

## **Notification about the transfer of the semiconductor business**

The semiconductor business of Panasonic Corporation was transferred on September 1, 2020 to Nuvoton Technology Corporation (hereinafter referred to as "Nuvoton"). Accordingly, Panasonic Semiconductor Solutions Co., Ltd. became under the umbrella of the Nuvoton Group, with the new name of Nuvoton Technology Corporation Japan (hereinafter referred to as "NTCJ").

In accordance with this transfer, semiconductor products will be handled as NTCJ-made products after September 1, 2020. However, such products will be continuously sold through Panasonic Corporation.

Publisher of this Document is NTCJ.

If you would find description "Panasonic" or "Panasonic semiconductor solutions", please replace it with NTCJ.

※ Except below description page

"Request for your special attention and precautions in using the technical information and semiconductors described in this book"

**Nuvoton Technology Corporation Japan**

**FK330309EL**

**Silicon N-channel MOSFET**

**For switching circuits**

■ Features

- Low drive voltage : 1.5 V drive
- Halogen-free / RoHS compliant  
 (EU RoHS / UL-94 V-0 / MSL : Level 1 compliant)

■ Marking Symbol : X9

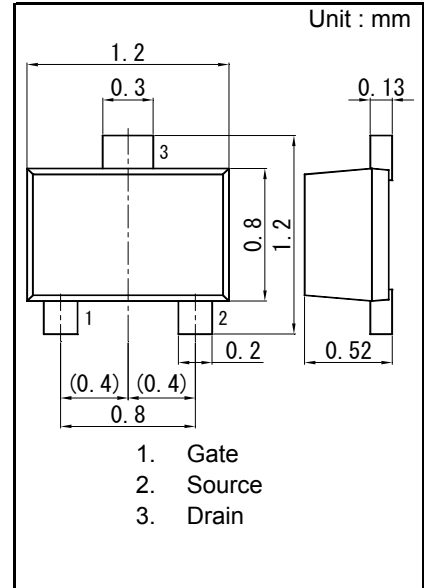
■ Packaging

Embossed type (Thermo-compression sealing) : 10 000 pcs / reel (standard)

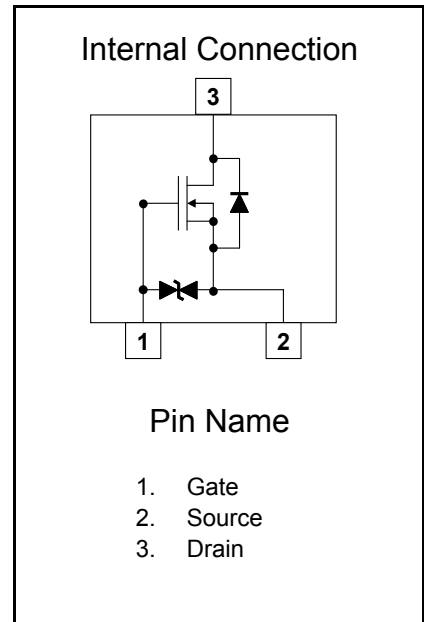
■ Absolute Maximum Ratings Ta = 25 °C

| Parameter                 | Symbol | Rating      | Unit |
|---------------------------|--------|-------------|------|
| Drain to Source Voltage   | VDS    | 30          | V    |
| Gate to Source Voltage    | VGS    | ±6          |      |
| Drain Current             | ID     | 100         | mA   |
| Drain Current (Pulsed) *1 | IDp    | 200         |      |
| Total Power Dissipation   | PD     | 100         | mW   |
| Channel Temperature       | Tch    | 150         | °C   |
| Storage Temperature Range | Tstg   | -55 to +150 |      |

Note \*1 Pulse test: Ensure that the channel temperature does not exceed 150 °C



|           |               |
|-----------|---------------|
| Panasonic | SSSMini3-F2-B |
| JEITA     | SC-105AA      |
| Code      | SOT-723       |



