

**SH282 Medium Sensitivity Unipolar Hall Effect Switch**

SH282 is a medium sensitivity unipolar Hall-effect switch designed in advanced DMOS technology. The following are integrated on a single silicon chip: voltage regulator, reverse bias protection, ESD protection, Hall voltage generator, chopper stabilized, small-signal amplifier, Schmitt trigger, and open-drain output. Superior high-temperature performance is made possible through advanced chopper stabilization technology.

**Features**

- Medium Sensitivity (7.5mT typ.)
- Stable Temperature Characteristics
- Good ESD Protection. (HBM4kV min.)
- Reverse bias protection on power supply pin

**Typical Applications**

- Solid state switch
- Limit switch
- Current limit
- Interrupter
- Current sensing

**Order Information**

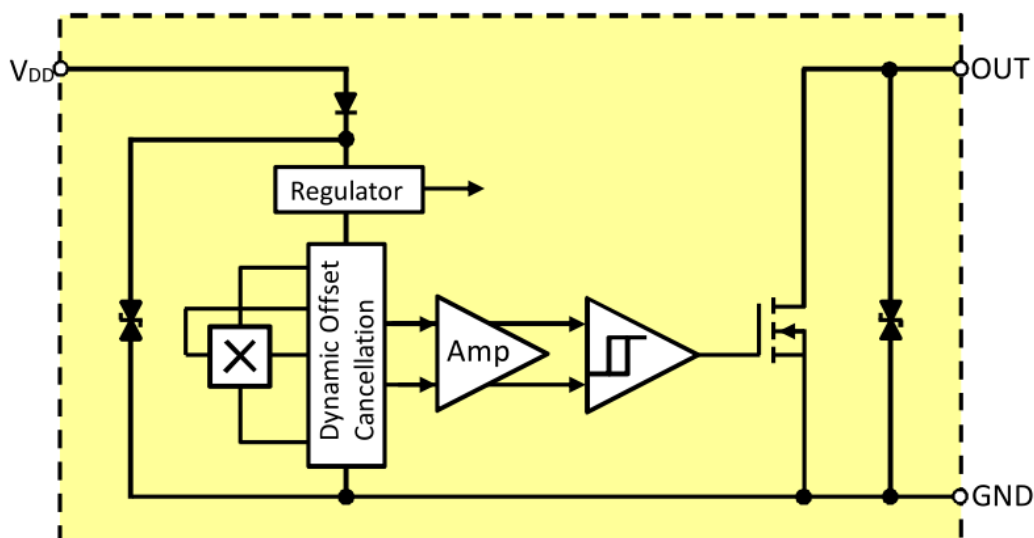
Order No.	Part No.	Temperature	Package	Packing
SH282KUA	SH282	K	UA	
SH282KSO-TR	SH282	K	SO	TR

Legend:

Temperature Code: K (-40°C~125°C)

Package Code: UA (TO92S), SO (SOT23)

Packing Code: Brank (Balk, 500pcs/Bag), TR (Tape & Reel, 3,000pcs/Reel)

