

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

MTM763200LBF

Silicon N-channel MOSFET (FET1)

Silicon P-channel MOSFET (FET2)

For Switching

For DC-DC Converter

■ Features

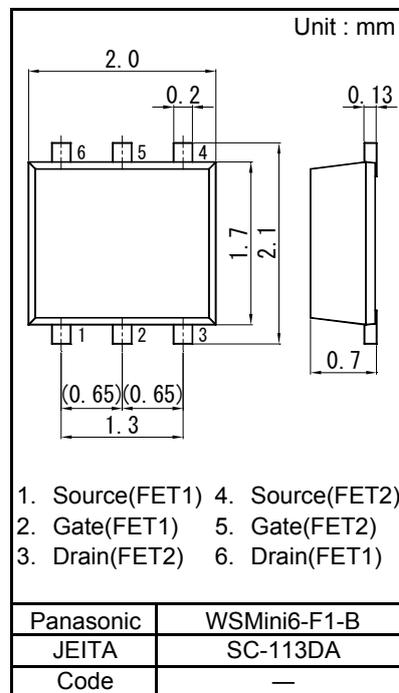
- Low Drain-source On-state Resistance :
 $R_{DS(on)}$ typ. N-ch = 80 mΩ (VGS = 4.0 V) P-ch: 100 mΩ (VGS = -4.0 V)
- Halogen-free / RoHS compliant
 (EU RoHS / UL-94 V-0 / MSL : Level 1 compliant)

■ Marking Symbol JB

■ Basic Part Number Nch+Pch MOS 20V (Individual)

■ Packaging

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

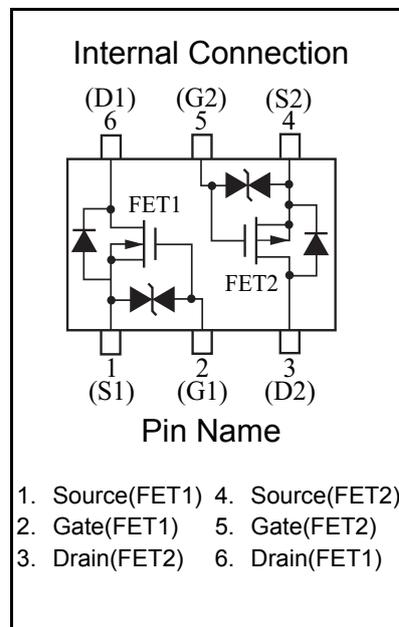


■ Absolute Maximum Ratings Ta = 25 °C

Parameter		Symbol	Rating	Unit
FET1 (N-ch.)	Drain-source Voltage	VDS	20	V
	Gate-source Voltage	VGS	±10	V
	Drain current	ID	1.9	A
	Peak drain current	IDp	12	A
FET2 (P-ch.)	Drain-source Voltage	VDS	-20	V
	Gate-source Voltage	VGS	±10	V
	Drain current	ID	-1.2	A
	Peak drain current	IDp	-7	A
Overall	Total power dissipation *1	PD	700	mW
	Channel temperature	Tch	150	°C
	Operating ambient temperature	Topr	-40 to +85	°C
	Storage Temperature Range	Tstg	-55 to +150	°C

Note *1 Measuring on ceramic substrate at 40 mm · 38 mm · 0.2 mm.

PD absolute maximum rating Non-heat sink: 150 mW.



