

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

FK330309EL

Silicon N-channel MOSFET

For switching circuits

■ Features

- Low drive voltage : 1.5 V drive
- Halogen-free / RoHS compliant
 (EU RoHS / UL-94 V-0 / MSL : Level 1 compliant)

■ Marking Symbol : X9

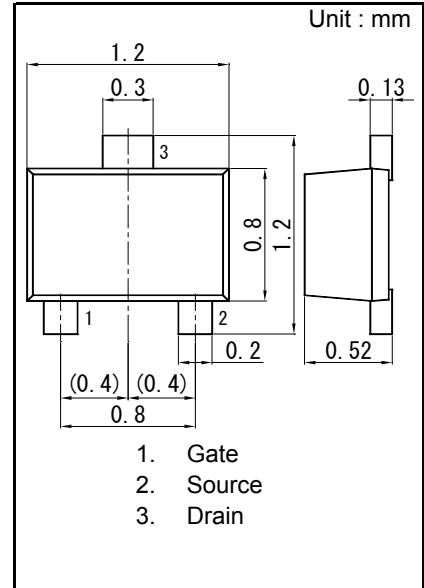
■ Packaging

Embossed type (Thermo-compression sealing) : 10 000 pcs / reel (standard)

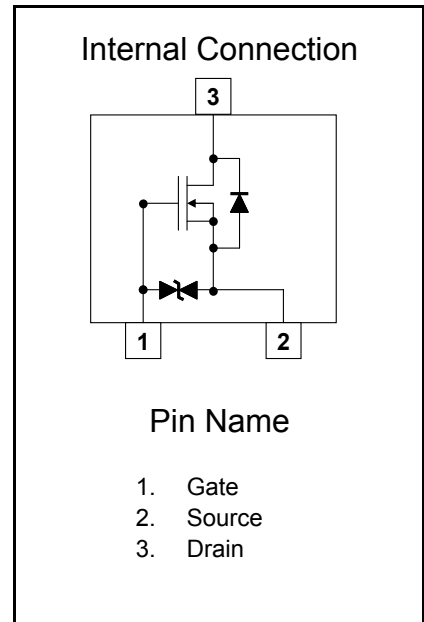
■ Absolute Maximum Ratings Ta = 25 °C

Parameter	Symbol	Rating	Unit
Drain to Source Voltage	VDS	30	V
Gate to Source Voltage	VGS	±6	
Drain Current	ID	100	mA
Drain Current (Pulsed) *1	IDp	200	
Total Power Dissipation	PD	100	mW
Channel Temperature	Tch	150	°C
Storage Temperature Range	Tstg	-55 to +150	

