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

FL5252050R

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

For switching
For DC-DC Converter

■ Features

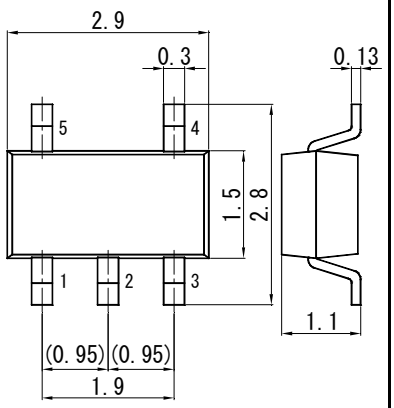
- Low drain-source ON resistance : RDS (on) typ. = 100 mΩ (VGS = -4.0 V)
- Low drive voltage : 2.5 V drive
- Halogen-free / RoHS compliant
  (EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

■ Marking Symbol : Y0

■ Packaging

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

Unit : mm



1. Gate
2 Source
3 Anode
4. Cathode
5 Drain

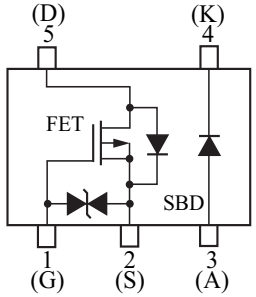
Panasonic	Mini5-G3-B
JEITA	SC-74A
Code	MO-178

■ 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	-2.1	A
	Drain Current (Pulsed)	IDp	-8	A
	Channel temperature	Tch	125	°C
SBD	Reverse voltage	VR	20	V
	Forward current (Average)	IF(AV)	700	mA
	Junction temperature	Tj	125	°C
Overall	Total power dissipation *1	PD	600	mW
	Operating ambient temperature	Topr	-40 to + 85	°C
	Storage temperature	Tstg	-55 to +125	°C

Note: *1 Measuring on ceramic substrate at 40 mm × 38 mm × 0.1 mm
PD absolute maximum rating without a heat shink: 300 mW

Internal Connection



Pin Name

1. Gate
2. Source
3. Anode
4. Cathode
5. Drain

Established : 2011-06-17
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■ Electrical Characteristics Ta = 25 °C ± 3 °C

FET (P-ch.)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain to Source Breakdown Voltage	VDSS	ID = -1 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		100	130	mΩ
	RDS(on)2	ID = -0.5 A, VGS = -2.5 V		130	200	
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		400		pF
Output Capacitance	Coss			40		pF
Reverse Transfer Capacitance	Crss			35		pF
Turn-on time*1	ton	VDD = -10 V, VGS = 0 to -4 V ID = -1.0 A		35		ns
Turn-off time*1	toff	VDD = -10 V, VGS = -4 to 0 V ID = -1.0 A		100		ns

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	VF	IF = 700 mA			0.45	V
Reverse current	IR	VR = 20 V			200	μA
Terminal capacitance	Ct	VR = 10 V, f = 1 MHz		12		pF
Reverse recovery time	trr	IF = IR = 100 mA, Irr = 10 mA		4.3		ns

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

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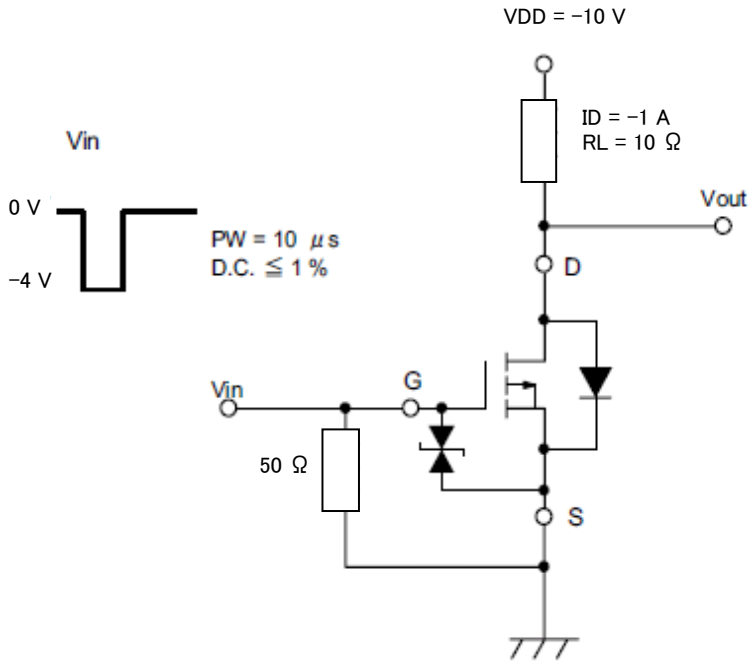
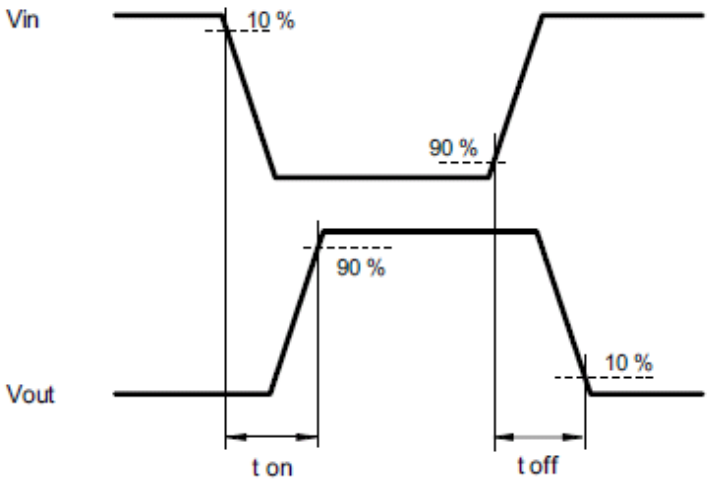
*1 Turn-on, Turn-off measurement circuit





