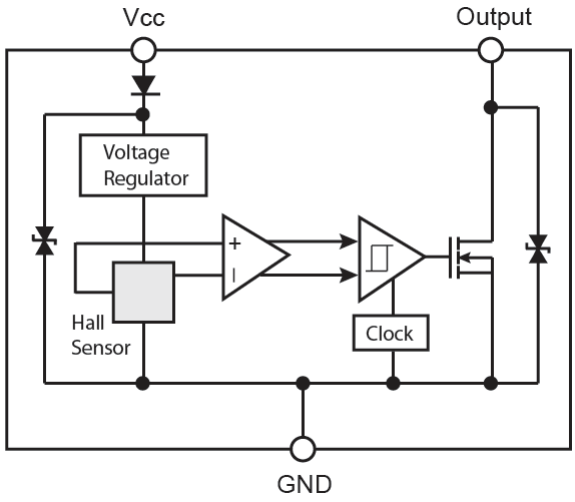
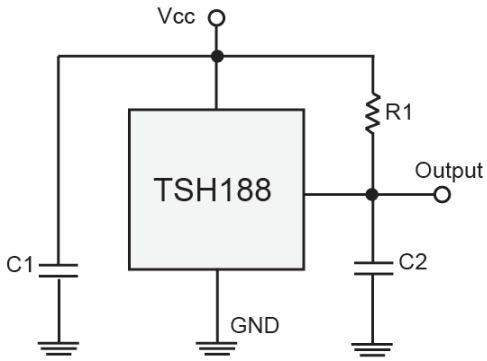
TSH188

Ultra High Sensitivity Hall Effect Latch

Block Diagram



Typical Application Circuit



C1：10nF
C2：1nF
R1：1KΩ

Electrical Specifications (DC Operating Parameters：T_A=+25°C,V_{CC}=12V)

Parameters	Test Conditions	Min	Typ	Max	Units
Supply Voltage	Operating	2.5	--	24	V
Supply Current	B<B_{OP}	--	--	5	mA
Output Saturation Voltage	I_{OUT}=20mA,B>B_{OP}	--	--	400	mV
Output Leakage Current	I_{OFF} B<B_{RP}, V_{OUT} = 12V	--	--	10	uA
Internal Oscillator Chopper Frequency		--	69	--	kHz
Output Rise Time	R_L=1.1KΩ, C_L=20pF	--	0.04	0.45	uS
Output Fall Time	R_L=820Ω; C_L=20pF	--	0.18	0.45	uS
ESD	HBM	4	--	--	KV
Operate Point		5(-25)	--	25(-5)	Gauss
Release Point		-25(5)	--	-5(25)	Gauss
Hysteresis		--	30	--	Gauss

Note: 1G (Gauss) = 0.1mT (millitesta)

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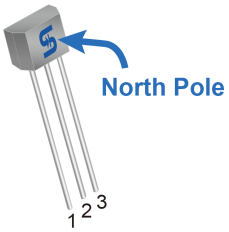
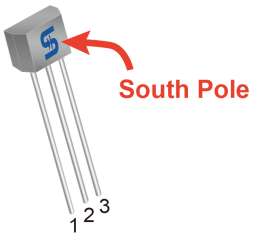
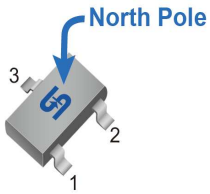
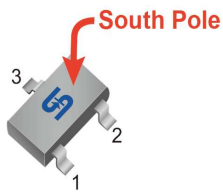
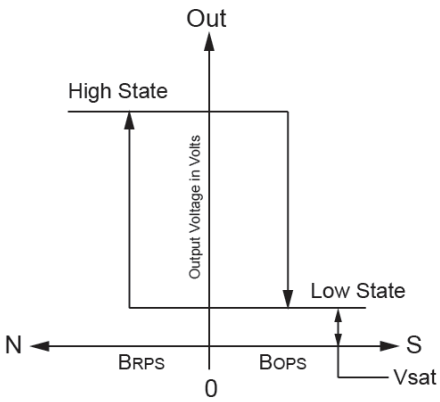
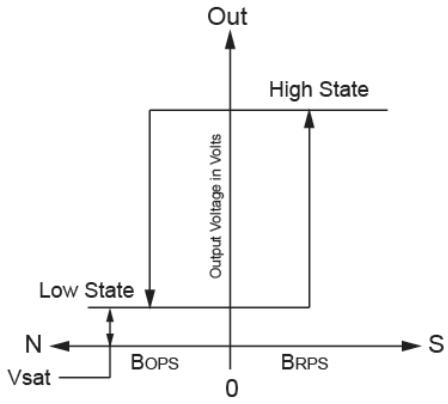
Output Behavior versus Magnetic Pole