Note *1 Pulse test: Ensure that the channel temperature does not exceed 150 °C



Panasonic	SSSMini3-F2-B
JEITA	SC-105AA
Code	SOT-723



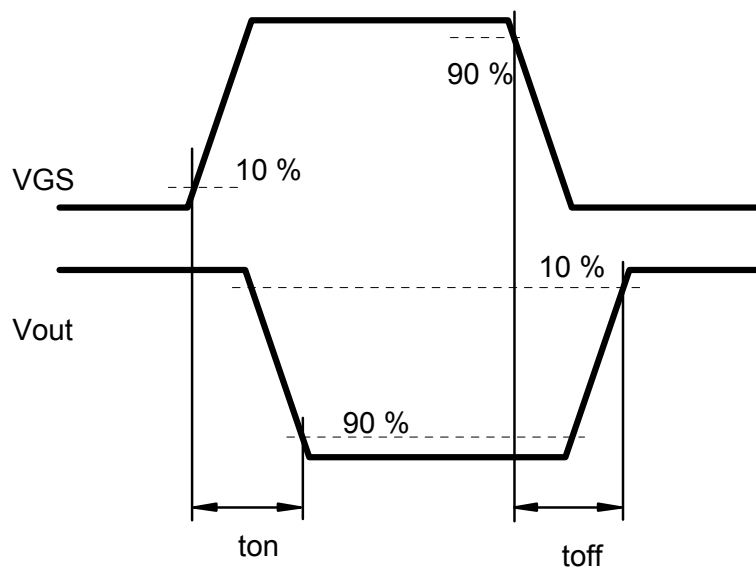
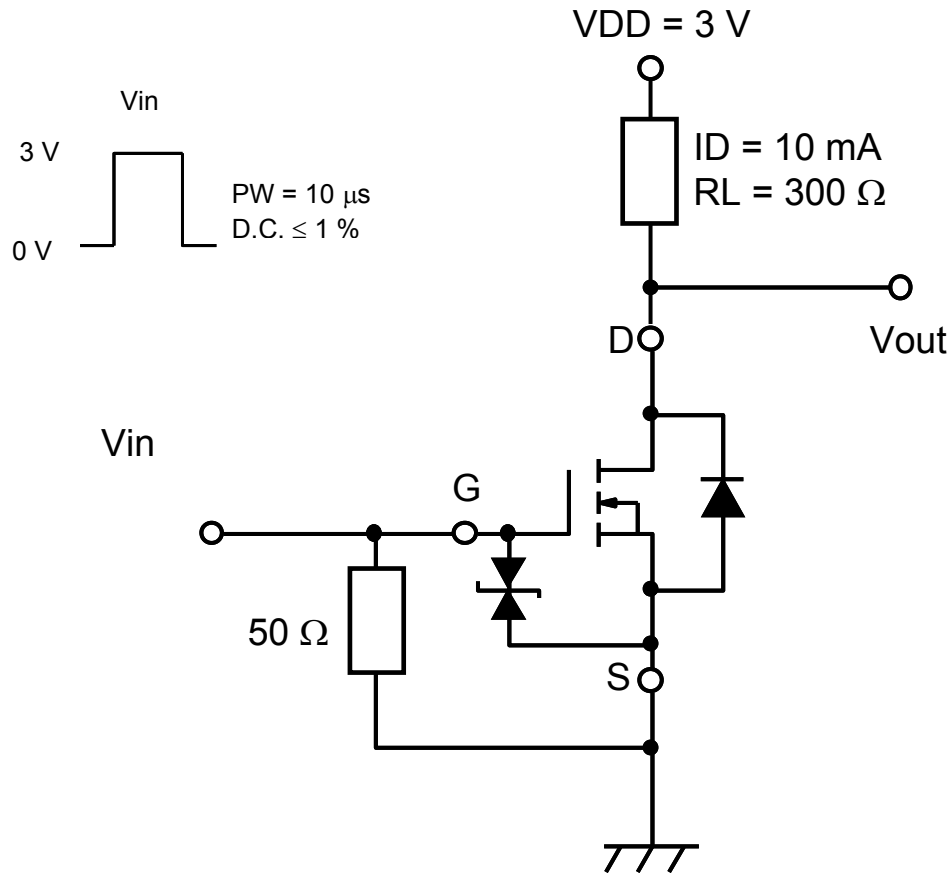
■ Electrical Characteristics Ta = 25 °C ± 3 °C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	VDSS	ID = 1 mA, VGS = 0 V	30			V
Zero Gate Voltage Drain Current	IDSS	VDS = 30 V, VGS = 0 V			10	μA
Gate-source Leakage Current	IGSS	VGS = ±6 V, VDS = 0 V			±10	μA
Gate-source Threshold Voltage	Vth	ID = 1 mA, VDS = 10 V	0.3		1.3	V
Drain-source On-state Resistance	RDS(on)1	ID = 10 mA, VGS = 2.5 V		1	4	Ω
	RDS(on)2	ID = 10 mA, VGS = 1.5 V		4	12	
Input Capacitance	Ciss	VDS = 10 V, VGS = 0 V f = 1 MHz		13		pF
Output Capacitance	Coss			7		
Reverse Transfer Capacitance	Crss			4		
Turn-on Delay Time *1	ton	VDD = 3 V, VGS = 0 to 3 V ID = 10 mA, RL = 300 Ω		20		ns
Turn-off Delay Time *1	toff	VDD = 3 V, VGS = 3 to 0 V ID = 10 mA, RL = 300 Ω		100		ns

