

## Features

- 3V excitation, Battery operation available
- Very small surface mountable package, Easy to mount on PCB
- Volt level output
- On-chip amplification and temperature compensations
- Pre-calibration of offset voltage and span

## Applications

- Industrial instrumentation
- Pressure switch, Pneumatic device
- Medical device

## Part number for ordering

X3DM - 050KP D S R

Model  
X3DM

Rated pressure (Pa)

Pressure type

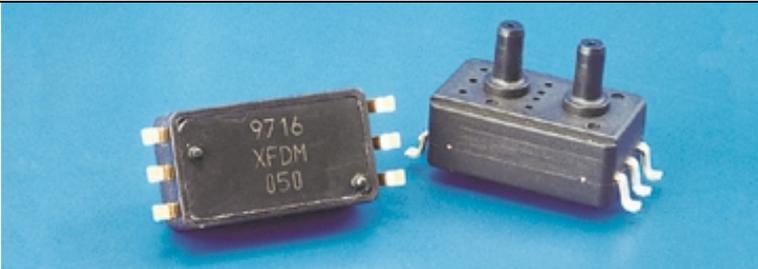
D : Differential

DW : Differential (Bipolar pressure)

Terminal leads direction (See Outline Diagram)



Terminal leads configuration  
S : Surface mount package

|                                 |   |
|---------------------------------|---|
| Pressure type                   | Differential pressure<br>X3DM   |
| Model                           |  |
| Package configuration           | Surface mount package   |
| Measurable pressure range (kPa) | Part number for ordering  |
| -100~100                        | X3DM-100KPDWSR  |
| 0~50                            | X3DM-050KPDSR   |
| 0~100                           | X3DM-100KPDSR   |
| 0~200                           | X3DM-200KPDSR   |
| 0~1000                          | X3DM-001MPDSR   |

