

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



FM6K62010L

Silicon N-channel MOSFET(FET)
 Silicon epitaxial planar type(SBD)

For switching
 For DC-DC Converter

■ Features

- Low drain-source ON resistance : $R_{DS(on)}$ typ. = 80 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 : Y5

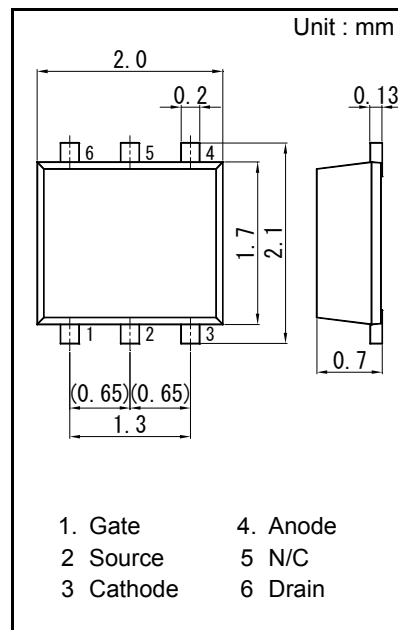
■ Packaging

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

■ Absolute Maximum Ratings Ta = 25 °C

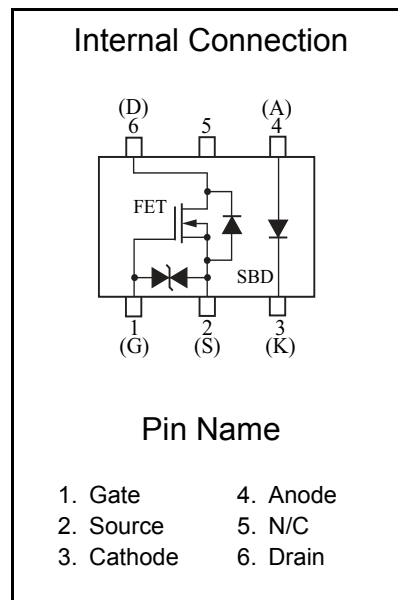
項目		Symbol	Rating	Unit
FET	Drain to Source Voltage	VDS	20	V
	Gate to Source Voltage	VGS	±10	V
	Drain current	ID	2.0	A
	Drain Current (Pulsed)	IDp	12	A
	Channel temperature	Tch	125	°C
SBD	Reverse voltage	VR	20	V
	Forward current (Average)	IF(AV)	1.0	A
	Non-repetitive Peak forward surge current *1	IFSM	3.0	A
	Junction temperature	Tj	125	°C
Overall	Total power dissipation *2	PD	700	mW
	Operating ambient temperature	Topr	-40 to + 85	°C
	Storage temperature	Tstg	-55 to +125	°C

Note: *1 60 Hz sine wave 1 cycle (Non-repetitive peak current)
 *2 Measuring on ceramic substrate at 40 mm × 38 mm × 0.2 mm
 PD absolute maximum rating without a heat sink: 150 mW



- 1. Gate
- 2. Source
- 3. Cathode
- 4. Anode
- 5. N/C
- 6. Drain

Panasonic	WSMini6-F1-B
JEITA	SC-113DA
Code	—



Pin Name

- 1. Gate
- 2. Source
- 3. Cathode
- 4. Anode
- 5. N/C
- 6. Drain

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain to Source Breakdown Voltage	VDSS	ID = 1.0 mA, VGS = 0	20			V
Zero Gate Voltage Drain Current	IDSS	VDS = 20 V, VGS = 0			1.0	μA
Gate-source Leakage Current	IGSS	VGS = ±8 V, VDS = 0			±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	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	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 delay time *1	td(on)	VDD = 10 V, VGS = 0 V to 4 V		5		ns
Rise time *1	tr	ID = 1.0 A		8		
Turn-off delay time *1	td(off)	VDD = 10 V, VGS = 4 V to 0 V		20		ns
Fall time *1	tf	ID = 1.0 A		18		

