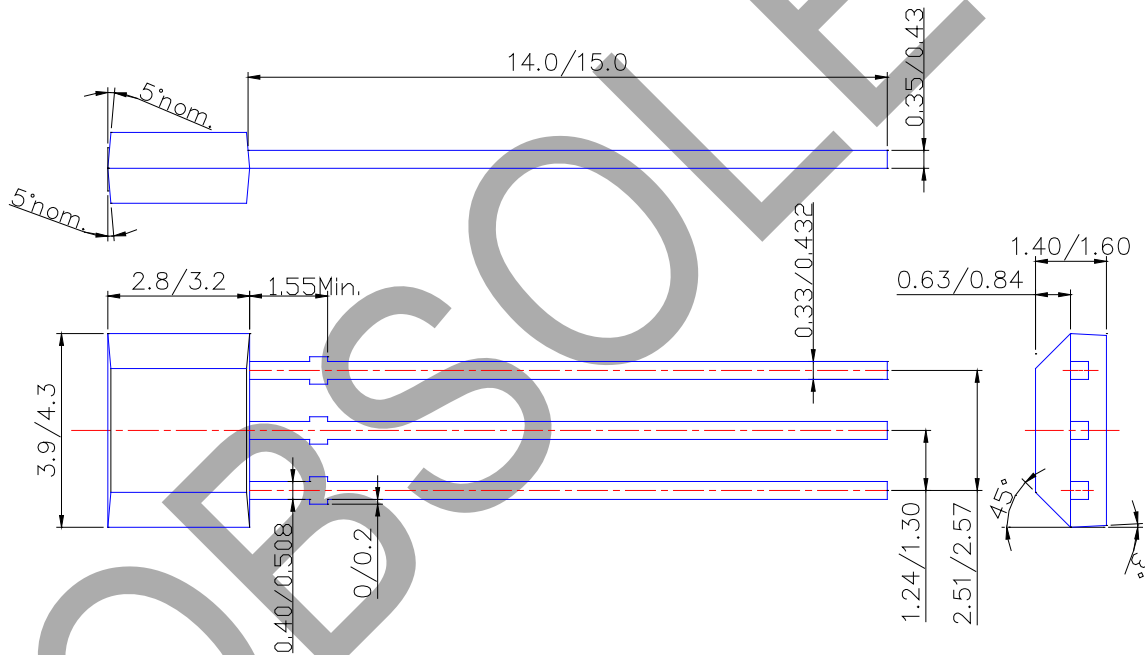


Active Area Depth



Sensor Location

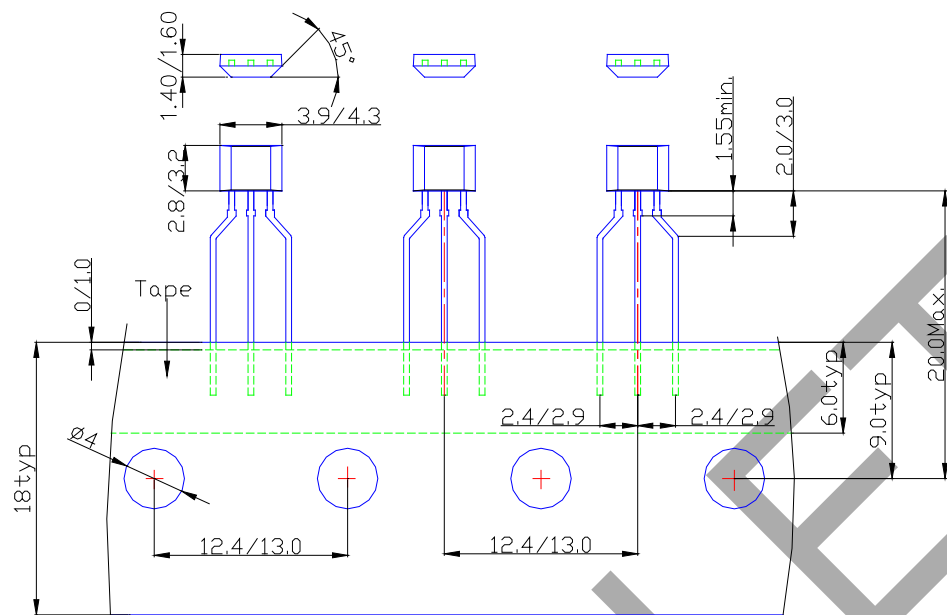
Package Dimension



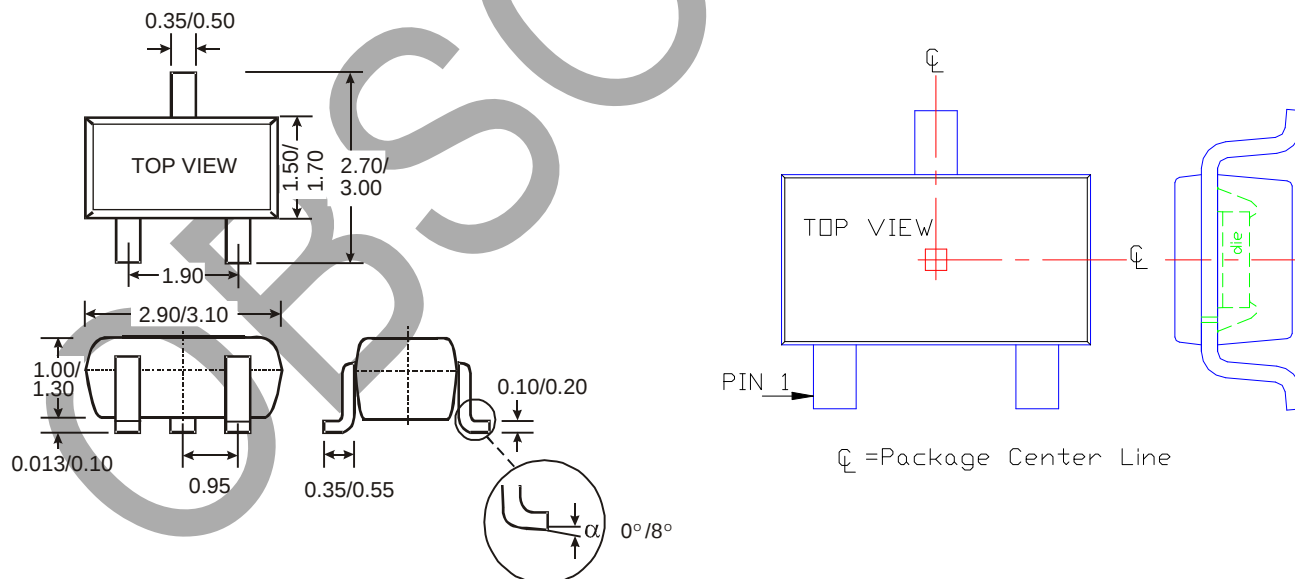
OBsolete - PART DISCONTINUED

Package Outline Dimensions (Continued)

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



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



OBsolete - Part discontinued

The drawing consists of two views: a top view (labeled 'Top View' in the original image) and a bottom view (labeled 'Bottom View').

Top View:

- Overall width: 1.95/2.075
- Overall height: 0.57/0.63
- Seating plane: 0.43mm
- Active area depth: 0.15max.
- Marking: A red dashed line indicates a marking location.
- Pin#1 ID: A feature with a diameter of 0/0.05 and a length of 2x.
- Feature A: A rectangular feature with a width of 1.45/1.65.
- Feature B: A rectangular feature with a width of 0.76/0.96.
- Feature C: A rectangular feature with a width of 0.65nom.
- Feature D: A rectangular feature with a width of 0.2/0.3.
- Feature E: A rectangular feature with a width of 0.30/0.40.
- Feature F: A rectangular feature with a width of 0.05mm.
- Feature G: A rectangular feature with a width of 0.05mm.
- Feature H: A rectangular feature with a width of 0.05mm.
- Feature I: A rectangular feature with a width of 0.05mm.
- Feature J: A rectangular feature with a width of 0.05mm.
- Feature K: A rectangular feature with a width of 0.05mm.
- Feature L: A rectangular feature with a width of 0.05mm.
- Feature M: A rectangular feature with a width of 0.05mm.
- Feature N: A rectangular feature with a width of 0.05mm.
- Feature O: A rectangular feature with a width of 0.05mm.
- Feature P: A rectangular feature with a width of 0.05mm.
- Feature Q: A rectangular feature with a width of 0.05mm.
- Feature R: A rectangular feature with a width of 0.05mm.
- Feature S: A rectangular feature with a width of 0.05mm.
- Feature T: A rectangular feature with a width of 0.05mm.
- Feature U: A rectangular feature with a width of 0.05mm.
- Feature V: A rectangular feature with a width of 0.05mm.
- Feature W: A rectangular feature with a width of 0.05mm.
- Feature X: A rectangular feature with a width of 0.05mm.
- Feature Y: A rectangular feature with a width of 0.05mm.
- Feature Z: A rectangular feature with a width of 0.05mm.

