



PT3665

Hi-Sensitivity Hall-effect Switch

Applications

- Cover detector
- Battery-operated
- Hand Held Equipment

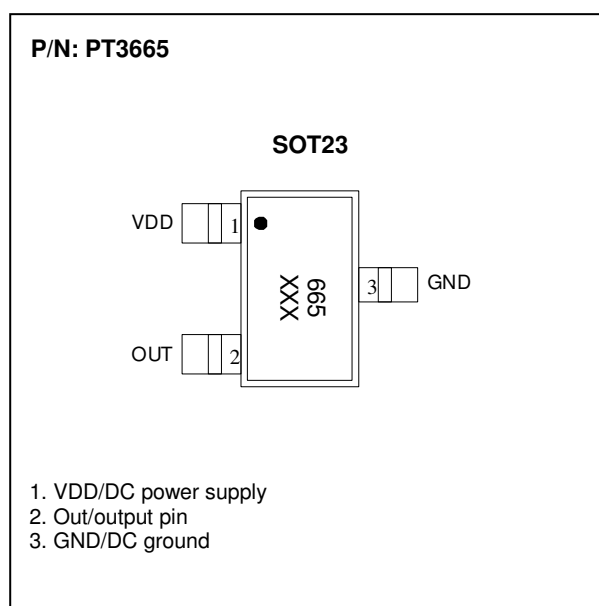
Features

- 2.4V to 5.5V operation range
- Built-in dynamic offset cancellation
- Small size
- High balance and low thermal drift magnetic sensing
- ESD protected to 5KV(HBM)

Order information

- PT3665 /PKG:SOT23

Package Type



Specifications

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Conditions	Rating	Units
Maximum supply voltage	V _{DDmax}		7	V
Allowable power dissipation	P _d	SOT23	300*	mW
Operating temperature	T _a		-40~+85	°C
Storage temperature	T _s		-55~+150	°C
Max. output current	I _{OMAX}		5	mA

*: On 50mm x 50mm x 1.6mm glass epoxy board

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General Specifications

The PT3665 is designed for battery-operated, hand-held equipment such as cellular and cordless phone, PDA and pagers application. The built-in dynamic offset cancellation of pre-amplifier stage achieves optimal symmetrical magnetic sensing.

This Hall effect sensor IC integrate a sensor, pre-amplifier with dynamic offset cancellation and the differential hysteresis comparator in single chip . The architecture block diagram is shown in Fig. 1.

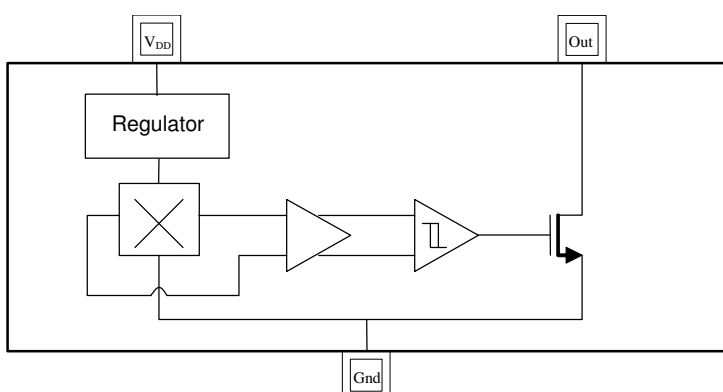


Fig. 1. Functional diagram

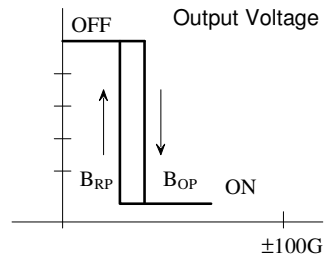
Electrical Characteristics (T_A=+25°C, V_{DD}=3.0V)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Units
Supply Voltage	V _{DD}	Operating	2.4	-	5.5	V
Output Sink Voltage	V _{DS(ON)}	I _{OUT} =1mA, V _{DD} =3.0V	-	0.1	0.25	V
Supply Current	I _{DD}	V _{DD} =3.0V	-	4.0	6.0	mA

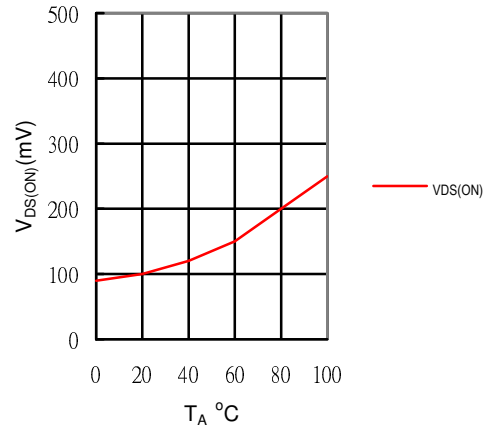
Magnetic Characteristics (T_A=+25°C, V_{DD}=3.0V)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Units
Operate Point	B _{OP}	North operate point	30	45	60	G
Release Point	B _{RP}	North release point	18	37	56	G
Hysteresis	B _{HYS}	B _{OPX} - B _{RPX}	4	8	12	G