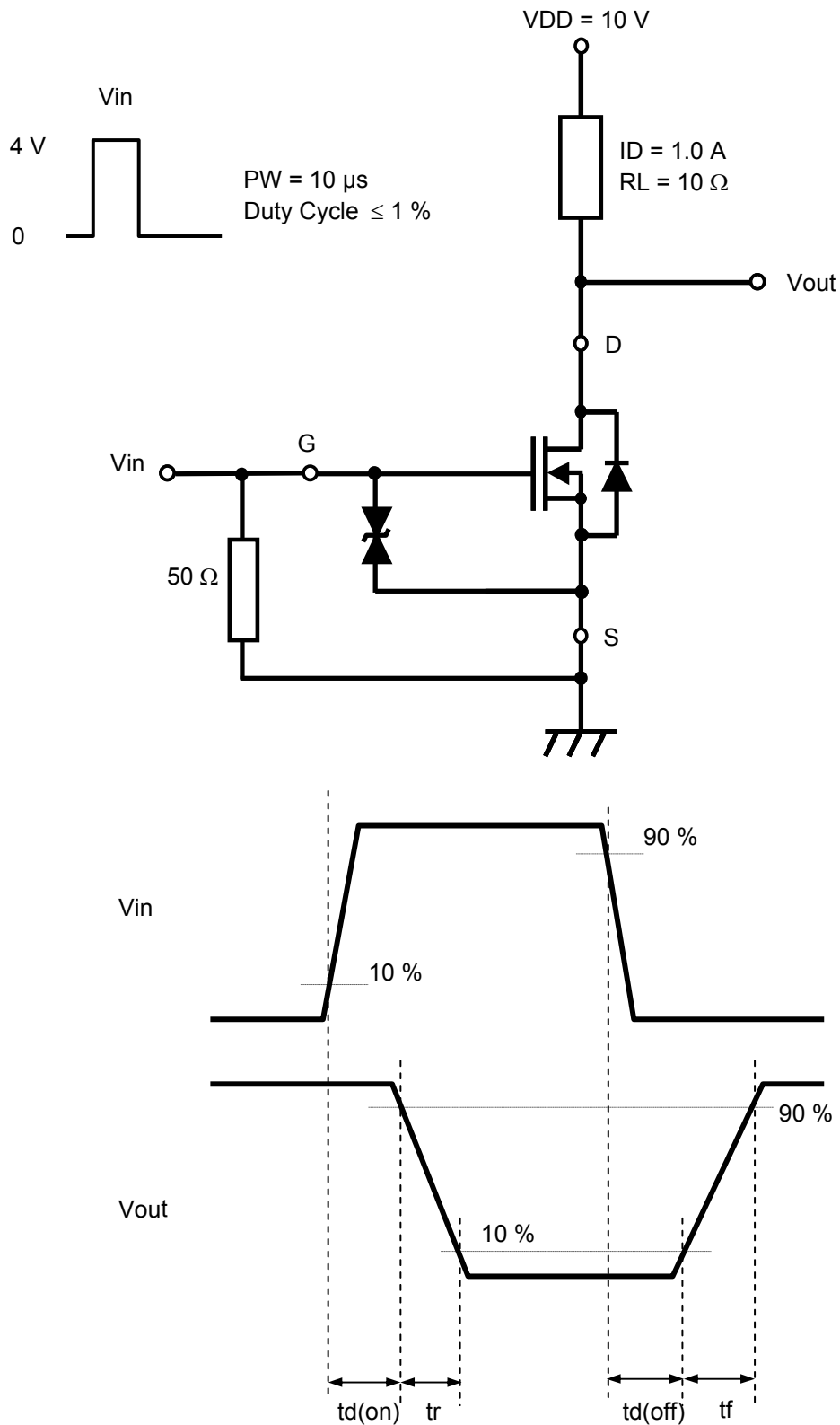
Note: 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.
2. *1 Turn-on, Turn-off measurement circuit

SBD

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	VF1	IF = 800 mA			0.47	V
	VF2	IF = 1.0 A			0.52	V
Reverse current	IR	VR = 20 V			80	μA