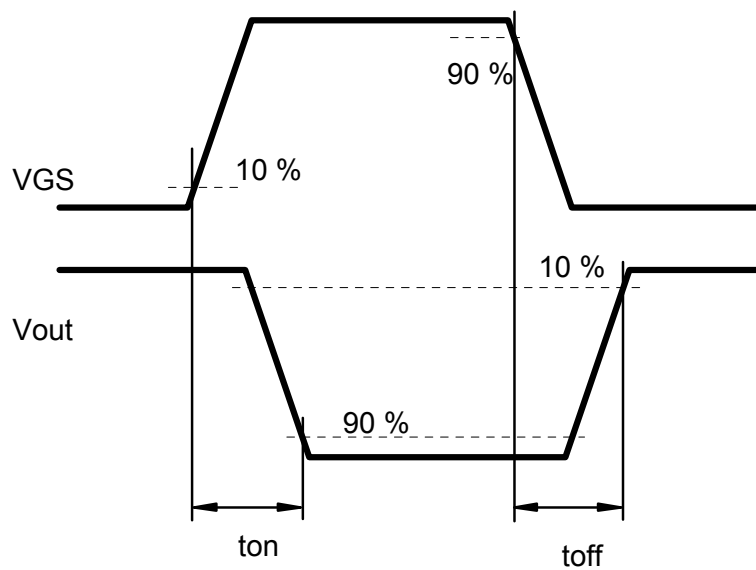
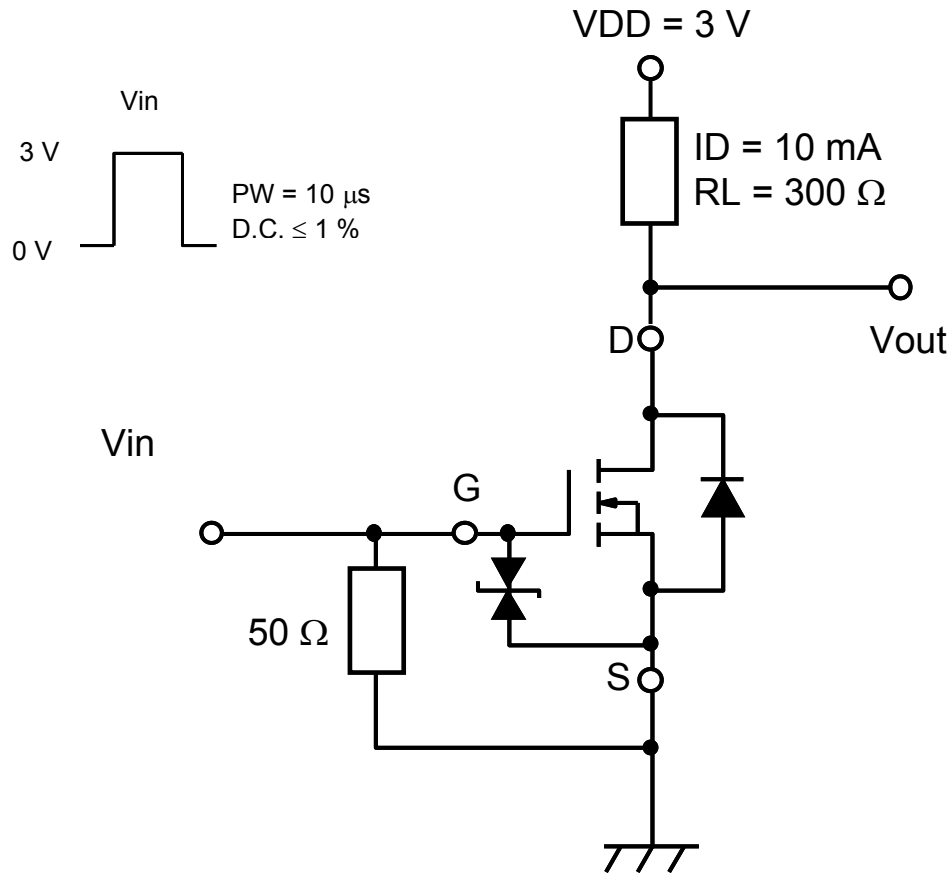
■ Electrical Characteristics Ta = 25 °C ± 3 °C

