

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

FG6543010R

Silicon N-channel MOSFET(FET1)

Silicon P-channel MOSFET(FET2)

For switching

■ Features

- Low drive voltage: 2.5 V drive
- Halogen-free / RoHS compliant
(EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

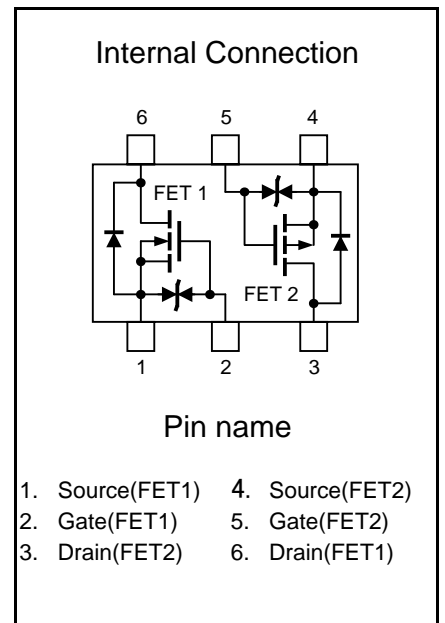
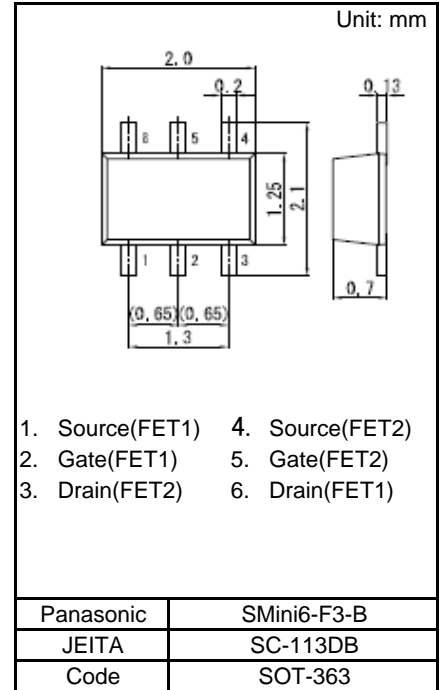
■ Marking Symbol:V7

■ Basic Part Number
FJ330301 + FK330301 (Individual)

■ Packaging
FG6543010R Embossed type (Thermo-compression sealing):
3 000 pcs / reel (standard)

■ Absolute Maximum Ratings Ta = 25 °C

Parameter		Symbol	Rating	Unit
FET1 (Nch.)	Drain-source Voltage	VDS	30	V
	Gate-source Voltage	VGS	± 12	V
	Drain Current	ID	100	mA
	Drain Current (Pulsed)	IDp	200	mA
FET2 (Pch.)	Drain-source Voltage	VDS	- 30	V
	Gate-source Voltage	VGS	± 12	V
	Drain Current	ID	- 100	mA
	Drain Current (Pulsed)	IDp	- 200	mA
Overall	Total Power Dissipation	PD	150	mW
	Channel Temperature	Tch	150	°C
	Storage Temperature	Tstg	- 55 to + 150	°C



■ Electrical Characteristics Ta = 25 °C ± 3 °C
FET1(Nch.)

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			1.0	μA
Gate-source Leakage Current	IGSS	VGS = ±10 V, VDS = 0 V			± 10	μA
Gate-source Threshold Voltage	Vth	ID = 1.0 μA, VDS = 3.0 V	0.5	1.0	1.5	V
Drain-source On-state Resistance	RDS(on)1	ID = 10 mA, VGS = 2.5 V		3	6	Ω
	RDS(on)2	ID = 10 mA, VGS = 4.0 V		2	3	
Forward transfer admittance	Yfs	ID = 10 mA, VDS = 3.0 V	20	55		mS
Input Capacitance	Ciss	VDS = 3 V, VGS = 0 V, f = 1 MHz		12		pF
Output Capacitance	Coss			7		
Reverse Transfer Capacitance	Crss			3		
Turn-on Time *1	ton	VDD = 3 V, VGS = 0 V to 3 V ID = 10 mA		100		ns
Turn-off Tme *1	toff	VDD = 3 V, VGS = 3 V to 0 V ID = 10 mA		100		ns

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

*1 See FET1 Test circuit.

■ Electrical Characteristics Ta = 25 °C ± 3 °C
FET2(Pch.)

