WH2508F

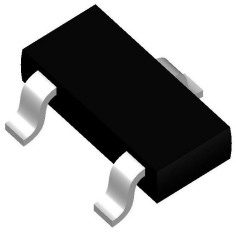
High sensitivity Hall-effect switch

Http://www.sh-willsemi.com

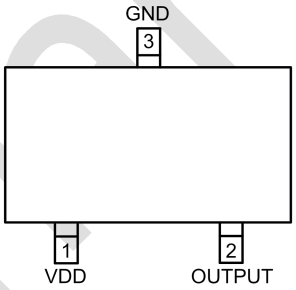
Descriptions

The WH2508F is a miniature micropower magnetic Hall effect switch IC with single output. The temperature compensation circuitry improves stability of magnetic switch points over the whole operating range. If the magnetic flux density perpendicular to the part marking surface is larger than operating point (BOP), the output will be turned on; if it is less than releasing point (BRP), the output will be turned off.The device operates in the omnipolar mode.

The WH2508F are available in TSOT23-3L packages. Standard products are Pb-free and Halogen free products.



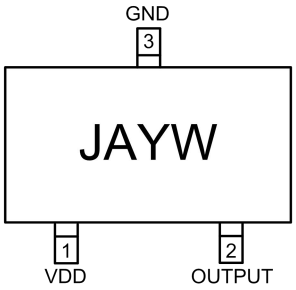
TSOT23-3L



Pin Configuration (Top View)

Features

- Omnipolar Operation
- Supply voltage range 1.6V ~ 5.5V
- High Magnetic Sensitivity
  Bop=36 Gauss Brp=25 Gauss (South)
  Bop=-37 Gauss Brp=-26 Gauss (North)
- Average Supply Current <6.5 μA @VDD=3.3V (typical)
- 8KV ESD on Supply and Output Pins
- Operating Temperature -40 ~ +85 °C



JA: Device Code
Y: YEAR Code
W: WEEK Code

Marking

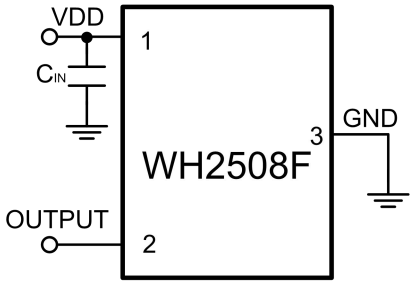
Applications

- Cover switch in notebook PC/PAD
- Cell phones
- Level, proximity and position switches

