

Magnetic Sensors

List of Varieties

Series	HGDE*/HGDF*	HGAR	HGDVST	HGPRDT
Photo				
Package specifications	MAP type SOT23 type	DFN type MSOP type TSSOP8 type TSSOP16 type	SOT23 type	
Type	Switching (Surface mount)	Angle (Surface mount)	Switching (Surface mount)	Encoder (Surface mount)
Dimensions (mm)	1.3×0.9×0.525 2.9×2.8×1.1	1.8×1.05×0.65 2.95×4.0×1.1 3.0×4.9×1.1 5.0×6.4×1.1	2.9×2.8×1.1	
Function	Dual polarity/Dual output Dual polarity/Single output Single polarity/Single output	Sin/Cos output Sin/Cos output x2	Single polarity/Single output	2-phase alternating output Alternating output/ Direction of rotation output
Operating magnetic field	1.3mT 2.0mT 3.0mT	10 to 120mT 20 to 60mT	Hoff typ. 1.4mT Hon typ. 2.0mT	Hoff: -0.8mT Typ Hon: +0.8mT Typ
Drive voltage	Typ. 1.8V (1.6V min. to 3.6V max.) Typ. 5V (4.5V min. to 5.5V max.)	5.5V max.	3 to 30V	12V Typ. (3 to 30V)
Current consumption	3μA Ave (at VDD=1.8V) Typ. 1.65mA (at VDD=5V)	—	2.5mA Max. (at VDD=12V)	1.6mA Typ. (at VDD=12V)
Operating temperature range	-10°C to +85°C -40°C to +85°C	-40°C to +105°C -40°C to +150°C	-40°C to +140°C (at VDD=9V)	
Automotive	—	○	●	●

Note

● Indicates applicability to all products in the series, while ○ indicates applicability to some products in the series.

Switching Output Type

HGDE*/HGDF* Series

High reliability with a compact, thin profile based on magnetic sensing device technology.



■ Type: Switching (Surface mount)

Applications: Game: Virtual/augmented reality
 Healthcare: Healthcare equipment, Nursing care equipment,
 Analysis, test equipment
 Home: Major home appliances
 Audio_TV: Visual, Audio, Pro audio, Cameras
 Mobile: Notebooks, peripherals

■ Product List

Products No.	Package specifications	Function	Operating magnetic field	Drive voltage	Current consumption	Size (mm)	Automotive	Drawing No.
HGDESM013A	MAP type	Single polarity/Single output	1.3mT	Typ. 1.8V (1.6V min. to 3.6V max.)	3μA Ave (at VDD=1.8V)	1.3×0.9×0.525	—	1
HGDEPM013A	MAP type	Dual polarity/Single output	1.3mT	Typ. 1.8V (1.6V min. to 3.6V max.)	3μA Ave (at VDD=1.8V)	1.3×0.9×0.525	—	
HGDEDM013A	MAP type	Dual polarity/Dual output	1.3mT	Typ. 1.8V (1.6V min. to 3.6V max.)	3μA Ave (at VDD=1.8V)	1.3×0.9×0.525	—	
HGDESM023A	MAP type	Single polarity/Single output	2.0mT	Typ. 1.8V (1.6V min. to 3.6V max.)	3μA Ave (at VDD=1.8V)	1.3×0.9×0.525	—	
HGDESM033A	MAP type	Single polarity/Single output	3.0mT	Typ. 1.8V (1.6V min. to 3.6V max.)	3μA Ave (at VDD=1.8V)	1.3×0.9×0.525	—	
HGDEST021B	SOT23 type	Single polarity/Single output	2.0mT	Typ. 1.8V (1.6V min. to 3.6V max.)	3μA Ave (at VDD=1.8V)	2.9×2.8×1.1	—	2
HGDEPT021B	SOT23 type	Dual polarity/Single output	2.0mT	Typ. 1.8V (1.6V min. to 3.6V max.)	3μA Ave (at VDD=1.8V)	2.9×2.8×1.1	—	
HGDFST021B	SOT23 type	Single polarity/Single output	2.0mT	Typ. 5V (4.5V min. to 5.5V max.)	Typ. 1.65mA (at VDD=5V)	2.9×2.8×1.1	—	3
HGDFPT021B	SOT23 type	Dual polarity/Single output	2.0mT	Typ. 5V (4.5V min. to 5.5V max.)	Typ. 1.65mA (at VDD=5V)	2.9×2.8×1.1	—	