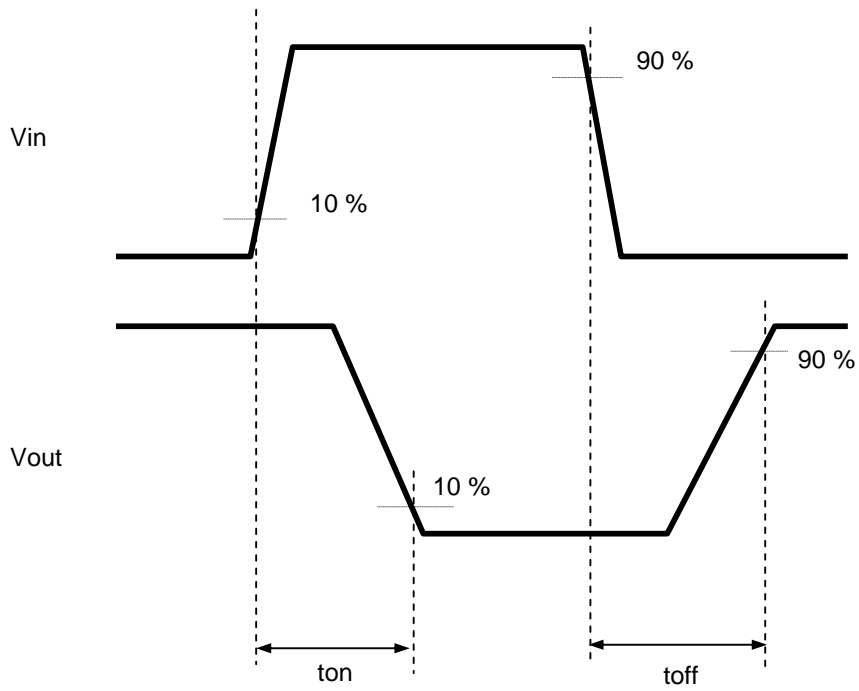
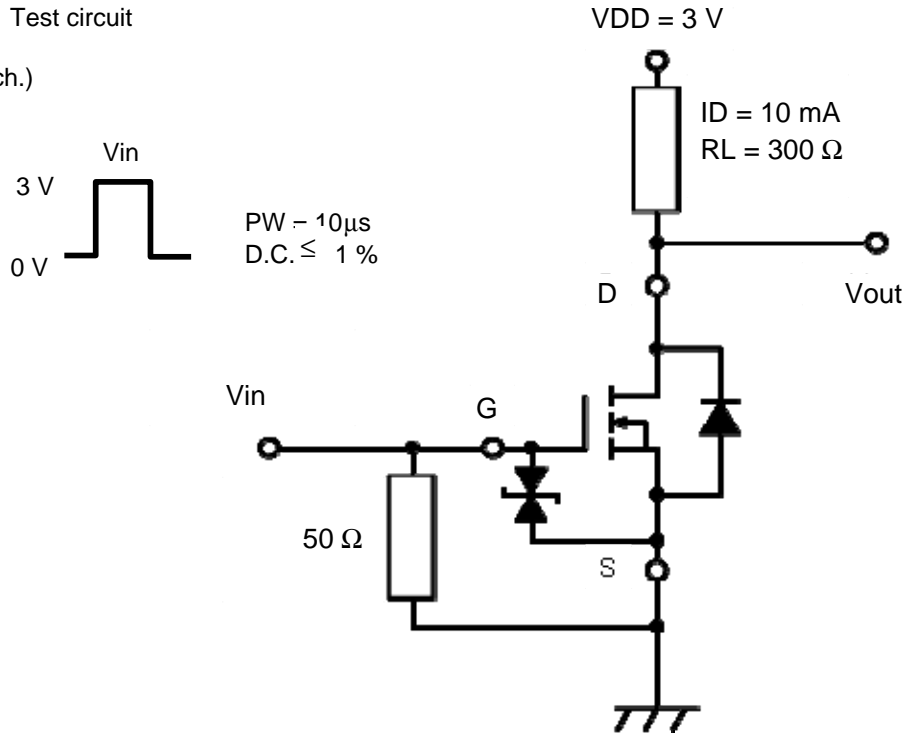
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	VDSS	ID = -1 mA, VGS = 0 V	-30			V
Zero Gate Voltage Drain Current	IDSS	VDS = -30 V, VGS = 0 V			-1.0	μA
Gate-source Leakage Current	IGSS	VGS = ±10 V, VDS = 0 V			±10	μA
Gate-source Threshold Voltage	Vth	ID = -1.0 μA, VDS = -3.0 V	-0.5	-1.0	-1.5	V
Drain-source On-state Resistance	RDS(on)	ID = -10 mA, VGS = -2.5 V		7	17	Ω
		ID = -10 mA, VGS = -4.0 V		4	7	
Forward transfer admittance	Yfs	ID = -10 mA, VDS = -3.0 V	20	40		mS
Input Capacitance	Ciss	VDS = -3 V, VGS = 0 V, f = 1 MHz		12		pF
Output Capacitance	Coss			7		
Reverse Transfer Capacitance	Crss			3		
Turn-on Time *2	ton	VDD = -3 V, VGS = 0 V to -3 V, ID = -10 mA		100		ns
Turn-off Tme *2	toff	VDD = -3 V, VGS = -3 V to 0 V, ID = -10 mA		100		ns

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

*2 See FET2 Test circuit.

