## Sensors

# Pressure Sensors

## List of Varieties

| Series | HSPPAR | HSPPAD (Water-proof) | HSFPAR |
|---|---|---|---|
| Photo |  |  |  |
| Type | Atmospheric pressure detection | Atmospheric pressure detection, Depth of water detection | Load detection |
| Water-proof | — | ● | — |
| Mounting method | Surface mount | | |
| Dimensions (mm) | 2.5×2.5×0.7 | 3.1×3.1×2.6 | 1.5×0.85×0.68 2.0×1.6×0.66 |
| Interface | Differential voltage | I²C | — |
| Operating temperature range | -20℃ to +85℃ | -40℃ to +85℃ | |
| Supply voltage | — | 1.7 to 3.6V | 1.5 to 3.6V |
| Automotive | — | — | — |

⚠Note

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

# Sensors | Pressure Sensors

## MEMS Pressure Sensor
# HSPPAR Series

## Compact type expanding application possibilities.
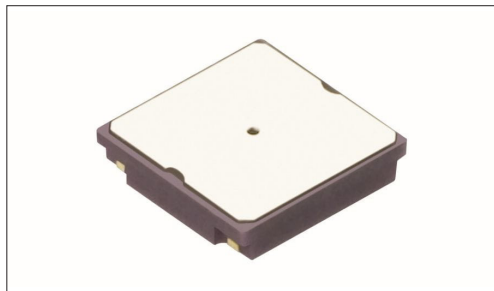


- Type：Atmospheric pressure detection
- Mounting method：Surface mount

Applications：Mobile：Smartphones, tablets,Headsets, wearables,
Notebooks, peripherals
Energy_Industrial：Robots, drones,Industrial equipment,
Converters
Game：Virtual/augmented reality
Healthcare：Healthcare equipment,Nursing care equipment,
Analysis, test equipment
Home：Major home appliances

## ■ Product List

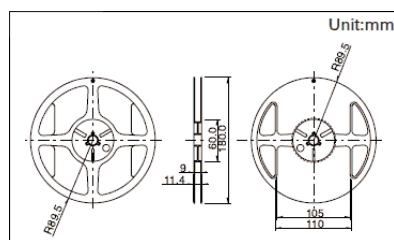| Products No. | Function | Features | Interface | Pressure measurement range | Operating temperature range | Size (mm) | Automotive | Drawing No. |
|---|---|---|---|---|---|---|---|---|
| HSPPAR003D | Atmospheric pressure detection | Pressure sensor element contained within housing | Differential voltage | 500 to 1100hPa | -20℃ to +85℃ | 2.5×2.5×0.7 | — | 1 |

⚠Note

1. This catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. Place your purchase order in N minimum package units (N: integer).

## ■ 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 | 210×210×230 |



## Drawing No.1

### ■ Dimensions

**Sensors** **Pressure Sensors**

MEMS Pressure Sensor
# HSPPAD (Water-proof Type) Series

## Water-proof piezoresistive design, suitable for water depth detection.



- Type：Atmospheric pressure detection, Depth of water detection
- Mounting method：Surface mount

Applications：Infrastructure：Smart meters
　　　　　　　Healthcare：Healthcare equipment,Nursing care equipment,
　　　　　　　　　　　　　Analysis, test equipment
　　　　　　　Mobile：Headsets, wearables

■ Product List

| Products No. | Function | Features | Interface | Pressure measurement range | Operating temperature range | Size (mm) | Automotive | Drawing No. |
|---|---|---|---|---|---|---|---|---|
| HSPPAD143C | Atmospheric pressure detection, Depth of water detection (Water-proof) | Water-proof pressure sensor, output range 300 to 2000hPa | I²C | 300 to 2000hPa | -40℃ to +85℃ | 3.1×3.1×2.6 | — | |
| HSPPAD147A | Atmospheric pressure detection, Depth of water detection (Water-proof) | Water-proof pressure sensor, output range 30 to 750kPa | I²C | 30 to 750kPa | -40℃ to +85℃ | 3.1×3.1×2.6 | — | 1 |
| HSPPAD148A | Atmospheric pressure detection, Depth of water detection (Water-proof) | Water-proof pressure sensor, output range 30 to 3200kPa | I²C | 30 to 3200kPa | -40℃ to +85℃ | 3.1×3.1×2.6 | — | |

