

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

MTM132270BBF

Silicon N-channel MOSFET

For switching

■ Features

- Low drain-source ON resistance: $R_{DS(on)}$ typ = 85 mΩ (VGS = 4.0 V)
- Low drive voltage: 2.5 V drive
- Halogen-free / RoHS compliant
(EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

■ Marking Symbol: ET

■ Packaging

MTM132270BBF Embossed type (Thermo-compression sealing):
3 000 pcs / reel (standard)

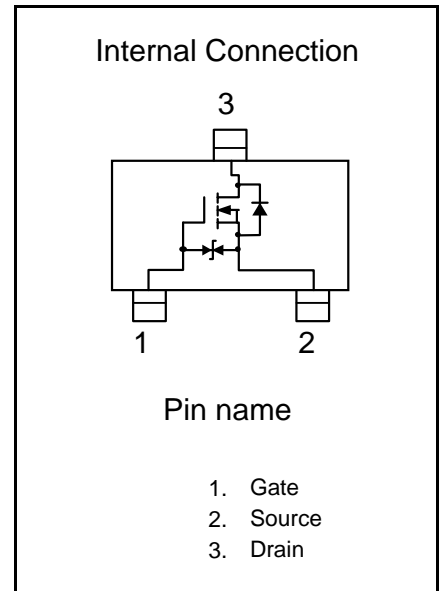
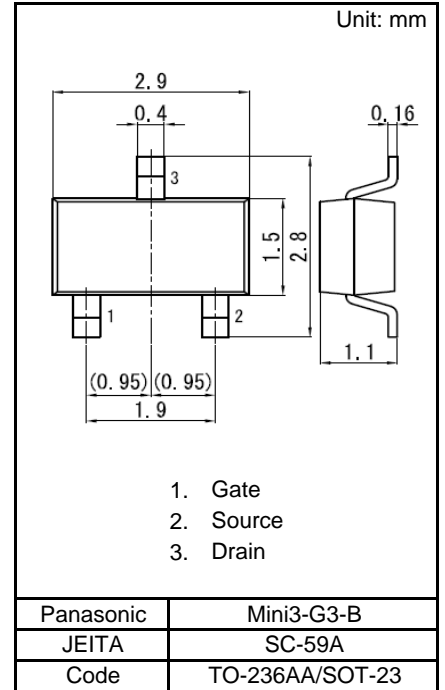
■ Absolute Maximum Ratings Ta = 25 °C

| Parameter | Symbol | Rating | Unit |
|--------------------------|--------|-------------|------|
| Drain-source Voltage | VDS | 20 | V |
| Gate-source Voltage | VGS | ±10 | V |
| Drain Current | ID | 2.0 | A |
| Drain Current(Pulsed) *1 | IDp | 8.0 | A |
| Power Dissipation *2 | PD | 700 | mW |
| Channel Temperature | Tch | 150 | °C |
| Storage Temperature | Tstg | -55 to +150 | °C |

Note: *1 Pulse width = 10 μs, Duty cycle ≤ 1 %

*2 Measuring on ceramic board at 40 mm × 38 mm × 0.1 mm.

Absolute maximum rating PD Non-heat sink shall be made 200 mW.



