

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

FG6943010R

Silicon N-channel MOSFET(FET1)
 Silicon P-channel MOSFET(FET2)

For switching

■ Features

- Low drive voltage: 2.5 V drive
- Halogen-free / RoHS compliant
 (EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

■ Marking Symbol V7

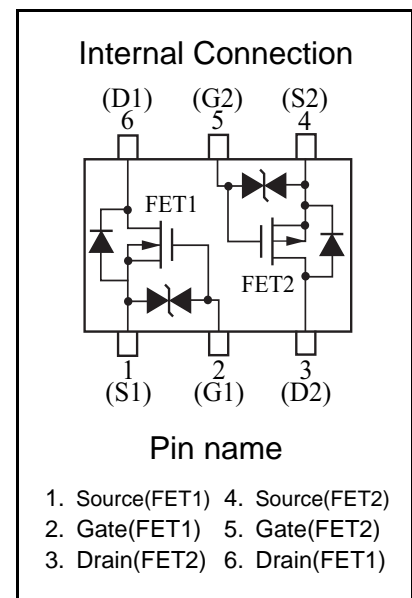
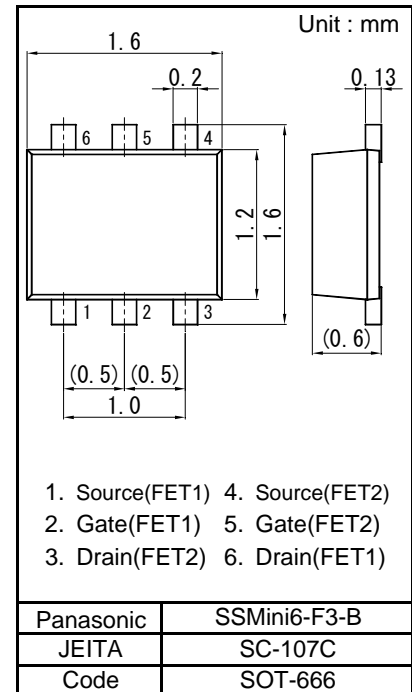
■ Basic Part Number FJ330301 + FK330301 (Individual)

■ Packaging

Embossed type (Thermo-compression sealing) 8 000 pcs / reel (standard)

■ Absolute Maximum Ratings Ta = 25 °C

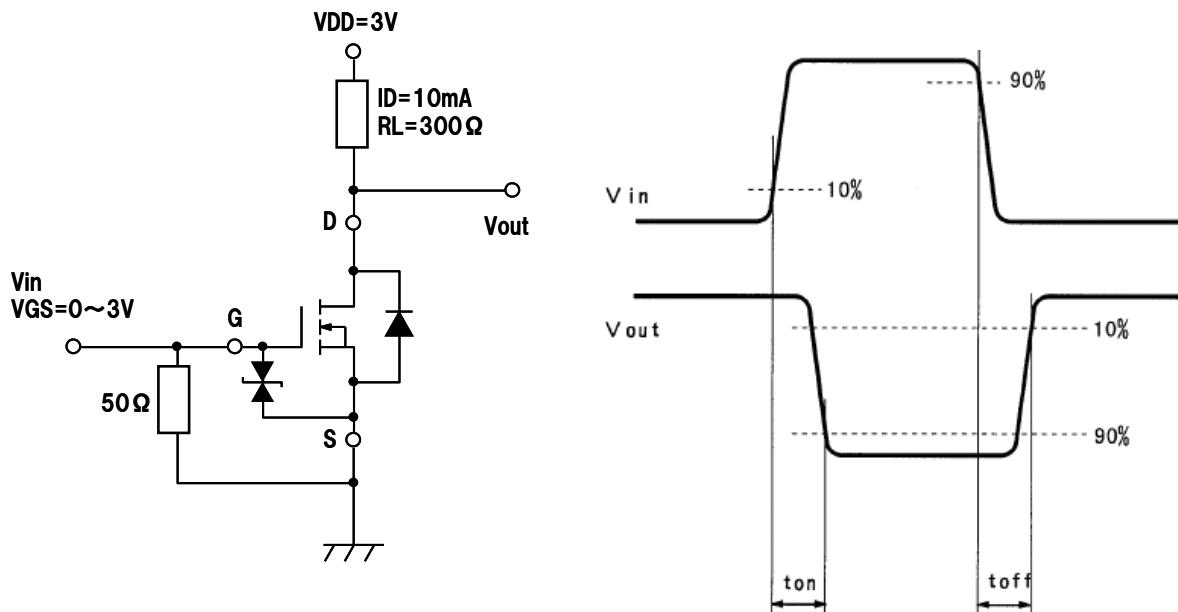
| Parameter | | Symbol | Rating | Unit |
|-----------|-------------------------------|--------|-------------|------|
| FET1 | Drain-source voltage | VDS | 30 | V |
| | Gate-source voltage | VGS | ±12 | V |
| | Drain current | ID | 100 | mA |
| | Pulse drain current | IDp | 200 | mA |
| FET2 | Drain-source voltage | VDS | -30 | V |
| | Gate-source voltage | VGS | ±12 | V |
| | Drain current | ID | -100 | mA |
| | Pulse drain current | IDp | -200 | mA |
| Overall | Total power dissipation | PT | 125 | mW |
| | Channel temperature | Tch | 150 | °C |
| | Operating ambient temperature | Topr | -40 to + 85 | °C |
| | Storage temperature | Tstg | -55 to +150 | °C |



