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

MOS FET

Panasonic MTM684110LBF

MTM684110LBF

Dual P-channel MOSFET

For switching

■ Features

- Low drain-source On-state Resistance
  RDS(on) typ. = 23 mΩ (VGS =-5.0 V)
- Low drive voltage:1.8V drive
- Halogen-free / RoHS compliant
  (EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

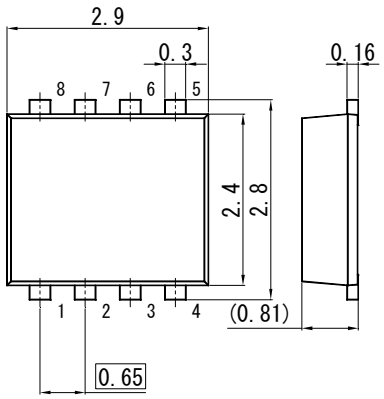
■ Marking Symbol 1D

■ Basic Part Number: Dual MTM76111 (Individual)

■ Packaging

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

Unit: mm



1. Source
2. Gate
3. Source
4. Gate
5. Drain
6. Drain
7. Drain
8. Drain

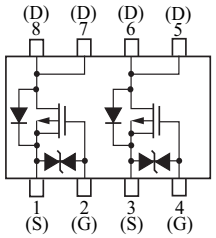
Panasonic	WMini8-F1
JEITA	SC-115
Code	—

■ Absolute Maximum Ratings Ta = 25 °C

	Parameter	Symbol	Rating	Unit
FET1 FET2	Drain-source Voltage	VDS	-12	V
	Gate-source Voltage	VGS	±8	V
	Drain current	ID	-4.8	A
	Peak drain current	IDp	-19	A
Overall	Total power dissipation *1	PD	1.0	W
	Channel temperature	Tch	150	°C
	Operating ambient temperature	Topr	-40 to + 85	°C
	Storage temperature	Tstg	-55 to +150	°C

Note) *1 Glass epoxy board: 25.4 mm × 25.4 mm × 0.8 mm Copper foil of the drain portion should have a area of 300 mm^2 or more
PD absolute maximum rating without a heat shink: 400 mW