| Parameter                        | Symbol   | Conditions  | Min | Typ | Max | Unit |
|----------------------------------|----------|---|-----|-----|-----|------|
| Drain-source Breakdown Voltage   | VDSS     | ID = 1 mA, VGS = 0 V                                | 30  |     |     | V    |
| Zero Gate Voltage Drain Current  | IDSS     | VDS = 30 V, VGS = 0 V                               |     |     | 10  | μA   |
| Gate-source Leakage Current      | IGSS     | VGS = ±6 V, VDS = 0 V                               |     |     | ±10 | μA   |
| Gate-source Threshold Voltage    | Vth      | ID = 1 mA, VDS = 10 V                               | 0.3 |     | 1.3 | V    |
| Drain-source On-state Resistance | RDS(on)1 | ID = 10 mA, VGS = 2.5 V                             |     | 1   | 4   | Ω    |
|                                  | RDS(on)2 | ID = 10 mA, VGS = 1.5 V                             |     | 4   | 12  |      |
| Input Capacitance                | Ciss     | VDS = 10 V, VGS = 0 V<br>f = 1 MHz                  |     | 13  |     | pF   |
| Output Capacitance               | Coss     |   |     | 7   |     |      |
| Reverse Transfer Capacitance     | Crss     |   |     | 4   |     |      |
| Turn-on Delay Time *1            | ton      | VDD = 3 V, VGS = 0 to 3 V<br>ID = 10 mA, RL = 300 Ω |     | 20  |     | ns   |
| Turn-off Delay Time *1           | toff     | VDD = 3 V, VGS = 3 to 0 V<br>ID = 10 mA, RL = 300 Ω |     | 100 |     | ns   |

