

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 m Ω ($V_{GS} = 4.0$ 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)

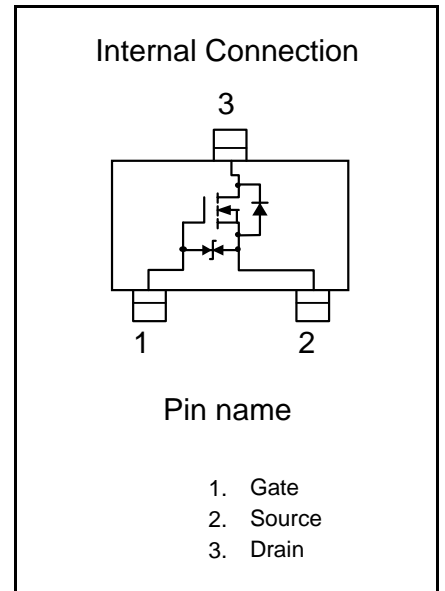
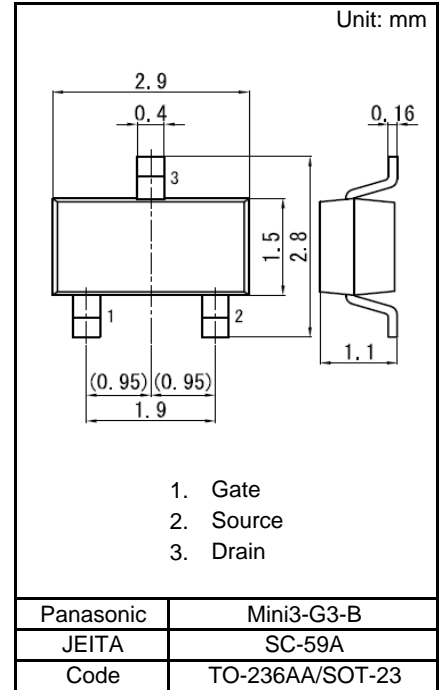
■ **Absolute Maximum Ratings** $T_a = 25$ °C

Parameter	Symbol	Rating	Unit
Drain-source Voltage	V_{DS}	20	V
Gate-source Voltage	V_{GS}	± 10	V
Drain Current	I_D	2.0	A
Drain Current(Pulsed) ^{*1}	I_{Dp}	8.0	A
Power Dissipation ^{*2}	PD	700	mW
Channel Temperature	T_{ch}	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

