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

Panasonic

MTM131270BBF

Silicon P-channel MOS FET

For switching

■ Features

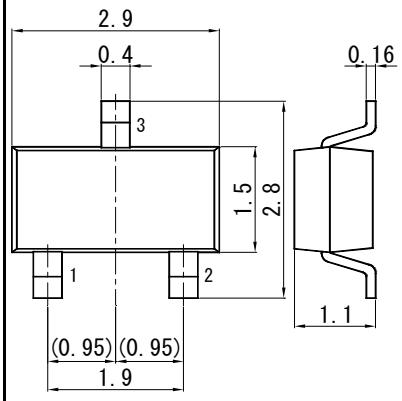
- Low Drain-source On-state Resistance : RDS(on) typ = 92 mΩ (VGS = -4.0 V)
- Low drive voltage: 1.8 V drive
- Halogen-free / RoHS compliant
  (EU RoHS / UL-94 V-0 / MSL : Level 1 compliant)

■ Marking Symbol : EU

■ Packaging

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

Unit : mm



1. Gate
2. Source
3. Drain

Panasonic	Mini3-G3-B
JEITA	SC-59A
Code	TO-236AA/SOT-23

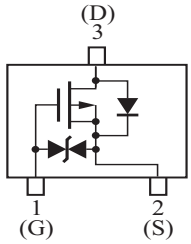
■ Absolute Maximum Ratings Ta = 25 °C

項目	記号	定格	単位
Drain-source Voltage	VDS	-20	V
Gate-source Voltage	VGS	±10	
Drain current	ID	-2	A
Peak drain current *1	IDp	-8	A
Power dissipation *2	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 Pulse width ≦10 μs, Duty cycle ≦1 %

*2 Measuring on ceramic board at 40 × 38 × 0.1 mm.
Absolute maximum rating PD without heat sink shall be made 200 mW.

Internal Connection



Pin Name

1. Gate
2. Source
3. Drain

Established : 2011-07-19
Revised : 2014-02-03

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

項目	記号	条件	最小	標準	最大	単位
Drain-source surrender voltage	VDSS	ID = -1 mA, VGS = 0 V	-20			V
Drain-source cutoff current	IDSS	VDS = -20 V, VGS = 0 V			-1	μA
Gate-source cutoff current	IGSS	VGS = ±8 V, VDS = 0 V			±10	
Gate threshold voltage	Vth	ID = -1 mA, VDS = -10 V	-0.4	-0.75	-1.1	V
Drain-source ON resistance *1	RDS(on)1	ID = -1 A, VGS = -4 V		92	130	mΩ
	RDS(on)2	ID = -1 A, VGS = -2.5 V		115	210	
	RDS(on)3	ID = -0.5 A, VGS = -1.8 V		161	280	
Forward transfer admittance *1	|Yfs|	ID = -1 A, VDS = -10 V, f = 1 kHz	3			S
Short-circuit input capacitance (Common source)	Ciss	VDS = -10 V, VGS = 0 V f = 1 MHz		300		pF
Short-circuit output capacitance (Common source)	Coss			30		
Reverse transfer capacitance (Common source)	Crss			35		
Turn-on Delay Time *2	td(on)	VDD = -10 V, VGS = 0 to -4 V ID = -1 A		6		ns
Rise Time *2	tr			8		
Turn-off Delay Time *2	td(off)	VDD = -10 V, VGS = -4 to 0 V ID = -1 A		57		
Fall Time *2	tf			55		

Note : 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.
2. *1 Pulse test
*2 Measurement circuit for Turn-on Delay Time / Rise Time / Turn-off Delay Time / Fall Time