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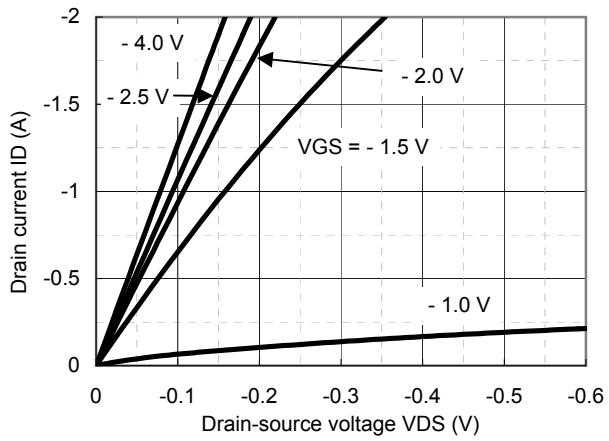
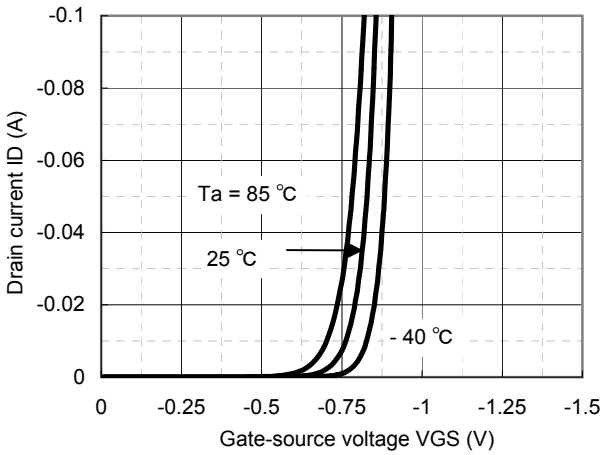
Technical Data (reference)

