

FG6943010R

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

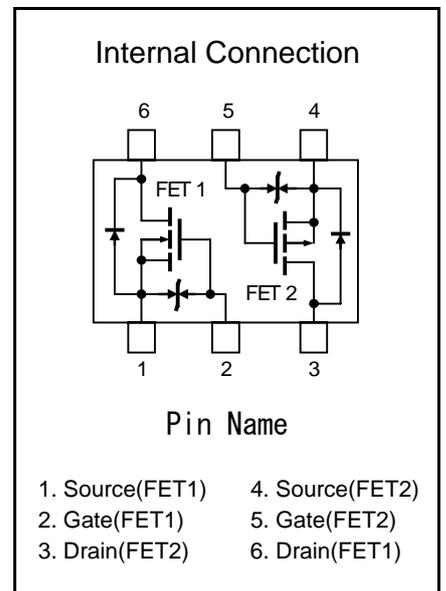
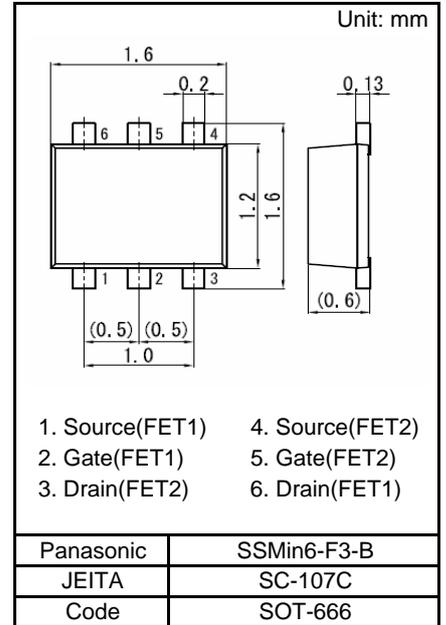
FJ330301 + FK330301 (Individual)

■ Packaging

FG6943010R Embossed type (Thermo-compression sealing):
8 000 pcs / reel (standard)

■ Absolute Maximum Ratings Ta = 25 °C

Parameter		Symbol	Rating	Unit
FET1 (N-ch.)	Drain-Source Voltage	VDS	30	V
	Gate-source Voltage	VGS	±12	V
	Drain Current	ID	100	mA
	Drain Current (Pulsed)	IDp	200	mA
FET2 (P-ch.)	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	125	mW
	Channel Temperature	Tch	150	°C
	Storage Temperature	Tstg	-55 to +150	°C



■ Electrical Characteristics Ta = 25 °C ± 3 °C
FET1(N-ch.)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	VDSS	ID = 1.0 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	Ω
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		pF
Reverse Transfer Capacitance	Crss			3		pF
Turn-on Time *1	ton	VDD = 3 V, VGS = 0 to 3 V, ID = 10 mA		100		ns
Turn-off Tme *1	toff	VDD = 3 V, VGS = 3 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 FET1 ton, toff measurement circuit