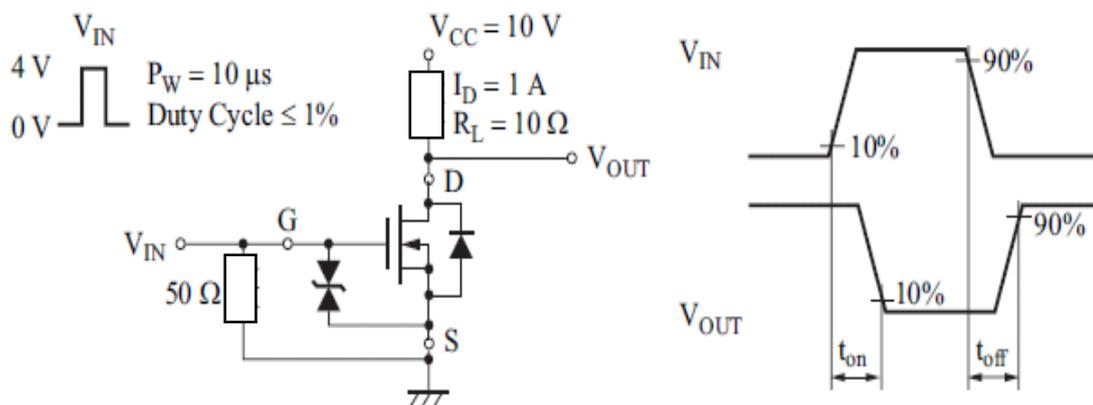
■ Electrical Characteristics Ta = 25 °C ± 3 °C
 FET1 (N-ch.)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	VDSS	ID = 1.0 mA, VGS = 0 V	20			V
Zero Gate Voltage Drain Current	IDSS	VDS = 20 V, VGS = 0 V			1.0	μA
Gate-source Leakage Current	IGSS	VGS = ±8.0 V, VDS = 0 V			±10	μA
Gate-source Threshold Voltage	Vth	ID = 1.0 mA, VDS = 10 V	0.4	0.85	1.3	V
Drain-source ON resistance *1	RDS(ON)1	ID = 1.0 A, VGS = 4.0 V		80	105	mΩ
	RDS(ON)2	ID = 0.5 A, VGS = 2.5 V		100	150	
Forward transfer admittance *1	Yfs	ID = 1.0 A, VDS = 10 V	3.0			S
Input Capacitance	Ciss	VDS = 10 V, VGS = 0, f = 1 MHz		280		pF
Output Capacitance	Coss			18		
Reverse Transfer Capacitance	Crss			17		
Turn-on time *2	ton	VDD = 10 V, VGS = 0 to 4 V, ID = 1.0 A		12		ns
Turn-off time *2	toff	VDD = 10 V, VGS = 4 to 0 V, ID = 1.0 A		50		

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

2. *1 Pulse measurement

*2 Measurement circuit for Turn-on Time / Turn-off Time



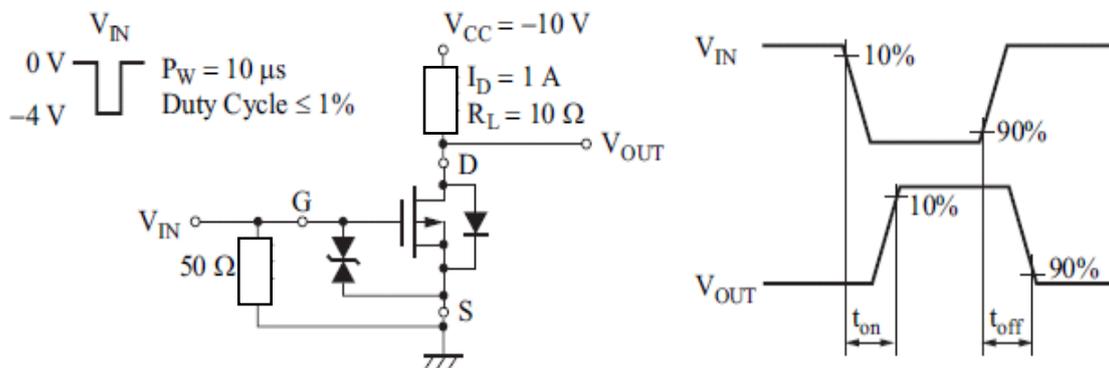
FET2 (P-ch.)