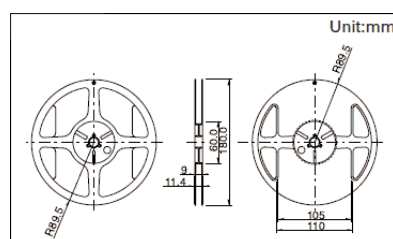
⚠ Note

1. This catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. Please place purchase orders per minimum order unit (integer).
3. High and low sensitivity types also available. Please contact us for details.
4. Some products can be provided halogen-free. Please contact us for details.

■ Packing Specifications

Taping

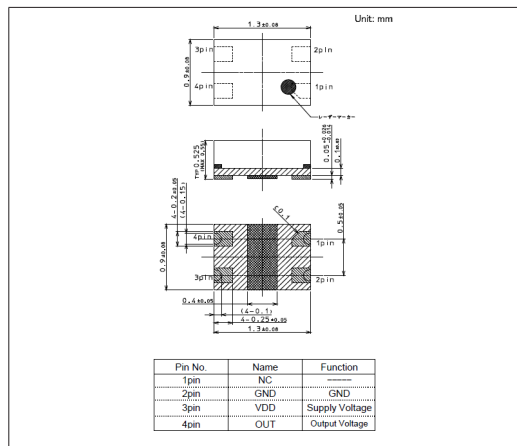
Number of packages (pcs.)			Tape width (mm)	Export package measurements (mm)
1 reel	1 case / Japan	1 case / export packing		
3,000	3,000	45,000	8	210 x 210 x 230



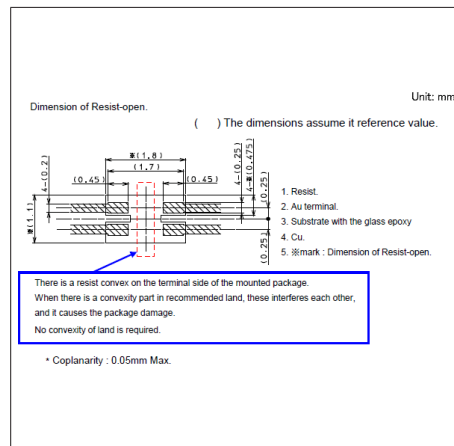
Switching Output Type HGDE*/HGDF* Series