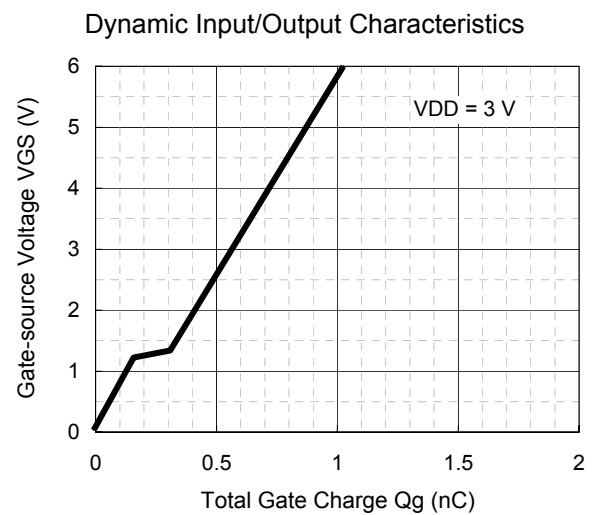
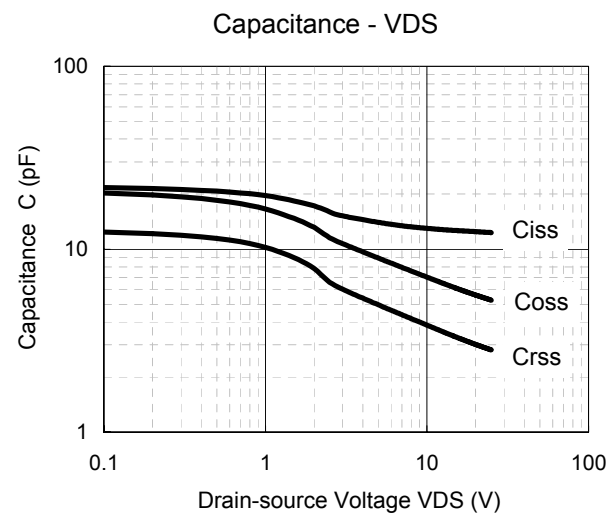
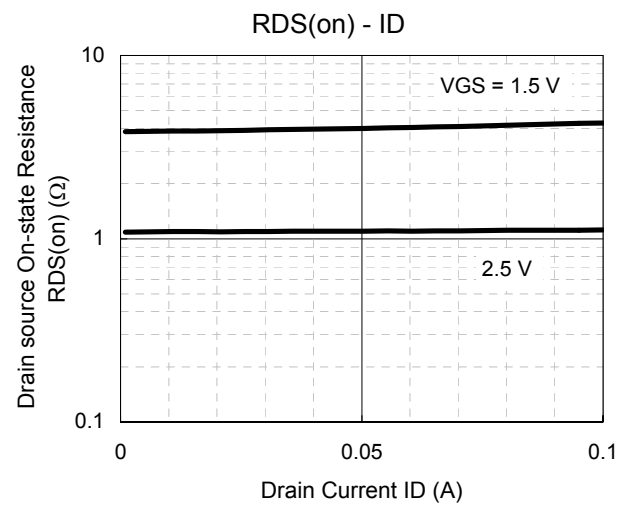
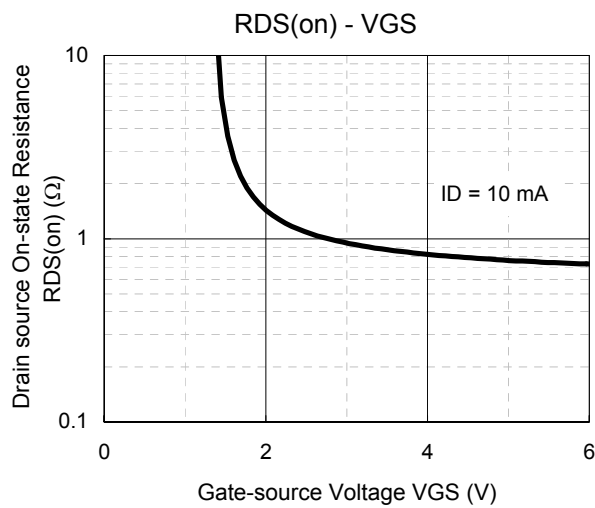