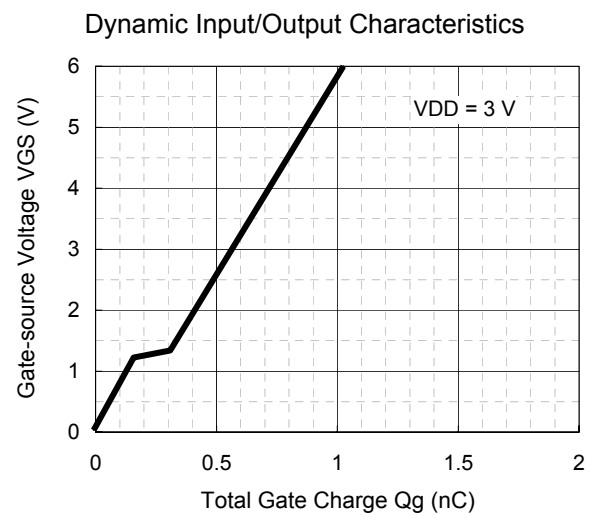
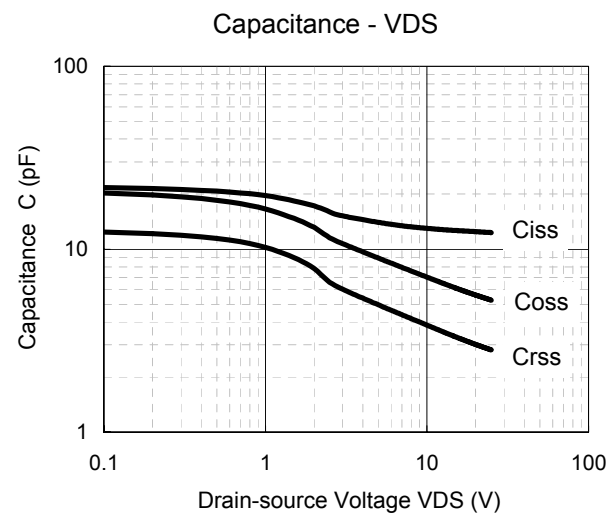
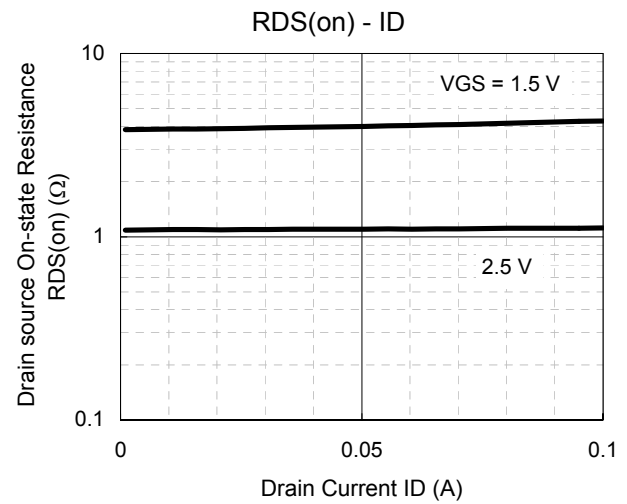
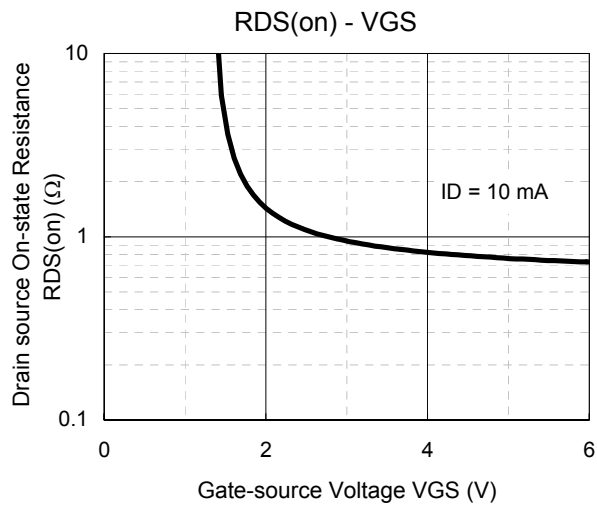
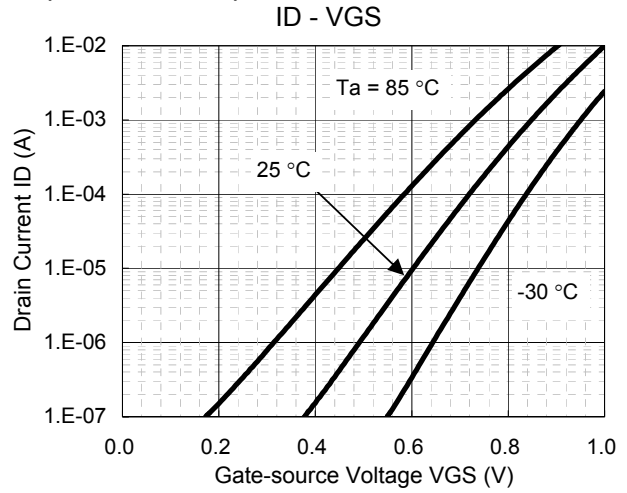
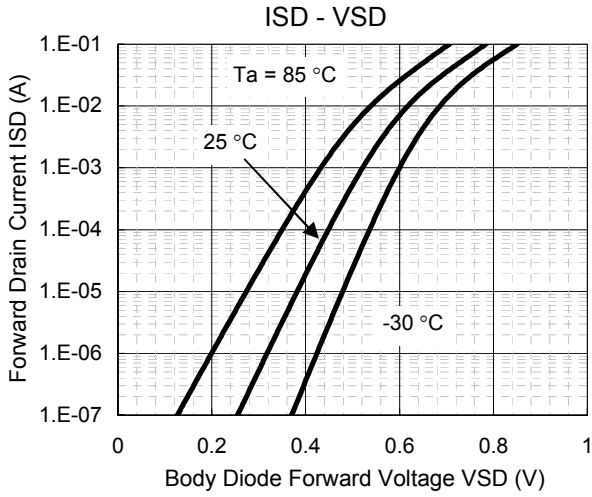
Note : 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.