Internal Connection



Pin Name

1. Source
2. Gate
3. Source
4. Gate
5. Drain
6. Drain
7. Drain
8. Drain

Established : 2011-03-25
Revised : 2013-10-15

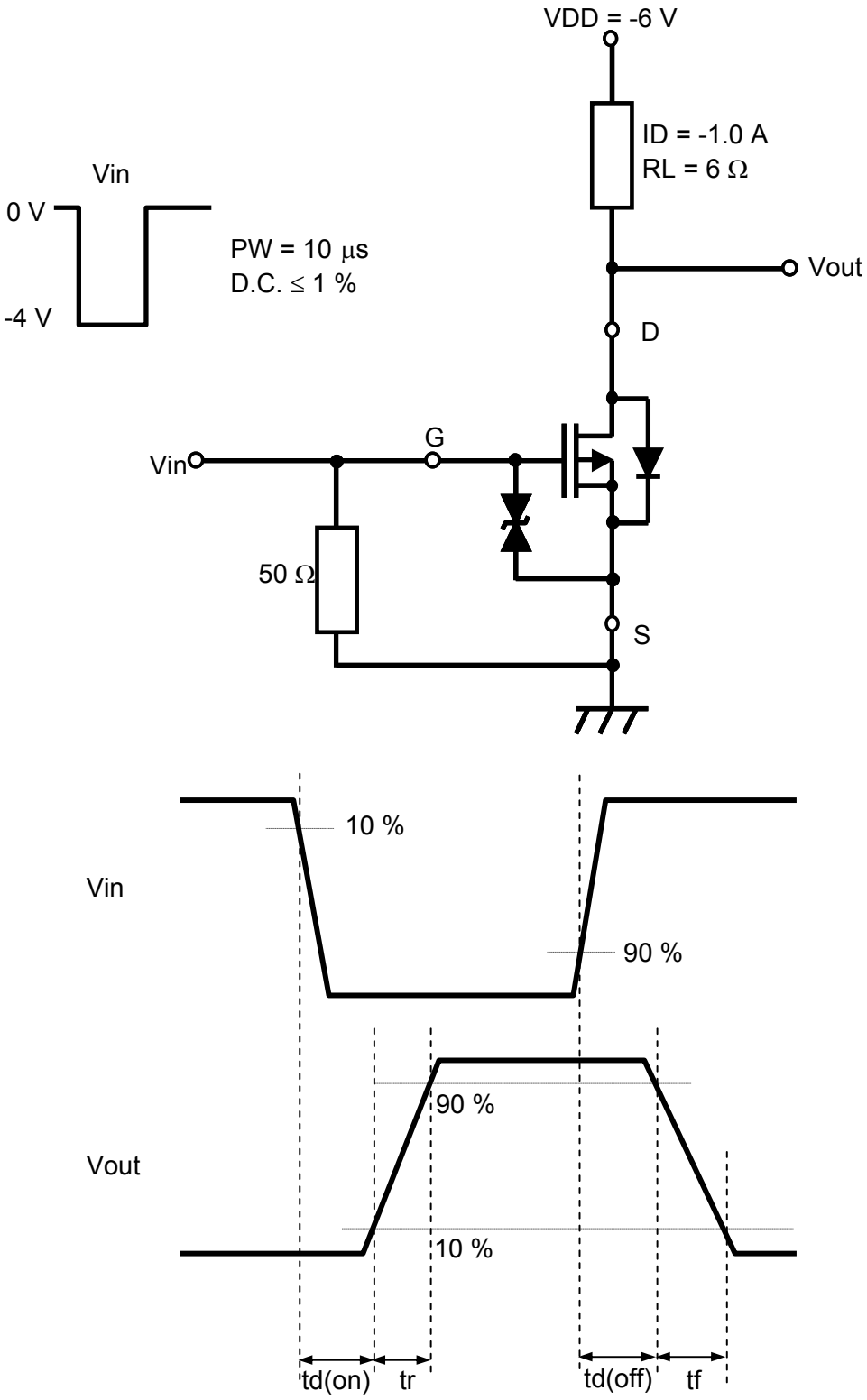
■ Electrical Characteristics Ta = 25°C ± 3°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	VDSS	ID = -1 mA, VGS = 0	-12			V
Drain-source cutoff current	IDSS	VDS = -10 V, VGS = 0			-0.1	μA
Gate-source cutoff current	IGSS	VGS = ±8 V, VDS = 0			±10	μA
Gate threshold voltage	Vth	ID = -1.0 mA, VDS = -6.0 V	-0.3	-0.65	-1.0	V
Drain-source ON resistance	RDS(ON)1	ID = -1.0 A, VGS = -5.0 V		23	32	mΩ
	RDS(ON)2	ID = -0.5 A, VGS = -2.5 V		27	40	mΩ
	RDS(ON)3	ID = -0.2 A, VGS = -1.8 V		36	60	mΩ
Forward transfer admittance	|Yfs|	ID = -1.0 A, VDS = -10 V	3.5			S