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

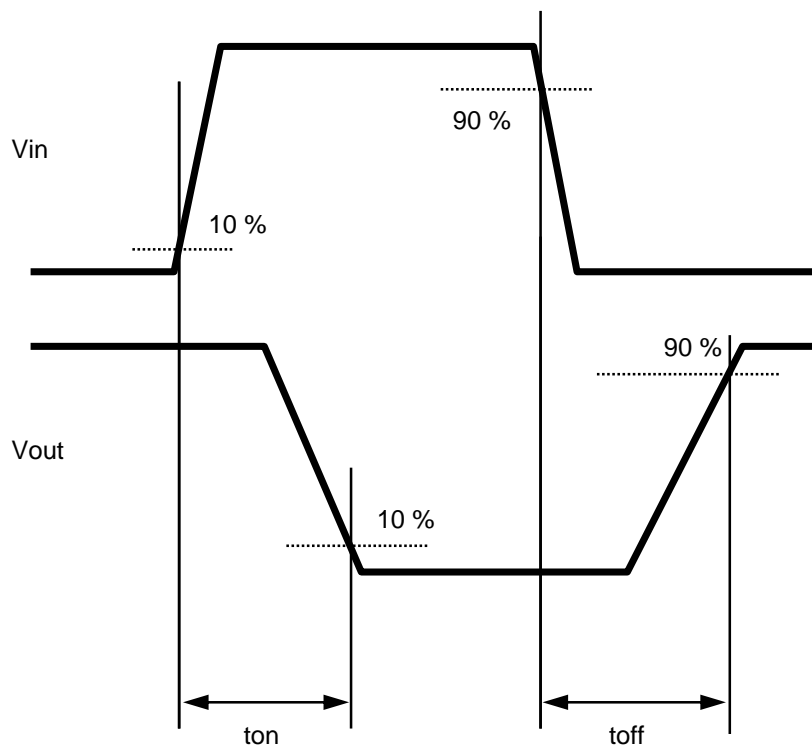
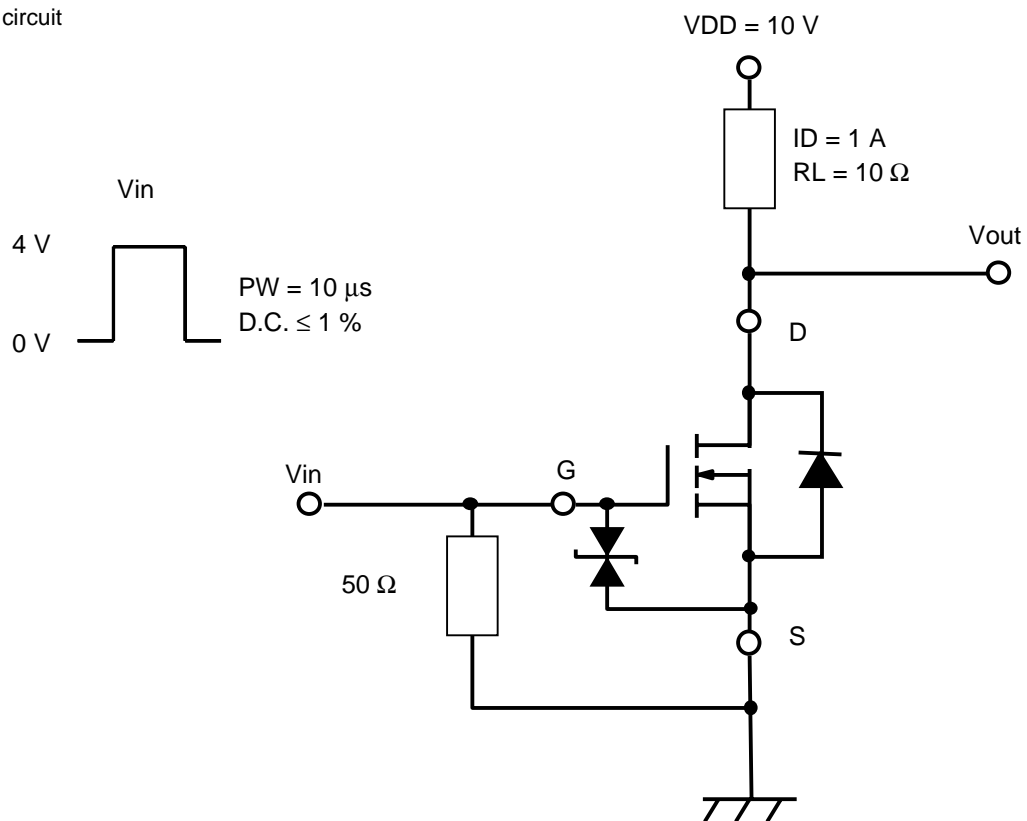
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--------------------------------------|----------|--|-----|------|-----|------|
| Drain-source Breakdown Voltage | VDSS | ID = 1 mA, VGS = 0 V | 20 | | | V |
| Zero Gate Voltage Drain Current | IDSS | VDS = 20 V, VGS = 0 V | | | 10 | μA |
| Gate-source cutoff Current | IGSS | VGS = ±8 V, VDS = 0 V | | | ±10 | μA |
| Gate threshold Voltage | Vth | ID = 1.0 mA, VDS = 10 V | 0.4 | 0.85 | 1.3 | V |
| —Drain-source On-state Resistance *1 | RDS(on)1 | ID = 1.0 A, VGS = 4.0 V | | 85 | 110 | mΩ |
| | RDS(on)2 | ID = 0.5 A, VGS = 2.5 V | | 100 | 150 | |
| Forward Transfer Admittance *1 | Yfs | ID = 1 A, VDS = 10 V | 3.0 | | | S |
| Input Capacitance | Ciss | VDS = 10 V, VGS = 0 V, f = 1 MHz | | 290 | | pF |
| Output Capacitance | Coss | | | 26 | | |
| Reverse Transfer Capacitance | Crss | | | 20 | | |
| Turn-on delay time *2 | ton | VDD = 10 V, VGS = 0 to 4 V ID = 1 A | | 12 | | ns |
| Turn-off delay time *2 | toff | VDD = 10 V, VGS = 4 to 0 V ID = 1 A | | 60 | | ns |