■ Electrical Characteristics Ta = 25 °C ± 3 °C
 FET1

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--------------------------------|----------|---|-----|-----|-----|------|
| Drain-source breakdown voltage | VDSS | ID = 1 mA, VGS = 0 | 30 | | | V |
| Drain-source cutoff current | IDSS | VDS = 30 V, VGS = 0 | | | 1.0 | μA |
| Gate-source cutoff current | IGSS | VGS = ±10 V, VDS = 0 | | | ±10 | μA |
| Gate threshold voltage | VTH | ID = 1.0 μA, VDS = 3.0 V | 0.5 | 1.0 | 1.5 | V |
| Drain-source ON resistance | RDS(on)1 | ID = 10 mA, VGS = 2.5 V | | 3 | 6 | Ω |
| | RDS(on)2 | ID = 10 mA, VGS = 4.0 V | | 2 | 3 | Ω |
| Forward transfer admittance | Yfs | ID = 10 mA, VDS = 3.0 V | 20 | 55 | | mS |
| Input capacitance | Ciss | VDS = 3 V, VGS = 0, f = 1 MHz | | 12 | | pF |
| Output capacitance | Coss | | | 7 | | pF |
| Reverse transfer capacitance | Crss | | | 3 | | pF |
| Turn-on time *1 | ton | VDD = 3 V, VGS = 0 to 3 V ID = 10 mA | | 100 | | ns |
| Turn-off time *1 | toff | VDD = 3 V, VGS = 3 to 0 V ID = 10 mA | | 100 | | ns |

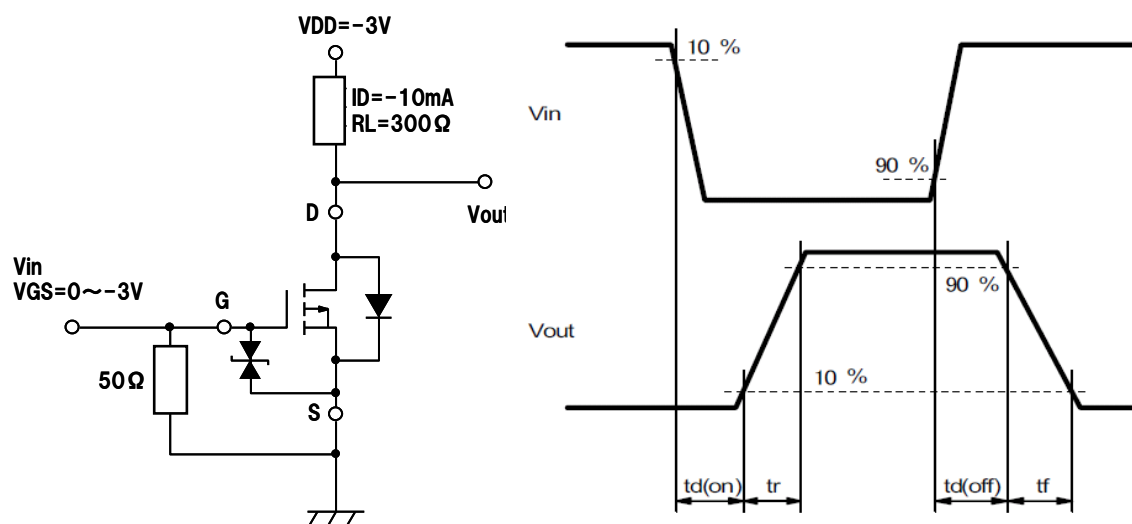
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.
 2. *1 FET1 Turn-on and Turn-off test circuit