2. \*1 Measurement circuit for Turn-on Delay Time / Turn-off Delay Time

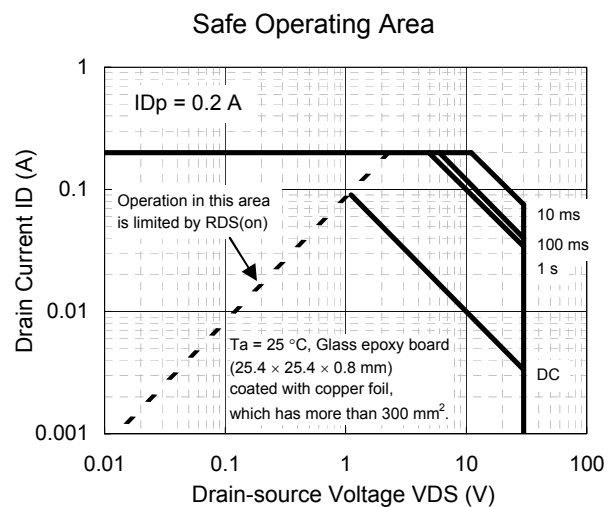
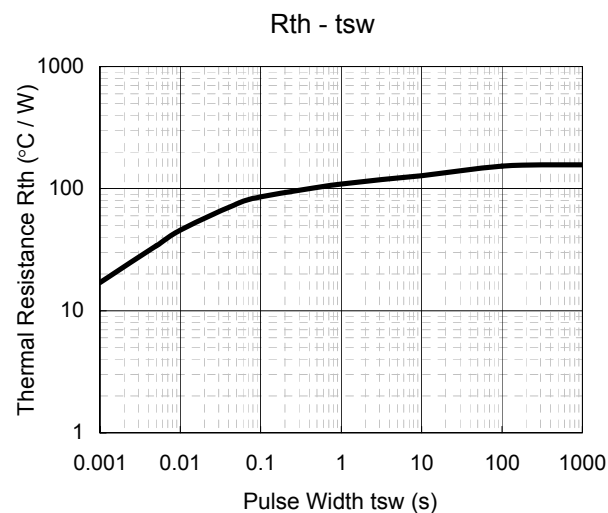
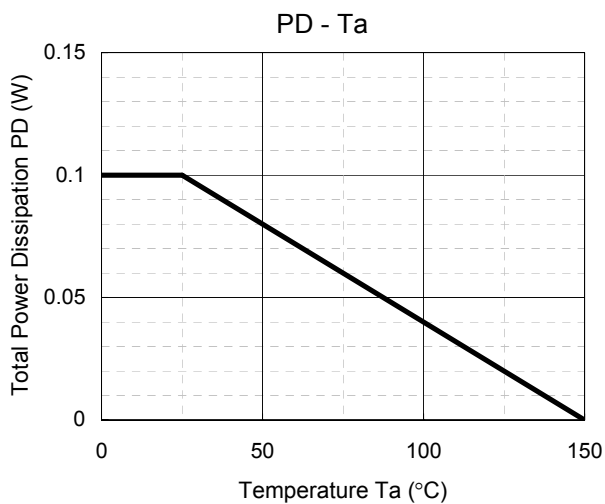
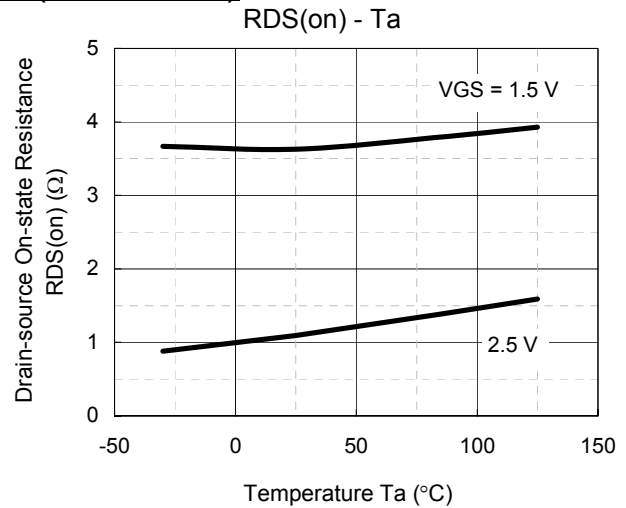
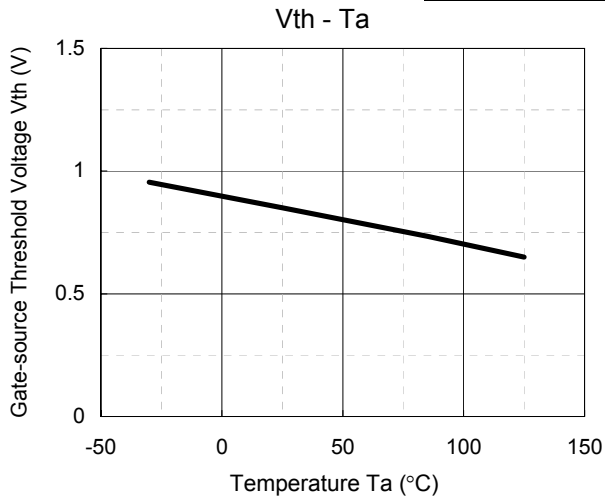
\*1 Measurement circuit for Turn-on Delay Time / Turn-off Delay Time