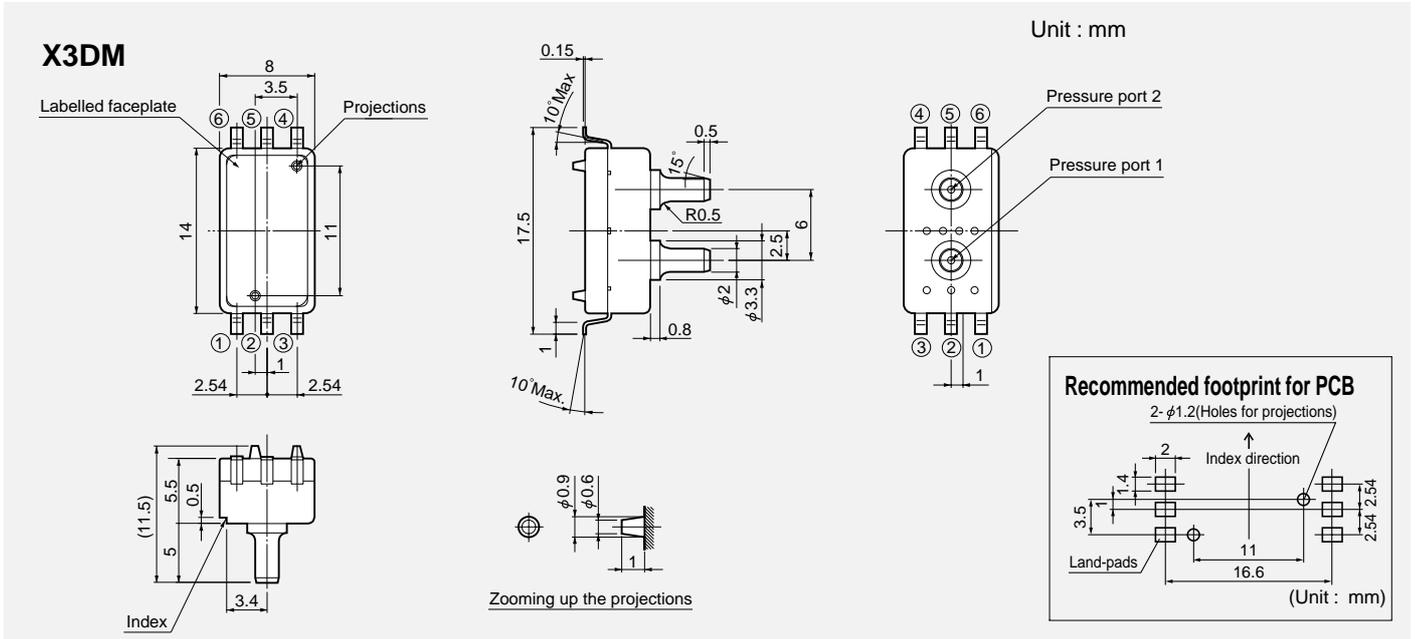
## Specifications

| Model/Rated pressure  | 100KPDW                     | 050KPD      | 100KPD       | 200KPD       | 001MPD                     | Unit                      |
|---|-----------------------------|-------------|--------------|--------------|----------------------------|---------------------------|
| <b>Recommended operating conditions</b>   |                             |             |              |              |                            |                           |
| Pressure type   | Differential pressure       |             |              |              |                            | —                         |
| Rated pressure  | ±100<br>±1.020              | 50<br>0.510 | 100<br>1.020 | 200<br>2.040 | 1000<br>10.20              | kPa<br>kg/cm <sup>2</sup> |
| Measurable pressure range   | -100~100                    | 0~50        | 0~100        | 0~200        | 0~1000                     | kPa                       |
| Pressure media  | Non-corrosive gas only      |             |              |              |                            | —                         |
| Excitation voltage  | 3.0±0.15                    |             |              |              |                            | VDC                       |
| Absolute maximum rating   |                             |             |              |              |                            |                           |
| Maximum load pressure   | Twice of rated pressure     |             |              |              | 1.5times of rated pressure |                           |
| Maximum excitation voltage  | 6                           |             |              |              |                            | VDC                       |
| Operating temperature   | -10~80                      |             |              |              |                            | °C                        |
| Storage temperature   | -20~100                     |             |              |              |                            | °C                        |
| Operating humidity  | 30~80 (No dew condensation) |             |              |              |                            | %RH                       |
| <b>Electric performances/characteristics(Excitation voltage Vcc=3.0V constant, Ambient temperature Ta=25°C)</b> |                             |             |              |              |                            |                           |
| Current consumption   | less than 6                 |             |              |              |                            | mA                        |
| Output impedance  | less than 10                |             |              |              |                            | Ω                         |
| Source current  | less than 0.1               |             |              |              |                            | mA                        |
| Sink current  | less than 1                 |             |              |              |                            | mA                        |
| Mechanical response time  | 2 (For the reference)       |             |              |              |                            | msec                      |
| Full scale span voltage   | 1.5                         |             |              |              |                            | V                         |
| Offset voltage※1, 2   | 0.5±0.075                   |             |              |              |                            | V                         |
| Full scale span voltage※1, 2  | 2.0±0.075                   |             |              |              |                            | V                         |
| Accuracy※2  | ±5.0                        |             |              |              |                            | %FS/0~50°C                |

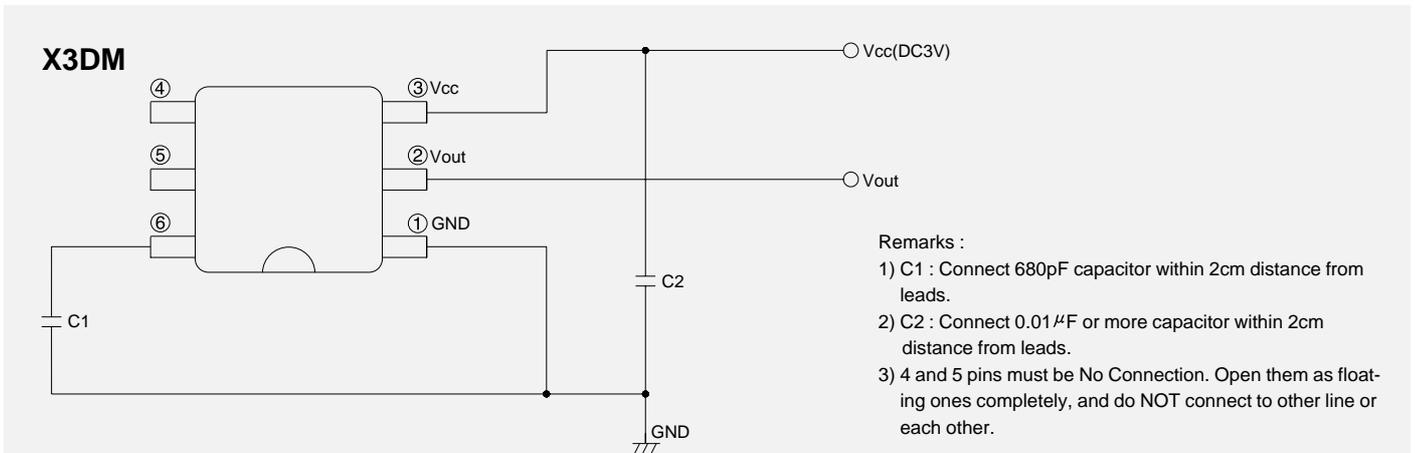
Note ; ※1) Output refers to pressure at pressure port 2.

※2) Excluding input voltage error.

■ Outline dimensions ■



■ Connection diagram ■



■ Transfer Function ■

$$V_{out} = V_s \times (P \times \alpha + \beta) \pm (\text{Pressure Error} \times \text{Temperature Error Multiplier} \times \alpha \times V_s)$$

※ $V_s = 3.0$ volts Notes ; The output voltage ( $V_{out}$ ) is no perfect ratiometric with the power supply voltage.

※ $P = \text{Input Pressure (kPa)}$

| Model       | pressure range | $\alpha$ | $\beta$ | Pressure Error(kPa) |
|-------------|----------------|----------|---------|---------------------|
| 050KPG(D)   | 0~50kPa        | 0.01     | 0.1667  | 2.5                 |
| 100KPG(D)   | 0~100kPa       | 0.005    | 0.1667  | 5.0                 |
| 100KPGV     | 0~-100kPa      | -0.005   | 0.1667  | 5.0                 |
| 100KPGW(DW) | -0~+100kPa     | 0.0025   | 0.4667  | 10.0                |
| 200KPG(D)   | 0~200kPa       | 0.0025   | 0.1667  | 10.0                |
| 001MPGW(D)  | 0~+1MPa        | 0.0025   | 0.1667  | 50.0                |
| 115KPA      | 15~115kPa.abs  | 0.005    | 0.09167 | 5.0                 |

※Temperature Error Multiplier=1

Note ; Please read instruction "Notes" before using the sensor.  
 Fujikura reserves the right to change specifications without notice.

# Fujikura Ltd.

If you have any questions regarding technical issues or specifications, please contact us.  
 Sensor Engineering Department 5-1 Kiba 1-chome, Koto-ku, Tokyo 135-8512, Japan  
 Phone +81-(0)3-5606-1072 Fax. +81-(0)3-5606-1538  
 E-mail : sensor@fujikura.co.jp