

# MS-0020

MS-0020 is a SON package semiconductor magnetoresistive element. It can detect gear rotation with high accuracy combined with a bias magnet for use, and outputs the phases A and B of module m=0.2.

Shipped in tray (225pcs per pack)

Notice : It is requested to read and accept "IMPORTANT NOTICE" written on the back of the front cover of this catalogue.

## ●Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Limit	Unit
Max. Input Power	PD	395	mW
Operating Temp. Range	Topr.	-40 ~ 100	°C
Storage Temp. Range	Tstg.	-40 ~ 125	°C

(Notice) Maximum input voltage in use is depend on the magnetic flux density of bias magnet.

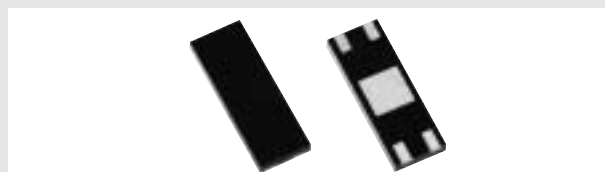
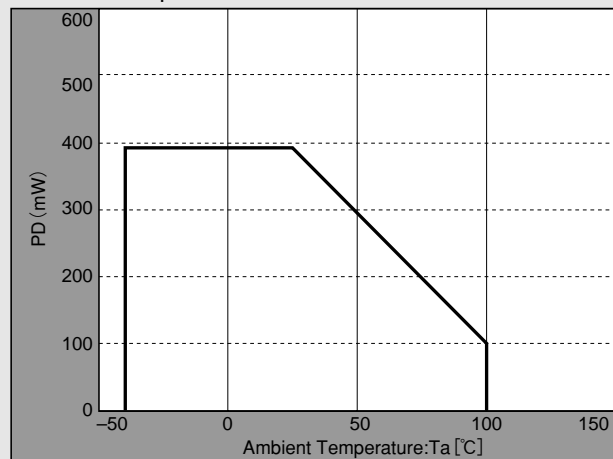
## ●Magnetic & Electrical Characteristics (Ta=25°C) (Ta=25°C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input Resistance	$R_{in}(0)$	$I_C=1mA, B=0T$	205		330	$\Omega$
Output Resistance	$R_{out}(0)$	$I_C=1mA, B=0T$	205		330	$\Omega$
Phase-A Voltage	$V_A(0)$	$V_C=5V, B=0T$	2.46	2.5	2.54	V
Phase-B Voltage	$V_B(0)$	$V_C=5V, B=0T$	2.46	2.5	2.54	V
Phase-A Voltage	$V_A(B)$	$V_C=5V, B=0.45T$	2.46	2.5	2.54	V
Phase-B Voltage	$V_B(B)$	$V_C=5V, B=0.45T$	2.46	2.5	2.54	V
Input Resistance Change Ratio	$\Delta R_{in}/R_{in}$	$I_C=1mA, B=0.45/0T$	170			%
Output Resistance Change Ratio	$\Delta R_{out}/R_{out}$	$I_C=1mA, B=0.45/0T$	170			%

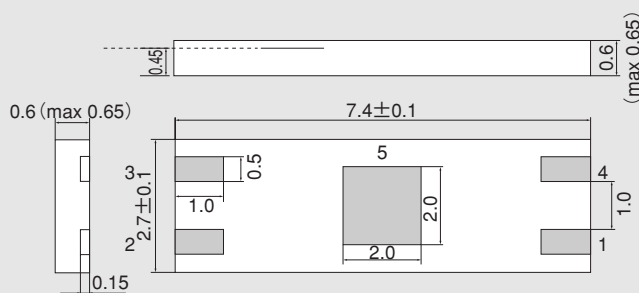
(\*)  $\Delta R_{in}/R_{in} = (R_{in}(B) - R_{in}(0)) / R_{in}(0)$  B=0.45T

(\*\*)  $\Delta R_{out}/R_{out} = (R_{out}(B) - R_{out}(0)) / R_{out}(0)$  B=0.45T

## ●Power Dissipation



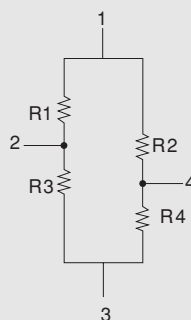
## ●Dimensional Drawing (Unit:mm)



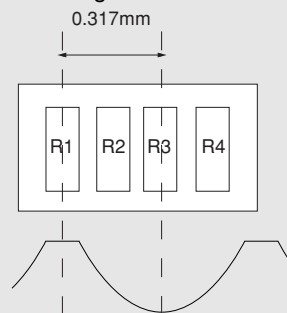
Pin 5 is insulated.