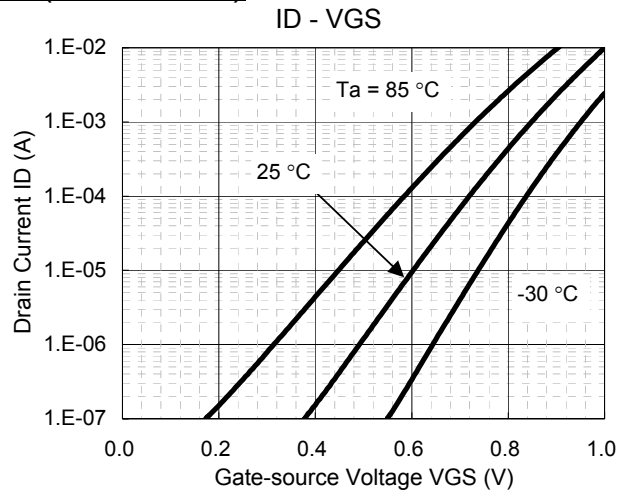
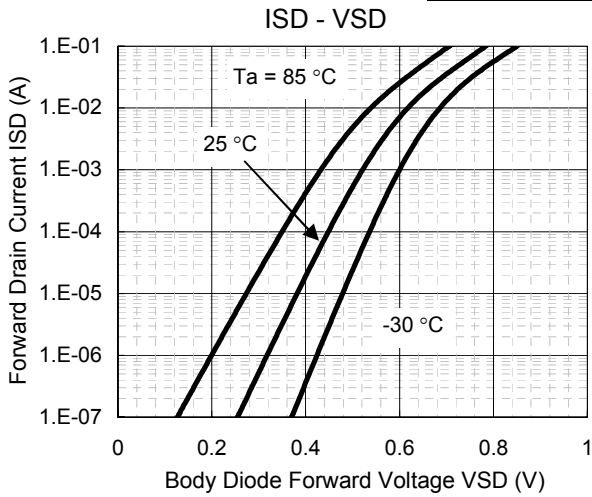
Note : 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.