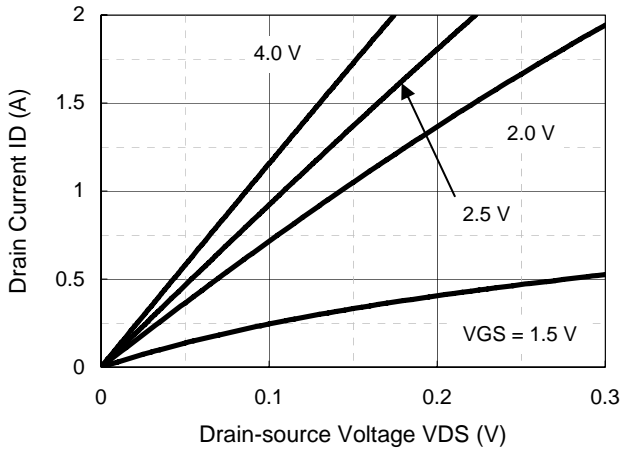
Note: Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.

*1 Pulse test

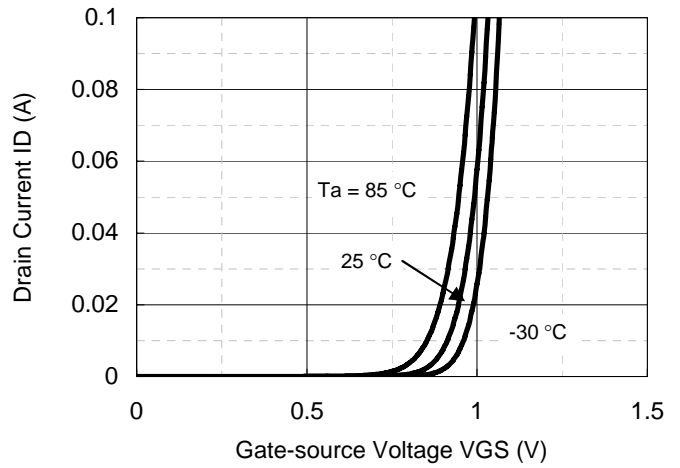
*2 See test circuit

*2 Test circuit

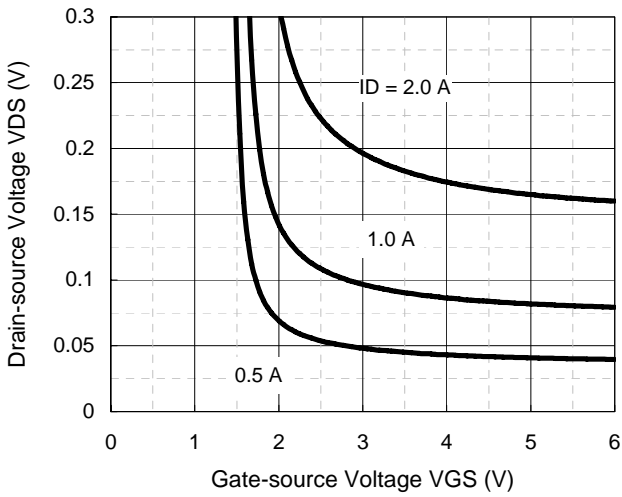