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			-1.0	μA
Gate-source Leakage Current	IGSS	VGS = ±8 V, VDS = 0 V			±10	μA
Gate-source 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		100	130	mΩ
	RDS(ON)2	ID = -0.6 A, VGS = -2.5 V		130	200	
Forward transfer admittance *1	Yfs	ID = -1.0 A, VDS = -10 V	3.0			S
Input Capacitance	Ciss	VDS = -10 V, VGS = 0, f = 1 MHz		440		pF
Output Capacitance	Coss			40		
Reverse Transfer Capacitance	Crss			38		
Turn-on Time *2	ton	VDD = -10 V, VGS = 0 to -4 V ID = -1 A		35		ns
Turn-off Time *2	toff	VDD = -10 V, VGS = -4 to 0 V ID = -1 A		100		

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

2. *1 Pulse measurement

*2 Measurement circuit for Turn-on Time / Turn-off Time

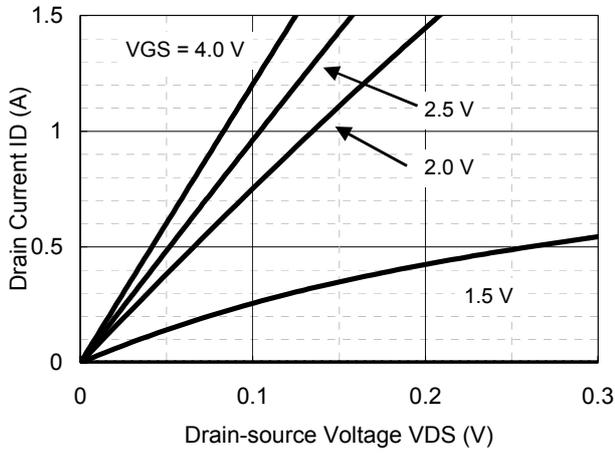




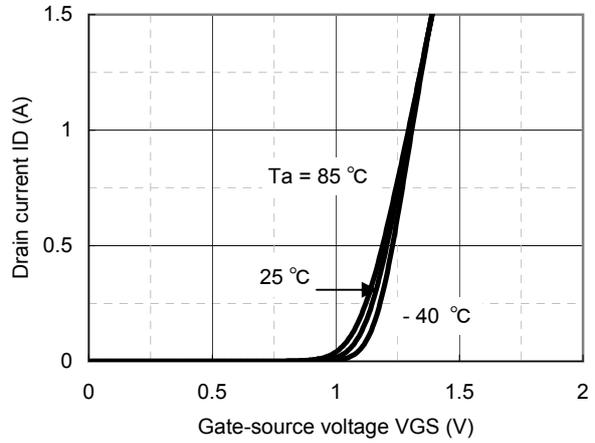
FET1(Nch.)

Technical Data (reference)