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

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

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



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

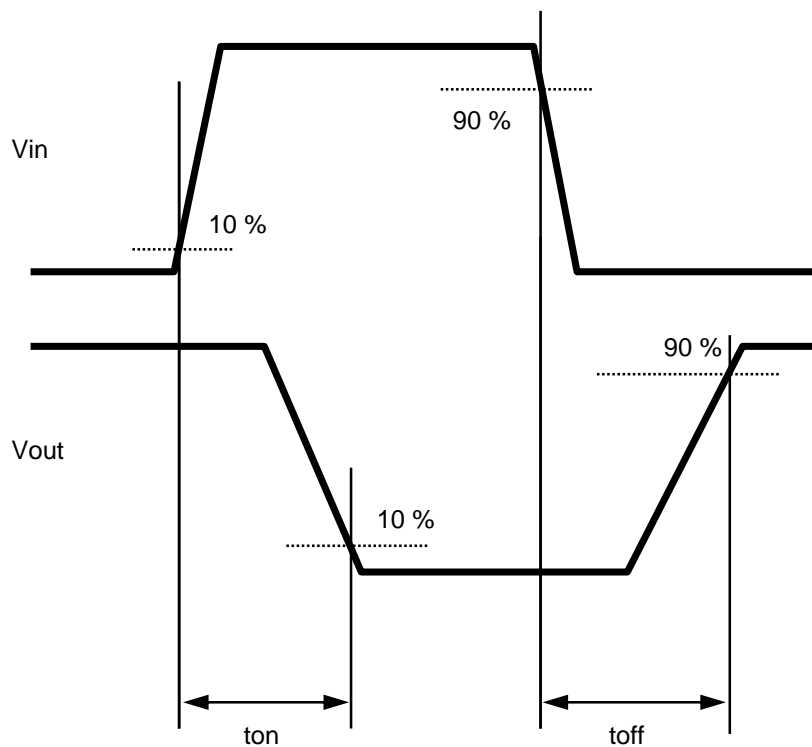
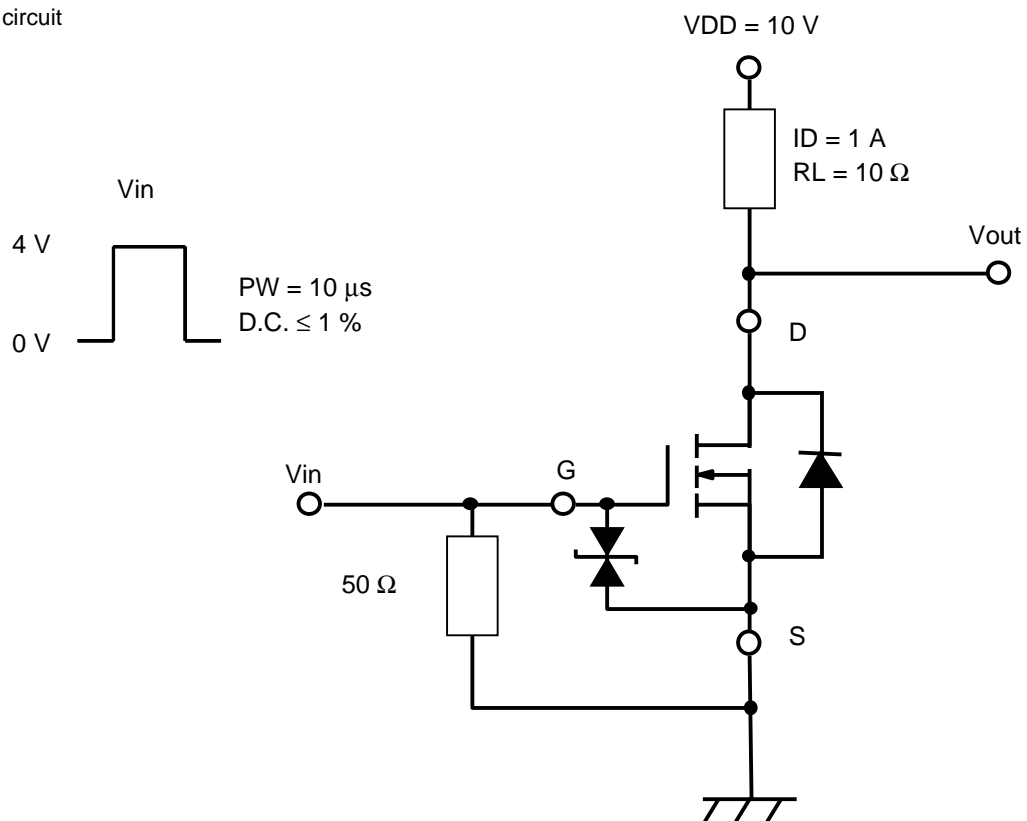
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	VDSS	ID = 1 mA, VGS = 0 V	20			V
Zero Gate Voltage Drain Current	IDSS	VDS = 20 V, VGS = 0 V			10	μA
Gate-source cutoff Current	IGSS	VGS = ±8 V, VDS = 0 V			±10	μA
Gate threshold Voltage	Vth	ID = 1.0 mA, VDS = 10 V	0.4	0.85	1.3	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

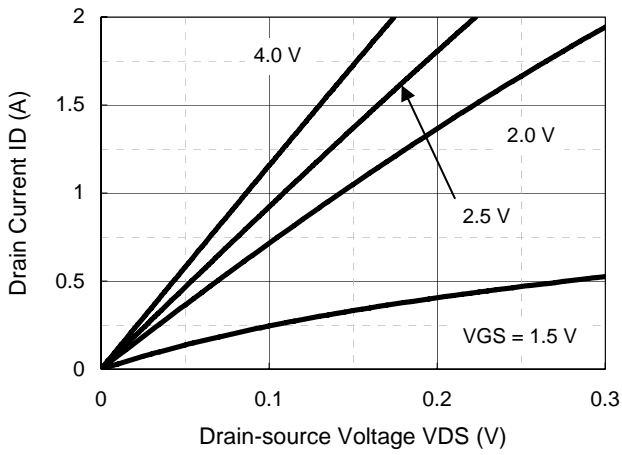
Note: Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.