DC Operating Parameters: T_A = -40 to 125°C, V_{CC} = 2.5~24V

Parameter	Test condition	OUT (TO-92S)	OUT (SOT-23)
North pole	B>B_{OP}	Open(Hi)	Low
South pole	B<B_{RP}	Low	Open(Hi)

TO-92S		SOT-23	
			
OUT=Hi (Pull-up Voltage)	OUT=Low (VDSon)	OUT=Low (VDSon)	OUT=Hi (Pull-up Voltage)
			
TO-92S - Magnetic Flux Density in Gauss		SOT-23 - Magnetic Flux Density in Gauss	

Characteristic Performance

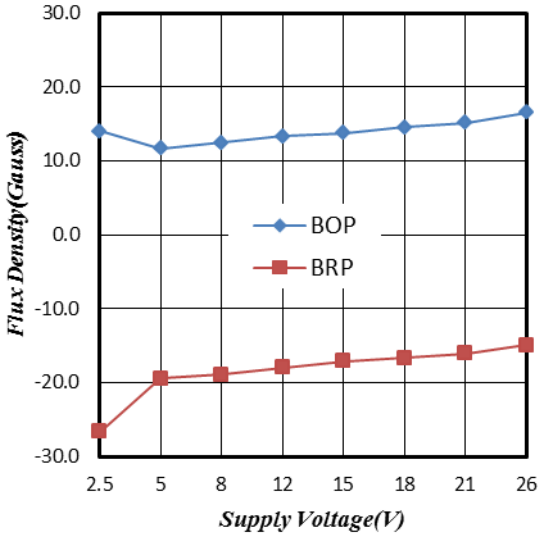


Figure 1. Supply Voltage vs. Flux Density