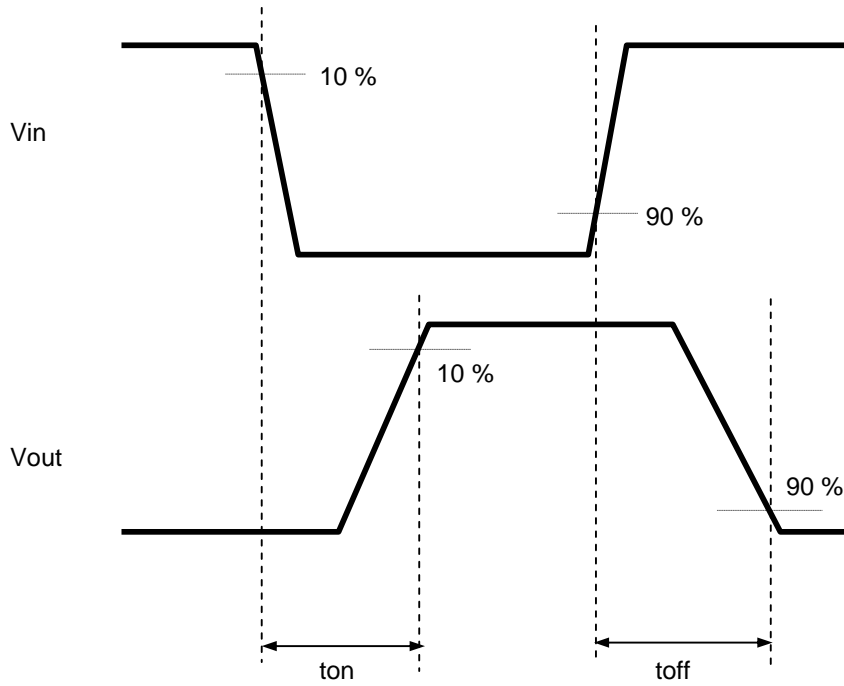
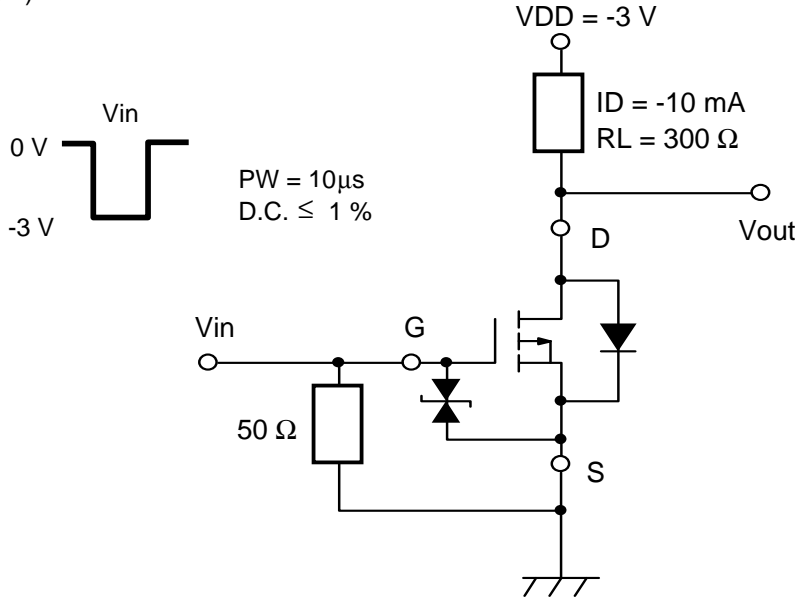
*1 FET1 Test circuit

FET1(Nch.)