Order Information

Device	Marking	Package	Shipping
WH2508F-3/TR	JAYW	TSOT-23-3L	3000/Reel&Tape

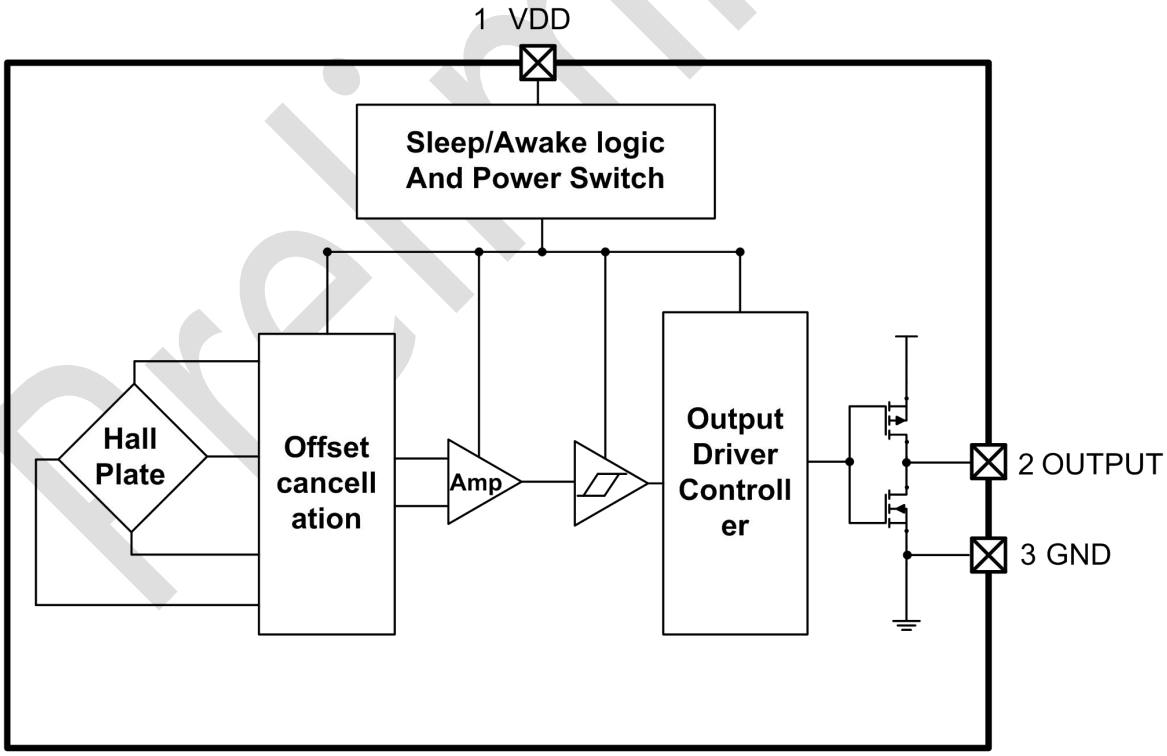
Typical Application



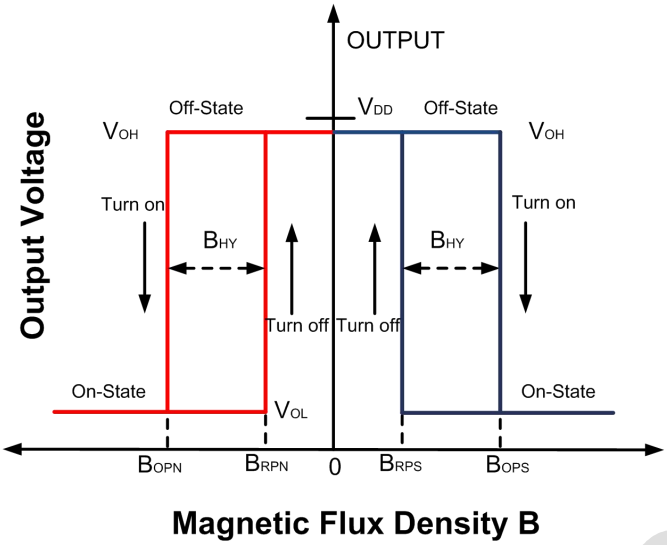
Pin Descriptions

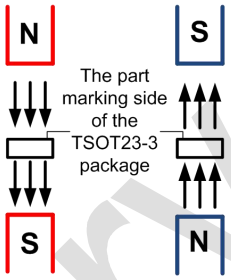
PIN	Symbol	Description
1	VDD	Power supply Input
2	OUTPUT	Output
3	GND	Ground

Block Diagram



Output Switching Characteristics





Absolute Maximum Ratings (@T_A=+25℃， unless otherwise specified)

Symbol	Parameter		Value	Unit
V_{DD}	Supply Voltage Dissipation		6	V
V_{DD_REV}	V_{IN} Range		-0.3	V
I_{OUTPUT}	Output Current		5	mA
B	Magnetic Flux Density		Unlimited	
P_D	Package Power Dissipation	TSOT23-3L	400	mW
T_{STG}	Storage Temperature Range		-50～+150	ºC
T_J	Maximum Junction Temperature		+150	ºC
ESD HBM	Human Body Model ESD Capability		8000	V

Note: Exceeding the absolute maximum ratings may cause permanent damage. Exposure to absolute-maximum rated conditions for extended periods may affect device reliability.

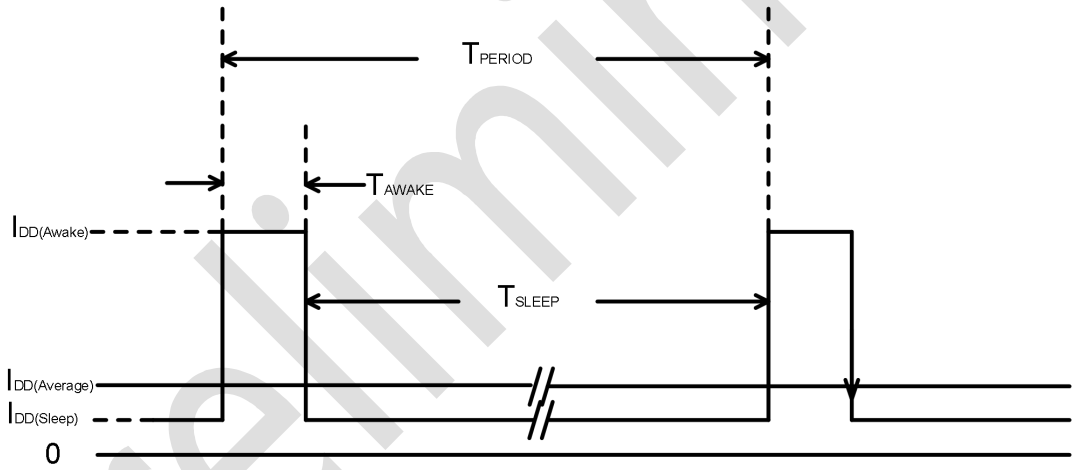
Recommended Operating Range （@T_A=+25℃， unless otherwise specified）