Drawing No.1

■ Dimensions

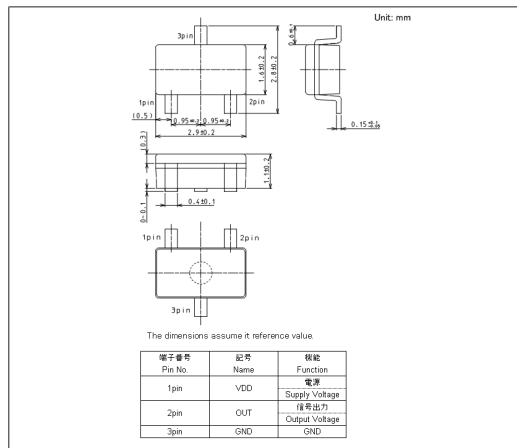


■ Land Dimensions

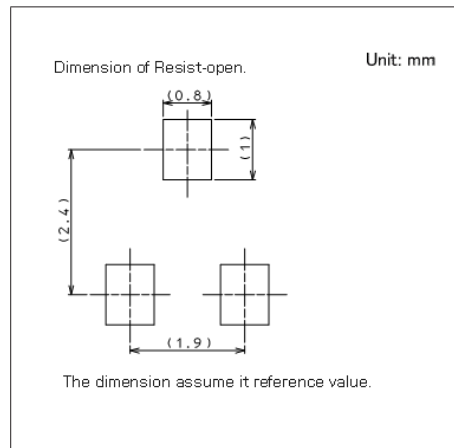


Drawing No.2

■ Dimensions

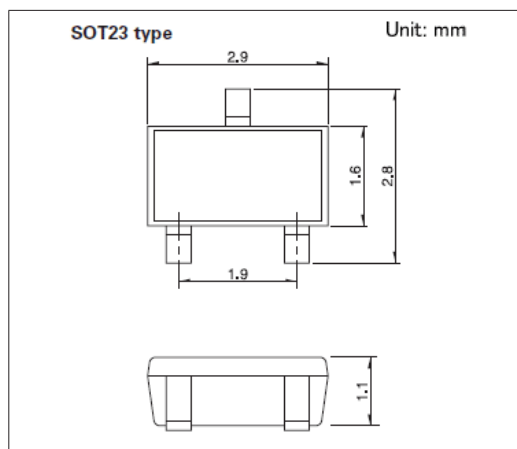


■ Land Dimensions

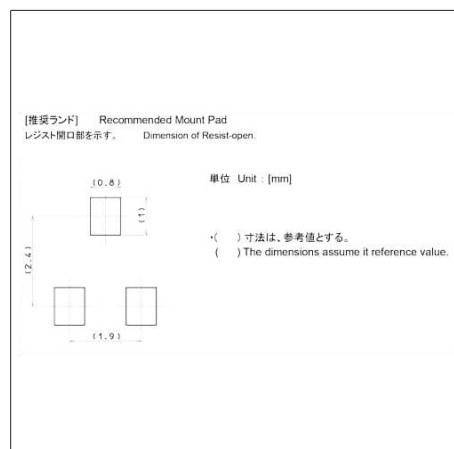


Drawing No.3

■ Dimensions



■ Land Dimensions



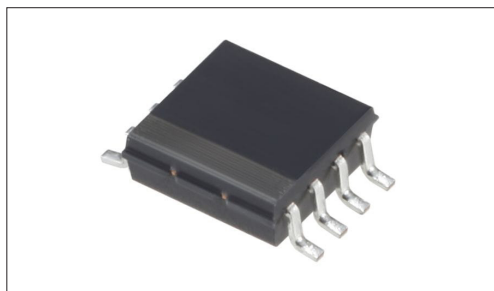
Sensors

Magnetic Sensors

Analog Linear Output Type

HGAR Series

High output suitable for high-resolution absolute angle and position detection.



Automotive

※Please check the product list for compatible products

■ Type: Angle (Surface mount)

Applications: Energy_Industrial: Robots, drones, Industrial equipment, Converters
 Game: Virtual/augmented reality
 Healthcare: Healthcare equipment, Nursing care equipment, Analysis, test equipment
 Automotive: Navigation/audio systems, HVAC, Shifter, Steering

■ Product List

Products No.	Package specifications	Function	Operating magnetic field	Drive voltage	Size (mm)	Automotive	Drawing No.
HGARPS011A	TSSOP8 type	Sin/Cos output	10 to 120mT	5.5V max.	3.0×4.9×1.1	●	1
HGARPS001A	TSSOP16 type	Sin/Cos output x2	10 to 120mT	5.5V max.	5.0×6.4×1.1	●	2
HGARAP001A	MSOP type	Sin/Cos output	20 to 60mT	5.5V max.	2.95×4.0×1.1	●	3
HGARAN008A	DFN type	Sin/Cos output	20 to 60mT	5.5V max.	1.8×1.05×0.65	—	4

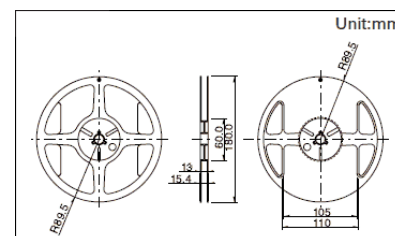
Note

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2. Place your purchase order in N minimum package units (N: integer).