**Functional Block Diagram**


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

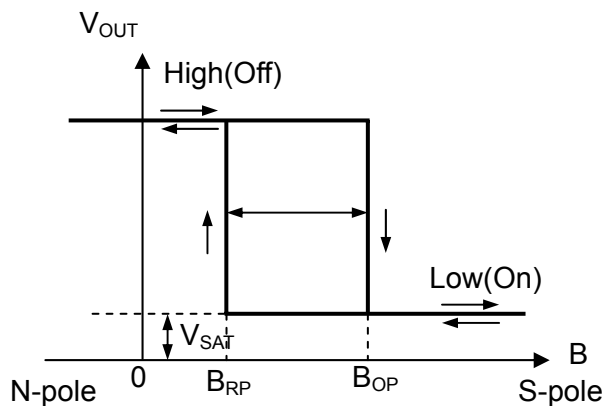
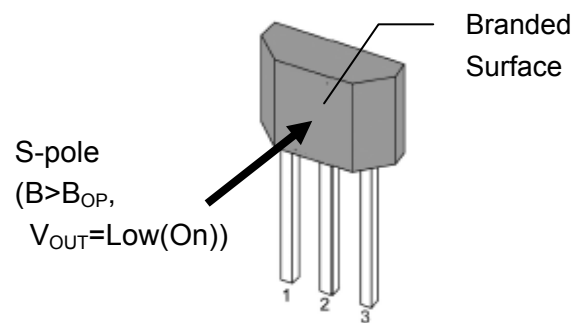
Parameter	Symbol	Value		Unit
		Min	Max	
Supply Voltage	$V_{DD}$	-28	28	V
Output Current	$I_{OUT}$	-	50	mA
Output Voltage	$V_{OUT}$	-0.3	28	V
Operating Temperature Range (K)	$T_A$	-40	125	$^{\circ}\text{C}$
Storage Temperature Range	$T_S$	-55	150	$^{\circ}\text{C}$
Maximum Junction Temperature	$T_J$	-	150	$^{\circ}\text{C}$
Power Dissipation (UA/SO)	$P_D$	-	606/230	mW

**Electrical Characteristics** ( $T_A=25^{\circ}\text{C}$ ,  $V_{DD}=12\text{V}$ )

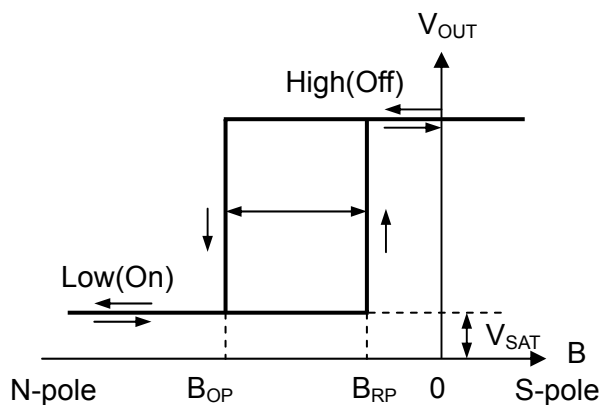
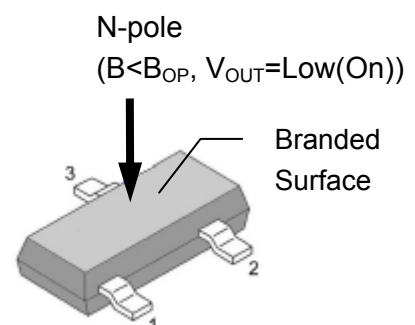
Parameter	Test Condition	Symbol	Value			Unit
			Min	typ	Max	
Supply Voltage		$V_{DD}$	3	-	24	V
Consumption Current	$V_{OUT}=\text{High}$	$I_{DD}$	-	2.5	5	mA
Output Saturation Voltage	$I_{SINK}=20\text{mA}$ , $V_{OUT}=\text{Low}$	$V_{SAT}$	-	-	0.4	V
Output Leakage Current	$V_{OUT}=20\text{V}(\text{High})$	$I_{LEAK}$	-	-	10	$\mu\text{A}$
Output Rise time	$R_L=1\text{k}\Omega$ , $C_L=20\text{pF}$	$t_R$	-	0.04	0.45	$\mu\text{s}$
Output Fall time	$R_L=820\Omega$ , $C_L=20\text{pF}$	$t_F$	-	0.18	0.45	$\mu\text{s}$
Electro-Static Discharge	HBM	-	4	-	-	kV

