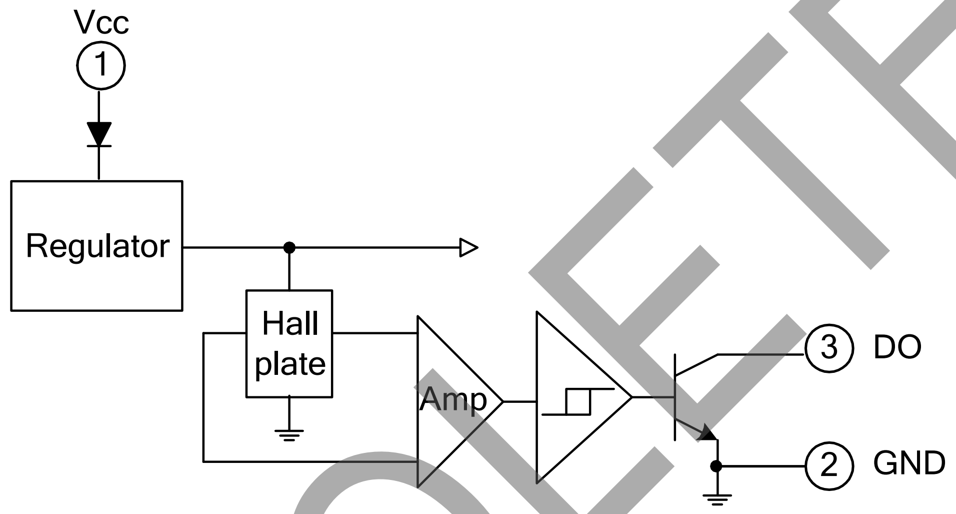
Pin Descriptions

Pin name	P/I/O	Pin #	Description
Vcc	P	1	Positive power supply
GND	P	2	Ground
DO	O	3	Digital output

Functional Block Diagram



Absolute Maximum Ratings ($T_A = 25°C$)

Symbol	Characteristics		Rating	Unit
V_{CC}	Supply Voltage		20	V
V_{RCC}	Reverse V_{CC} Polarity Voltage		-20	V
B	Magnetic Flux Density		Unlimited	
V_{CE}	Output OFF Voltage		30	V
P_D	Package Power Dissipation	SIP-3L	550	mW
I_C	Output "ON" Current	Continuous	25	mA
$T_{J(MAX)}$	Maximum Junction Temperature		150	°C
T_S	Storage Temperature Range		-65~+150	°C

Recommended Operating Conditions

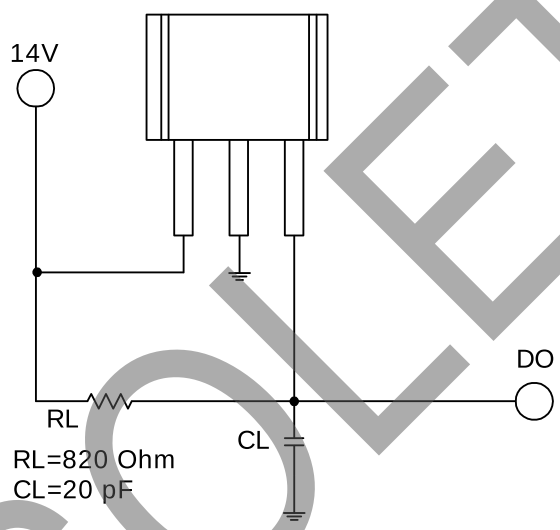
Symbol	Characteristic	Conditions	Min	Max	Unit
V_{CC}	Supply Voltage	Operating	3.5	20	V
T_A	Operating Ambient Temperature (Note 2)	Operating	-20	85	°C

Notes: 2. Shall not exceed P_D and Safety Operation Area.