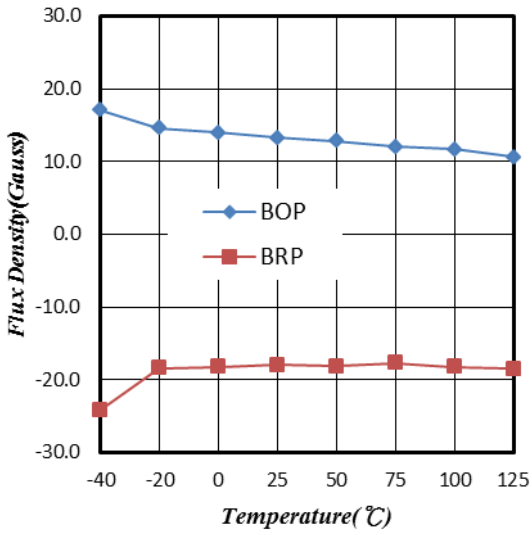


Figure 2. Temperature vs. Flux Density

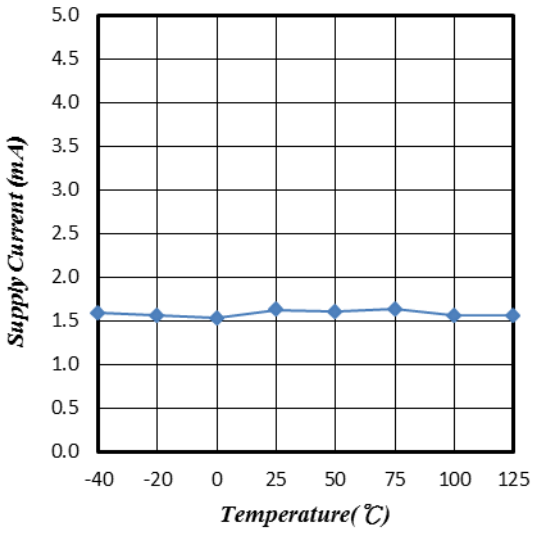


Figure 3. Supply Current vs. Temperature

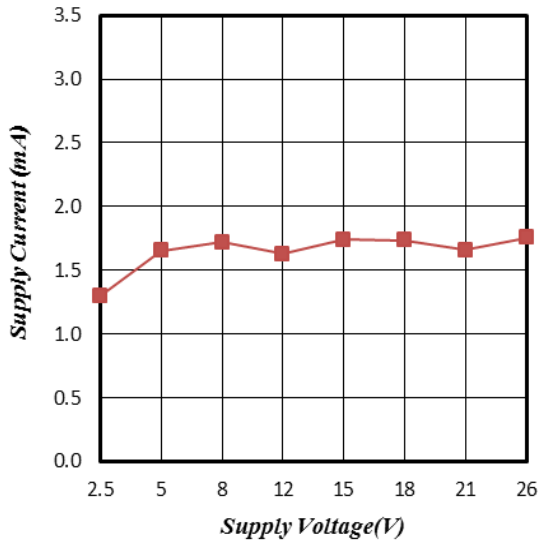


Figure 4. Supply Current vs. Supply Voltage

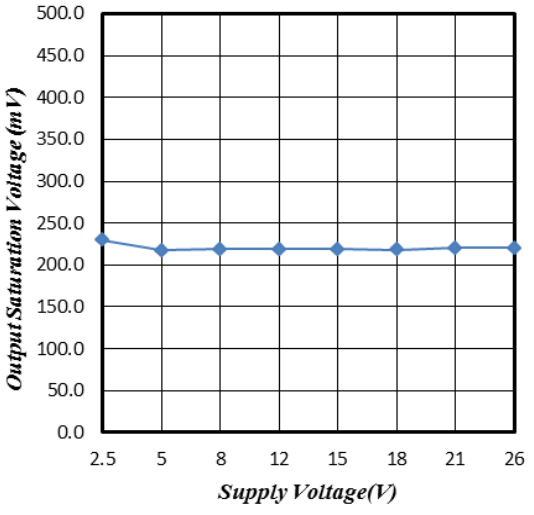


Figure 5. Supply Voltage vs. Saturation Voltage

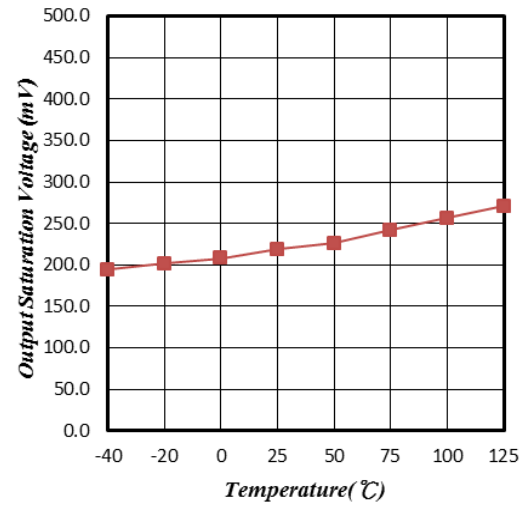


Figure 6. Saturation Voltage vs. Temperature

Characteristic Performance

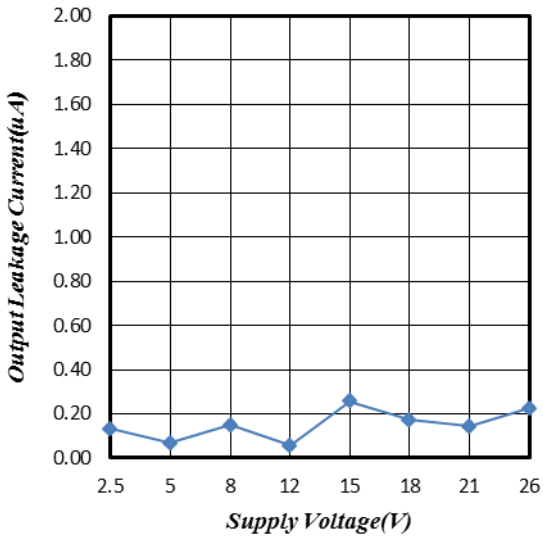