Symbol	Parameter	Conditions	Value	Unit
V_{DD}	Supply Voltage	Operating	1.6～5.5	V
T_A	Operating temperature Range	Operating	-40～85	ºC

Electronics Characteristics (@T_A=+25℃， V_{DD}=1.8V, unless otherwise specified)

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
VDD	Supply Voltage	Operating	1.6	—	5.5	V
$I_{DD(AVG)}$	Average Supply Current	TA=+25℃， VDD=1.8V	—	3.35	—	μA
$I_{DD(Awake)}$	Awake Supply Current	TA=+25℃， VDD=1.8V	—	1.82	—	mA
$I_{DD(Sleep)}$	Sleep Supply Current	TA=+25℃， VDD=1.8V	—	0.96		μA
VOL	Output Low Voltage (On)	I_{OUT}=5mA	—	0.085	0.1	V
VOH	Output high Voltage (Off)	I_{OUT}=5mA	V_{DD}-0.1	V_{DD}-0.085	—	V
T_{AWAKE}	Awake Time	Operating	—	50	—	μs
T_{PERIOD}	Period	Operating	—	45	—	ms

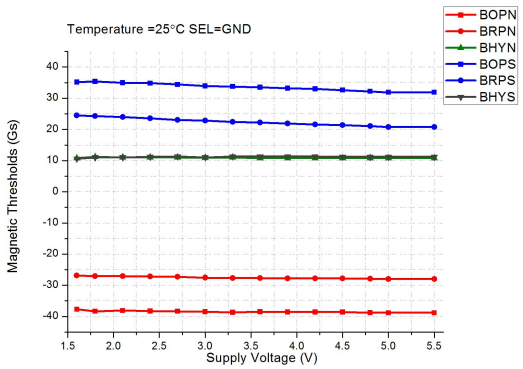
Note: When the power is initially turned on, the operating VDD (1.6V to 3.6V) must be applied to guaranteed the output sampling. The output state is valid after the second operating cycle (typical 45ms).



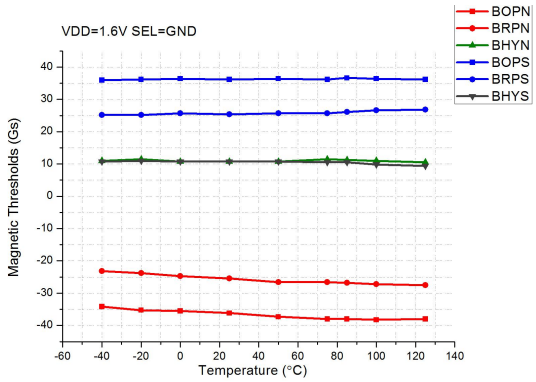
Magnetic Characteristics (T_A=25℃, VDD=1.8V, unless otherwise noted)

Symbol	Characteristics	Condition	Min.	Typ.	Max.	Unit
B_{OPN} (North Pole Part Marking Side)	Output Operation Point	TA=+25℃， VDD=1.8V	-44	-37	-32	Gauss
B_{OPS} (South Pole Part Marking Side)	Output Operation Point	TA=+25℃， VDD=1.8V	32	36	41	
B_{RPN} (North Pole Part Marking Side)	Output Release Point	TA=+25℃， VDD=1.8V	-34	-26	-23	
B_{RPS} (South Pole Part Marking Side)	Output Release Point	TA=+25℃， VDD=1.8V	21	25	30	
B_{HY} ($\|B_{OPX}\|$-$\|B_{RPX}\|$)	Hysteresis		-	11	-	