Electrical Characteristics (T_A = 25°C)

Symbol	Characteristic	Test Conditions	Min	Typ.	Max	Unit
V_{CE} (sat)	Output Saturation Voltage	V_{CC} = 14V, Ic = 20mA	-	300	700	mV
Icex	Output Leakage Current	V_{CE} = 14V, V_{CC} = 14V	-	<0.1	10	uA
Icc	Supply Current	V_{CC} = 20V, Output Open	-	5	10	mA
tr	Output Rise Time	V_{CC} = 14V, RL = 820Ω, CL = 20pF	-	0.3	1.5	us
tf	Output Falling Time	V_{CC} = 14V, RL = 820Ω, CL = 20pF	-	0.3	1.5	us

Test Circuit



Test Circuit

Magnetic Characteristics (T_A = 25°C, Note 3)

(1mT=10 Gauss)

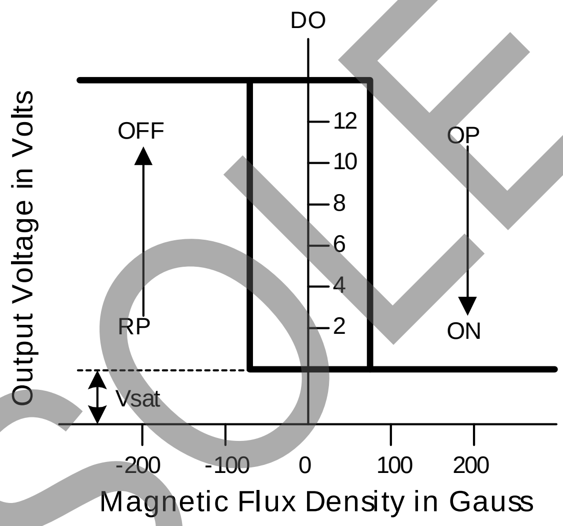
A grade

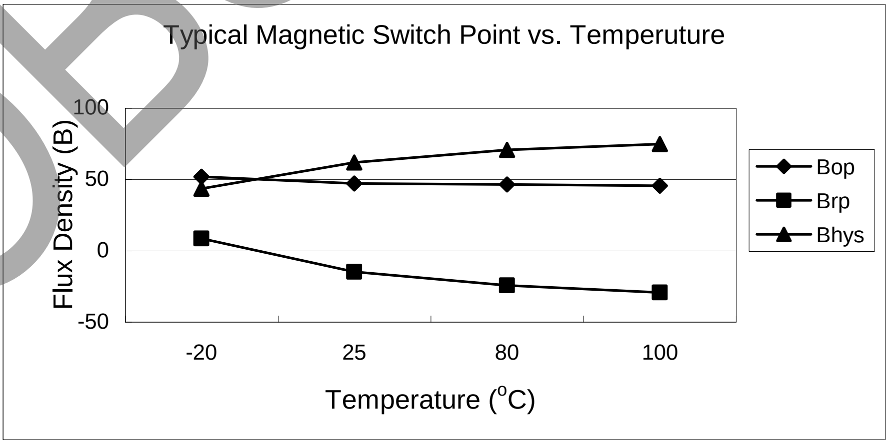
Symbol	Parameter	Min	Typ.	Max	Unit
Bops(south pole to brand side)	Operation Point	5	-	70	Gauss
Brps(south pole to brand side)	Release Point	-70	-	-5	Gauss
Bhy(|Bopx|-|Brpx|)	Hysteresis	-	80	-	Gauss

B grade

Symbol	Parameter	Min	Typ.	Max	Unit
Bops(south pole to brand side)	Operation Point	-	-	100	Gauss
Brps(south pole to brand side)	Release Point	-100	-	-	Gauss
Bhy(|Bopx|-|Brpx|)	Hysteresis	-	80	-	Gauss

Notes: 3. Magnetic characteristics may vary with supply voltage, operating temperature and after soldering.