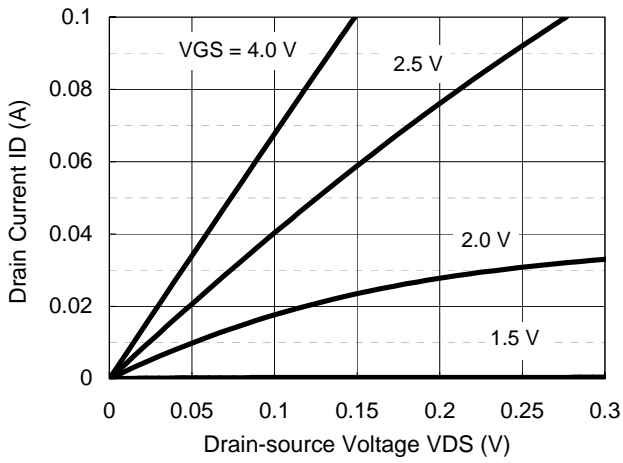


*2 FET2 Test circuit

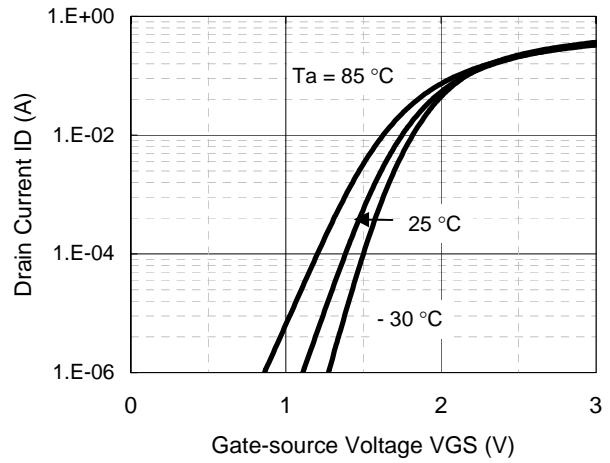
FET2(Pch.)



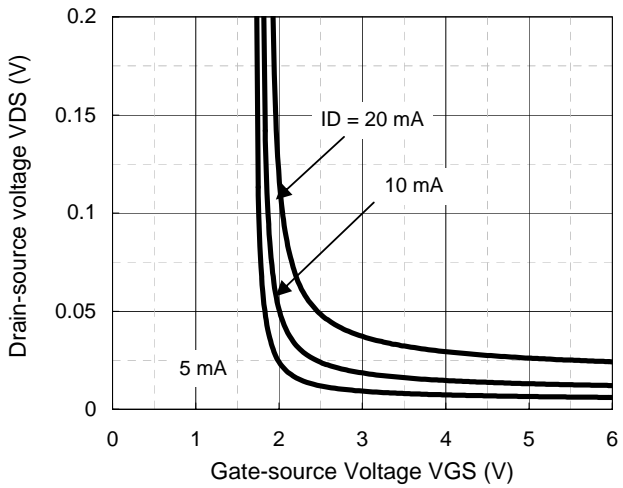
FET1(Nch.)