Pinning		
Input	1 (+)	3 (-)
Output	2 (B相)	4 (A相)

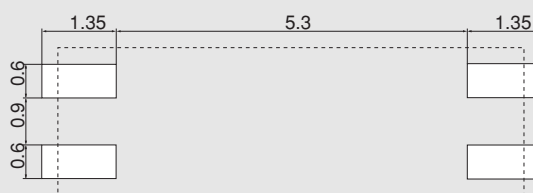
## ●Equivalent Circuit



## ●Configuration



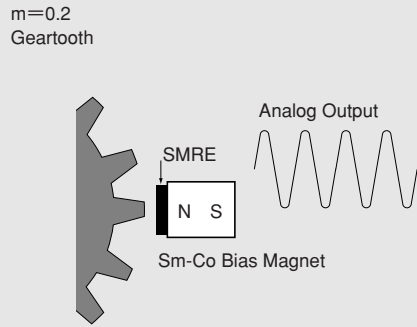
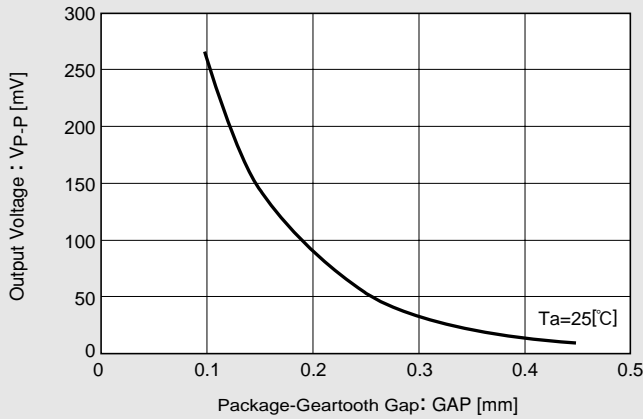
## ●Land Pattern(for reference only)(Unit:mm)



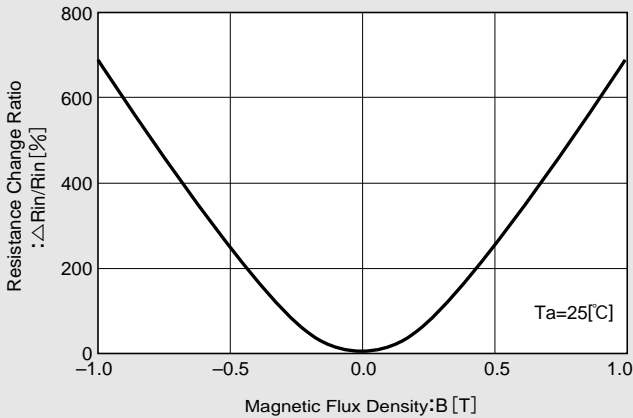
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- This product contains gallium arsenide (GaAs) .Handling and discarding precautions required.

●Characteristic Curves

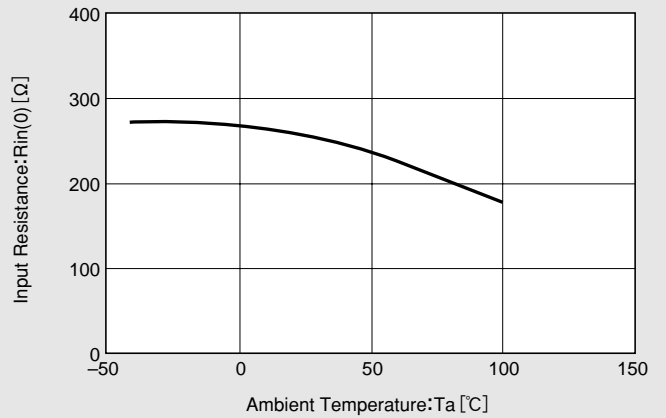
(Reference)Output Voltage-GAP(Package-Geartooth)



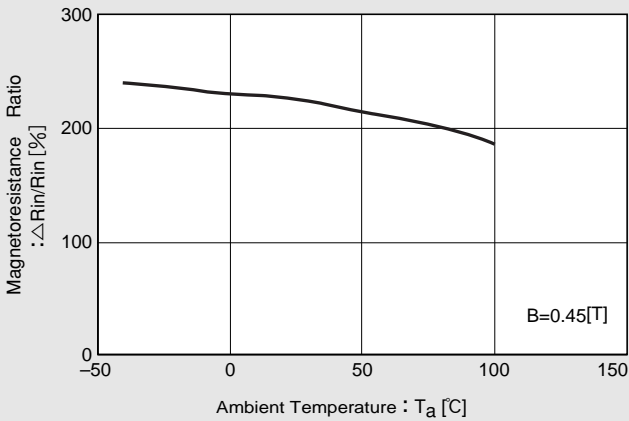
△Rin/Rin-B



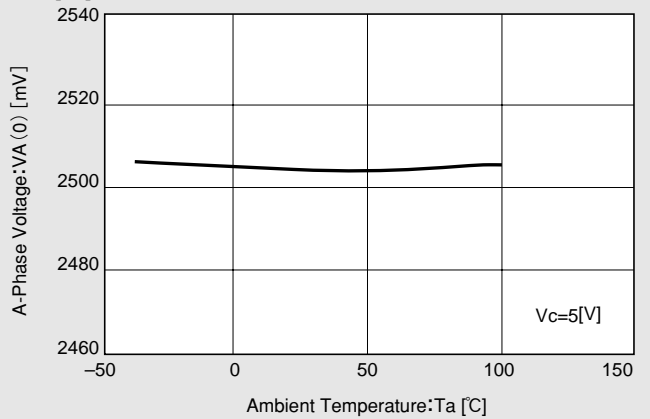
Rin(O)-T



△Rin/Rin-T



VA(O)-T



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December 7, 2010