■ Packing Specifications

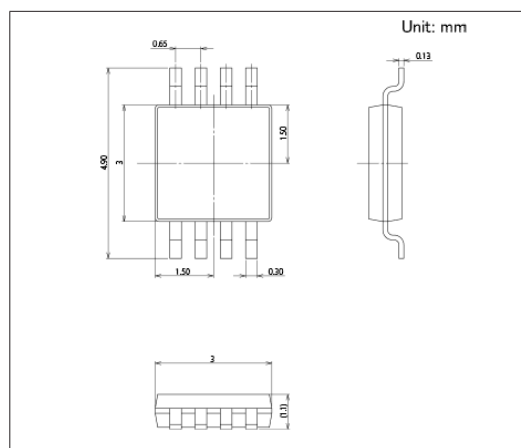
Taping

Products No.	Number of packages(pcs.)			Tape width (mm)	Export package measurements (mm)
	1 reel	1 case / Japan	1 case / export packing		
HGARPS011A	3,000	3,000	21,000	12	378×381×276
HGARPS001A	2,500	2,500	10,000	12	284×224×278
HGARAP001A	3,000	3,000	3,000	12	210 x 210 x 230
HGARAN008A	3,000	3,000	3,000	8	210 x 210 x 230

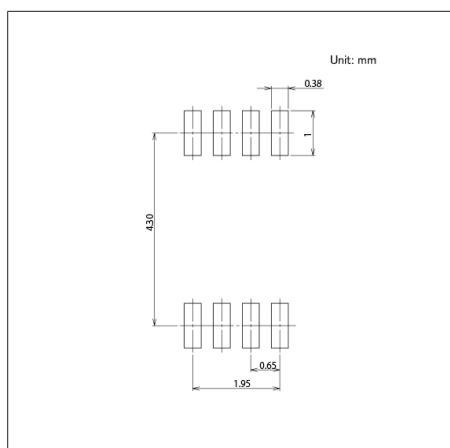


Drawing No.1

■ Dimensions



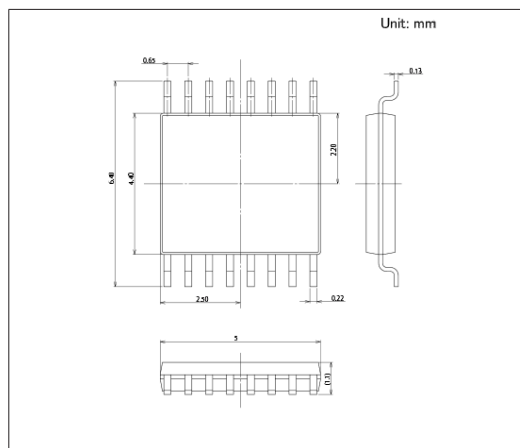
■ Land Dimensions



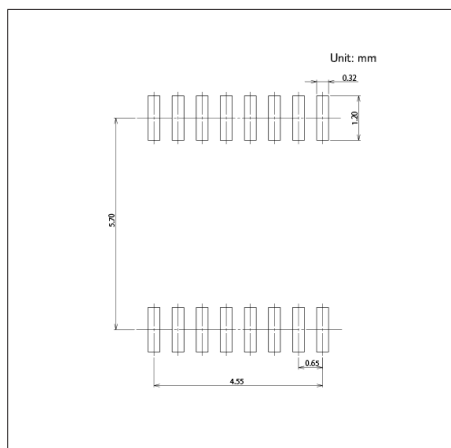
Analog Linear Output Type HGAR Series

Drawing No.2

■ Dimensions

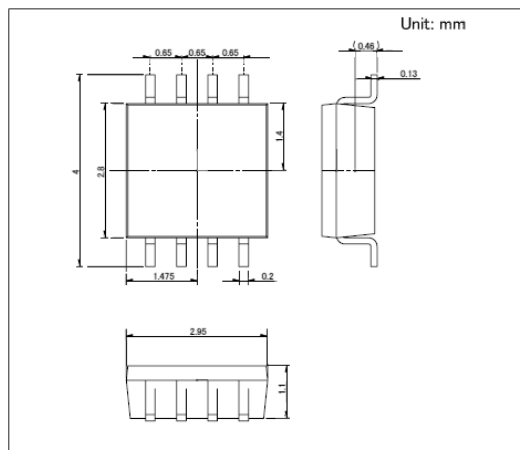


■ Land Dimensions



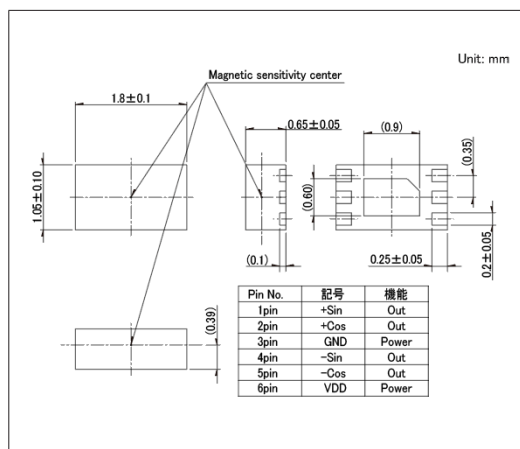
Drawing No.3

■ Dimensions



Drawing No.4

■ Dimensions



Sensors

Magnetic Sensors

Incremental Encode Output Type
HGPRDT Series

Incorporates dual-phase output in a small package, contributing to miniaturization and design flexibility of encoder systems.