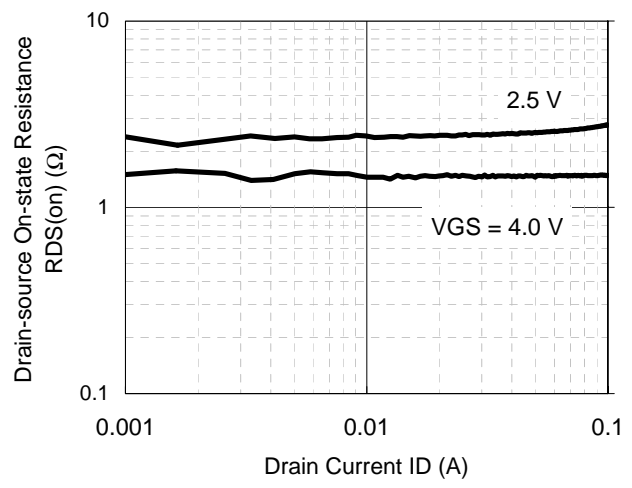
ID - VDS



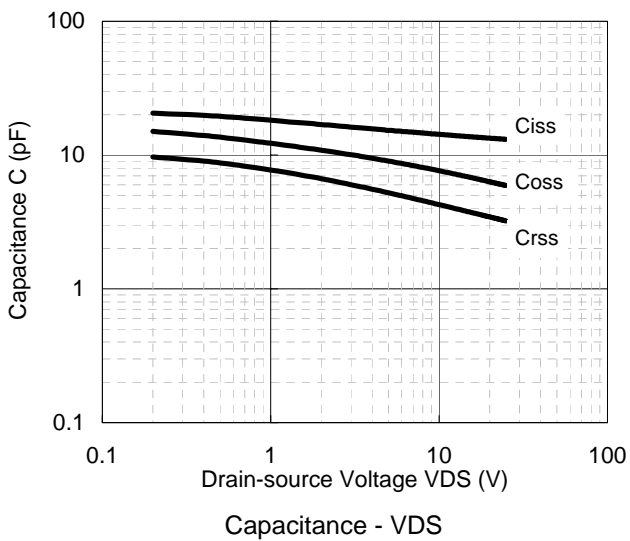
ID - VGS



VDS - VGS

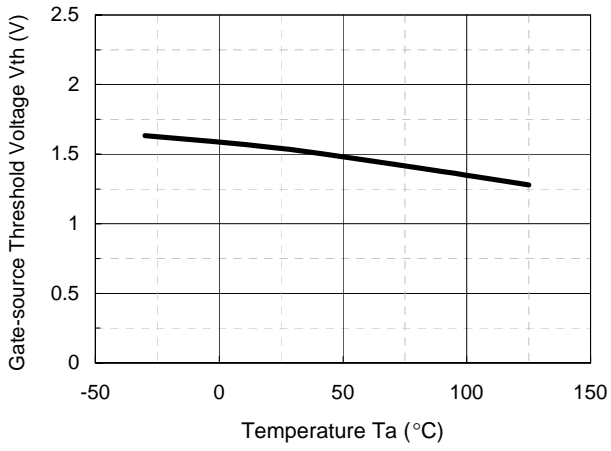


RDS(on) - ID

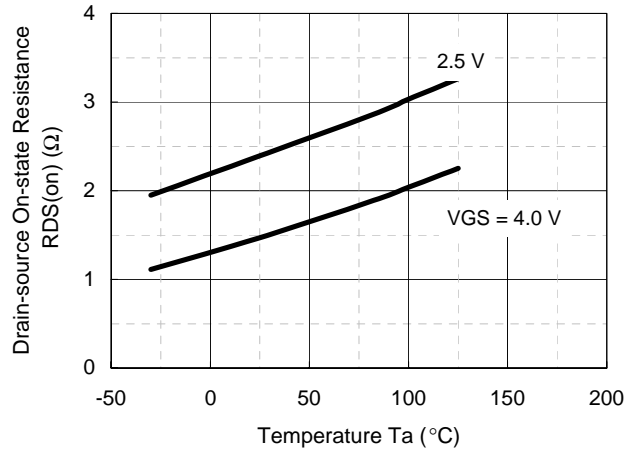


Capacitance - VDS

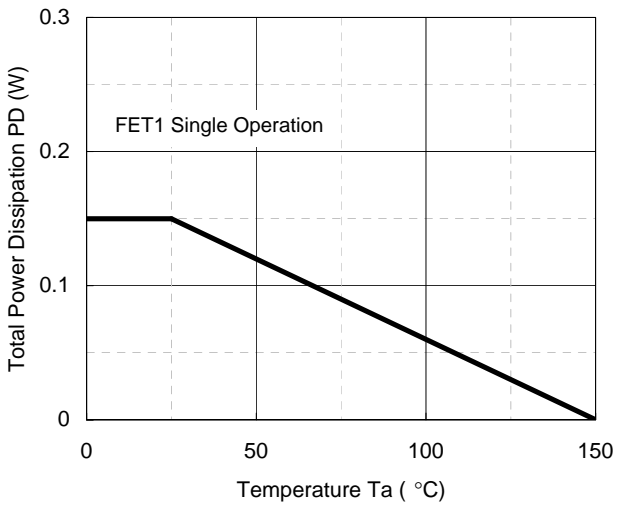
FET1(Nch.)