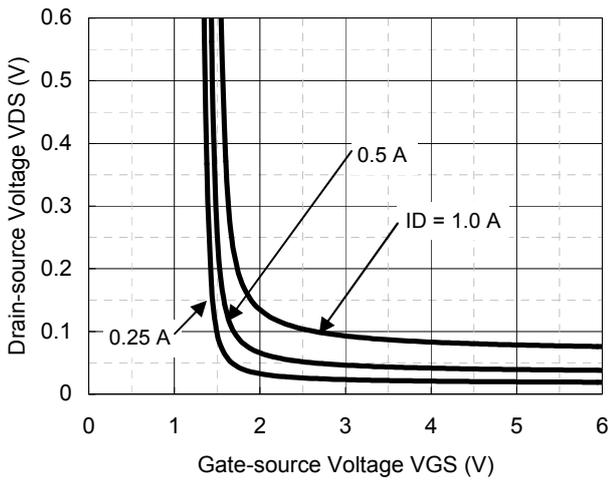
ID - VDS



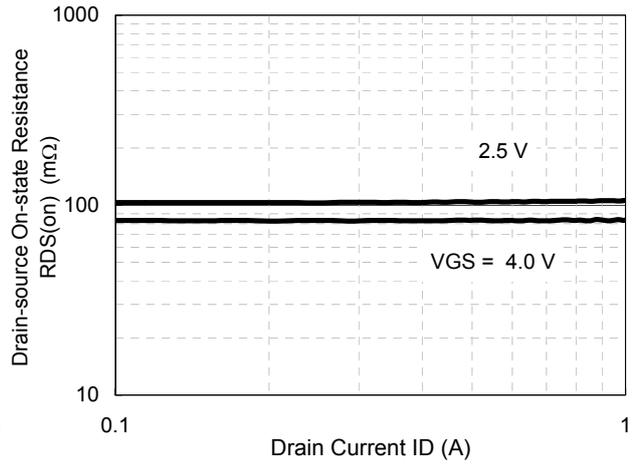
ID - VGS



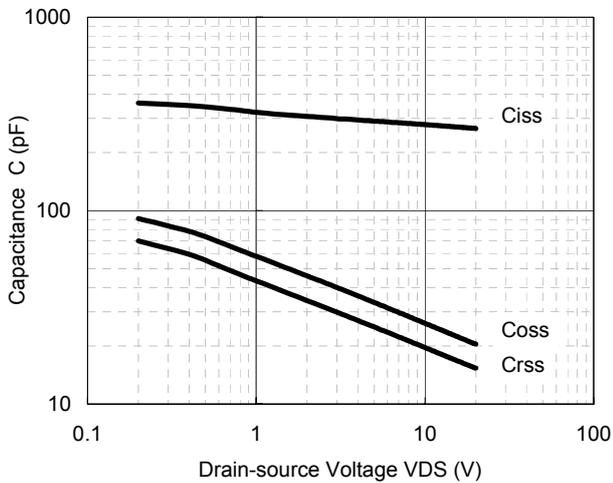
VDS - VGS



RDS(on) - ID



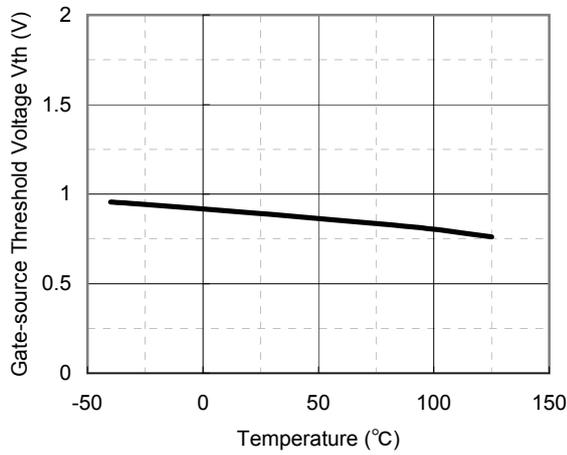
Capacitance - VDS



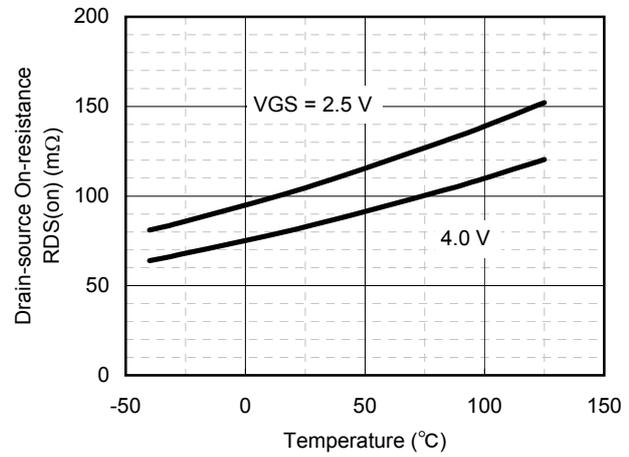
FET1(Nch.)

Technical Data (reference)