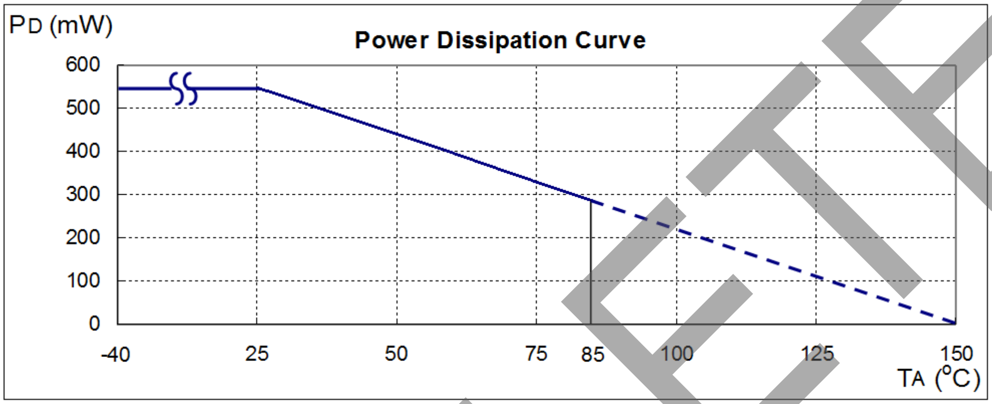




Performance Characteristics

(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



Ordering Information

ATS177 - X X - X - X

Package
P : SIP-3L

Lead Free
L : Lead Free
G : Green (Note 4)

Packing
A : Ammo Box (Note 7)
B : Bulk (Note 8)
7 : Tape & Reel

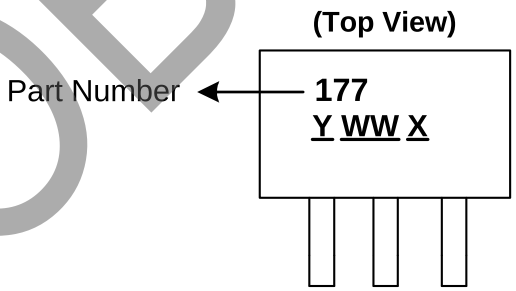
Magnetic Characteristics
A or B

Device	Package Code	Packaging (Note 5, 6)	Tube/Bulk		7” Tape and Reel		Ammo Box		Magnetic Characteristics
			Quantity	Part Number Suffix	Quantity	Part Number Suffix	Quantity	Part Number Suffix	
ATS177-PL-A-A	P	SIP-3L	NA	NA	NA	NA	4000/Box	-A	A
ATS177-PL-A-B	P	SIP-3L	NA	NA	NA	NA	4000/Box	-A	B
ATS177-PG-A-A	P	SIP-3L	NA	NA	NA	NA	4000/Box	-A	A
ATS177-PG-A-B	P	SIP-3L	NA	NA	NA	NA	4000/Box	-A	B
ATS177-PL-B-A	P	SIP-3L	1000	-B	NA	NA	NA	NA	A
ATS177-PL-B-B	P	SIP-3L	1000	-B	NA	NA	NA	NA	B
ATS177-PG-B-A	P	SIP-3L	1000	-B	NA	NA	NA	NA	A
ATS177-PG-B-B	P	SIP-3L	1000	-B	NA	NA	NA	NA	B

Notes:
4. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at http://www.diodes.com/products/lead_free.html.
5. 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.
6. 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.
7. Ammo Box is for SIP-3L Spread Lead.
8. Bulk is for SIP-3L Straight Lead.

Marking Information

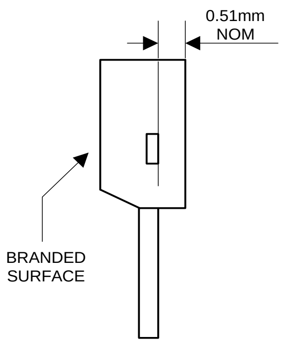
(1) SIP-3L



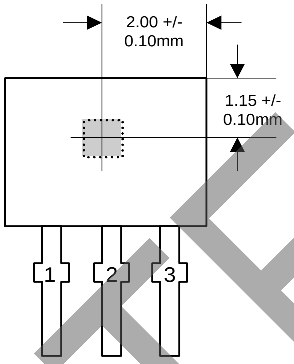
Y : Year : 0~9
WW : Week : 01~52, "52" represents 52 and 53 week
X : Internal Code : A~Z : Green
a~z : Lead Free

Package Outline Dimensions (All Dimensions in mm)