**UA-package Magnetic Characteristics** ( $T_A=25^\circ\text{C}$ ,  $V_{DD}=12\text{V}$ )

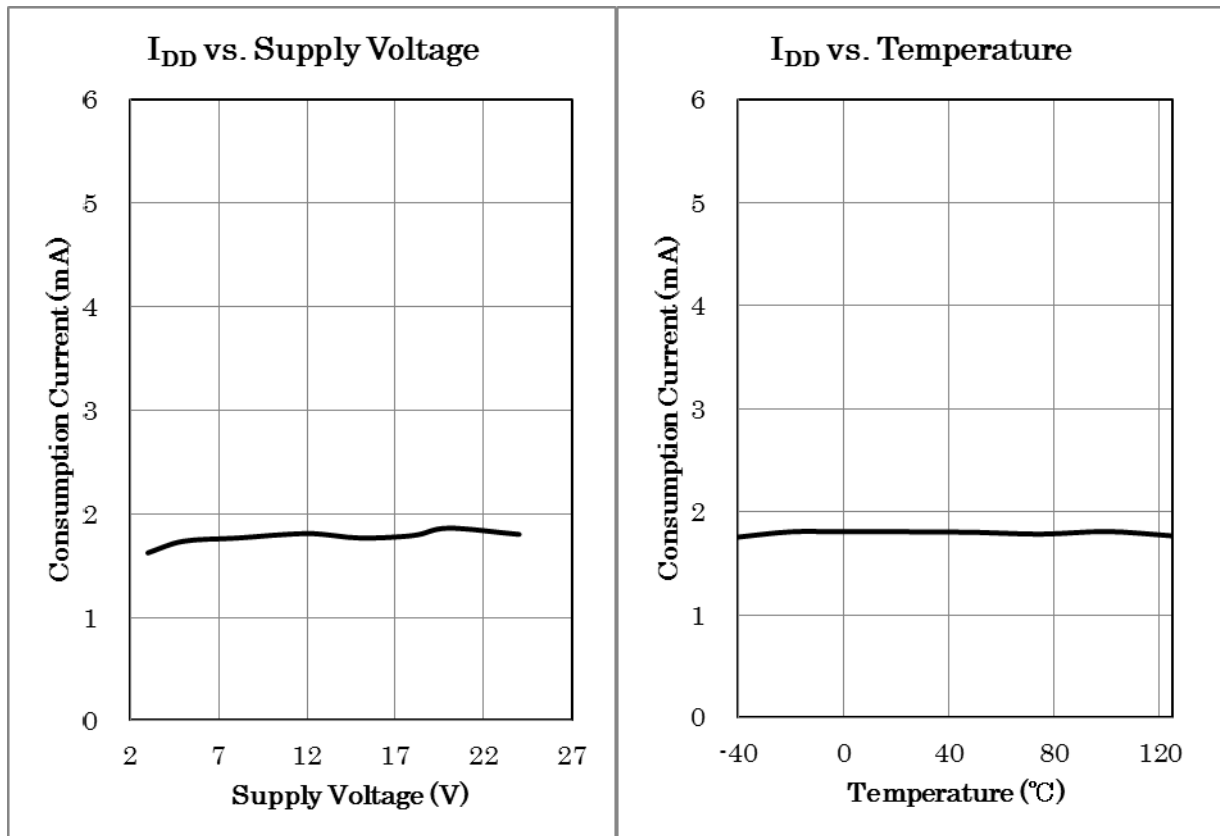
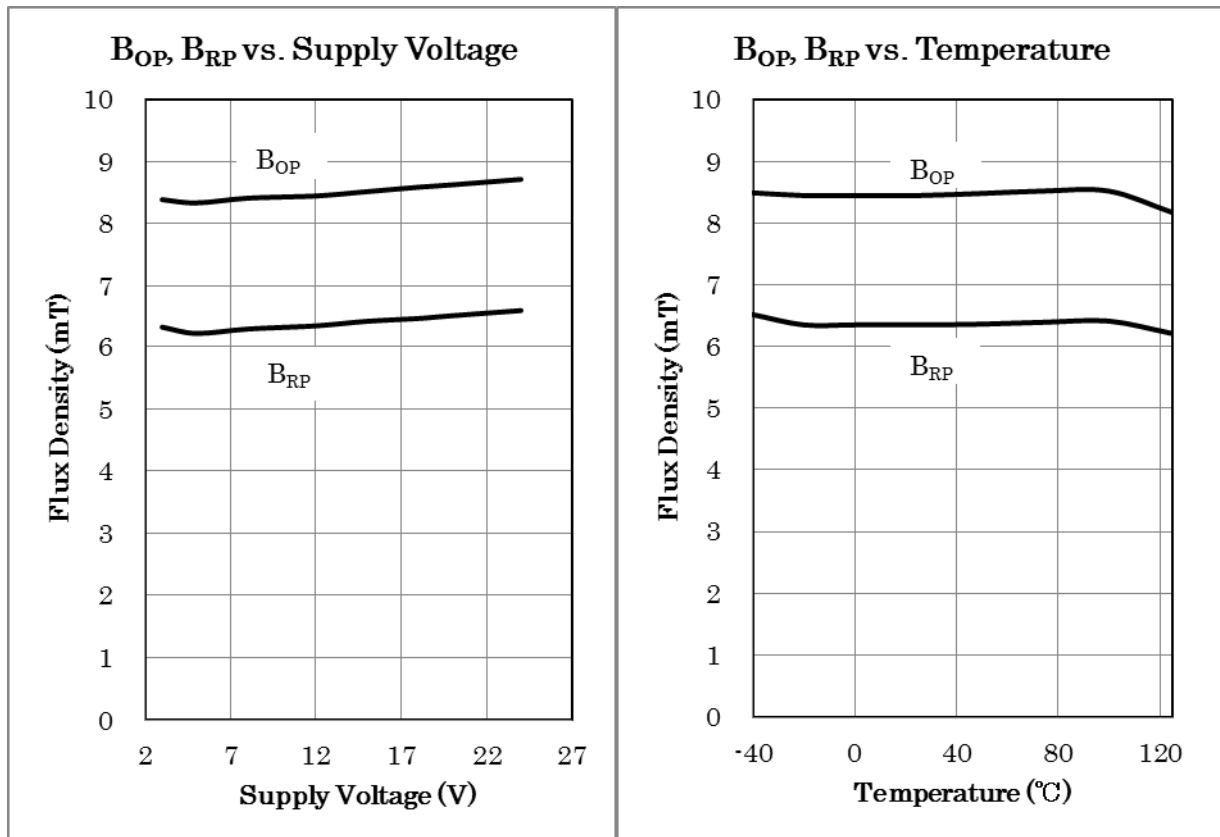
Parameter	Test Condition	Symbol	Value			Unit
			Min	typ	Max	
Operating Point	S pole to branded side	$B_{OP}$	6	-	10	mT
Release Point	S pole to branded side	$B_{RP}$	4	-	8	mT
Hysteresis		$B_{HYS}$	-	2	-	mT