2. *1 Measurement circuit for Turn-on Delay Time / Turn-off Delay Time

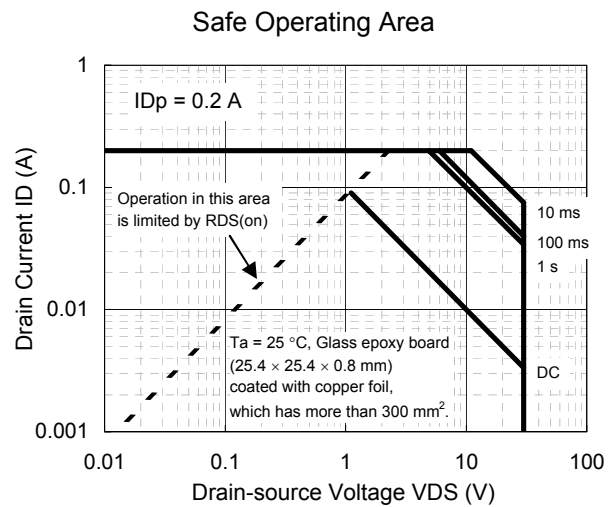
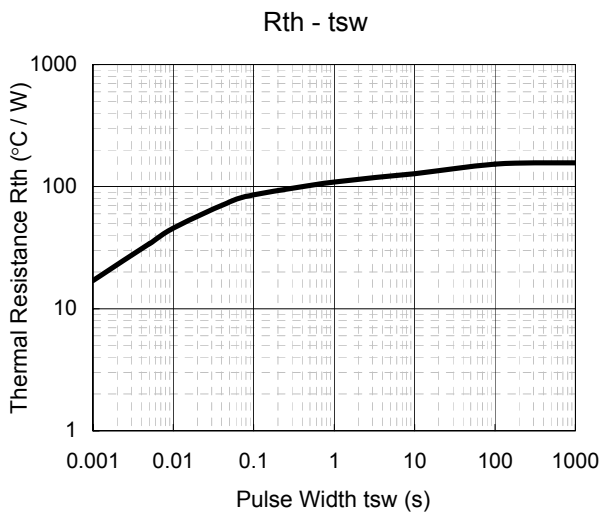
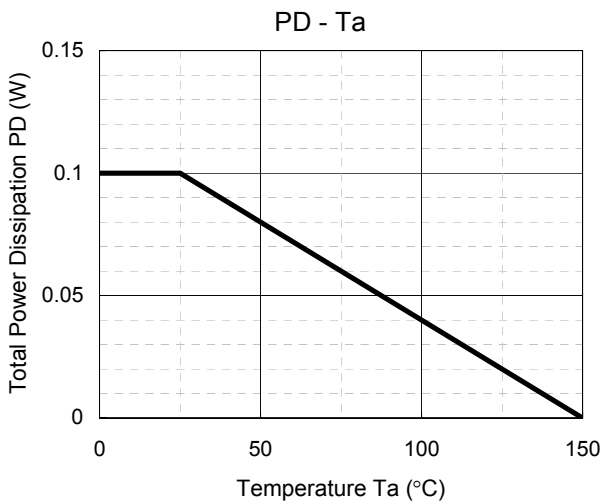
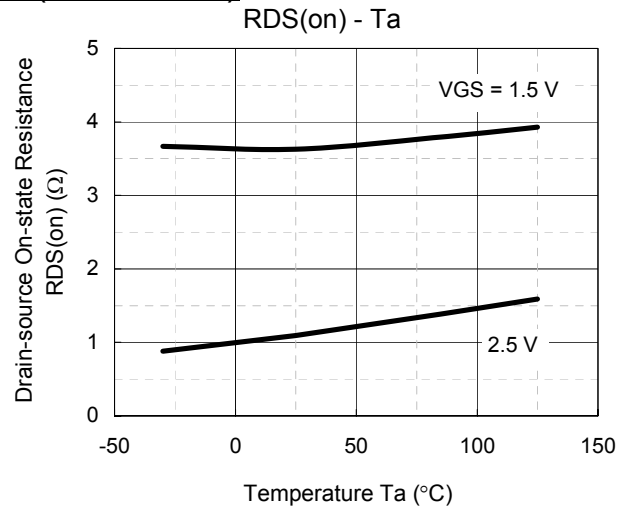
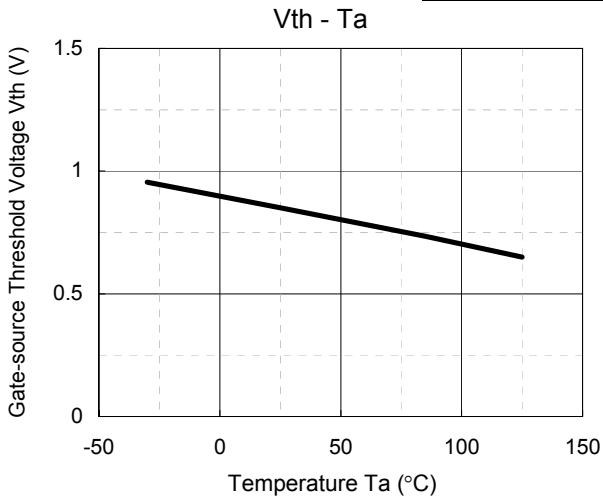
*1 Measurement circuit for Turn-on Delay Time / Turn-off Delay Time