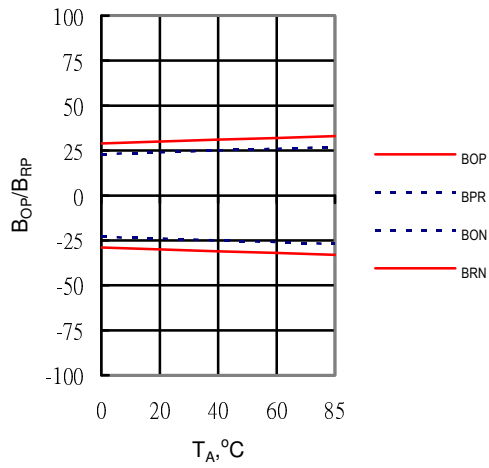
Magnetic Flux Density in Gauss



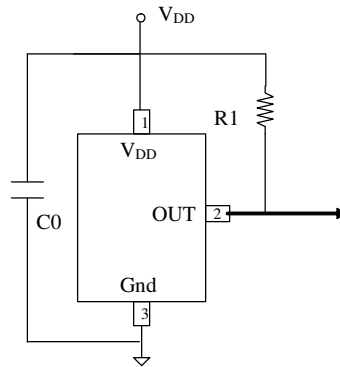
Output sink voltage versus temperature



B_{OP} , B_{RP} versus temperature



Application circuits



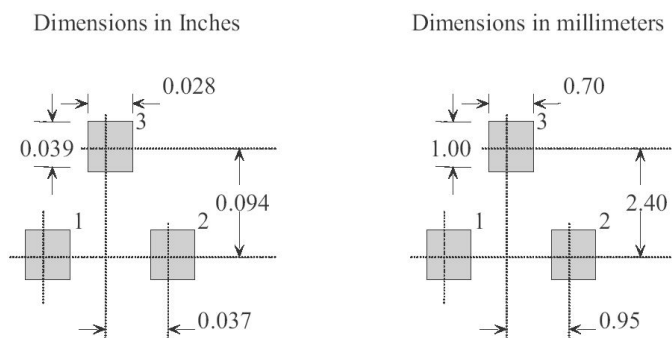
NOTE :

- C0: 0.1uF decoupling capacitor
- R1: >470Kohm is recommended

Ordering information

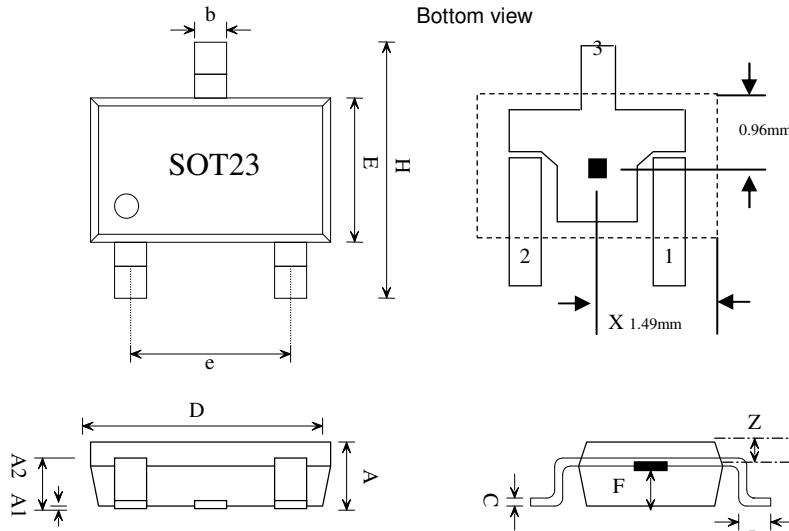
Part NO.	Marking NO.	Package	Temperature
PT3665	665	SOT-23	-40~85C Extended

Solder-Pad Layout



Package Outline

Sensor Location



SYMBOLS	DIMENSIONS IN MILLIMETERS(mm)		
	MIN	NOM	MAX
A	1.00	1.10	1.30
A1	0.00	-	0.10
A2	0.70	0.80	0.90
b	0.35	0.40	0.50
C	0.10	0.15	0.25
D	2.70	2.90	3.10
E	1.40	1.80	2.00
F	0.35	0.50	0.65
H	2.60	2.8	3.00
e	1.7	1.9	2.1
L	0.20	-	-
SENSOR LOCATION			
X	-	0.96	-
Y	-	1.49	-
Z	-	0.50	-