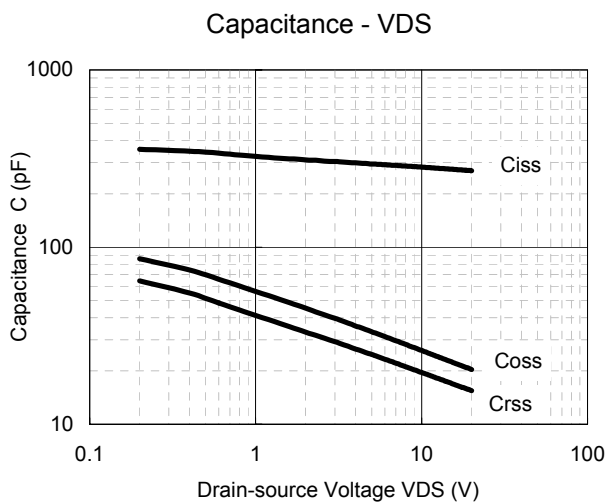
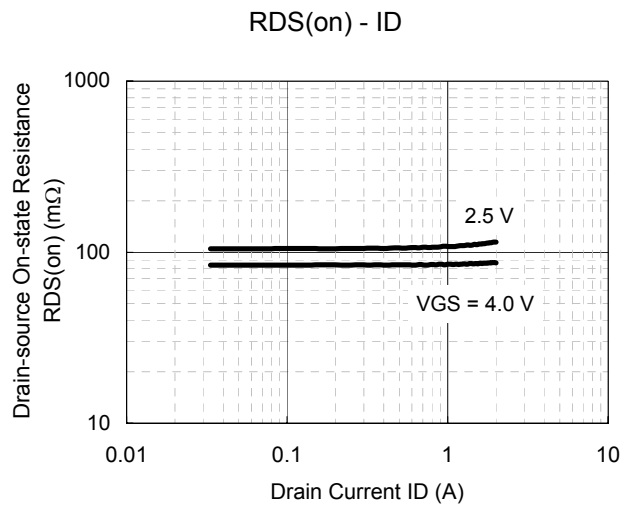
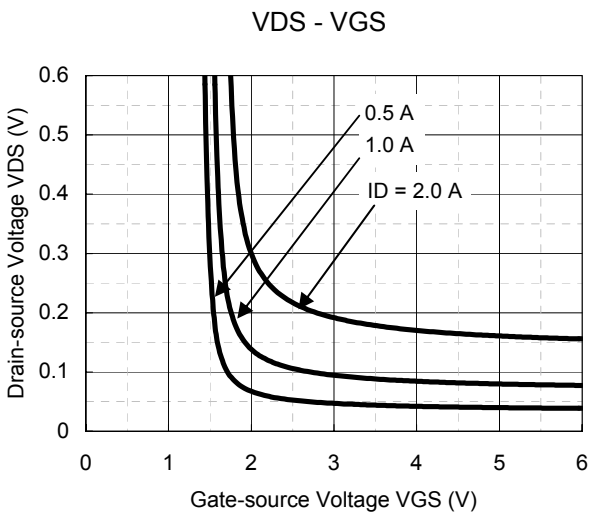
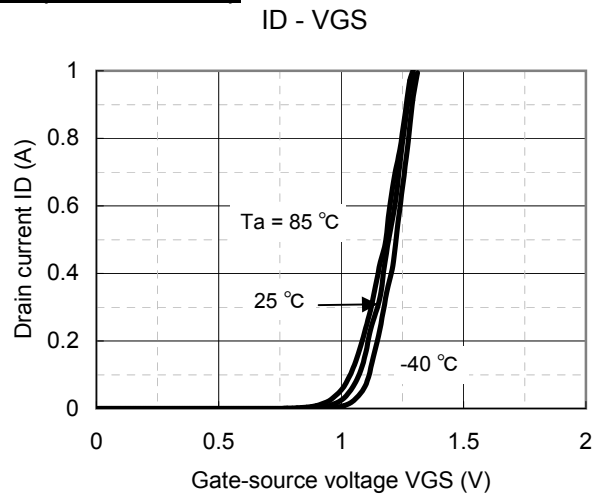
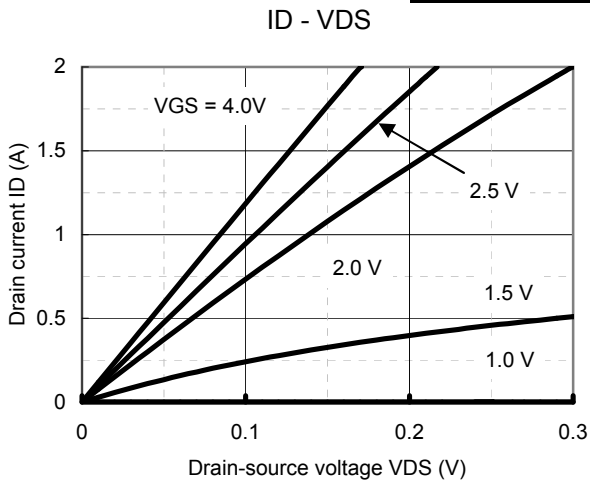
Note: Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 Measuring methods for diodes.