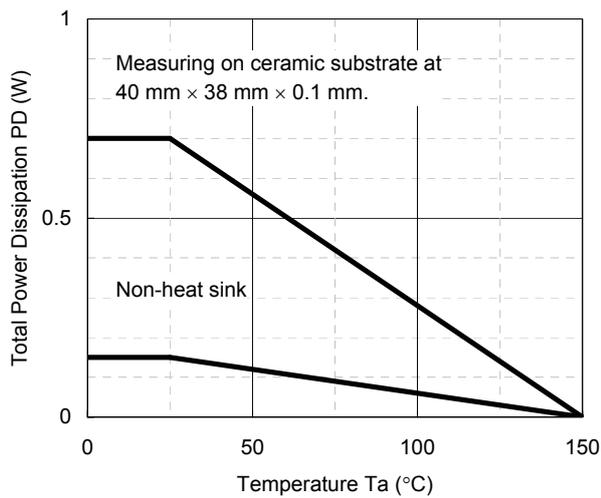
V_{th} - T_a



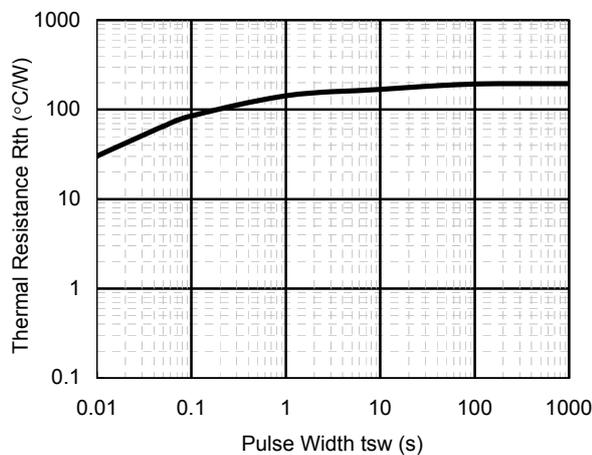
R_{DS(on)} - T_a



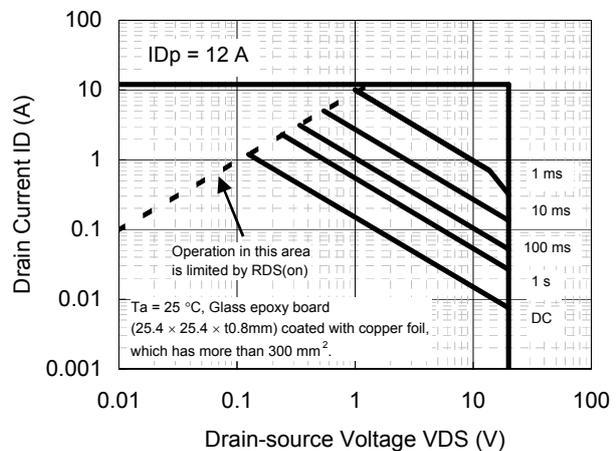
P_D - T_a



R_{th} - t_{sw}