■ Electrical Characteristics Ta = 25 °C ± 3 °C
 FET2

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--------------------------------|----------|---|------|------|------|------|
| Drain-source breakdown voltage | VDSS | ID = -1mA, VGS = 0 | -30 | | | V |
| Drain-source cutoff current | IDSS | VDS = -30 V, VGS = 0 | | | -1.0 | μA |
| Gate-source cutoff current | IGSS | VGS = ±10 V, VDS = 0 | | | ±10 | μA |
| Gate threshold voltage | VTH | ID = -1.0 μA, VDS = -3.0 V | -0.5 | -1.0 | -1.5 | V |
| Drain-source ON resistance | RDS(on)1 | ID = -10 mA, VGS = -2.5 V | | 7 | 17 | Ω |
| | RDS(on)2 | ID = -10 mA, VGS = -4.0 V | | 4 | 7 | Ω |
| Forward transfer admittance | Yfs | ID = -10 mA, VDS = -3.0 V | 20 | 40 | | mS |
| Input capacitance | Ciss | VDS = -3 V, VGS = 0, f = 1 MHz | | 12 | | pF |
| Output capacitance | Coss | | | 7 | | pF |
| Reverse transfer capacitance | Crss | | | 3 | | pF |
| Turn-on time *1 | ton | VDD = -3 V, VGS = 0 to -3 V, ID = -10 mA | | 100 | | ns |
| Turn-off time *1 | toff | VDD = -3 V, VGS = -3 to 0 V, ID = -10 mA | | 100 | | ns |

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.
 2. *1 FET2 Turn-on and Turn-off test circuit



