Overview

SDC177MJJ is a unipolar switch Hall integrated circuit.

Built-in reverse protection circuit, voltage regulator, Hall voltage generator, Differential amplifier, Schmitt trigger and open collector output, can convert The changing magnetic field signal is converted into a digital signal output.

It is suitable for machine, speed measurement and other occasions.

Features

ÿ**Wide** operating voltage range: 3.5V~20V

ÿ**Built** -in temperature compensation circuit

ÿ**Open** collector output

ÿ**Maximum** output current 25mA

ÿ**Package :** TO-92S

application

ÿ**Mahjong** machine

ÿ**Electronic** switch

ÿ**Speed** measurement

Figure 1. Package type

Pin Description

Package: TO-92S

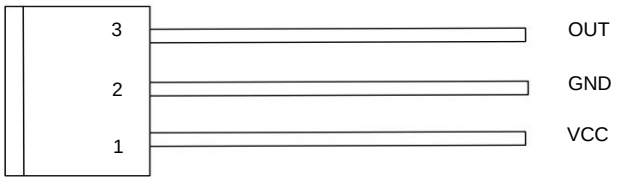


Figure 2. Pin layout

serial number	name	Function
1	VCC	Working input power
2	GND	land
3	OUT	Output pin

Table 1. Pin Description

Functional Block Diagram

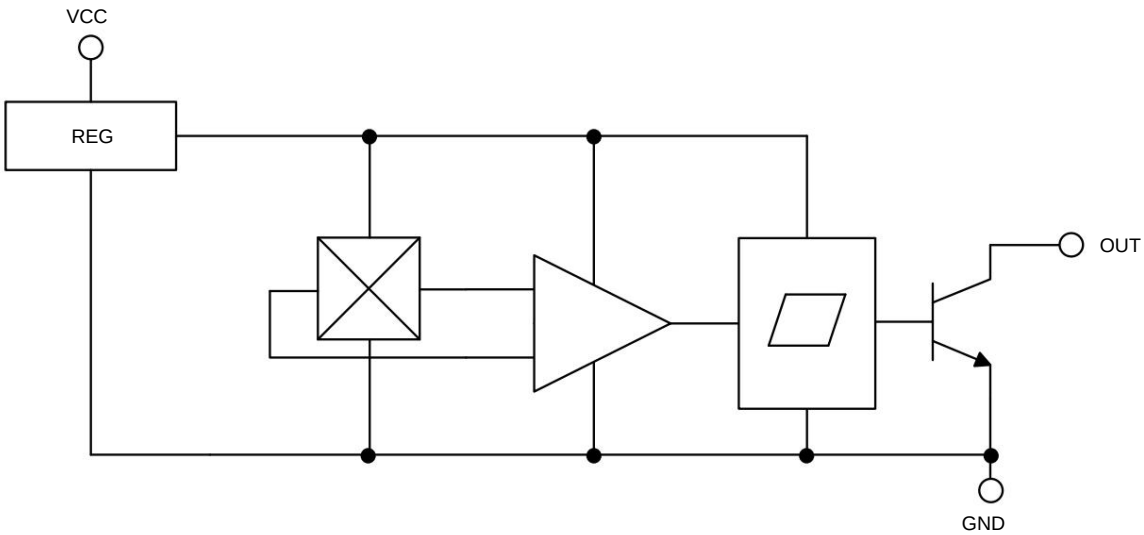
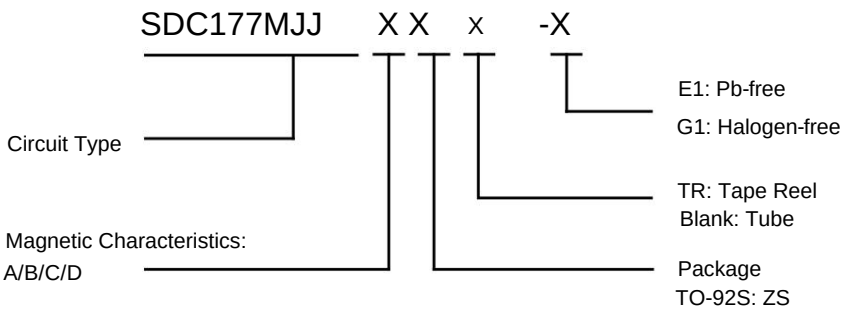