*1 Pulse test

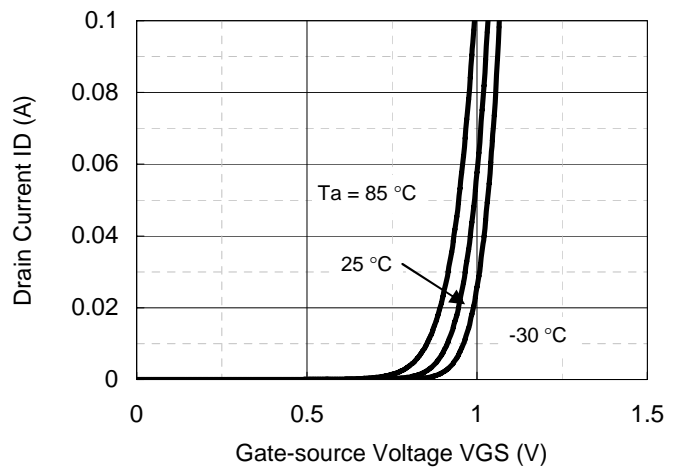
*2 See test circuit

*2 Test circuit

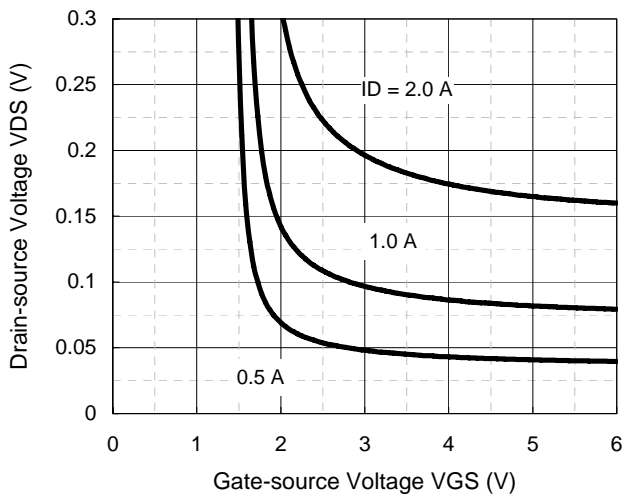




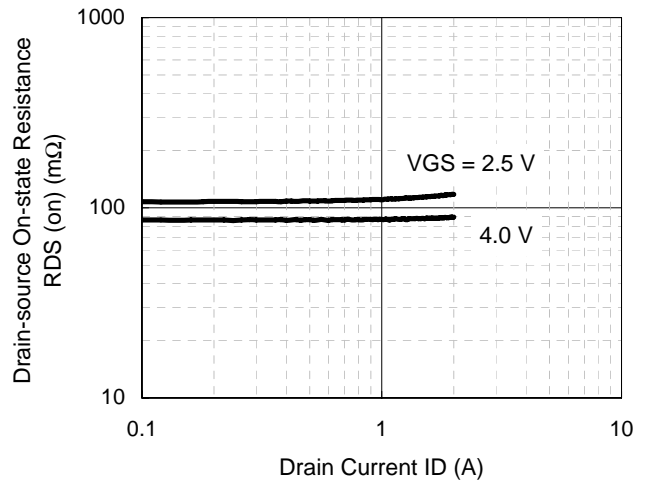
ID - VDS



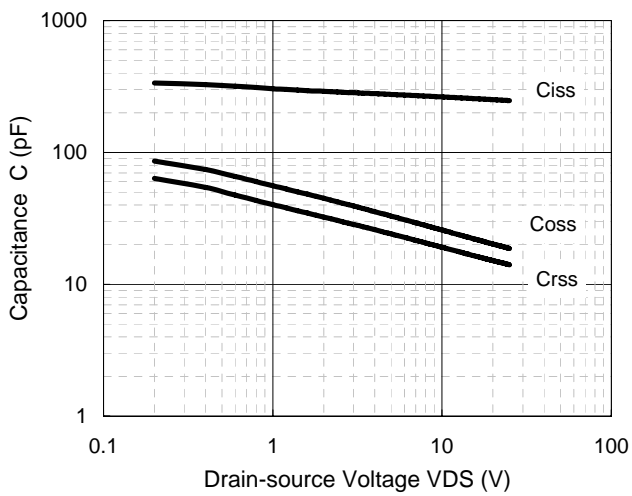
ID - VGS



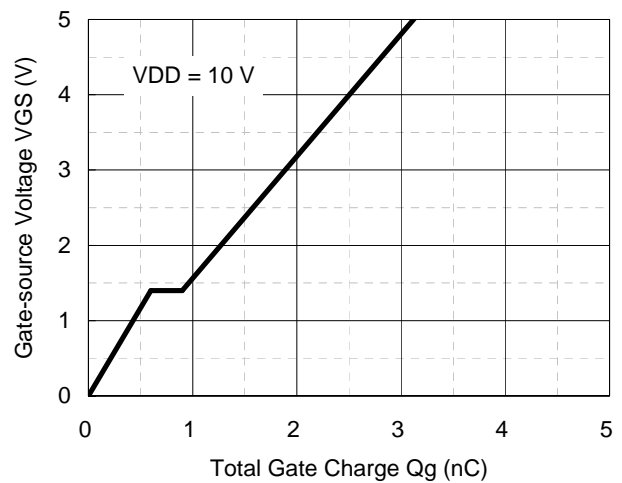