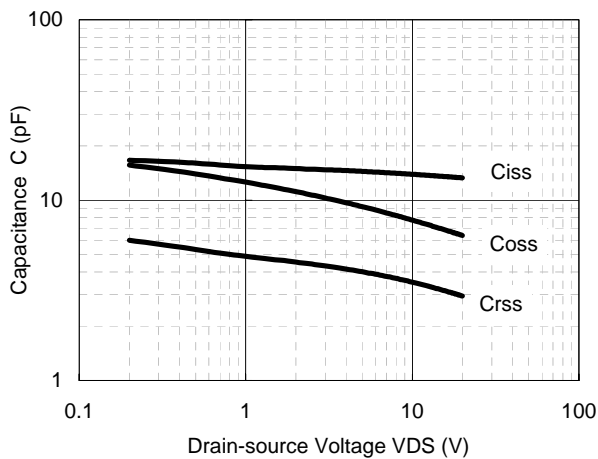
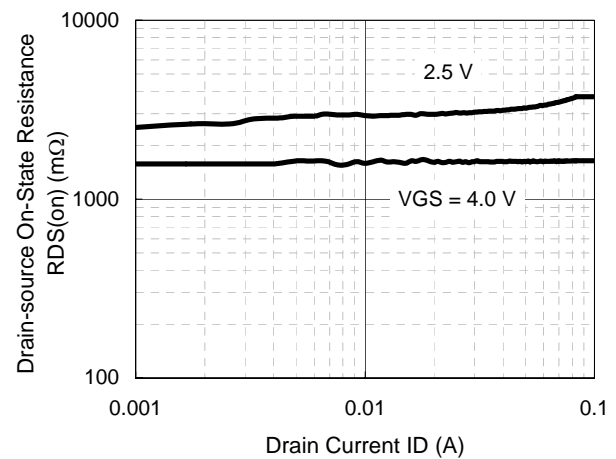
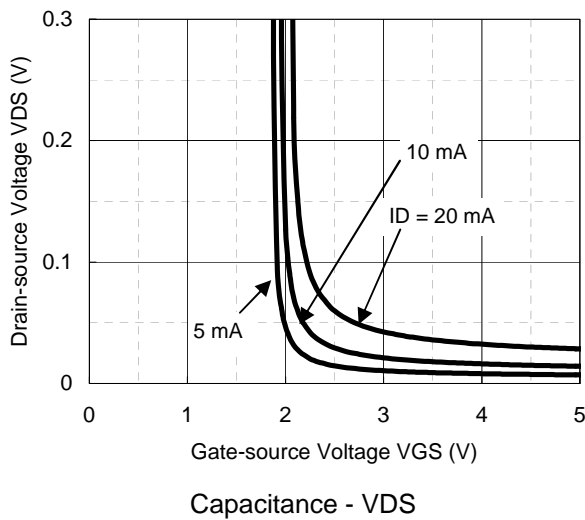
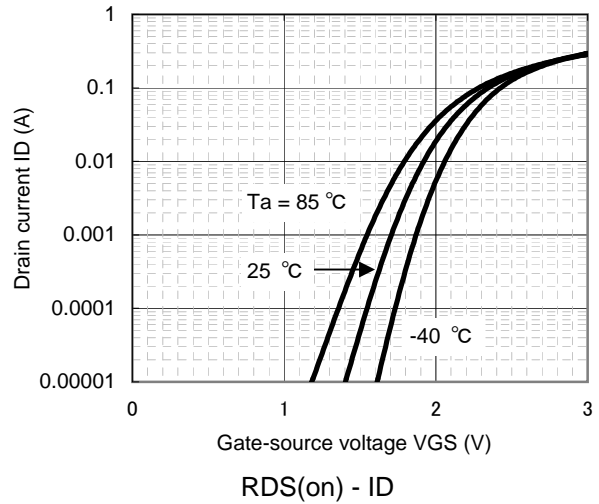
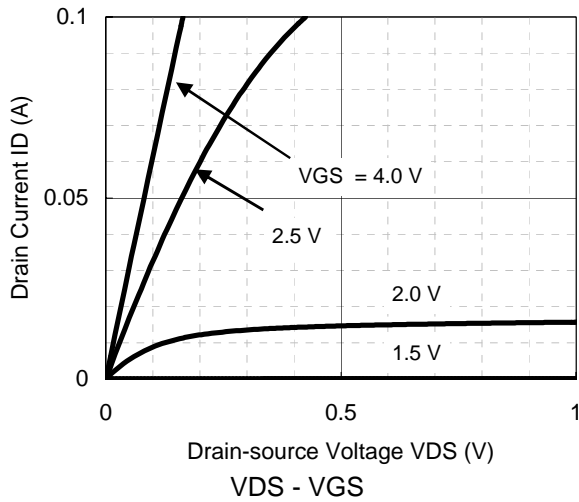


Technical Data (reference)

FET1(N-ch.)

ID - VDS

ID - VGS

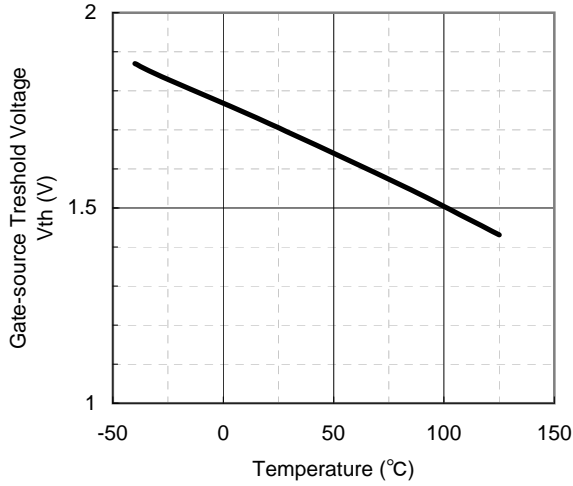




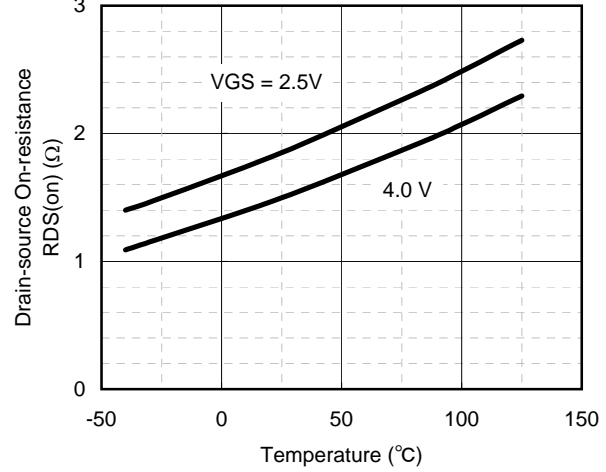
Technical Data (reference)

FET1(N-ch.)