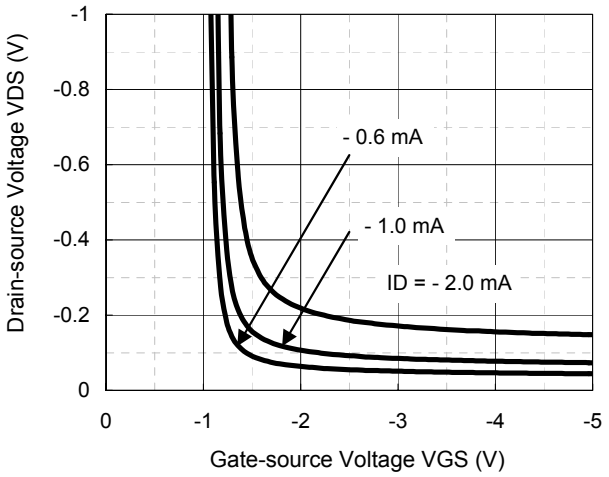
ID - VDS



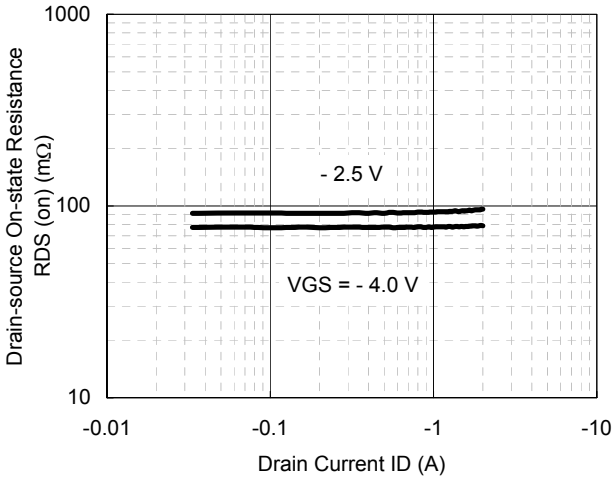
ID - VGS



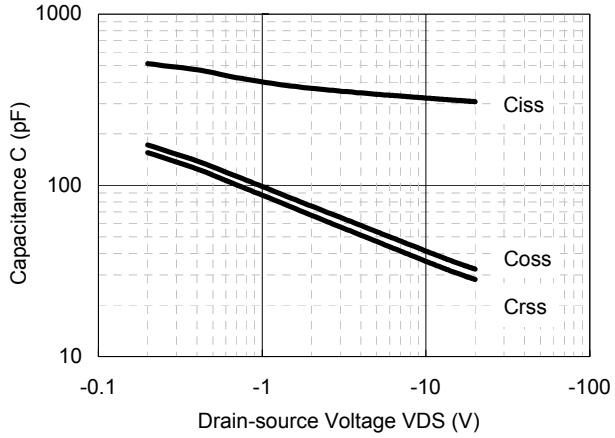
VDS - VGS



RDS(on) - ID



Capacitance - VDS



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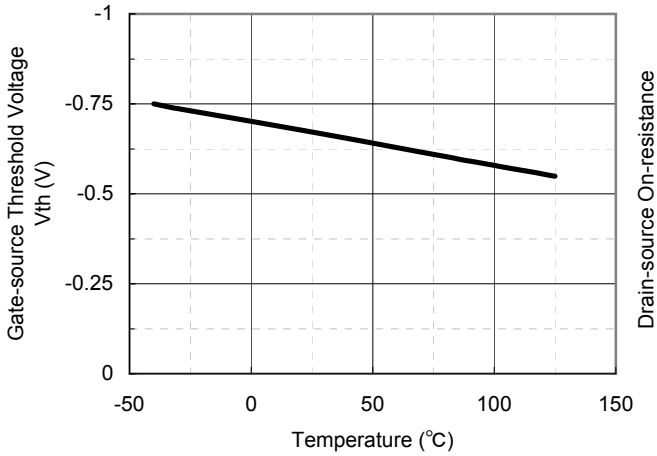
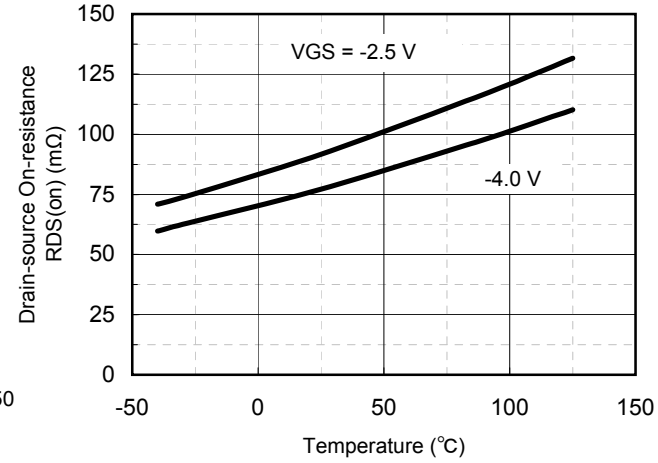
Technical Data (reference)