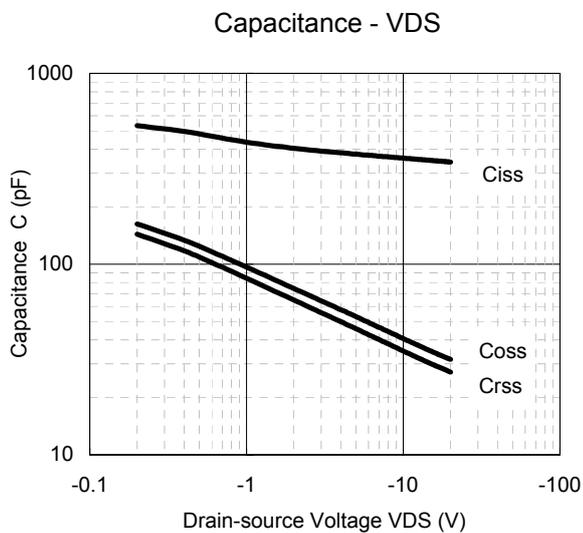
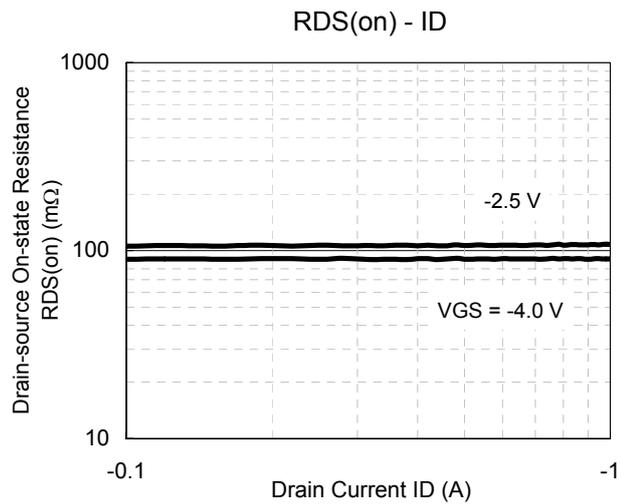
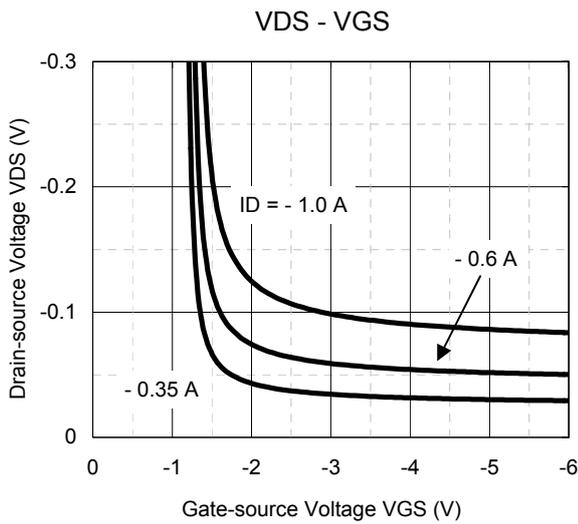
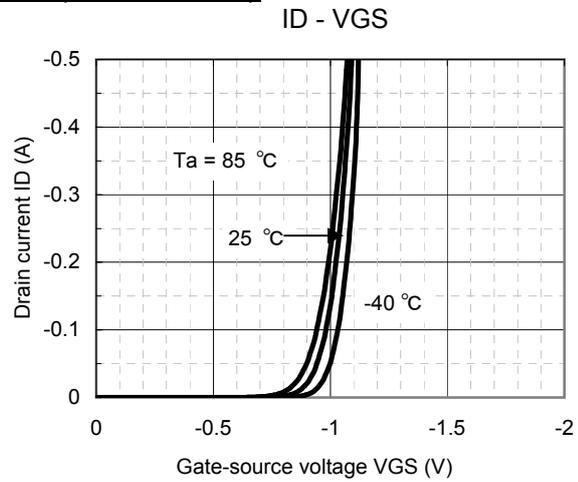
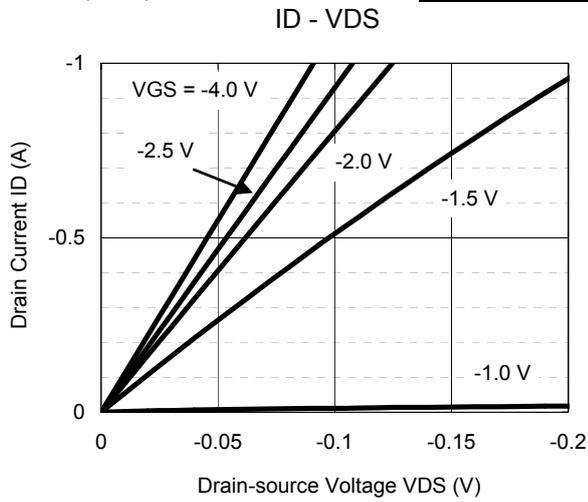
Safe Operating Area