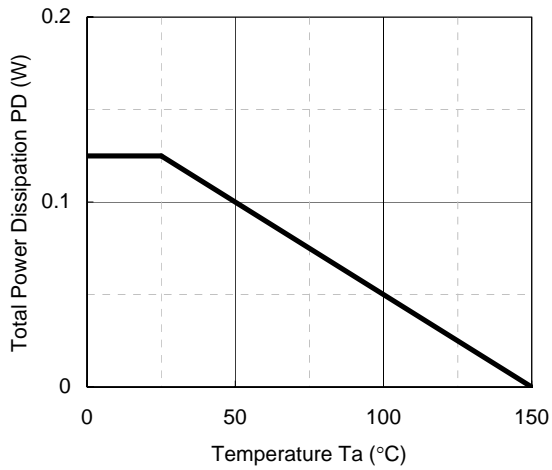
V_{th} - T_a



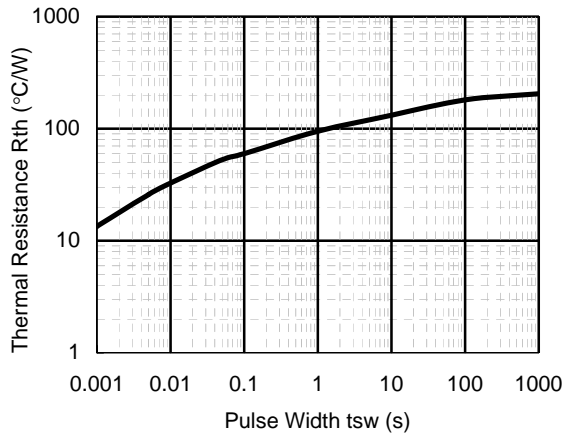
R_{DS(on)} - T_a



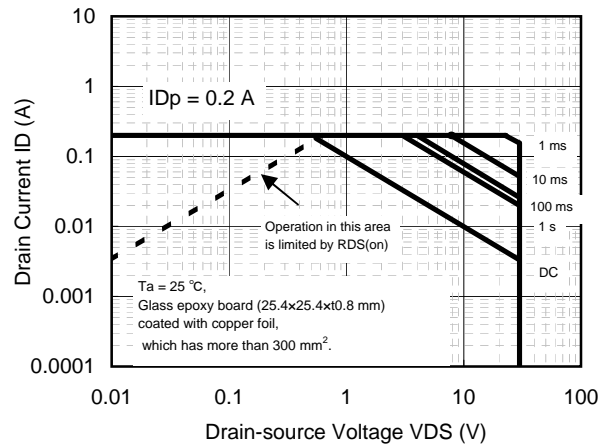
PD - T_a



R_{th} - t_{sw}



Safe Operating Area

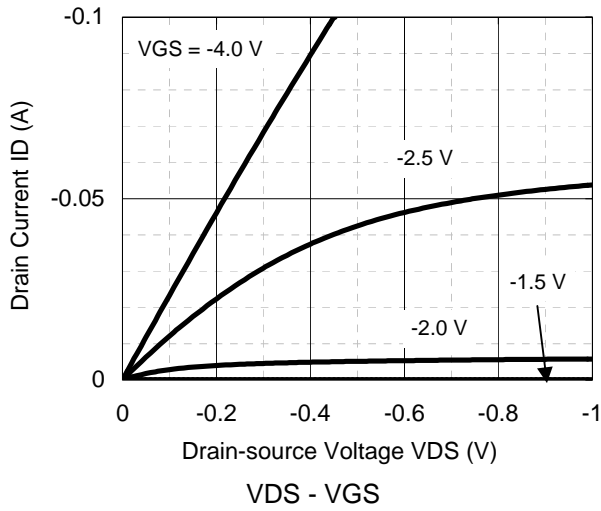




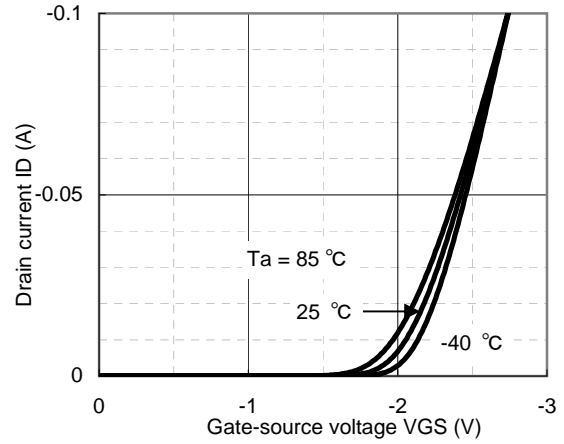