Technical Data (reference)

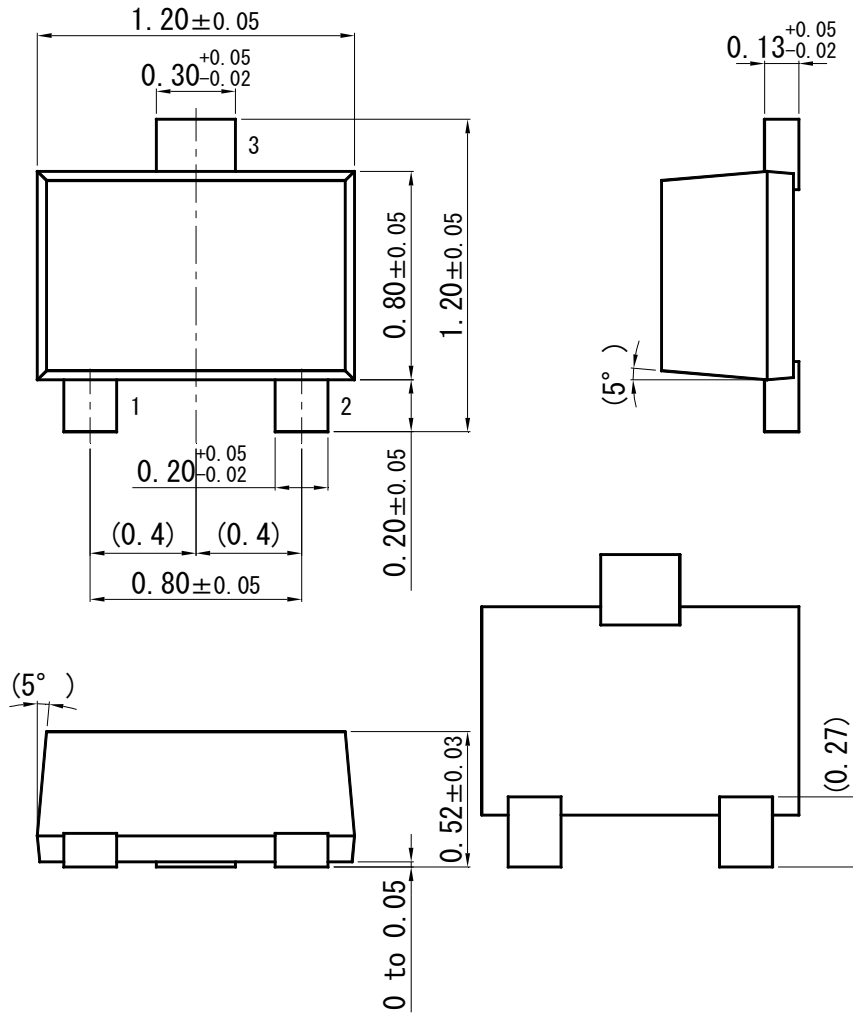


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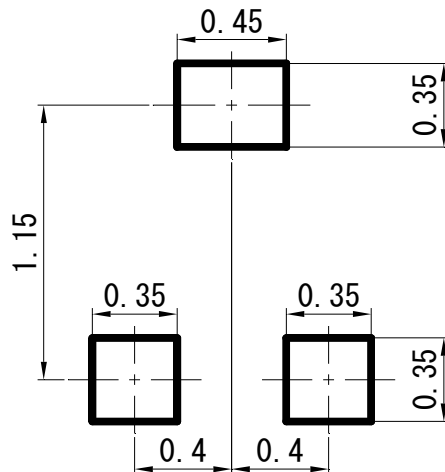


SSSMini3-F2-B

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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