Automotive

■ Type:Encoder (Surface mount)

Applications:Automotive:Navigation/audio systems, HVAC,Tailgate,
Power Windows,Steering

■ Product List

Products No.	Package specifications	Function	Operating magnetic field	Drive voltage	Current consumption	Size (mm)	Automotive	Drawing No.
HGPRDT006A	SOT23 type	Alternating output/ Direction of rotation output	Hon: +0.8mT Typ Hoff: -0.8mT Typ	12V Typ. (3 to 30V)	1.6mA Typ. (at VDD=12V)	2.9×2.8×1.1	●	1
HGPRDT007A	SOT23 type	2-phase alternating output	Hon: +0.8mT Typ Hoff: -0.8mT Typ	12V Typ. (3 to 30V)	1.6mA Typ. (at VDD=12V)	2.9×2.8×1.1	●	

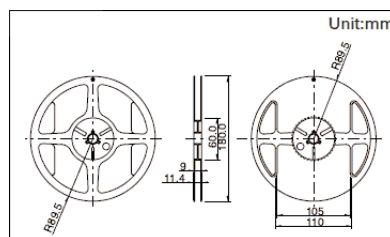
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■ Packing Specifications

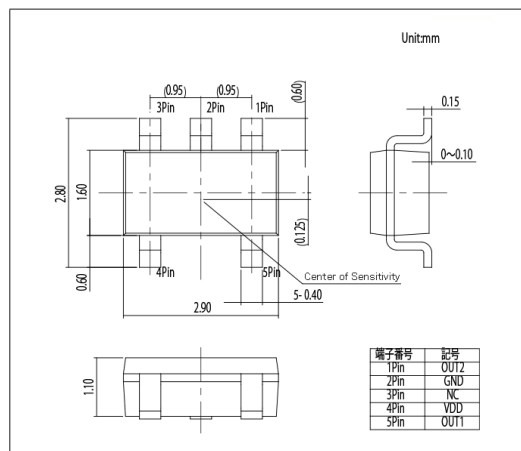
Taping

Number of packages(pcs.)			Tape width (mm)	Export package measurements (mm)
1 reel	1 case / Japan	1 case / export packing		
3,000	3,000	45,000	8	210 x 210 x 230



Drawing No.1

■ Dimensions



■ Land Dimensions