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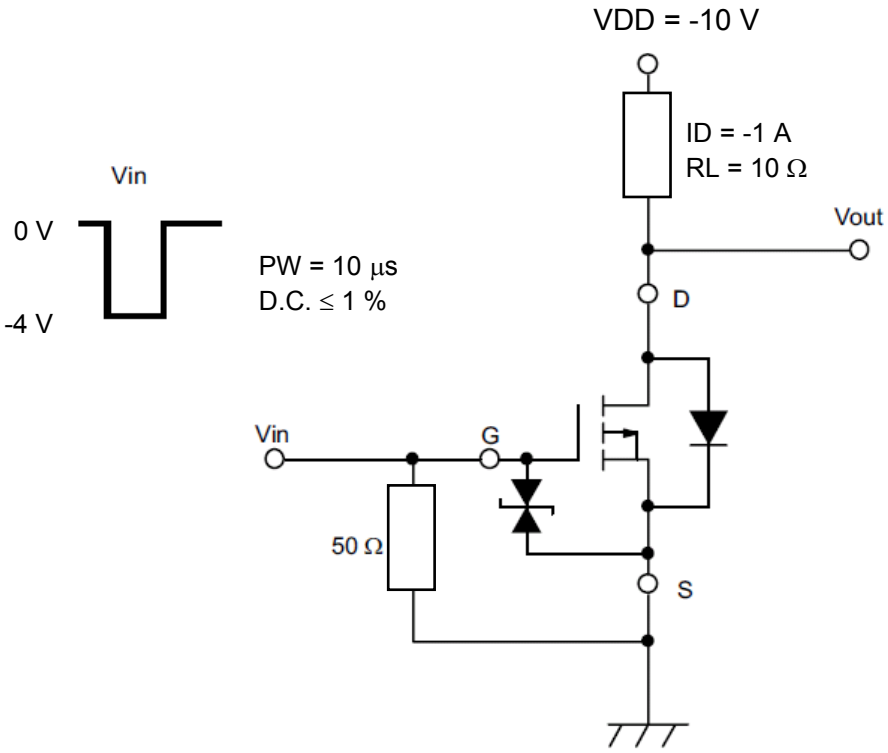
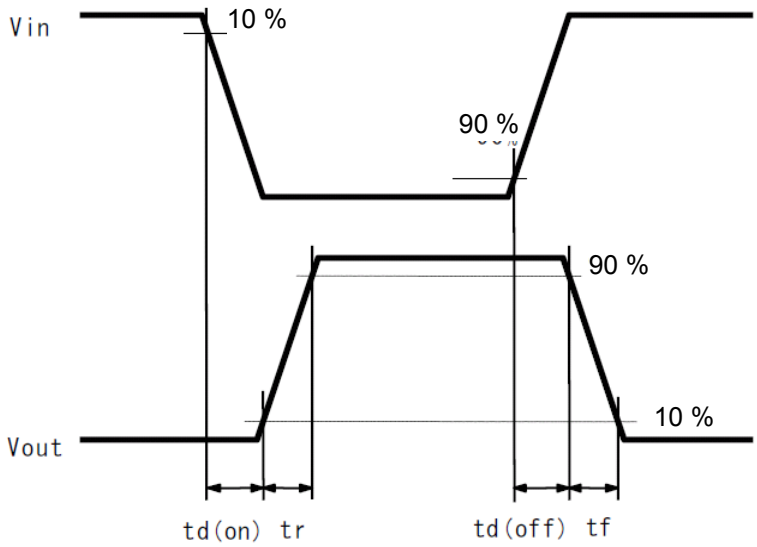
*2 Measurement circuit for Turn-on Delay Time / Rise Time / Turn-off Delay Time / Fall Time





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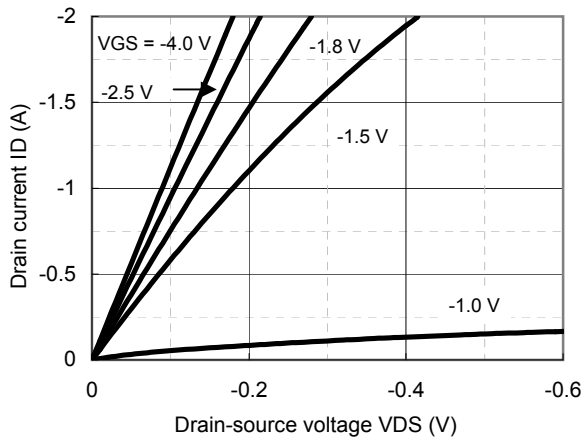
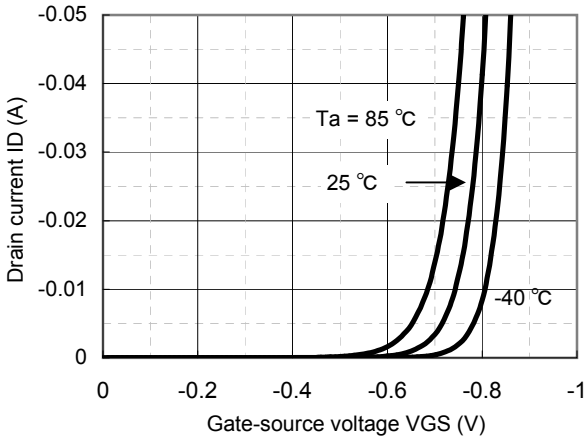
Technical Data (reference)