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

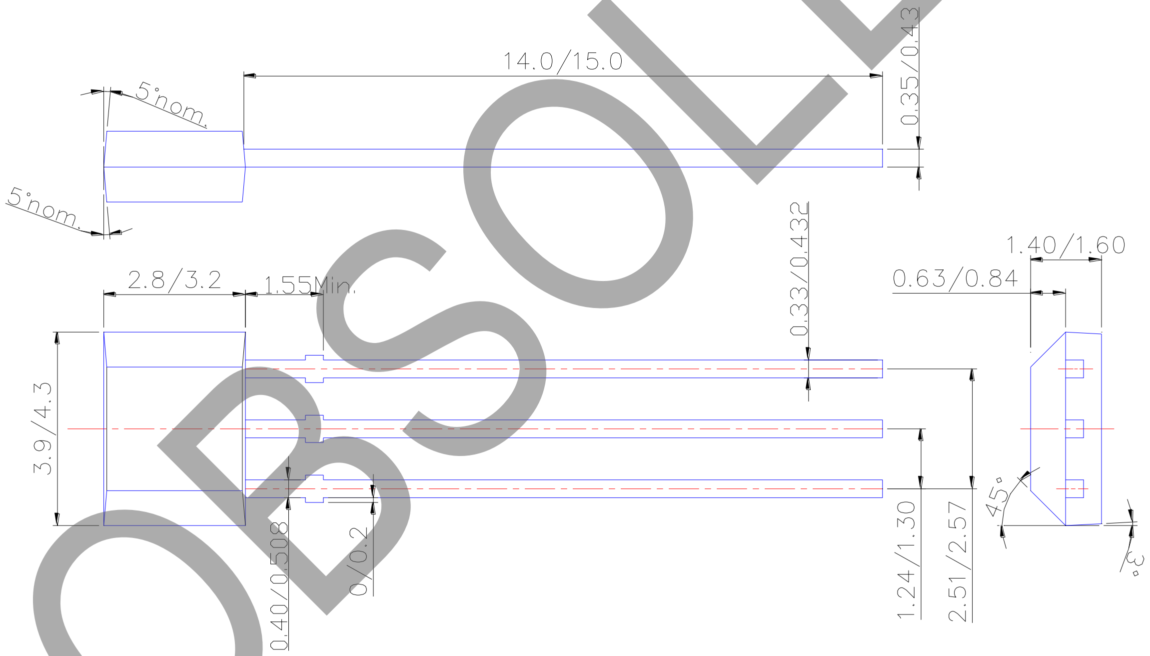


Active Area Depth



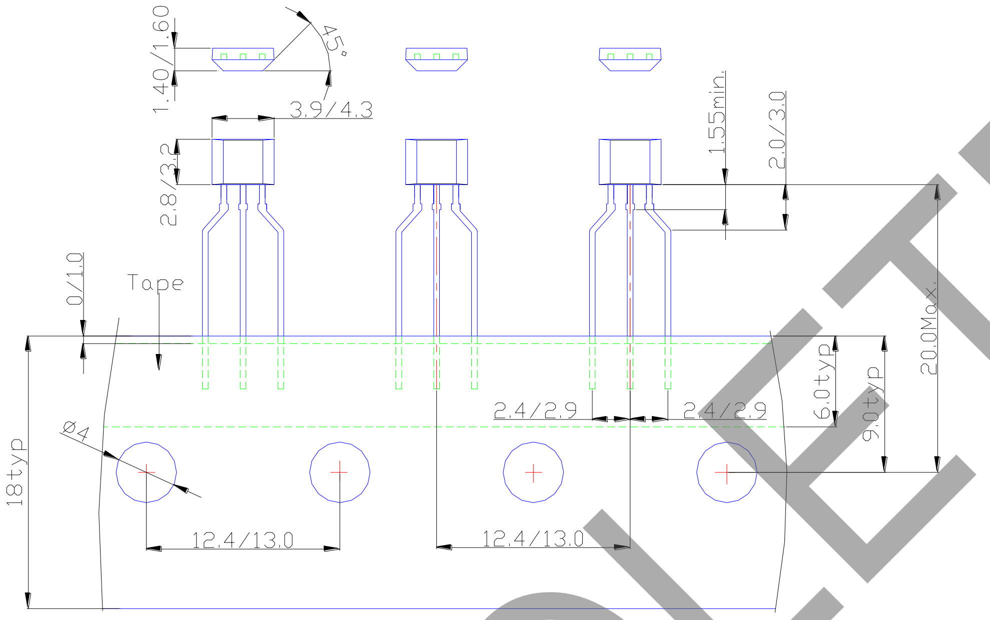
Sensor Location

Package Dimension



Package Outline Dimensions (continued)

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



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