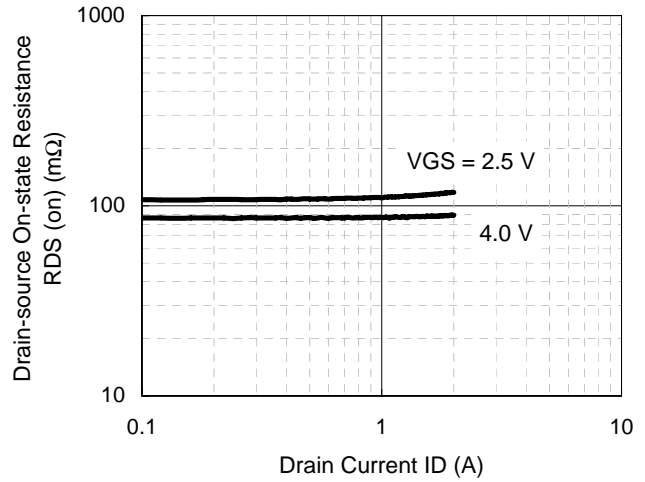
ID - VDS



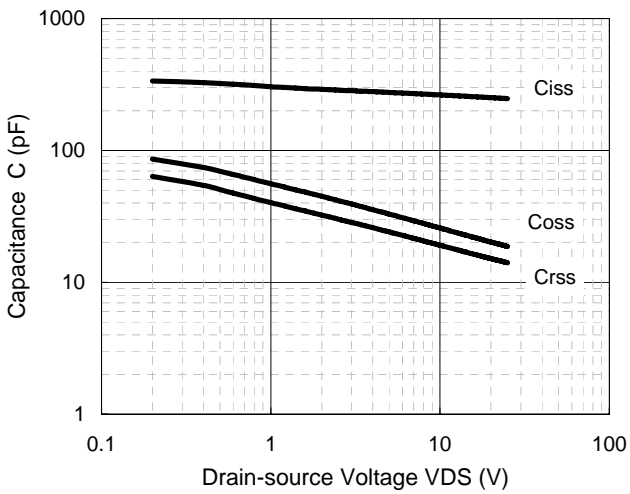
ID - VGS



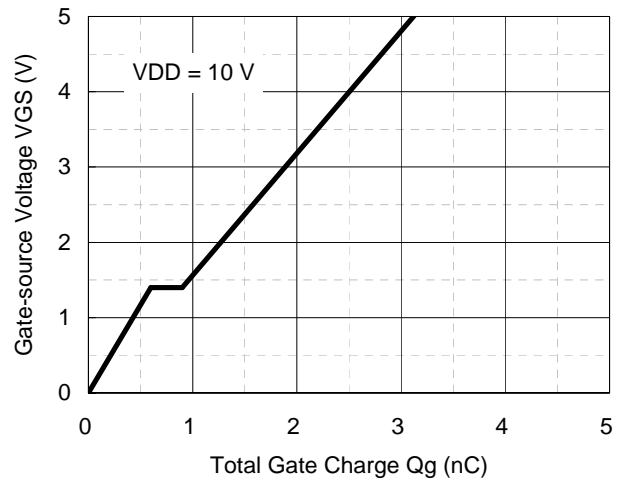
VDS - VGS



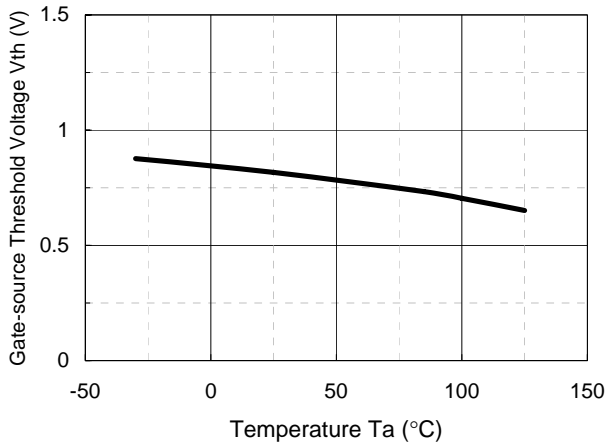
RDS(on) - ID



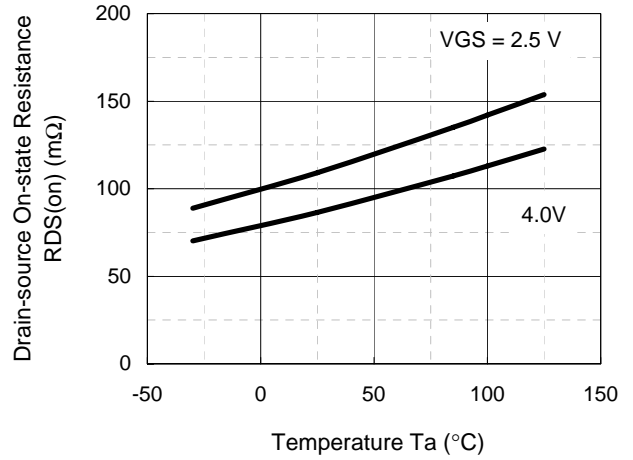