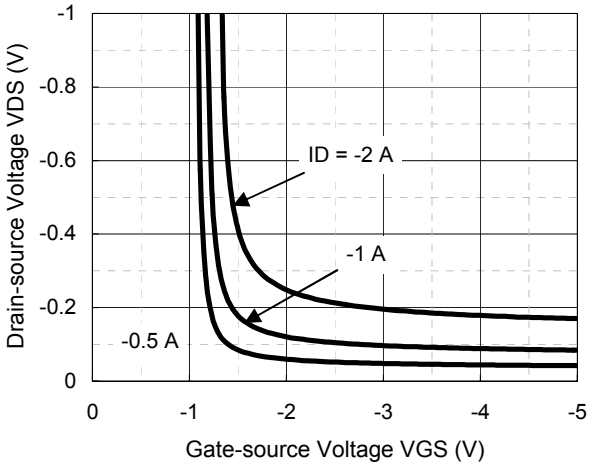
ID - VDS



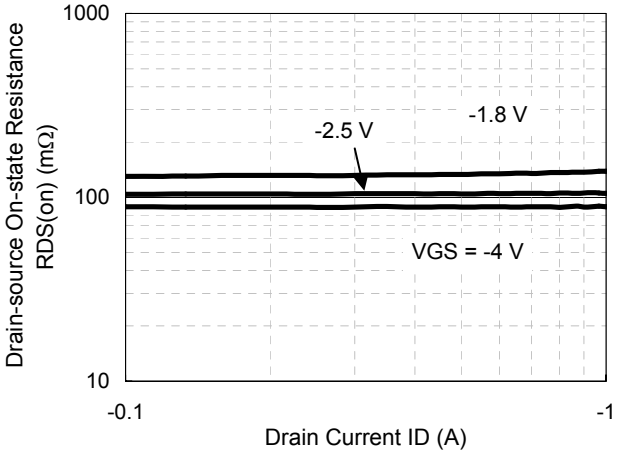
ID - VGS



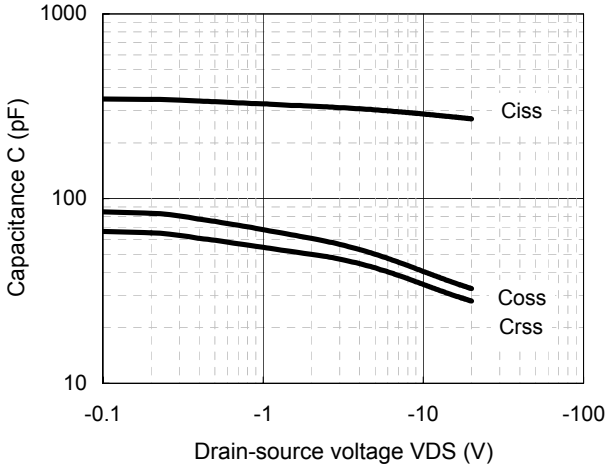
VDS - VGS



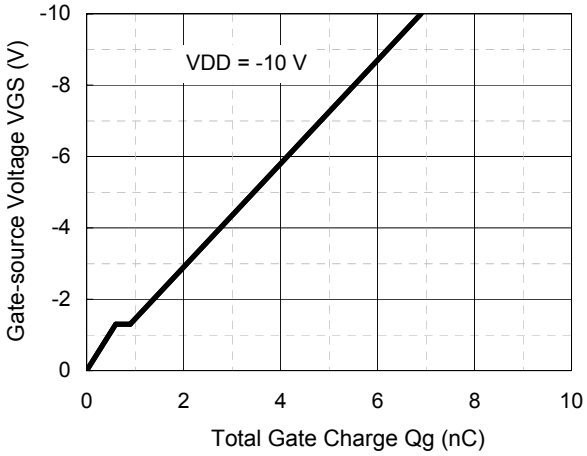
RDS(on) - ID



Capacitance - VDS



Dynamic Input/Output Characteristics



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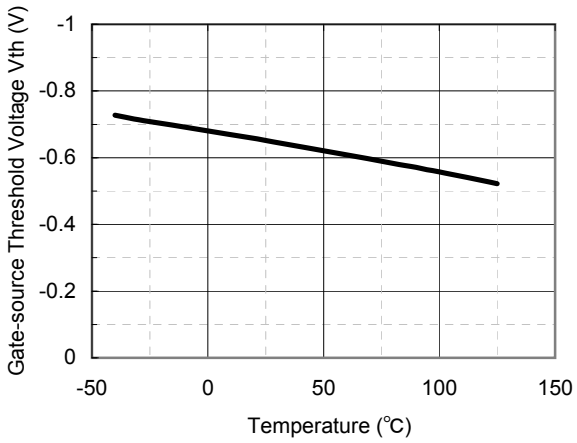
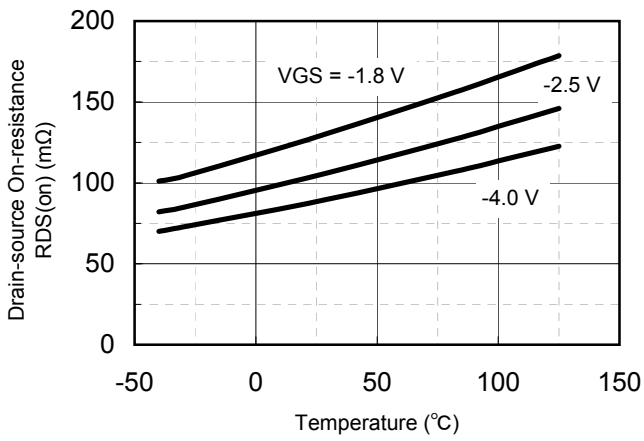
Technical Data (reference)