Technical Data ( reference )

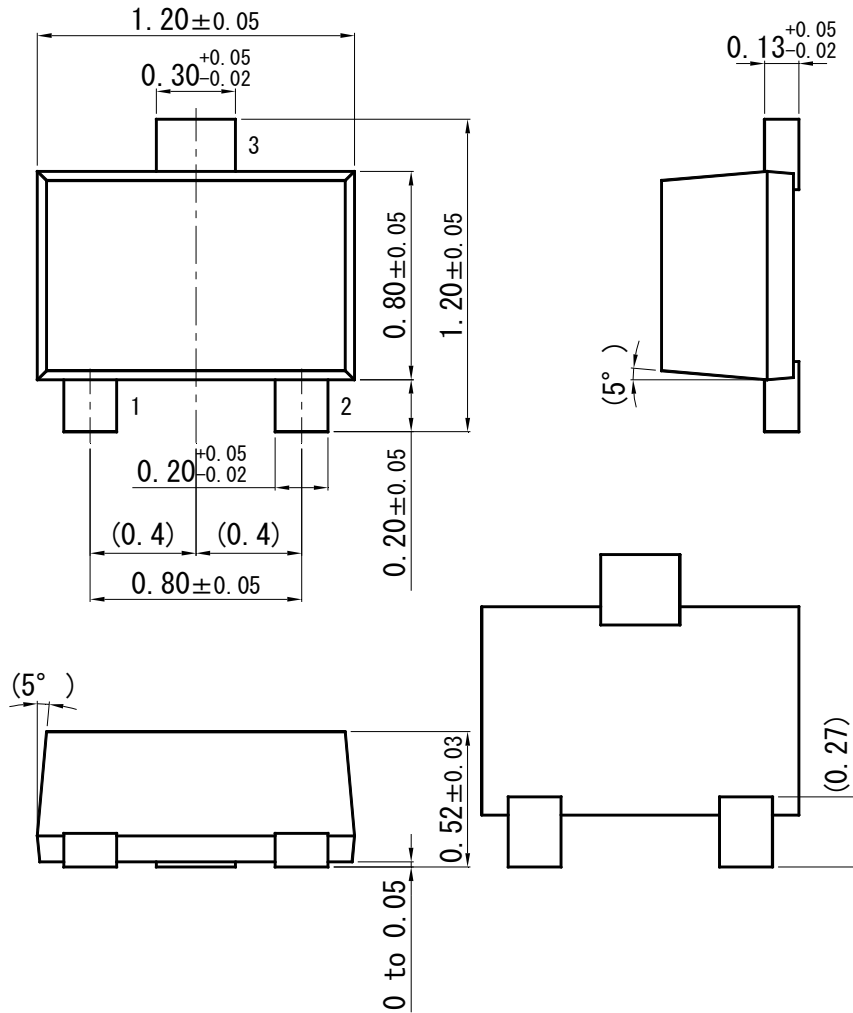


Technical Data ( reference )

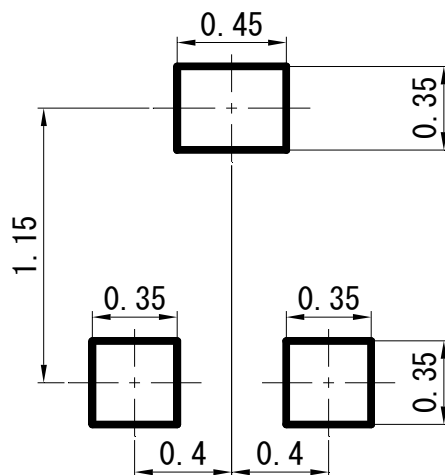


SSSMini3-F2-B

Unit : mm



■ Land Pattern (Reference) (Unit : mm)



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