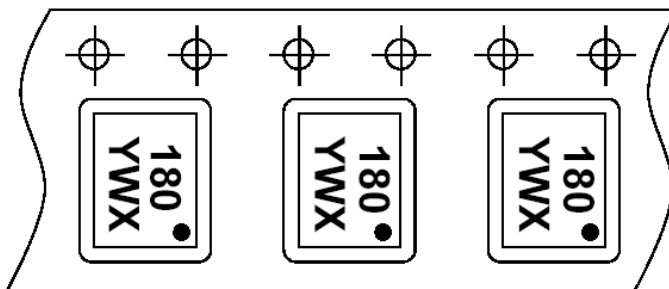
Bottom View:

- Overall width: 1.95/2.075
- Overall height: 0.57/0.63
- Seating plane: 0.43mm
- Active area depth: 0.15max.
- Marking: A red dashed line indicates a marking location.
- Pin#1 ID: A feature with a diameter of 0/0.05 and a length of 2x.
- Feature A: A rectangular feature with a width of 1.45/1.65.
- Feature B: A rectangular feature with a width of 0.76/0.96.
- Feature C: A rectangular feature with a width of 0.65nom.
- Feature D: A rectangular feature with a width of 0.2/0.3.
- Feature E: A rectangular feature with a width of 0.30/0.40.
- Feature F: A rectangular feature with a width of 0.05mm.
- Feature G: A rectangular feature with a width of 0.05mm.
- Feature H: A rectangular feature with a width of 0.05mm.
- Feature I: A rectangular feature with a width of 0.05mm.
- Feature J: A rectangular feature with a width of 0.05mm.
- Feature K: A rectangular feature with a width of 0.05mm.
- Feature L: A rectangular feature with a width of 0.05mm.
- Feature M: A rectangular feature with a width of 0.05mm.
- Feature N: A rectangular feature with a width of 0.05mm.
- Feature O: A rectangular feature with a width of 0.05mm.
- Feature P: A rectangular feature with a width of 0.05mm.
- Feature Q: A rectangular feature with a width of 0.05mm.
- Feature R: A rectangular feature with a width of 0.05mm.
- Feature S: A rectangular feature with a width of 0.05mm.
- Feature T: A rectangular feature with a width of 0.05mm.
- Feature U: A rectangular feature with a width of 0.05mm.
- Feature V: A rectangular feature with a width of 0.05mm.
- Feature W: A rectangular feature with a width of 0.05mm.
- Feature X: A rectangular feature with a width of 0.05mm.
- Feature Y: A rectangular feature with a width of 0.05mm.
- Feature Z: A rectangular feature with a width of 0.05mm.

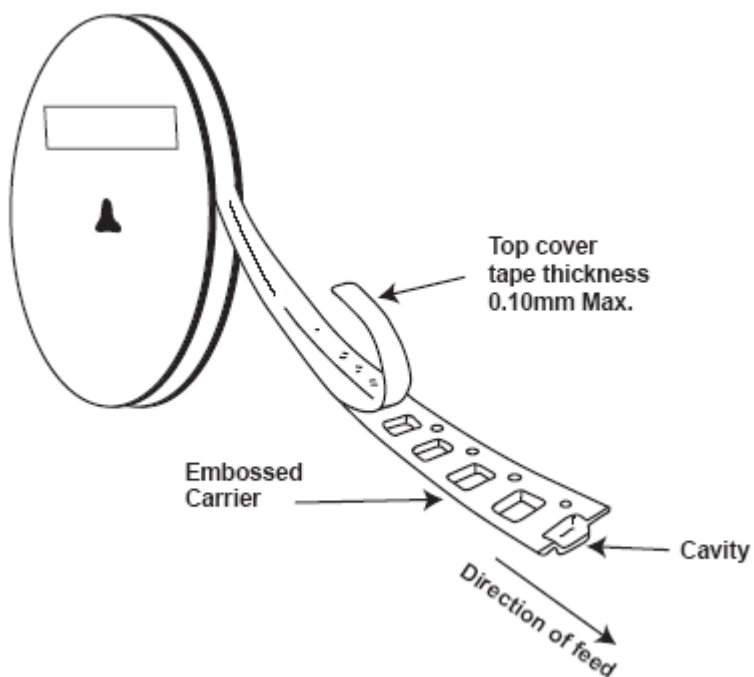
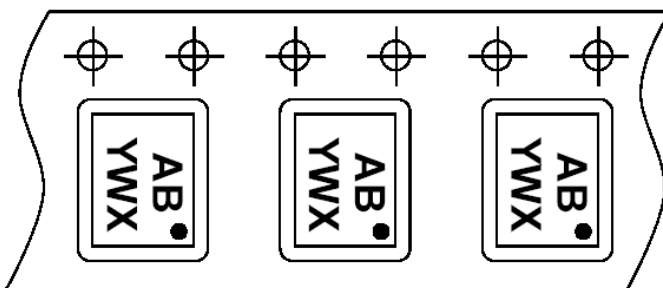
Technical drawing of a mechanical part showing the Bottom View. The drawing includes dimensions for width (1.95/2.075), height (0.57/0.63 Typ 0.60), and various tolerances (0.10 C, 0.08 C, 0.25 B, 0.10 M, 0.25 A). It also shows a sensor location, a seating plane, and a bottom view label.

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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