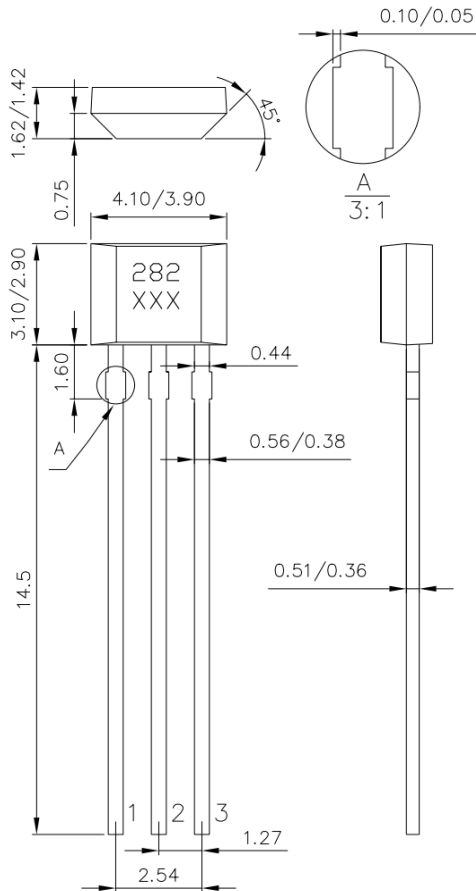
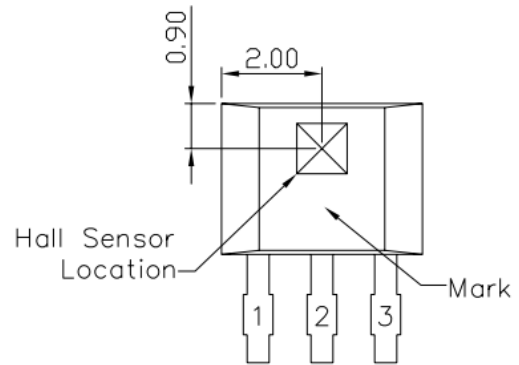