Figure 3. Functional block diagram

Ordering Information



Package temperature range		Product Number		Marking Number Packaging Lead	
		Lead Free	Halogen Free	Free Halogen Free Form	
TO-92S -20ÿ~85ÿ		SDC177MJJBZS-E1	SDC177MJJBZS-G1	177M	177MG Bag
		SDC177MJJCZS-E1	SDC177MJJCZS-G1	177M	177MG Bag
		SDC177MJJDZS-E1	SDC177MJJDZS-G1	177M	177MG Bag
		SDC177MJJBZSTR-E1	SDC177MJJBZSTR-G1	177M	177MG Tape
		SDC177MJJCZSTR-E1	SDC177MJJCZSTR-G1	177M	177MG Tape
		SDC177MJJDZSTR-E1	SDC177MJJDZSTR-G1	177M	177MG Tape

Limit parameters (Note: Do not exceed the maximum value in application to prevent damage. Long-term operation at the maximum value may affect the reliability of the device)

Parameter Parameter Value	symbol		unit
Working voltage	VCC	24	V
Output voltage	VOUT	24	V
Output current	IOUT	25	mA
Magnetic induction	B	Unlimited	GS
intensity Output breakdown	VCE	30	V
voltage Junction temperature	Tj	150	ÿ
ESD, HBM model per Mil-Std-883, Method 3015	HBM	2000	V
ESD, MM model per JEDEC EIA/JESD22-A115	MM	200	V
Latch-up test per JEDEC 78 Power dissipation		200	mA
Storage	PD	550	mW
temperature	TS	-65~150	ÿ

Table 2. Limit parameters

Recommended operating conditions

parameter	symbol	Minimum	Maximum	unit
Working voltage	VCC	3.5	20	V
Working temperature	Facing	-20	85	ÿ

Table 3. Recommended operating conditions

Electrical Characteristics (Unless otherwise specified: Ta = 25 ° C, VCC =

5 V) Parameter Symbol Operating voltage		Test conditions	Min Typ Max Unit			
Output low	VCC		3.5		20	V
level output	VOUT	IOUT=20mAÿB>BOP		300	700	mV
Shutdown current	IOFF	VCE=30VÿB<BRP		0.1	10	uA
Supply current	ICC	VCC=20V		3.5	5.5	mA
Output rise time Output	tr	RL=820ÿ,CL=20pF		0.3	1.50	us
fall time	tf	RL=820ÿ,CL=20pF		0.3	1.50	us

Table 4. Electrical characteristics

Magnetic Characteristics (Unless otherwise specified: VCC=5V)

Characteristic Symbol		Test conditions	Min	Typ	Max	Unit
Working point	BOP	0ÿ<Ta<85ÿ			200	GS
		Ta=25ÿ			180	GS
Restore Points	BRP	0ÿ<Ta<85ÿ	30		140	GS
		Ta=25ÿ	10		120	GS
Tape	BH	0ÿ<Ta<85ÿ	20	40	60	GS
		Ta=25ÿ	20	40	60	GS

Table 5. Magnetic properties

Note: When the magnetic field S pole faces the sign surface, B is "positive"

B-grade products

characteristic	symbol	Lower limit	Upper limit	unit
Work point	BOP	90	125	GS
recovery point	BRP	10		GS

C-grade products

characteristic	symbol	Lower limit	Upper limit	unit
Work point	BOP	125	150	GS
recovery point	BRP	10		GS

D-grade products

characteristic	symbol	Lower limit	Upper limit	unit
Work point	BOP	150	170	GS
recovery point	BRP	10		GS