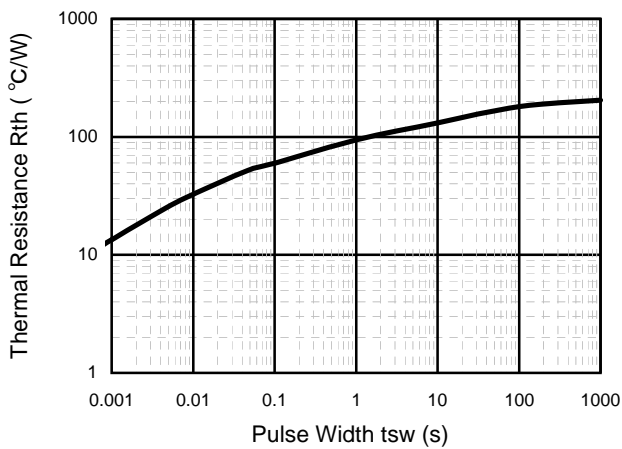
$V_{th} - T_a$



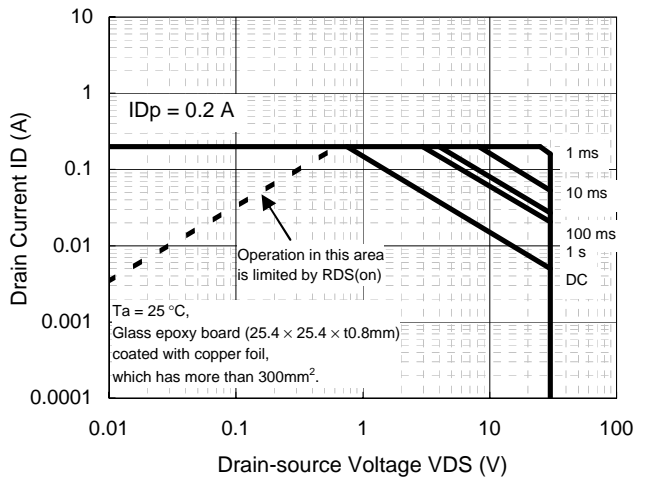
$R_{DS(on)} - T_a$



$P_D - T_a$

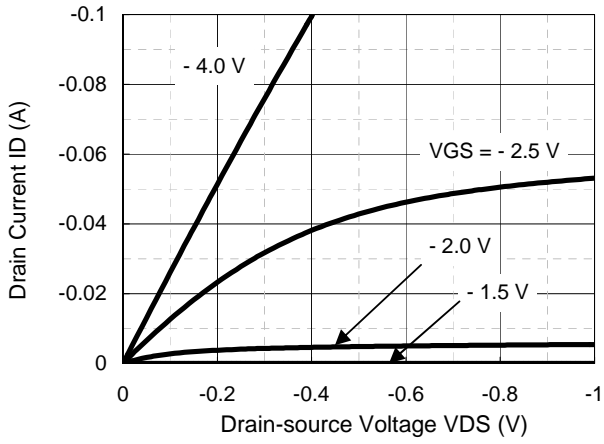


$R_{th} - t_{sw}$

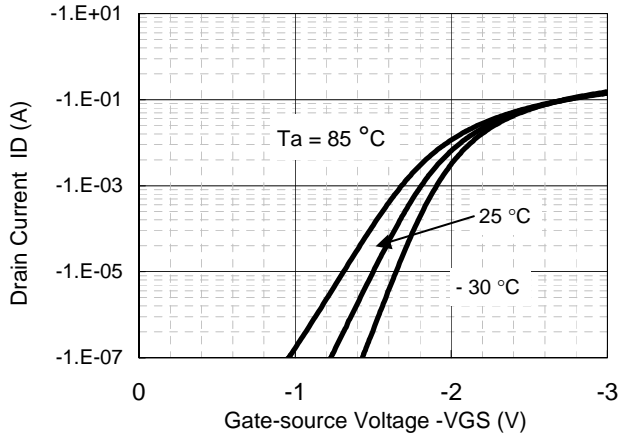


Safe Operating Area

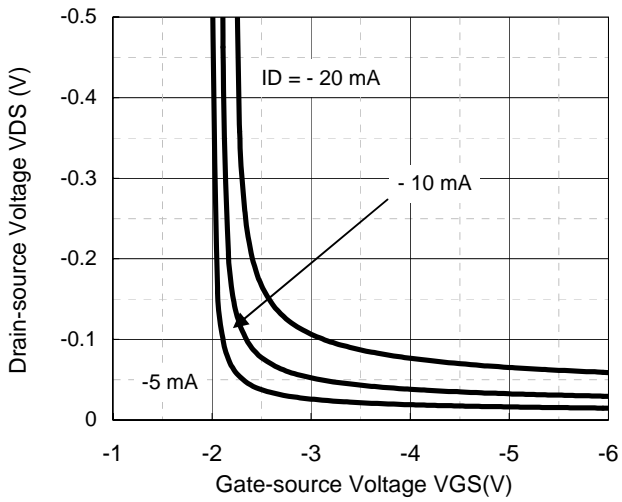
FET2(Pch.)