VDS - VGS



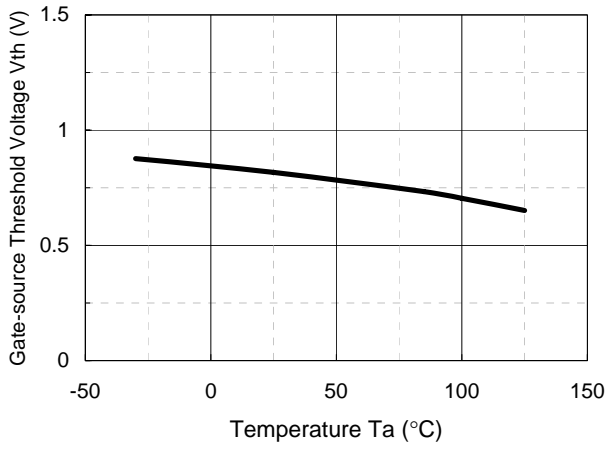
RDS(on) - ID



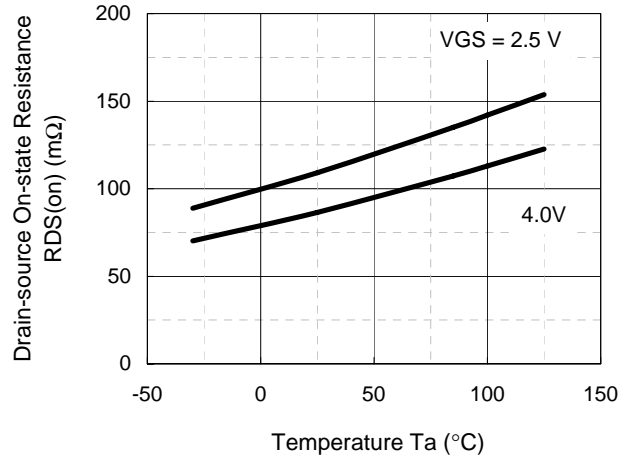
Capacitance - VDS



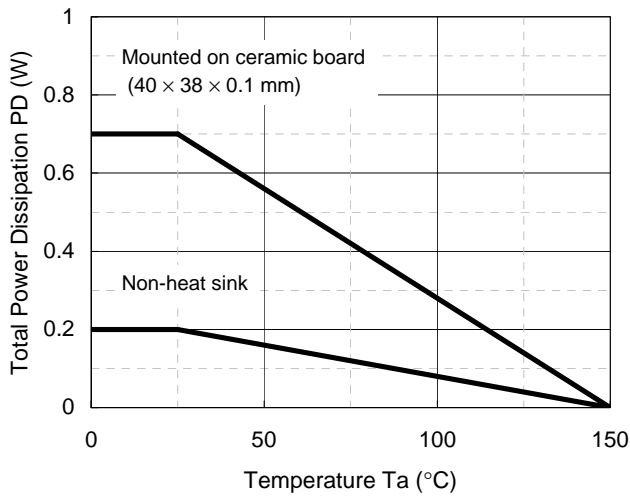
Dynamic Input/Output Characteristics



$V_{th} - T_a$



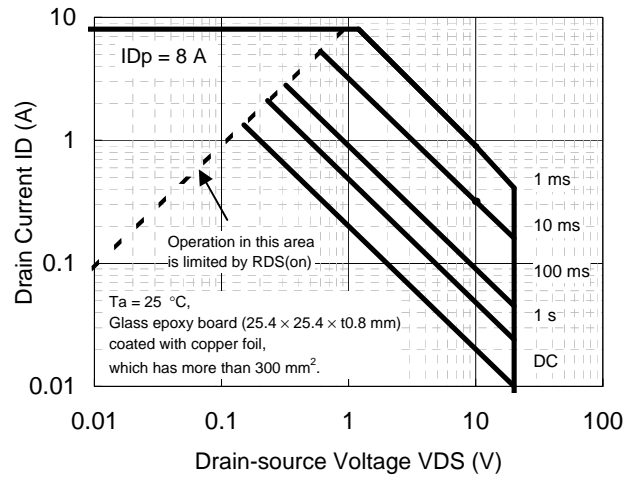