Figure 7. Supply Voltage vs. Leakage Current

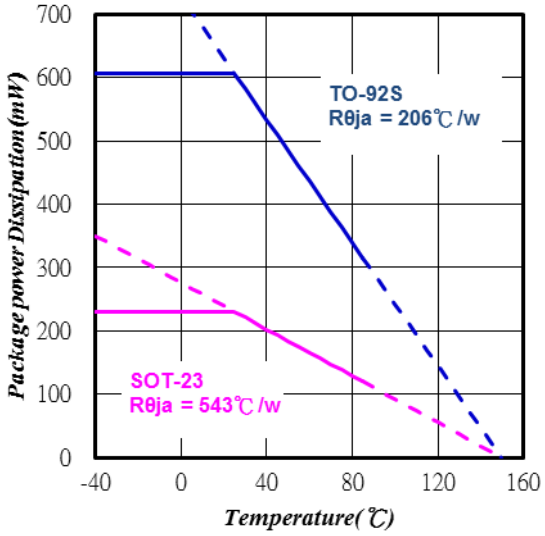


Figure 8. Temperature vs. Power Dissipation

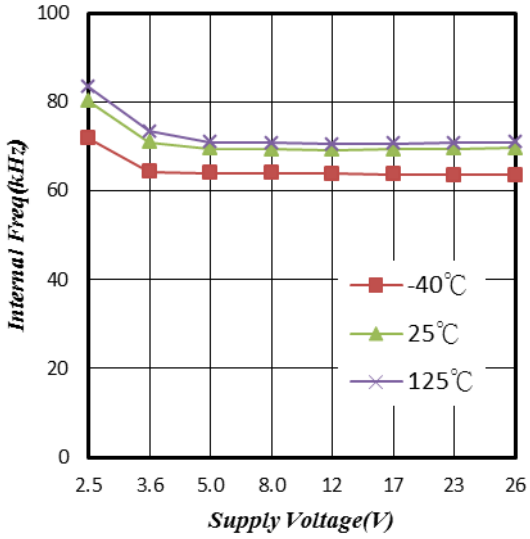


Figure 9. Supply Voltage vs. Internal Frequency

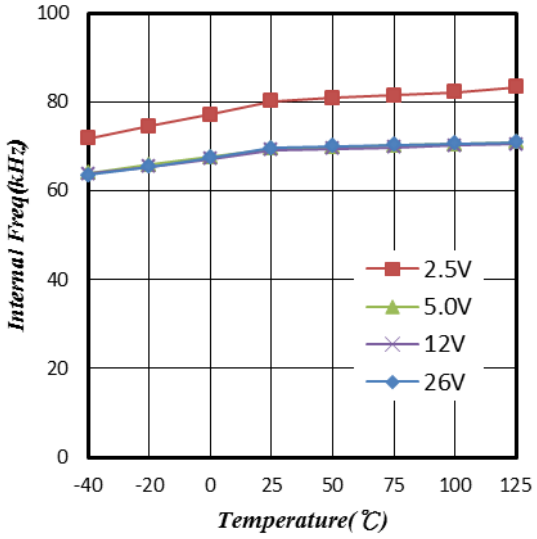


Figure 10. Temperature vs. Internal Frequency

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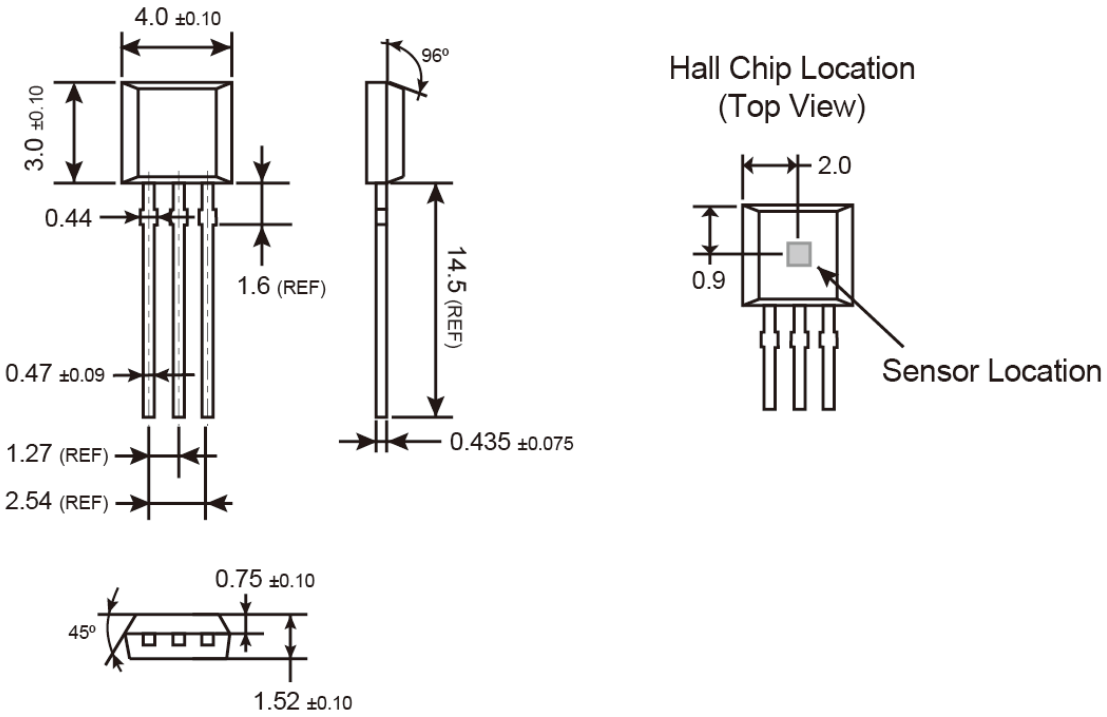
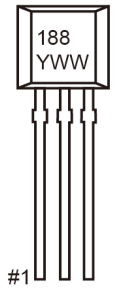
TO-92S Mechanical Drawing