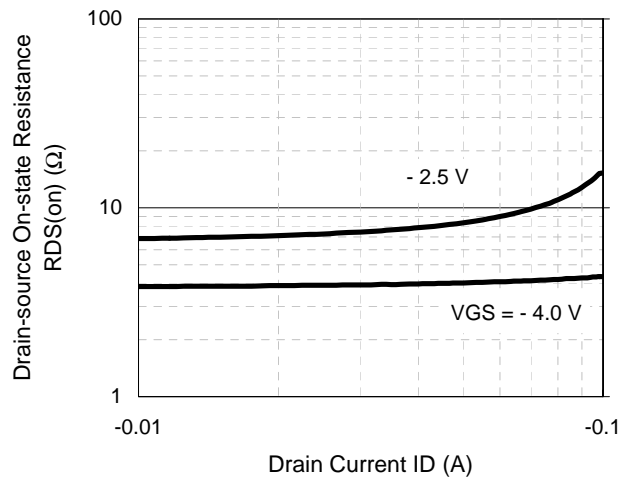
ID - VDS



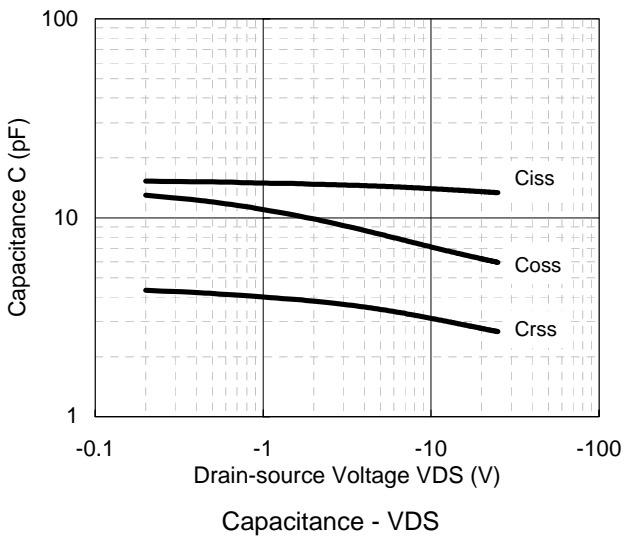
ID - VGS



VDS - VGS

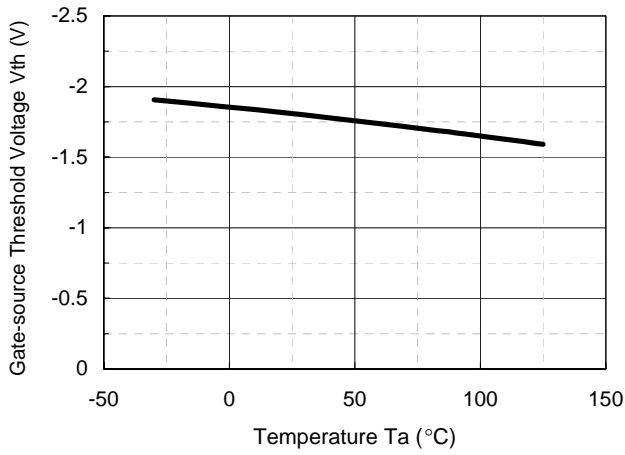


RDS(on) - ID

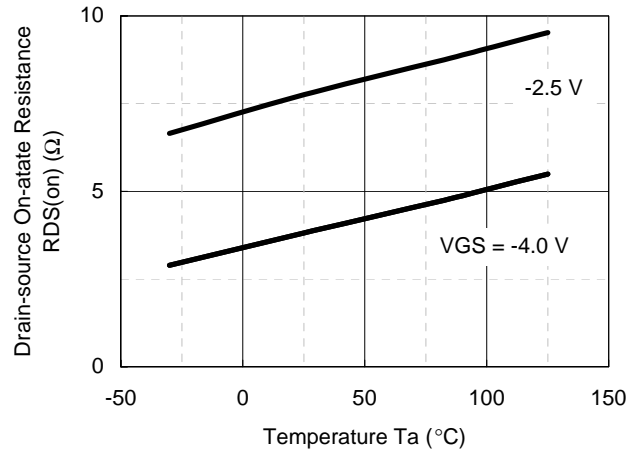


Capacitance - VDS

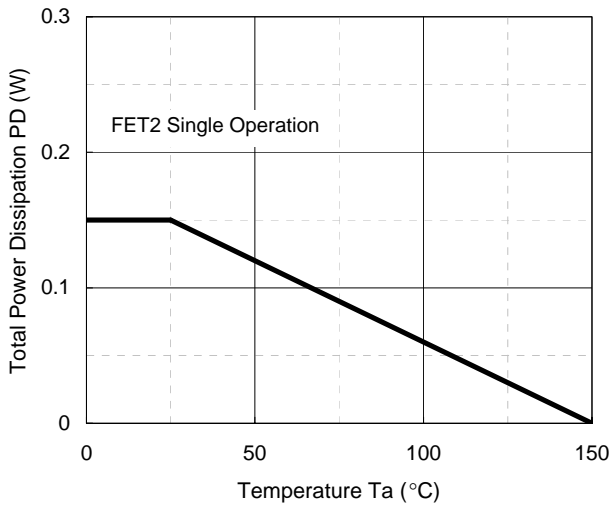
FET2(Pch.)