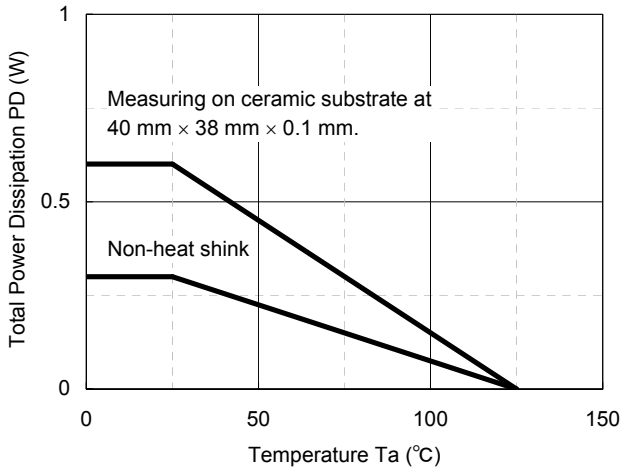
Vth - Ta



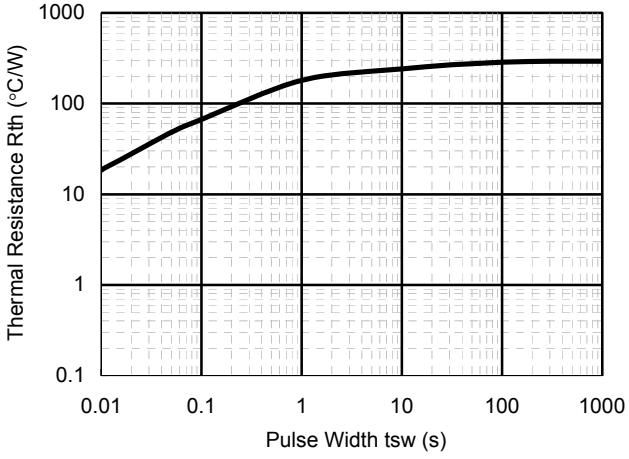
RDS(on) - Ta



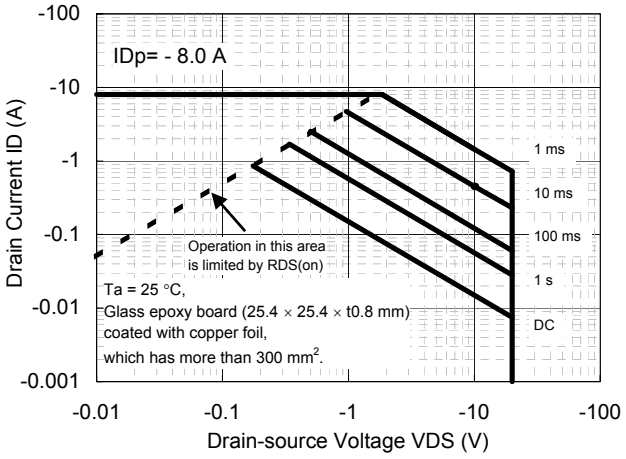
PD - Ta



Rth - tsw



Safe Operating Area



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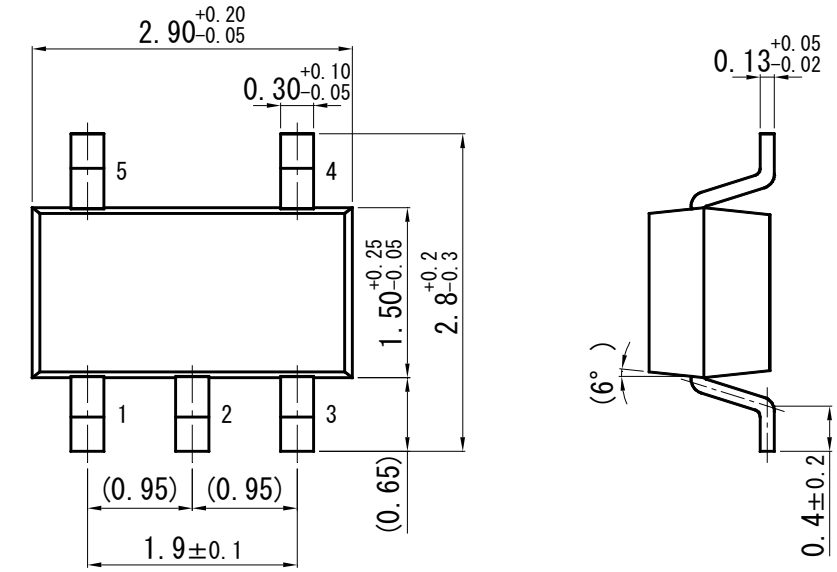
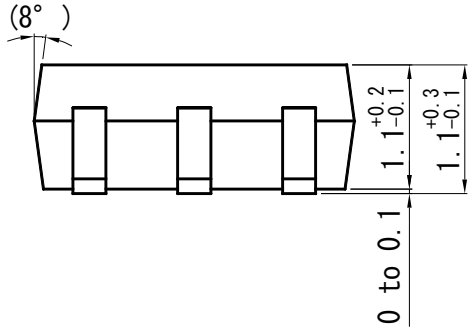
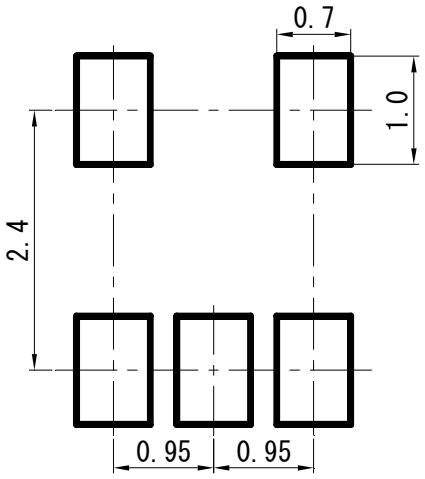
Mini5-G3-B

Unit: mm





■ Land Pattern (Reference) (Unit : mm)



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