Technical Data (reference)

FET2(P-ch.)

ID - VDS

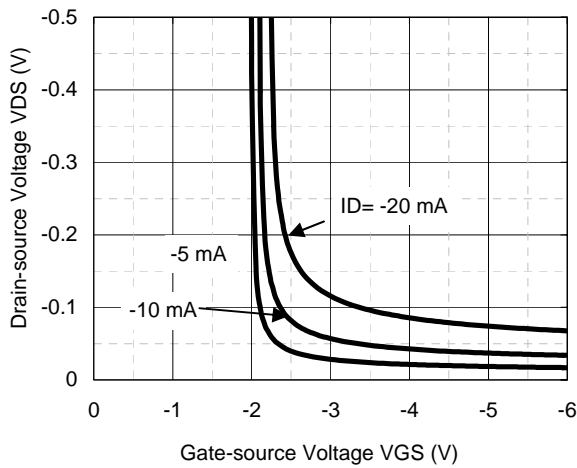


ID - VGS

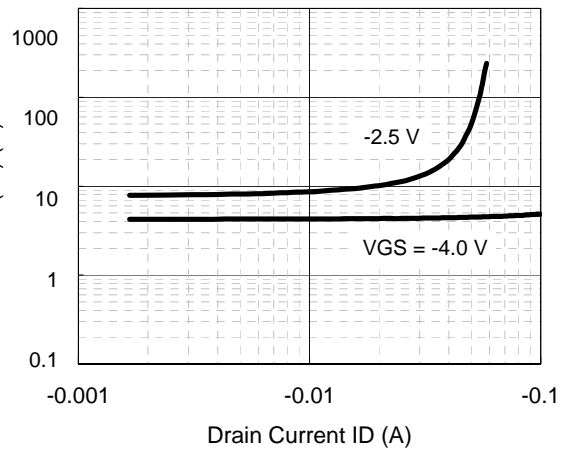


VDS - VGS

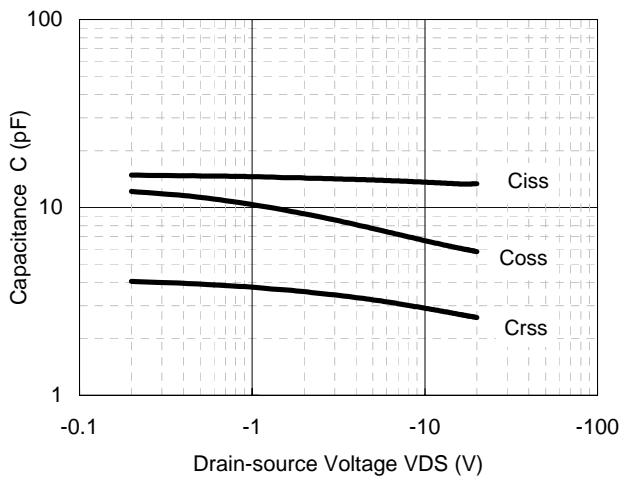
RDS(on) - ID



Drain-source On-state Resistance RDS(on) (Ω)