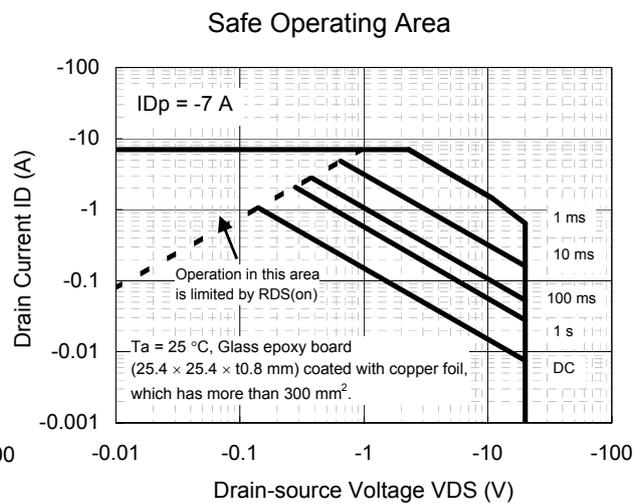
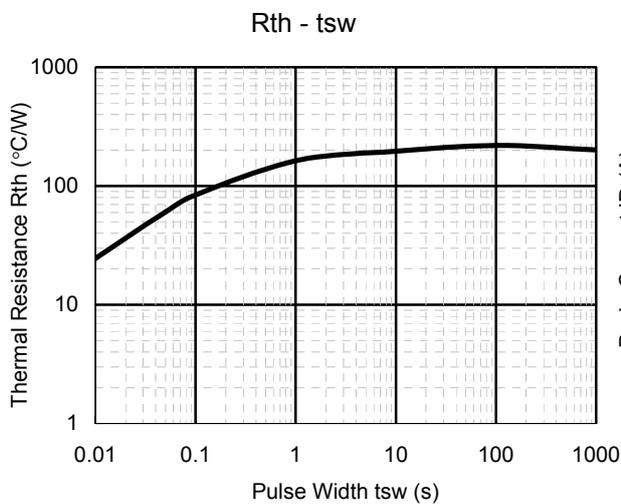
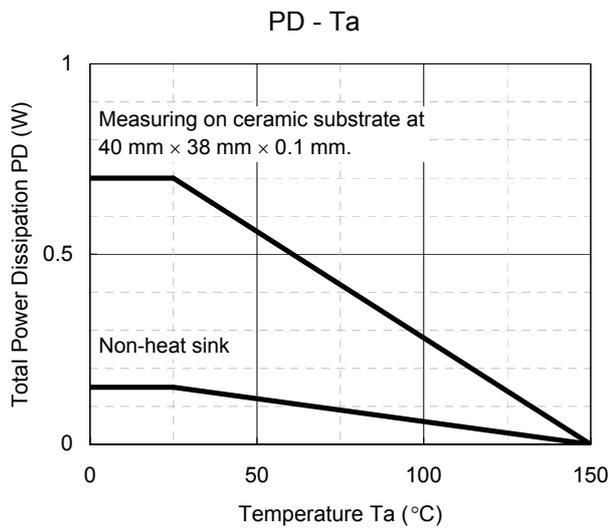
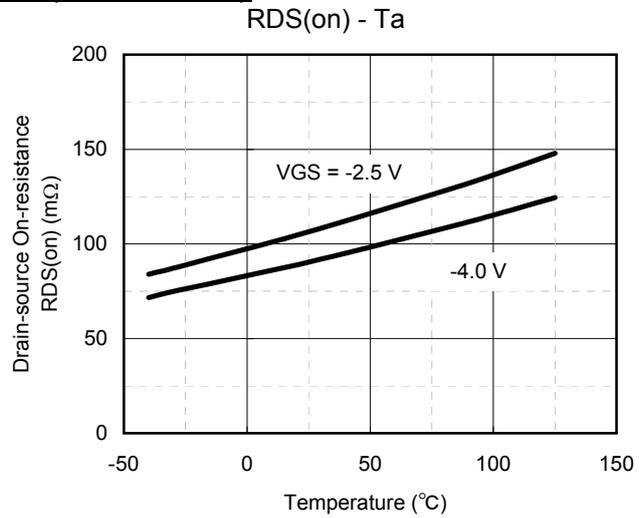
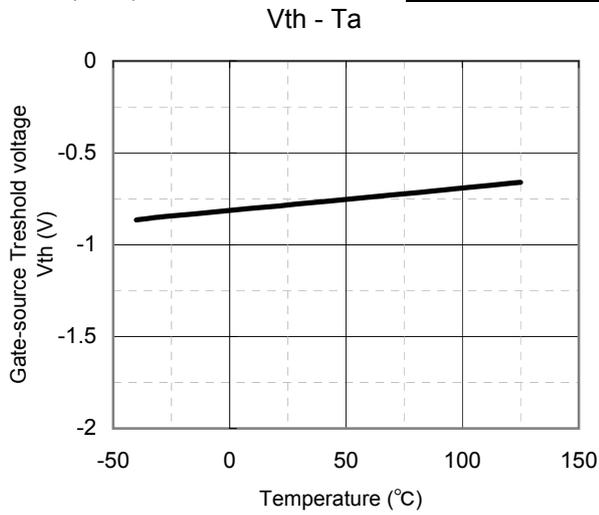
FET2(Pch.)