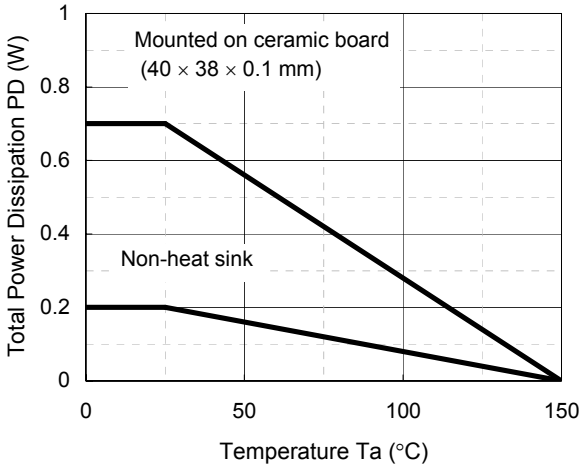
Vth - Ta



RDS(on) - Ta

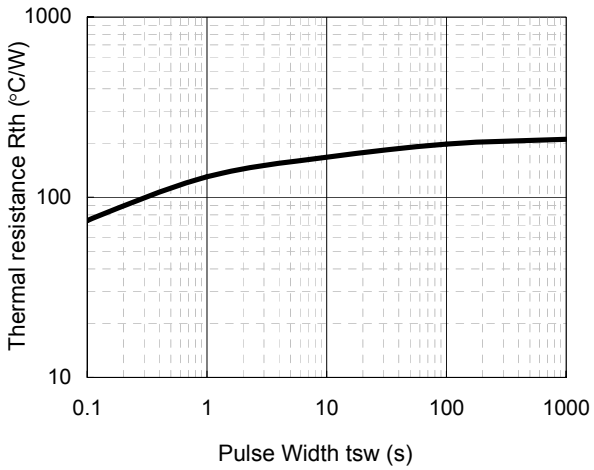


PD - Ta

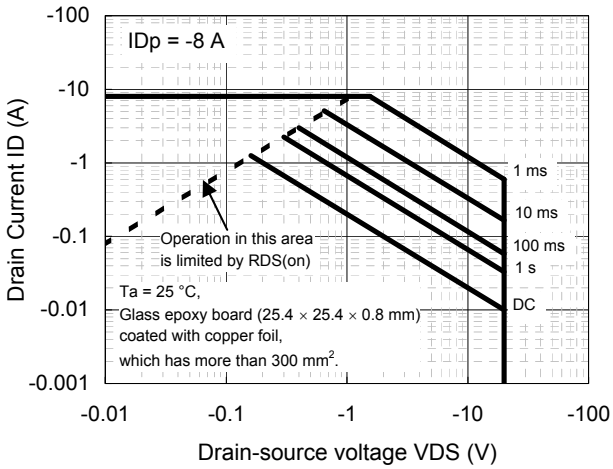


PD - Tc

Rth - tsw



Safe Operating Area



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