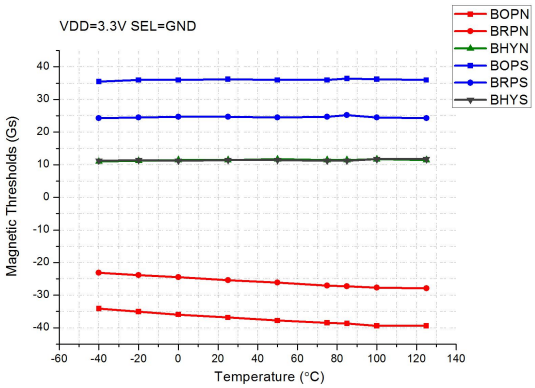
Performance Graphs



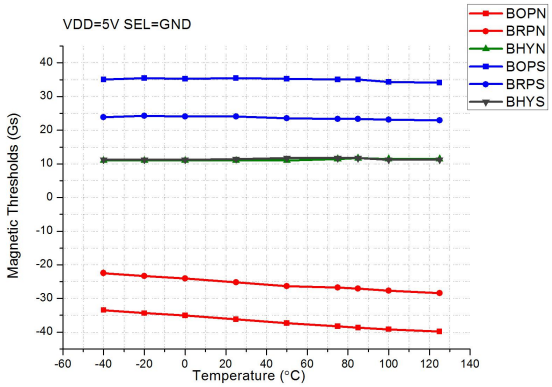
Magnetic Thresholds vs. Supply Voltage @T_A=25℃