Short-circuit input capacitance (Common source)	Ciss	VDS = -10 V, VGS = 0, f = 1 MHz		1400		pF
Short-circuit output capacitance (Common source)	Coss			135		pF
Reverse transfer capacitance (Common source)	Crss			150		pF
Turn-on delay time *1	td(on)	VDD = -6 V, VGS = 0 V to -4 V		9		ns
Rise time *1	tr	ID = -1.0 A		11		ns
Turn-off delay time *1	td(off)	VDD = -6 V, VGS = -4 V to 0 V		270		ns
Fall time *1	tf	ID = -1.0 A		160		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/Rise Time/Turn-off Delay Time/Fall Time

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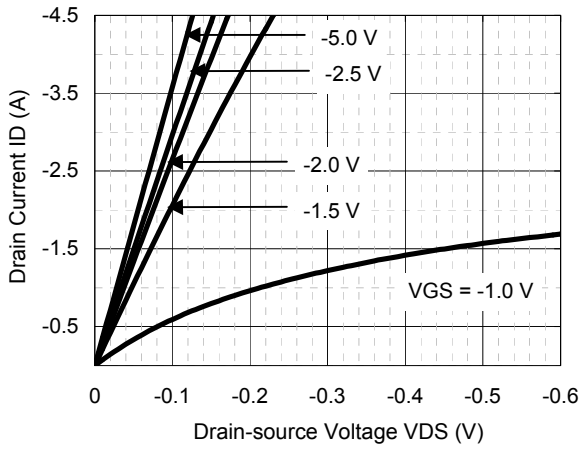
*2 Measurement circuit for Turn-on Delay Time/Rise Time/Turn-off Delay Time/Fall Time