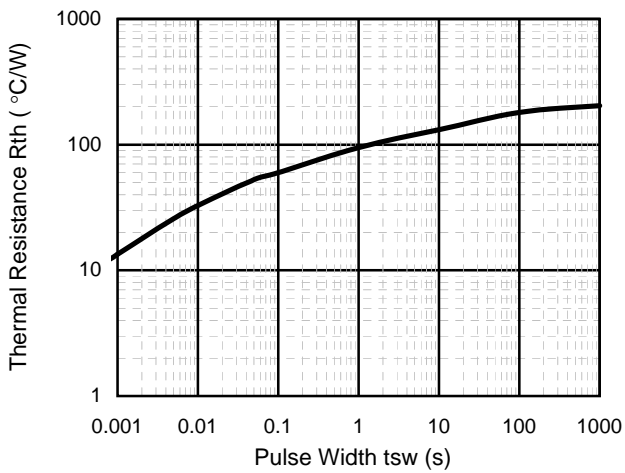
$V_{th} - T_a$



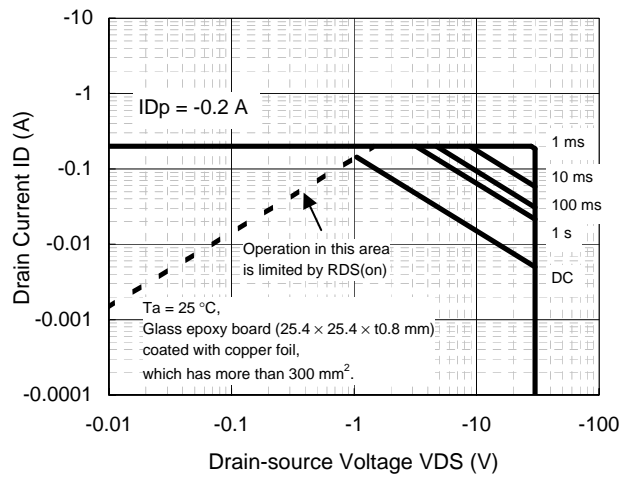
$R_{DS(on)} - T_a$



$P_D - T_a$



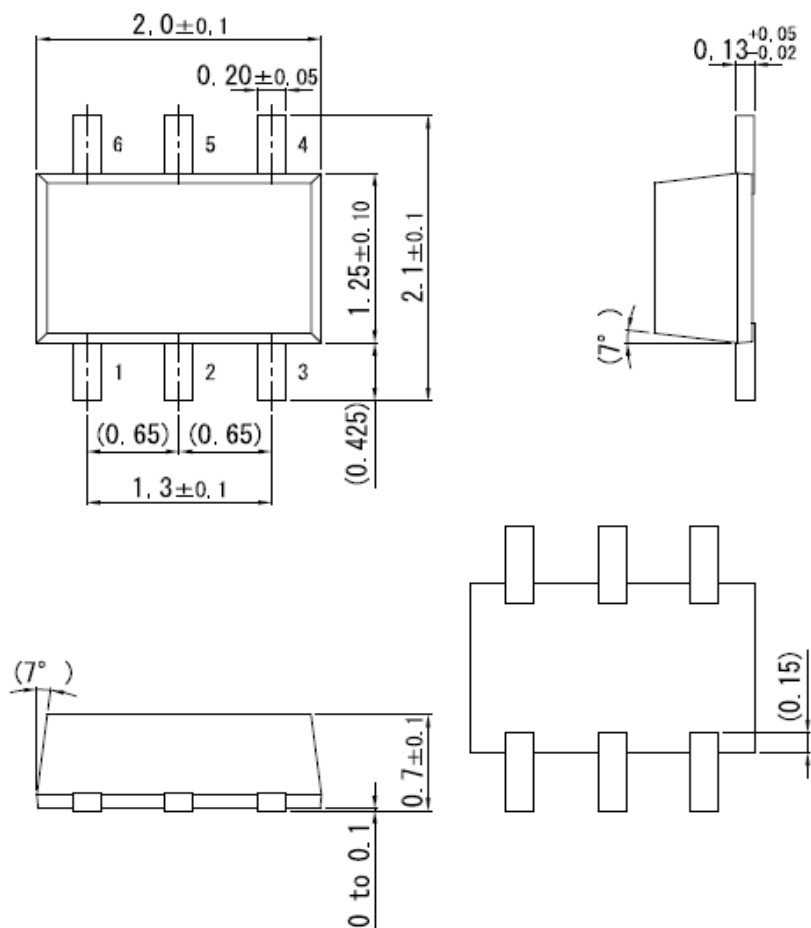
$R_{th} - t_{sw}$



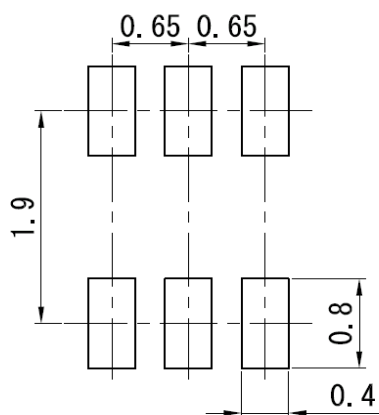
Safe Operating Area

SMini6-F3-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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- (6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. We do not guarantee quality for disassembled products or the product re-mounted after removing from the mounting board.
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