Capacitance - VDS



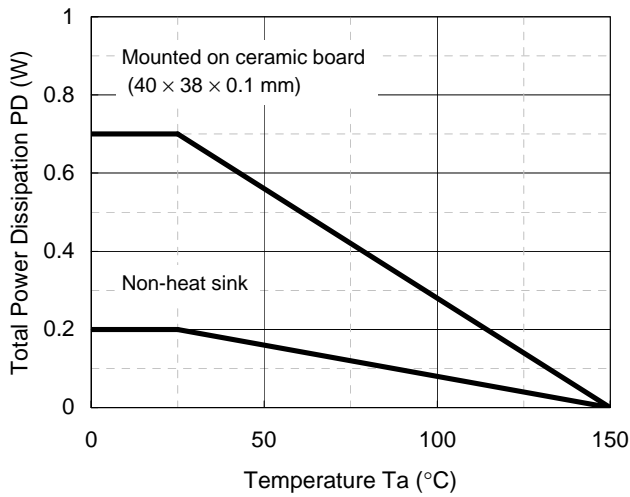
Dynamic Input/Output Characteristics



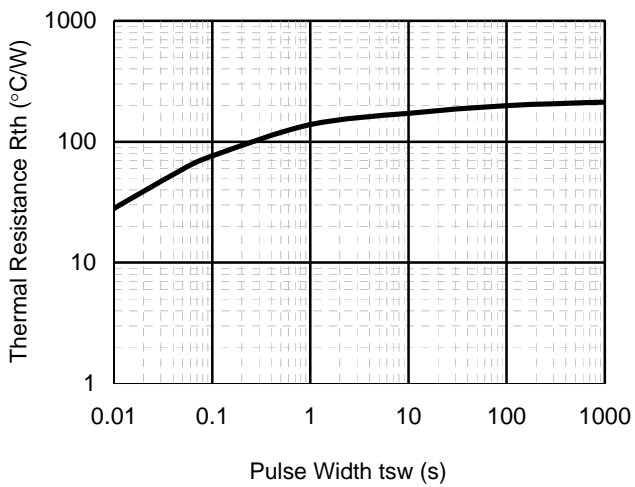
$V_{th} - T_a$



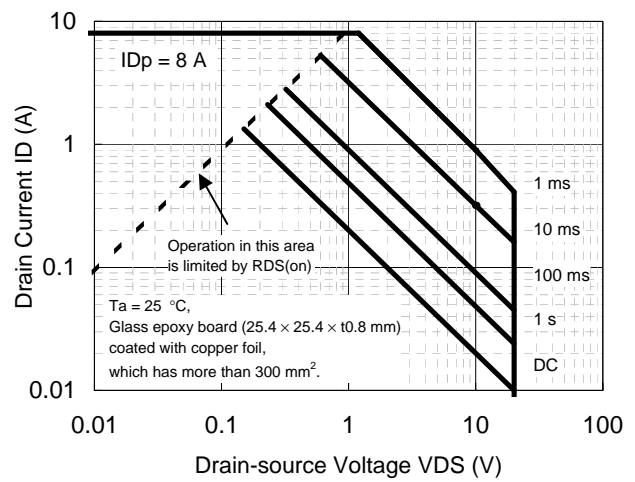
$R_{DS(on)} - T_a$



$P_D - T_a$