Typical application diagram

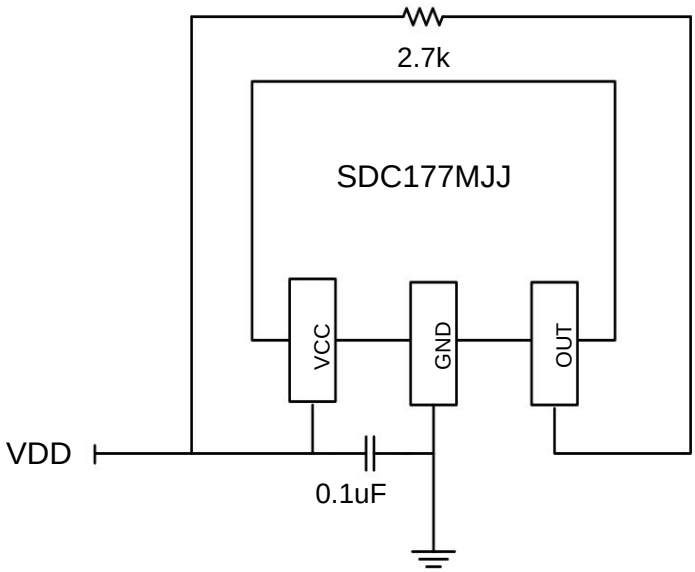
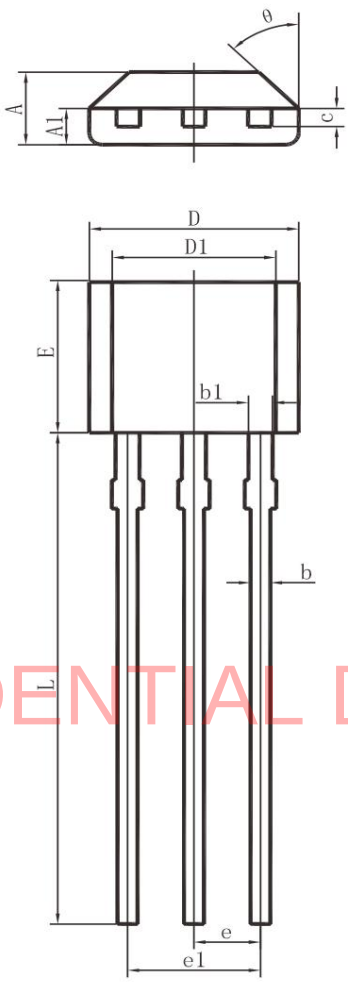


Figure 4. Typical application diagram

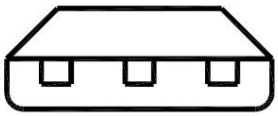
Package size

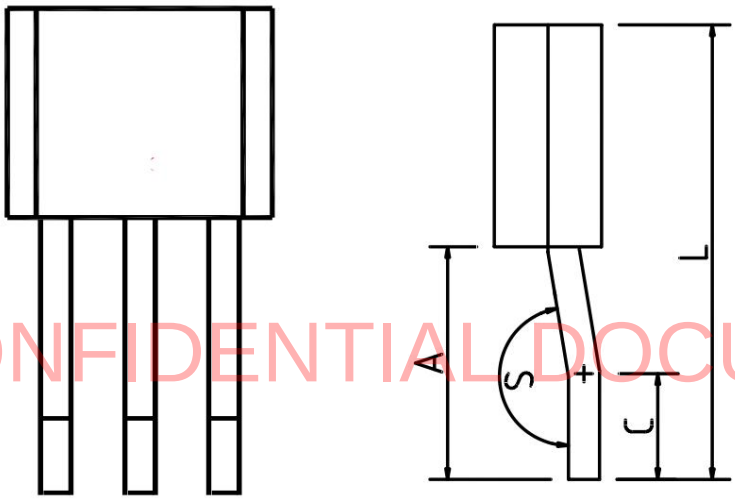
TO-92S(Right angle)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.420	1.620	0.056	0.064
A1	0.660	0.860	0.026	0.034
b	0.350	0.480	0.014	0.019
b1	0.380	0.530	0.015	0.021
c	0.360	0.510	0.014	0.020
D	3.900	4.100	0.154	0.161
D1	2.970	3.270	0.117	0.129
AND	2.900	3.100	0.116	0.124
and	1.270 TYPE.		0.050 TYPE.	
e1	2.440	2.640	0.096	0.104
L	14.500	14.900	0.580	0.596
i	45° TYPE.		45° TYPE.	

TO-92S(angle)





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.0	3.7	0.120	0.148
C	1.7	1.9	0.068	0.076
L	6.0	6.4	0.240	0.256
S	170°		170°	

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