Unit: Millimeters

Marking Diagram



188 = Device Code
Y = Year Code
WW = Week Code (01~52)

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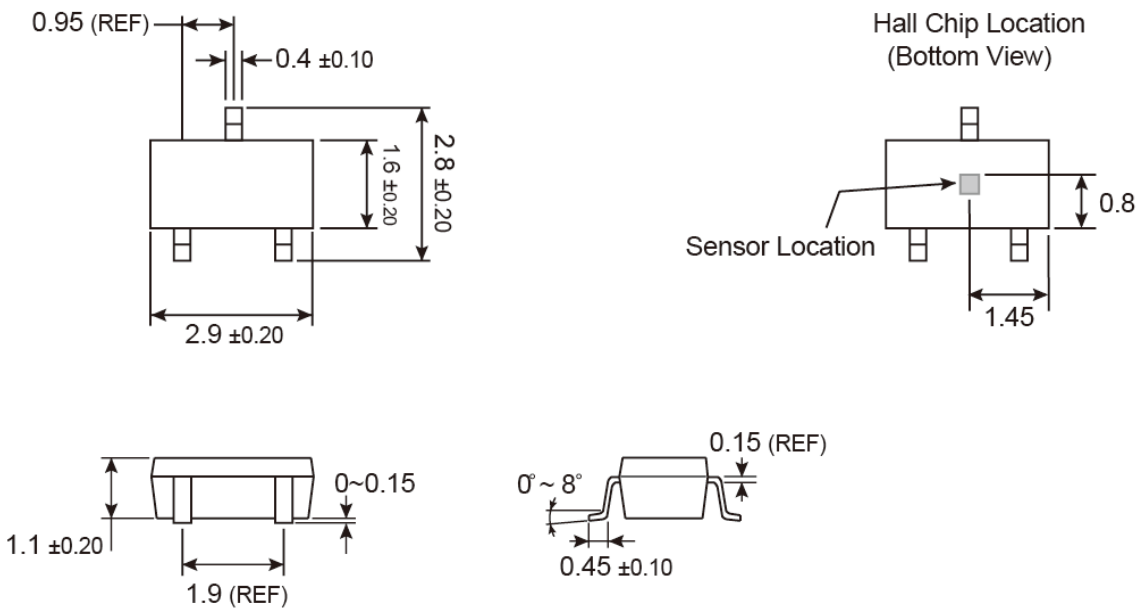
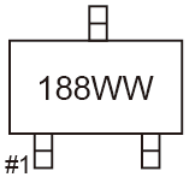
Ultra High Sensitivity Hall Effect Latch

SOT-23 Mechanical Drawing



Unit: Millimeters

Marking Diagram



188 = Device Code

WW = Week Code Table

week	1	2	3	4	5	6	7	8	9	10	11	12	13
code	OA	OB	OC	OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM
week	14	15	16	17	18	19	20	21	22	23	24	25	26
code	ON	OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY	OZ
week	27	28	29	30	31	32	33	34	35	36	37	38	39
code	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM
week	40	41	42	43	44	45	46	47	48	49	50	51	52
code	PN	PO	PP	PQ	PR	PS	PT	PU	PV	PW	PX	PY	PZ

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