$R_{DS(on)} - T_a$



$P_D - T_a$



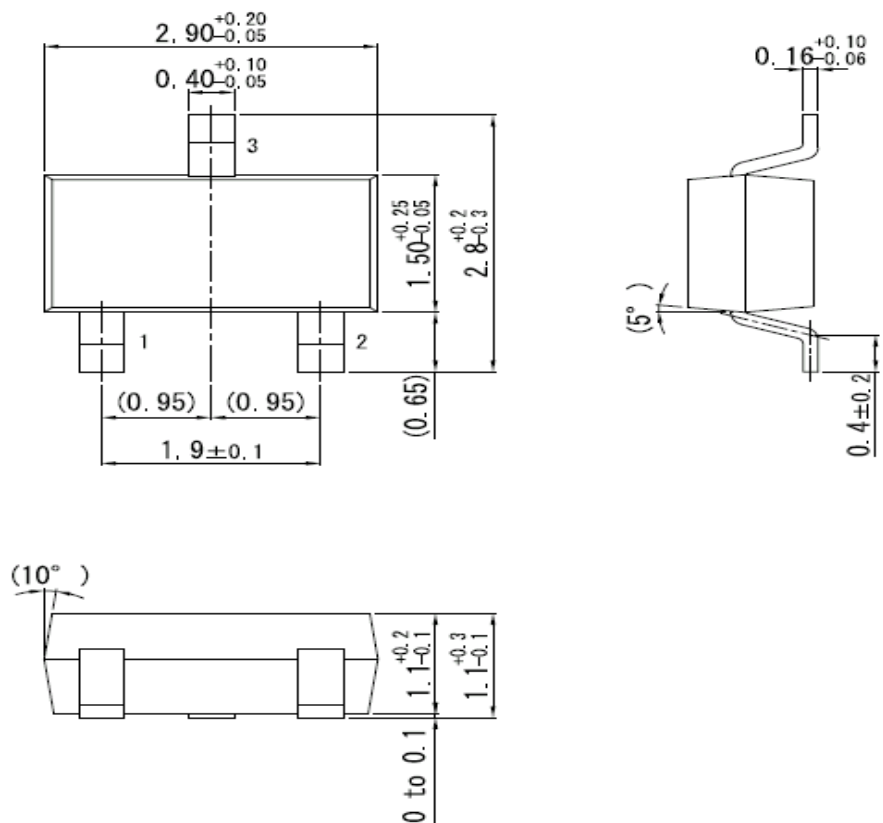
$R_{th} - t_{sw}$



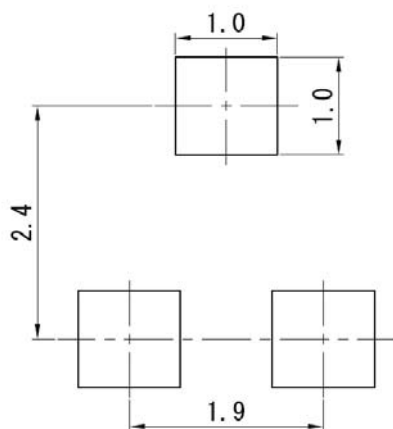
Safe Operating Area

Mini3-G3-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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