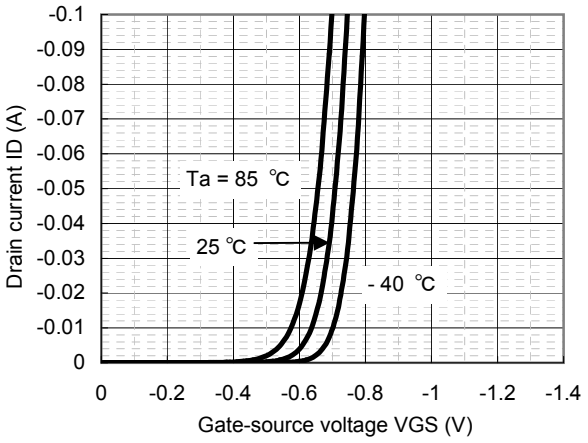
Established : 2011-03-25
Revised : 2013-10-15

Technical Data (reference)

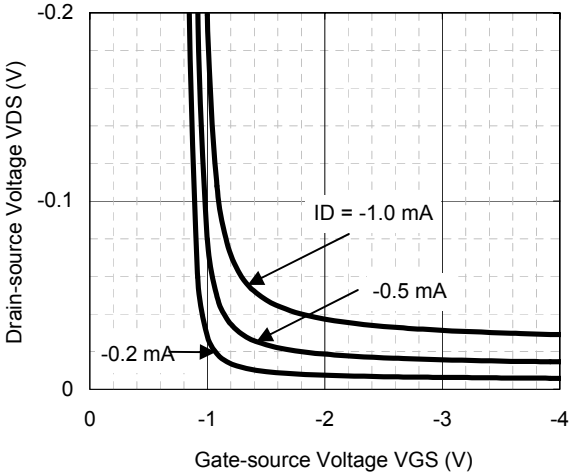
ID - VDS



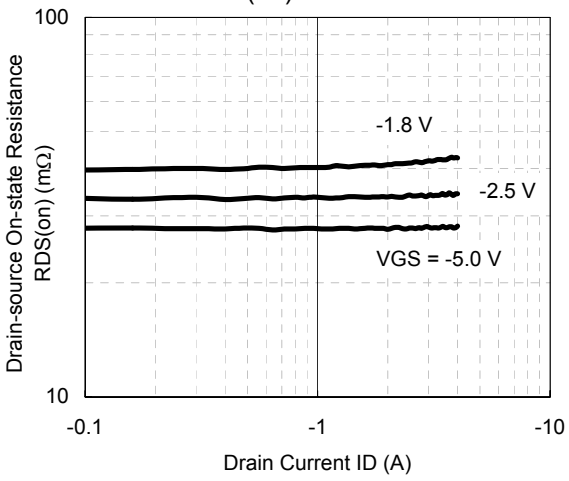
ID - VGS



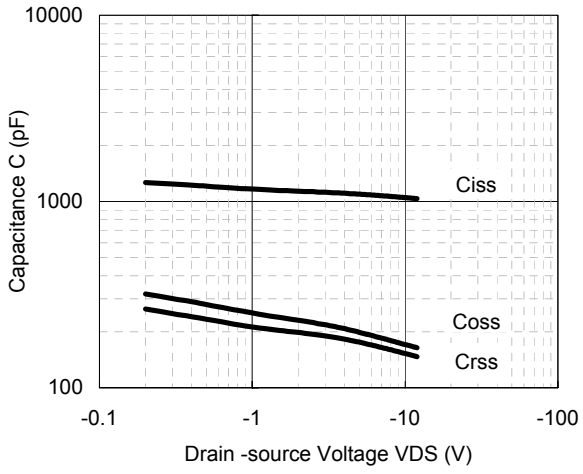
VDS - VGS



RDS(on) - ID



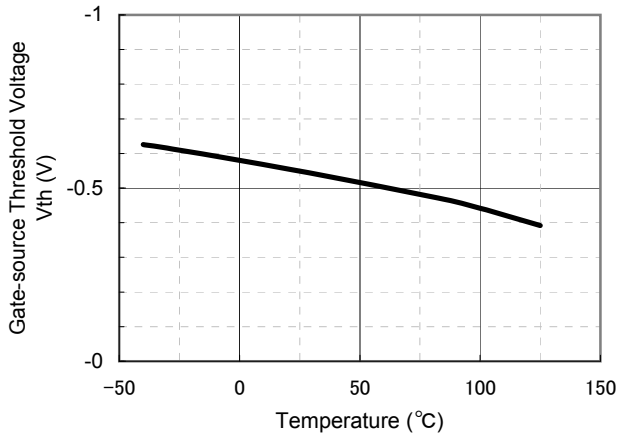
Capacitance - VDS



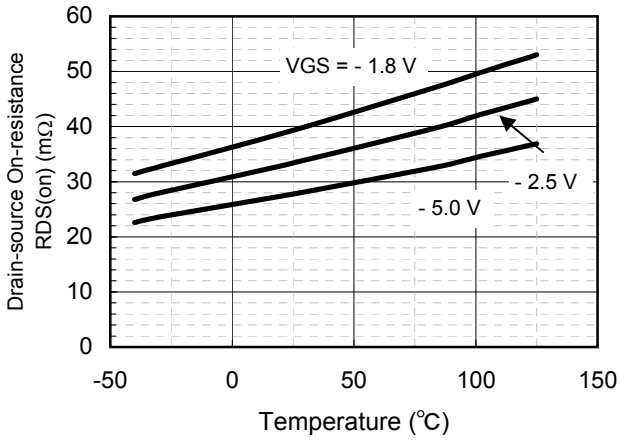
Established : 2011-03-25
Revised : 2013-10-15

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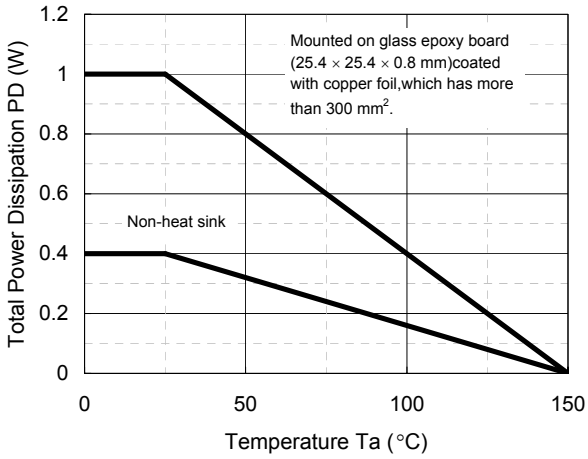
Vth - Ta