⚠️Note

1. This catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. Place your purchase order in N minimum package units (N: integer).
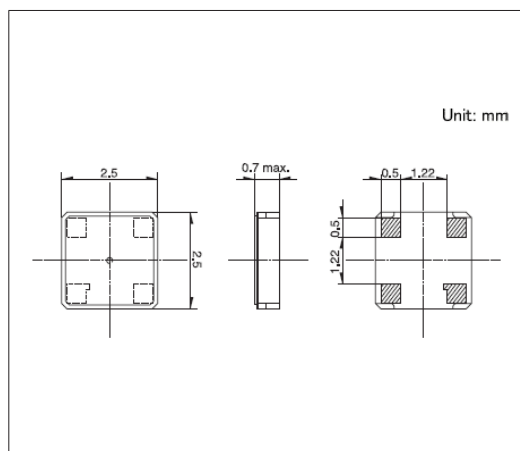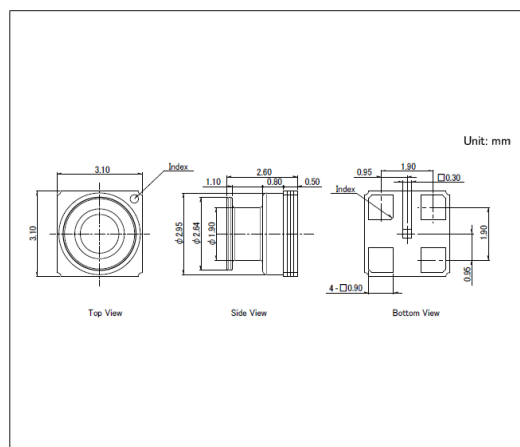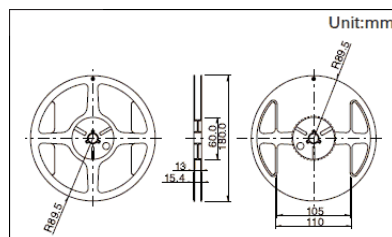
■ Packing Specifications
Taping

| Number of packages(pcs.) | | | Tape width (mm) | Export package measurements (mm) |
|---|---|---|---|---|
| 1 reel | 1 case / Japan | 1 case / export packing | | |
| 500 | 500 | 5,000 | 12 | 210×210×230 |



### Drawing No.1

■ Dimensions



ALPSALPINE

# Sensors | Pressure Sensors

## Force Sensor
# HSFPAR Series

## High-sensitivity load detection in a compact package.

■ Type：Load detection

■ Mounting method：Surface mount

Applications：Mobile：Smartphones, tablets,Headsets, wearables,
Notebooks, peripherals
Game：Virtual/augmented reality
Healthcare：Healthcare equipment,Nursing care equipment,
Analysis, test equipment

■ Product List

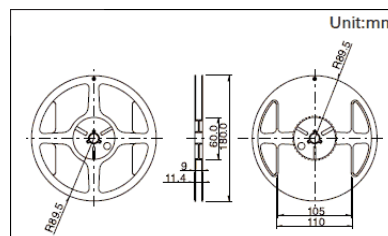| Products No. | Function | Features | Force range | Operating temperature range | Supply voltage | Size (mm) | Automotive | Drawing No. |
|---|---|---|---|---|---|---|---|---|
| **HSFPAR004A** | Load detection | High-sensitivity load detection with a compact package | 0 to 8N | -40℃ to +85℃ | 1.5 to 3.6V | 2.0×1.6×0.66 | — | 1 |
| **HSFPAR007A** | Load detection | High-sensitivity load detection with a compact package | 0 to 8N | -40℃ to +85℃ | 1.5 to 3.6V | 1.5×0.85×0.68 | — | 2 |

⚠ Note

1. This catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. Please place purchase orders for taping products per minimum order unit (1 reel or a case).
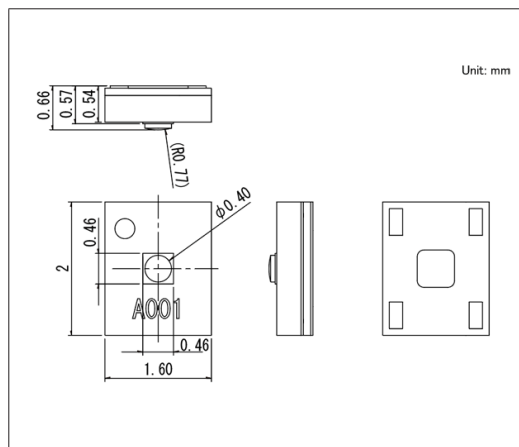
■ Packing Specifications

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 | 210×210×230 |



Unit:mm

## Drawing No.1

■ Dimensions



Unit: mm

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Force Sensor
# HSFPAR Series

## Drawing No.2

■Dimensions