Capacitance - VDS

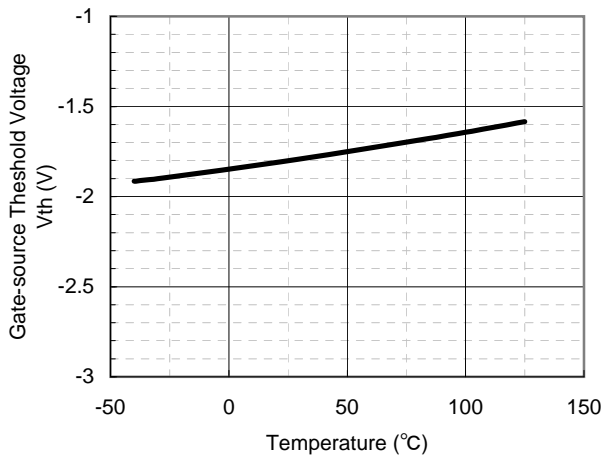




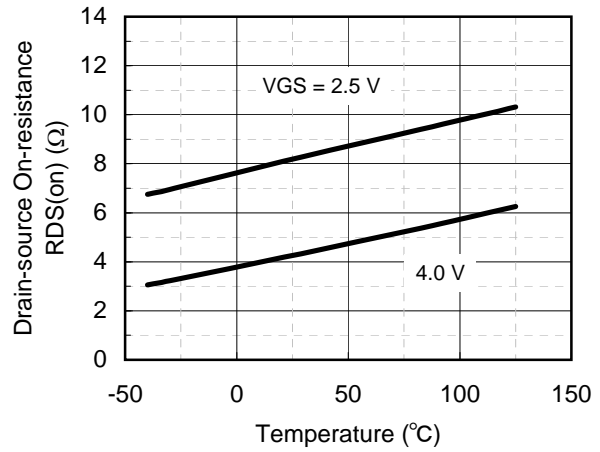
Technical Data (reference)

FET2(P-ch.)