*1 Turn-on, Turn-off measurement circuit

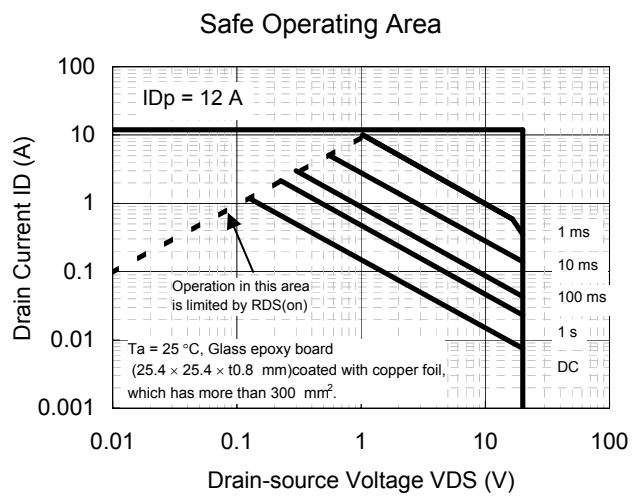
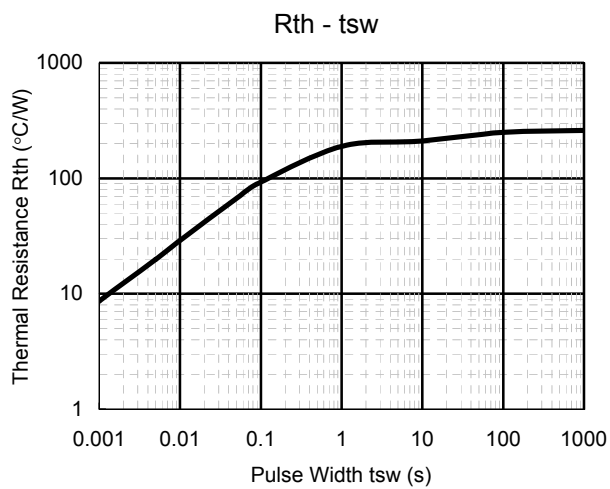
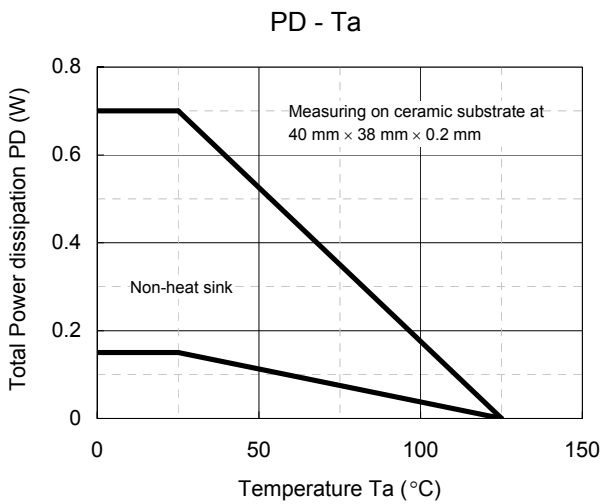
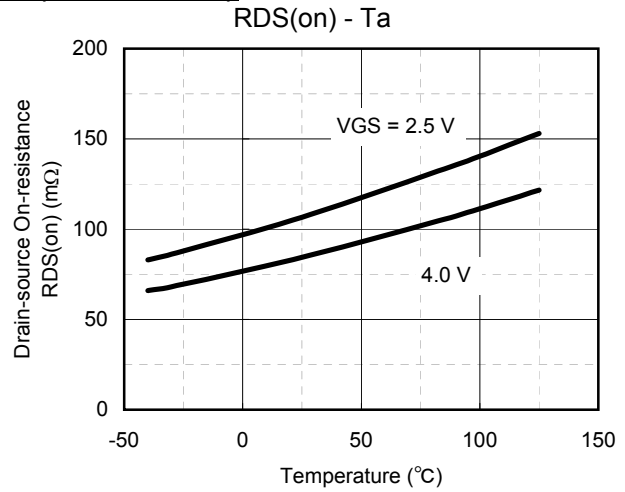
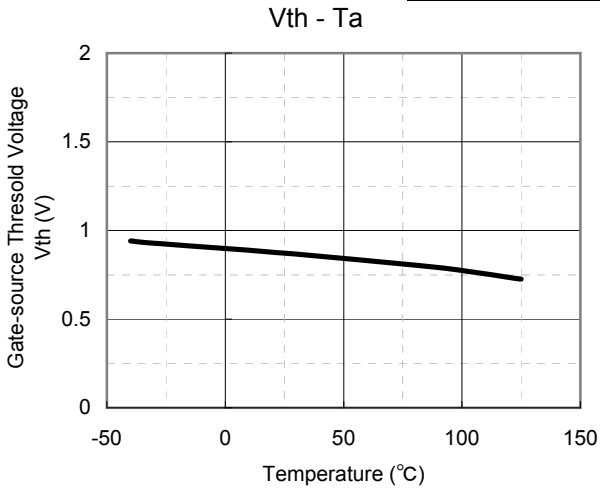