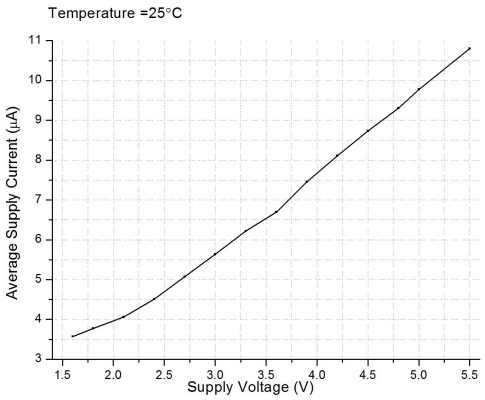
Magnetic Thresholds vs T_A @VDD=1.6V



Magnetic Thresholds vs T_A @VDD=3.3V



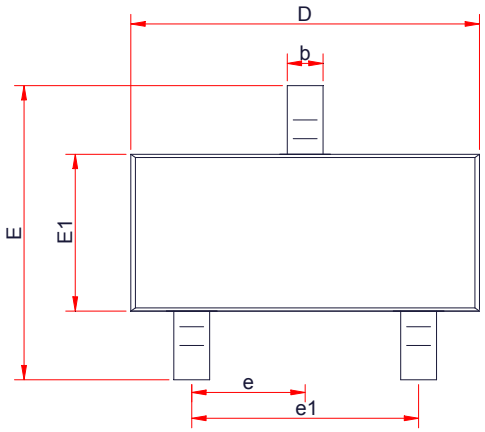
Magnetic Thresholds vs T_A @VDD=5V



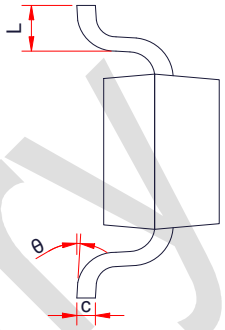
Current Consumption vs. T_A

PACKAGE OUTLINE DIMENSIONS

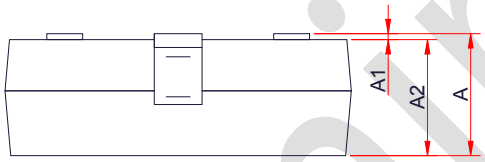
TSOT-23-3L



TOP VIEW



SIDE VIEW

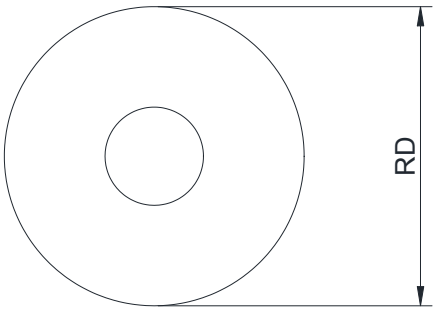


SIDE VIEW

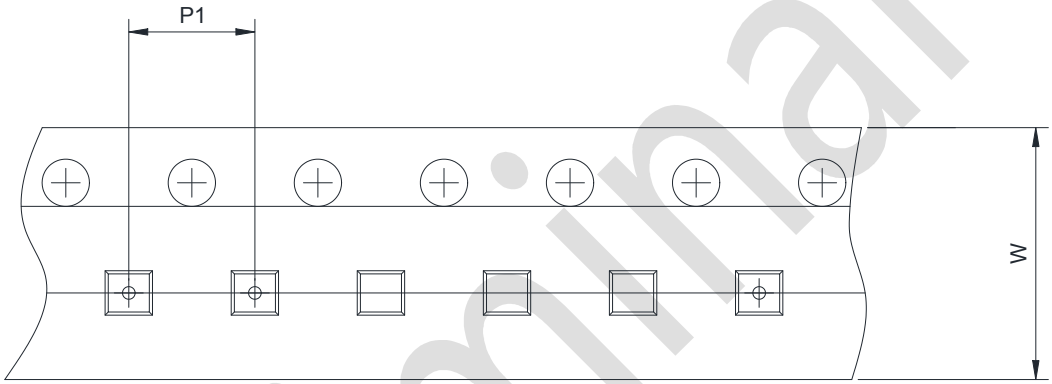
Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	-	-	0.90
A1	0.00	-	0.10
A2	0.70	0.75	0.80
b	0.35	0.42	0.50
c	0.08	0.14	0.20
D	2.82	2.92	3.02
E	2.65	2.80	2.95
E1	1.60	1.65	1.70
e	0.95BSC		
e1	1.90BSC		
L	0.30	0.45	0.60
θ	0 °	-	8 °

TAPE AND REEL INFORMATION

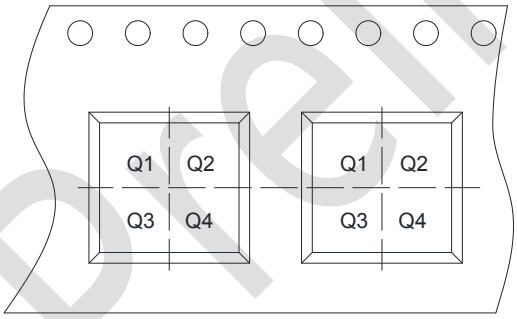
Reel Dimensions



Tape Dimensions



Quadrant Assignments For PIN1 Orientation In Tape



User Direction of Feed

RD	Reel Dimension	☑ 7inch	☐ 13inch		
W	Overall width of the carrier tape	☑ 8mm	☐ 12mm	☐ 16mm	
P1	Pitch between successive cavity centers	☐ 2mm	☑ 4mm	☐ 8mm	
Pin1	Pin1 Quadrant	☐ Q1	☐ Q2	☑ Q3	☐ Q4

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Board Mount Hall Effect/Magnetic Sensors ***category:***

Click to view products by Will Semiconductor ***manufacturer:***

Other Similar products are found below :

HGPRDT005A AH277AZ4-AG1 AV-10379 AV-10448 SS41C AH1894-Z-7 TLE4917 50017859-003 TY-13101 TLE4976L SS85CA BU52002GUL-E2 BU52003GUL-E2 AH277AZ4-BG1 TLE49614MXTSA1 AH211Z4-AG1 AH3360-FT4-7 TLE4941-1 SS460S-100SAMPLE 50065820-03 AH374-P-A AH3372-P-B AH1806-P-A TLE49595UFXHALA1 SS460P-T2 AH1913-W-7 AH3373-P-B TLE9852QXXUMA1 TLE5046ICAKLRHALA1 TLE49421CHAMA2 AH1903-FA-EVM AH8502-FDC-EVM AH3774-P-EVM TLE4998S3XALA1 TLE5011FUMA1 TLE5027CE6747HAMA1 TLE5109A16E1210XUMA1 TLI4966GHTSA1 TLI4906KHTSA1 MA710GQ-P S-57K1NBL2A-M3T2U S-57P1NBL9S-M3T4U S-576ZNL2B-L3T2U S-576ZNL2B-A6T8U S-57P1NBL0S-M3T4U S-57A1NSL1A-M3T2U S-57K1RBL1A-M3T2U S-57P1NBH9S-M3T4U S-57P1NBH0S-M3T4U S-57A1NSH1A-M3T2U