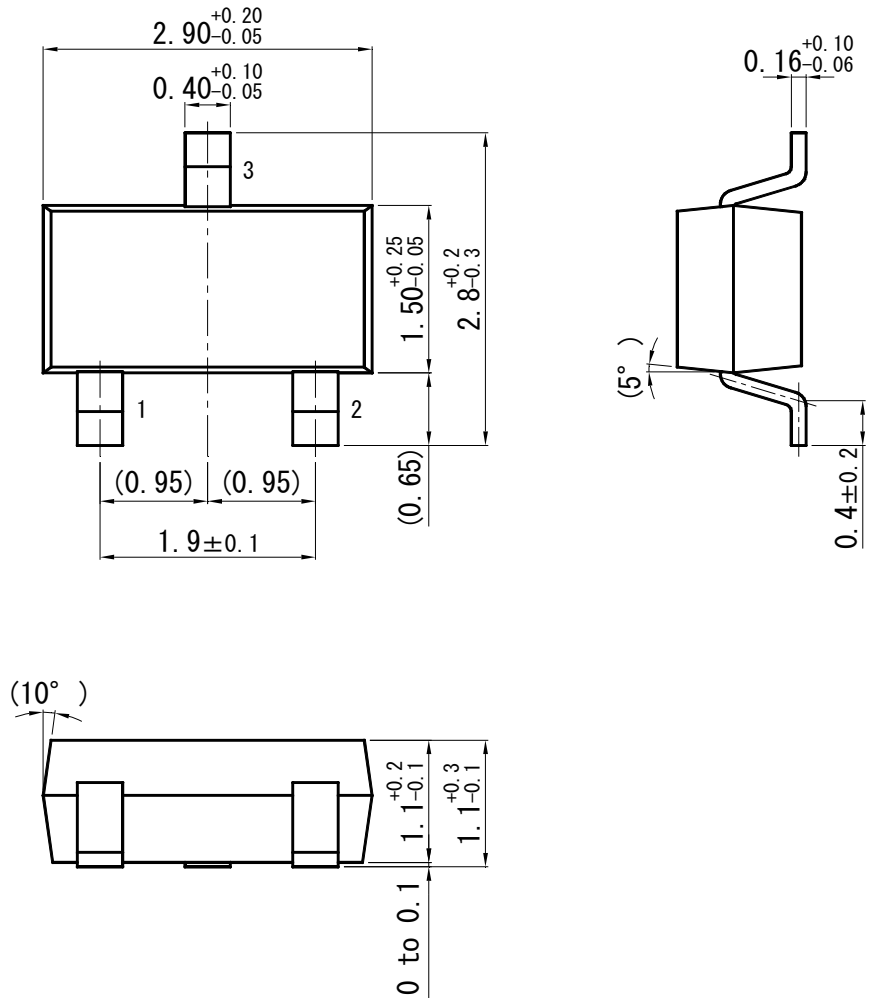
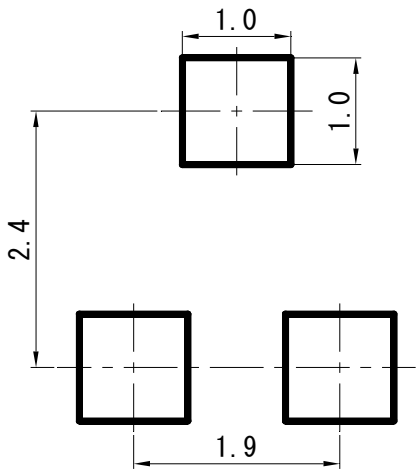
Mini3-G3-B

Unit: mm



■ Land Pattern (Reference) (Unit : mm)



Established : 2011-07-19
Revised : 2014-02-03

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