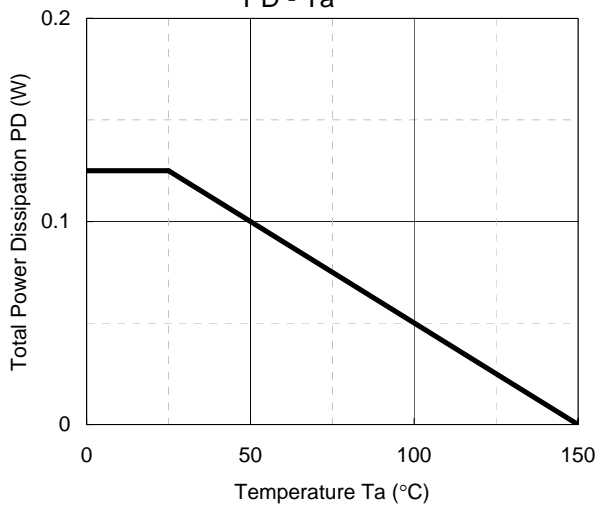
V_{th} - T_a



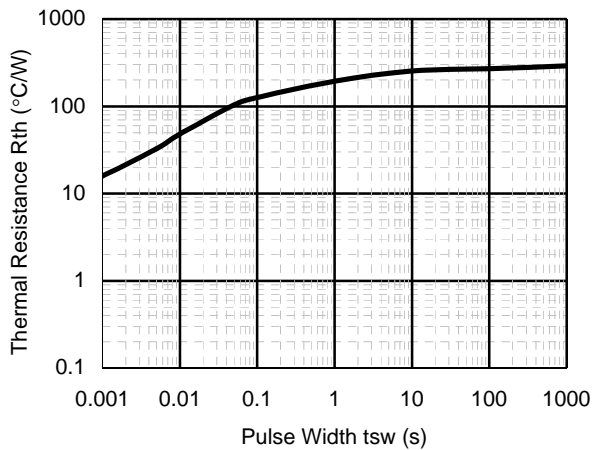
R_{DS(on)} - T_a



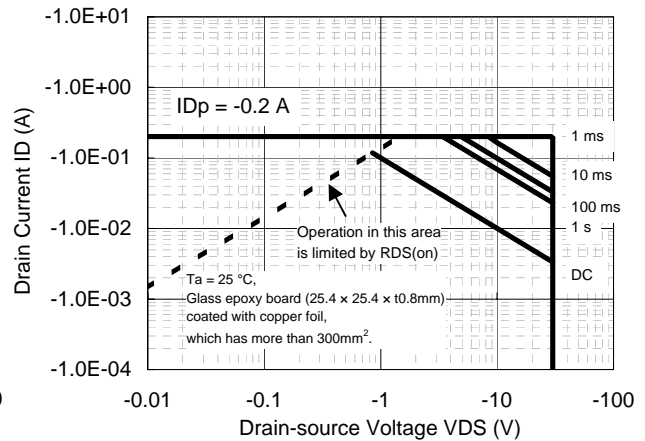
PD - T_a



R_{th} - t_{sw}

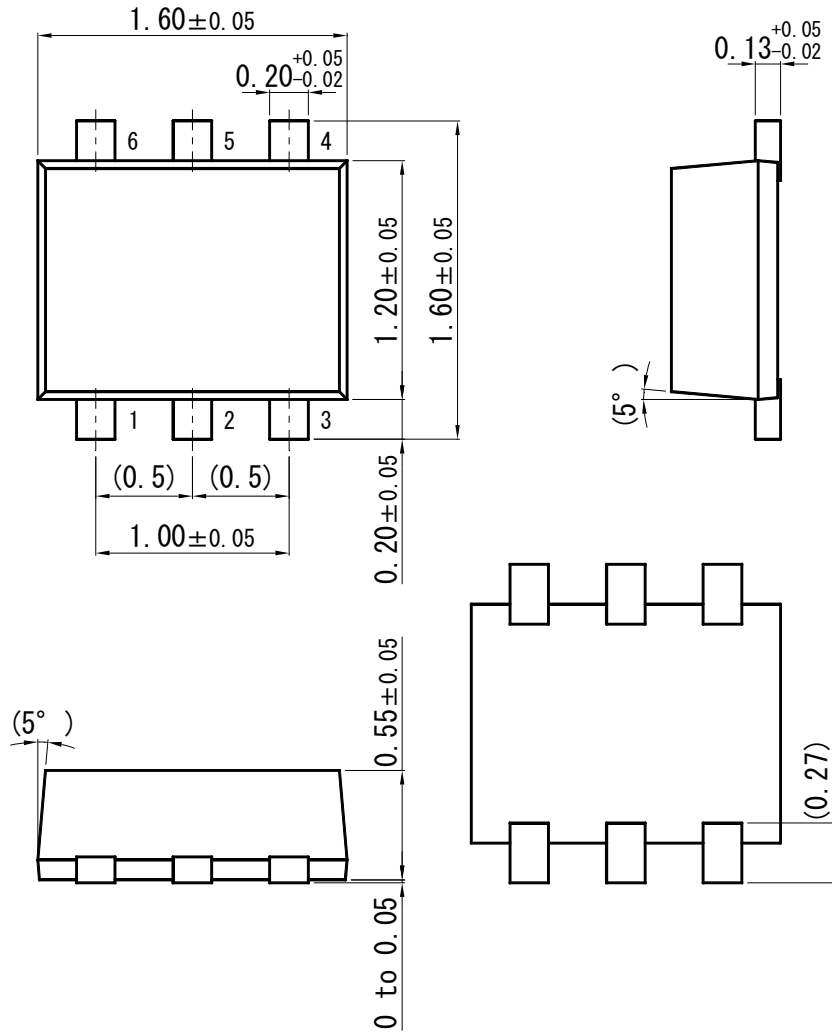


Safe Operating Area

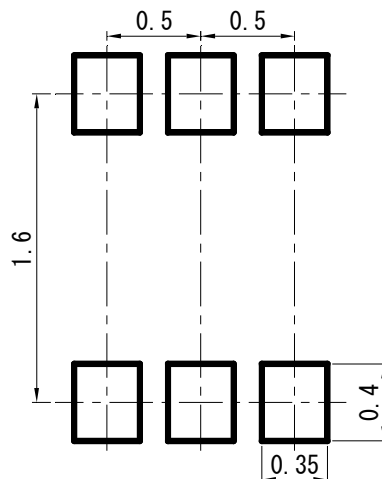


SSMini6-F3-B

Unit: mm



■ Land Pattern (Reference) (Unit : mm)



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