Technical Data (reference)

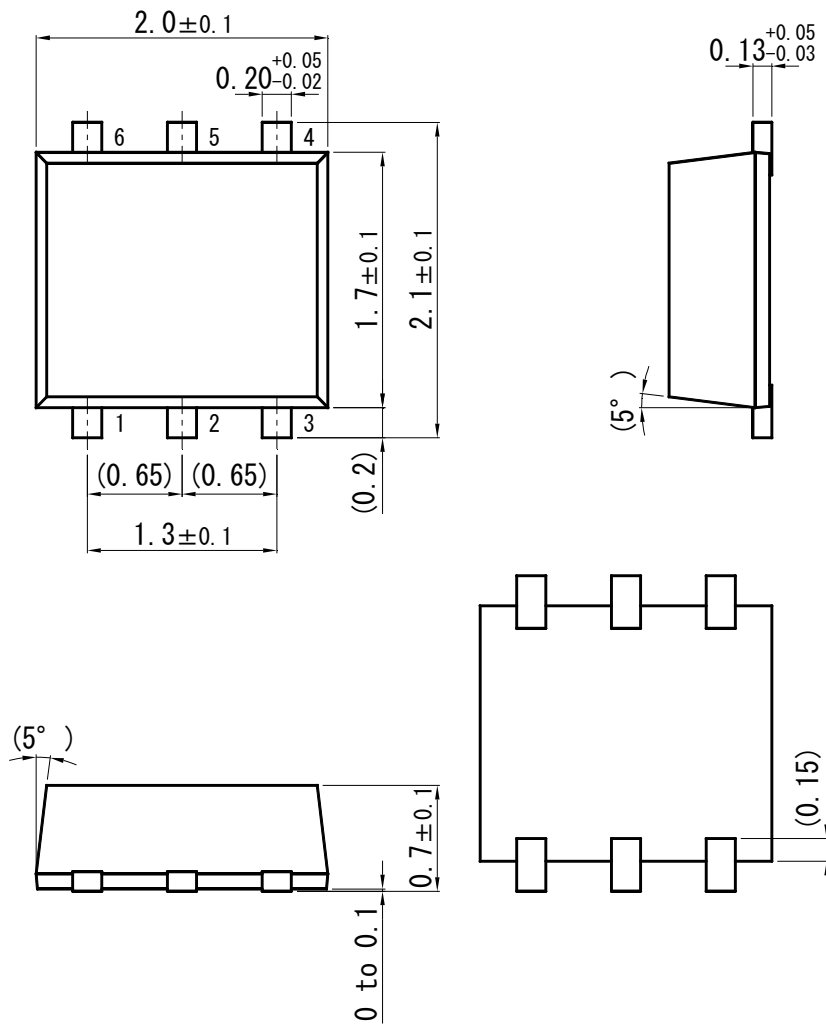


Technical Data (reference)

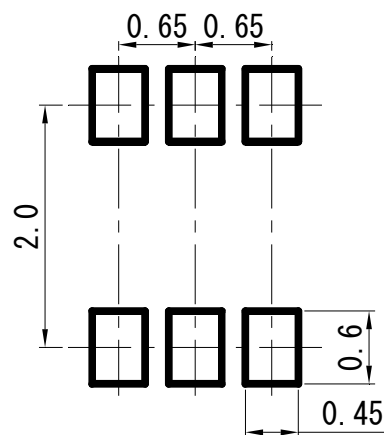


WSMini6-F1-B

Unit: mm



■ Land Pattern (Reference) (Unit : mm)



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