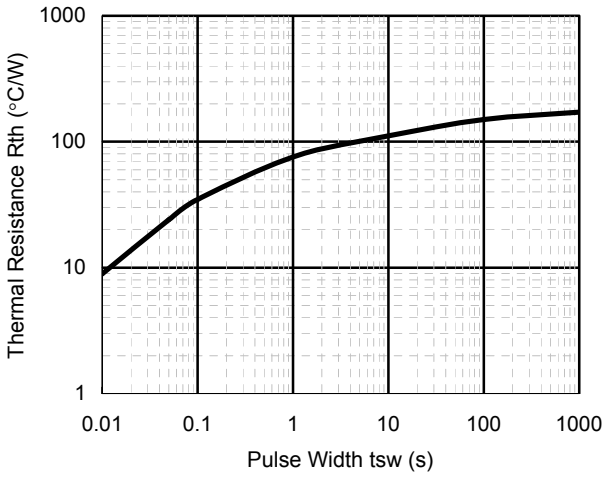
RDS(on) - Ta



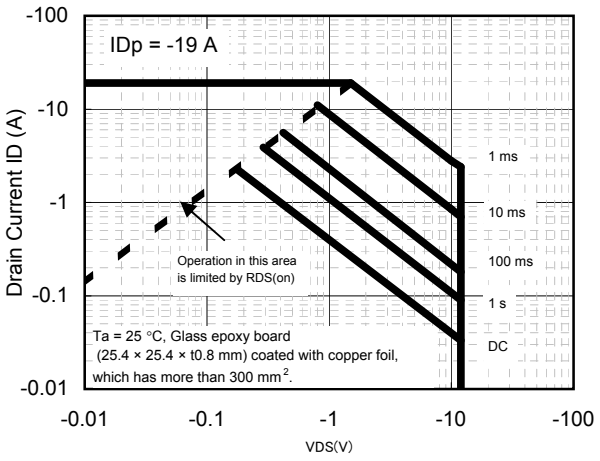
PD - Ta



Rth - tsw



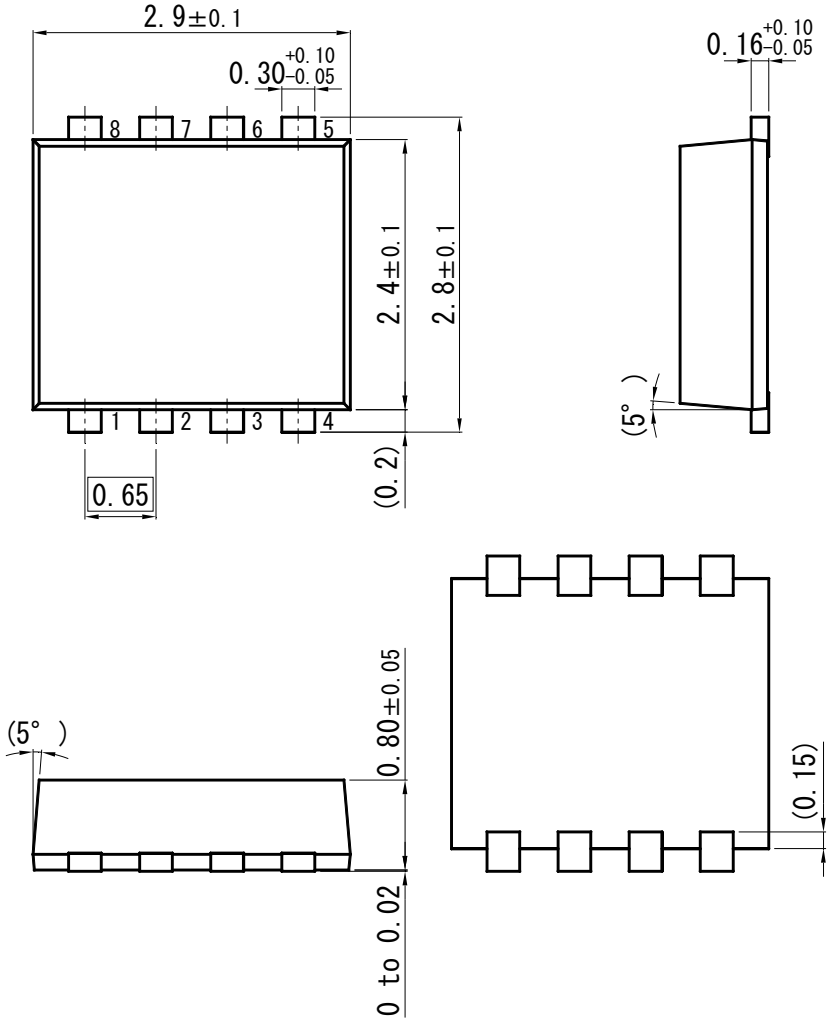
Safe Operating Area



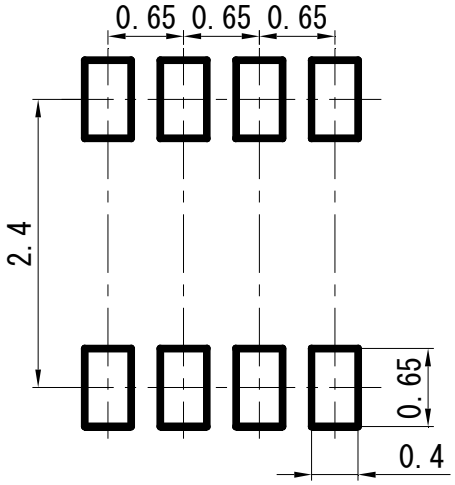
Established : 2011-03-25
Revised : 2013-10-15

WMini8-F1

Unit : mm



■ Land Pattern (Reference) (Unit : mm)



Established : 2011-03-25
Revised : 2013-10-15

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