**Switching Characteristics**

**UA Package**
**SO-package Magnetic Characteristics** ( $T_A=25^\circ\text{C}$ ,  $V_{DD}=12\text{V}$ )

Parameter	Test Condition	Symbol	Value			Unit
			Min	Value typ	Max	
Operating Point	N pole to branded side	$B_{OP}$	-10	-	-6	mT
Release Point	N pole to branded side	$B_{RP}$	-8	-	-4	mT
Hysteresis		$B_{HYS}$	-	2	-	mT

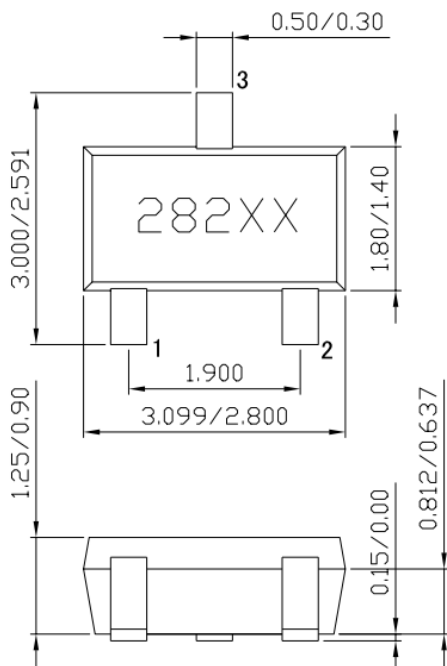
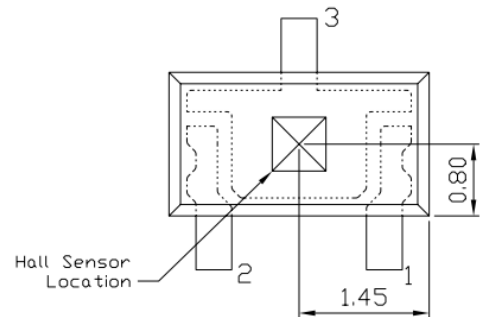

**Switching Characteristics**

**SO Package**

Performance Graphs



**Sensor Location, Package Dimension and Marking**
**UA-package: TO92S**

**Hall sensor location**

**NOTES:**

1. Controlling dimension: mm;
2. Leads must be free of flash and plating voids.
3. Do not bend leads within 1 mm of lead to package interface.
4. PINOUT:  
 Pin 1  $V_{DD}$   
 Pin 2 GND  
 Pin 3 Output

**SO package: SOT23  
(Top view)**

**Hall chip location  
(Bottom view)**

**NOTES:**

1. PINOUT:  
 Pin 1  $V_{DD}$   
 Pin 2 Output  
 Pin 3 GND
2. Controlling dimension: mm;
3. Lead thickness after solder plating will be 0.254mm maximum.