Technical Data (reference)



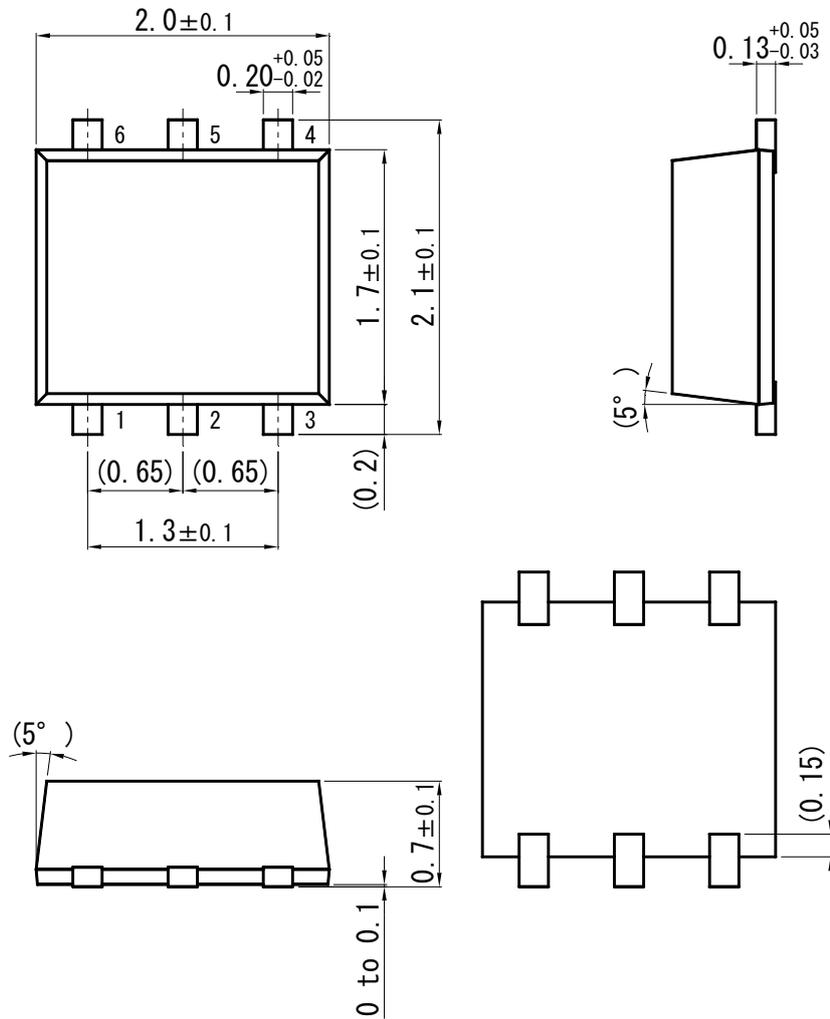
FET2(Pch.)

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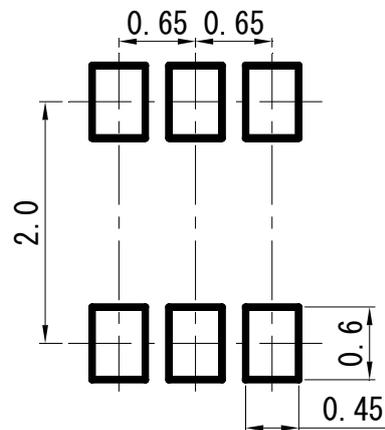


WSMini6-F1-B

Unit : mm



■ Land Pattern (Reference) (Unit : mm)



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Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
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