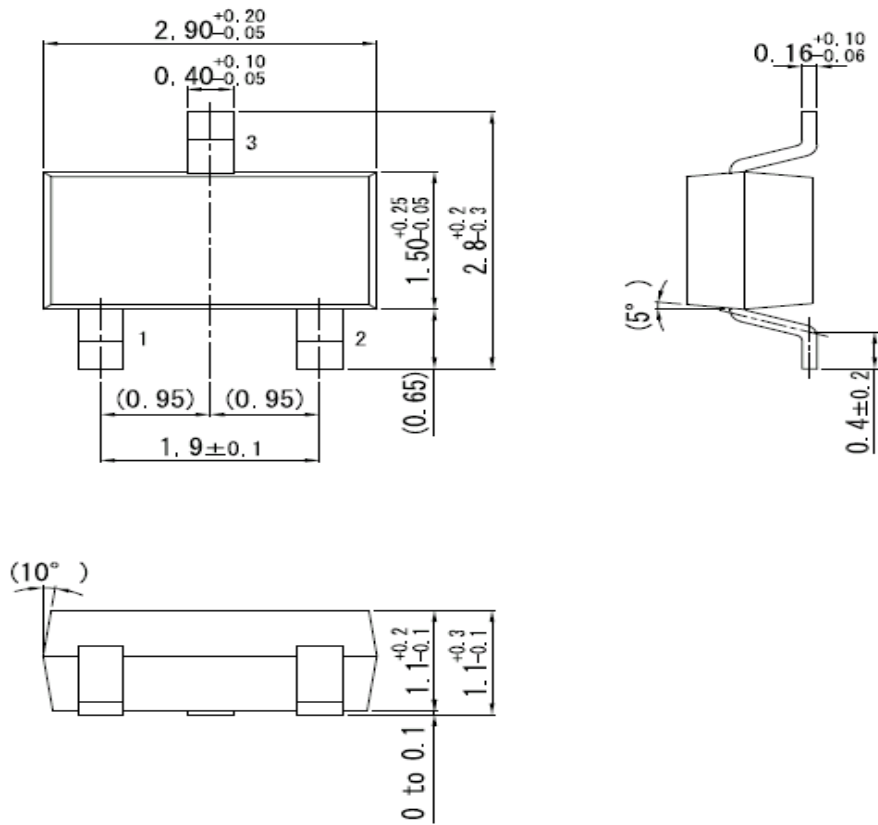
$R_{th} - t_{sw}$



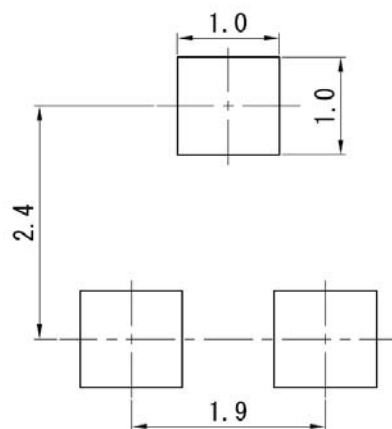
Safe Operating Area

Mini3-G3-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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