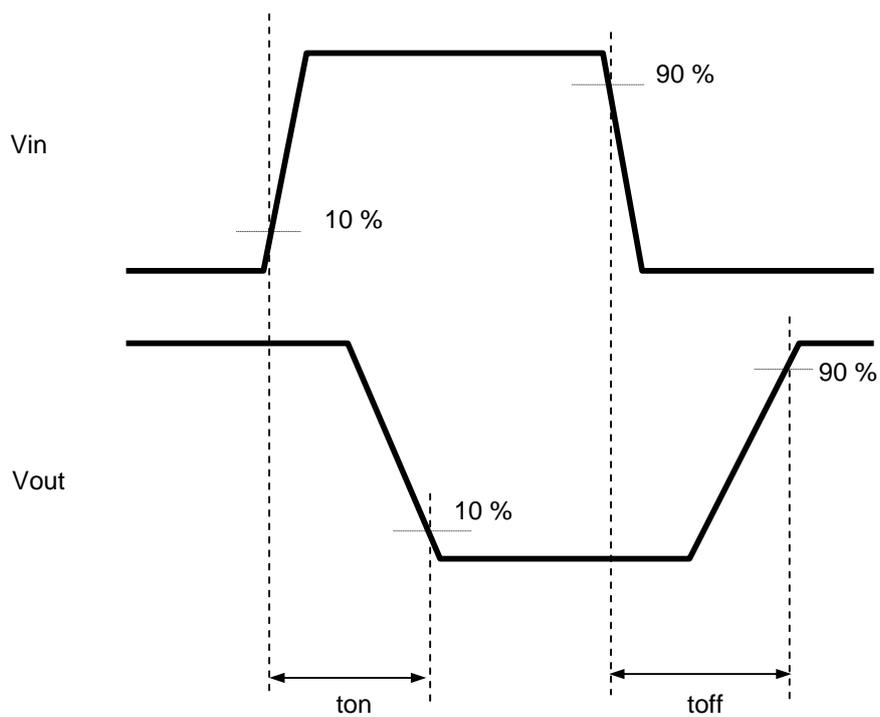
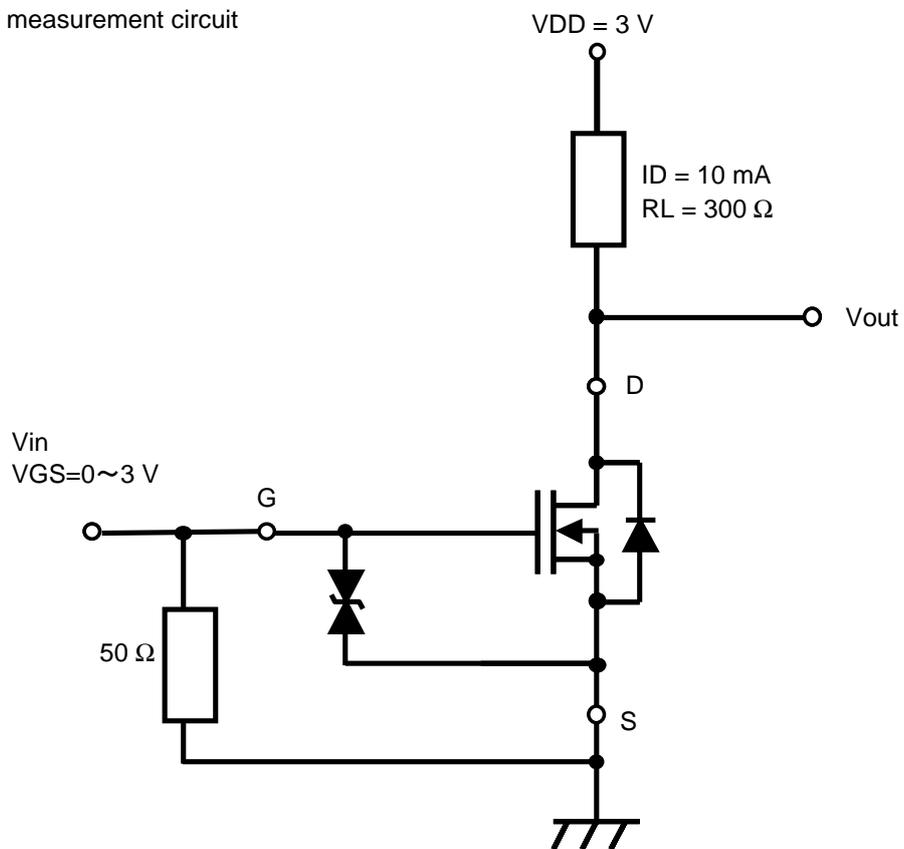
■ Electrical Characteristics Ta = 25 °C ± 3 °C
FET2(P-ch.)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	VDSS	ID = -1.0 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		7	17	Ω
	RDS(on)2	ID = -10 mA, VGS = -4.0 V		4	7	Ω
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		pF
Reverse Transfer Capacitance	Crss			3		pF
Turn-on Time *2	ton	VDD = -3 V, VGS = 0 to -3 V, ID = -10 mA		100		ns
Turn-off Tme *2	toff	VDD = -3 V, VGS = -3 to 0 V, ID = -10 mA		100		ns

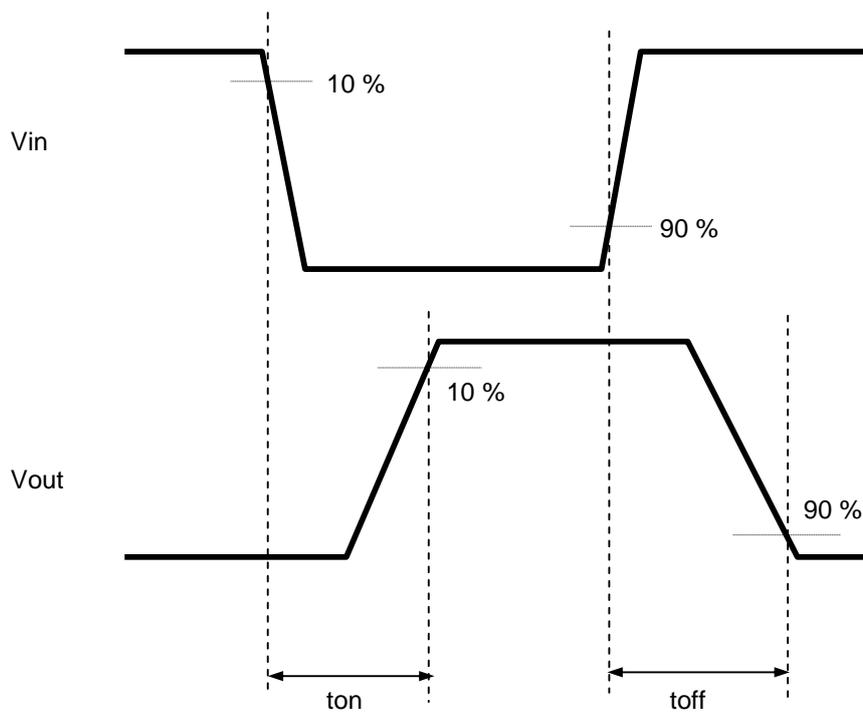
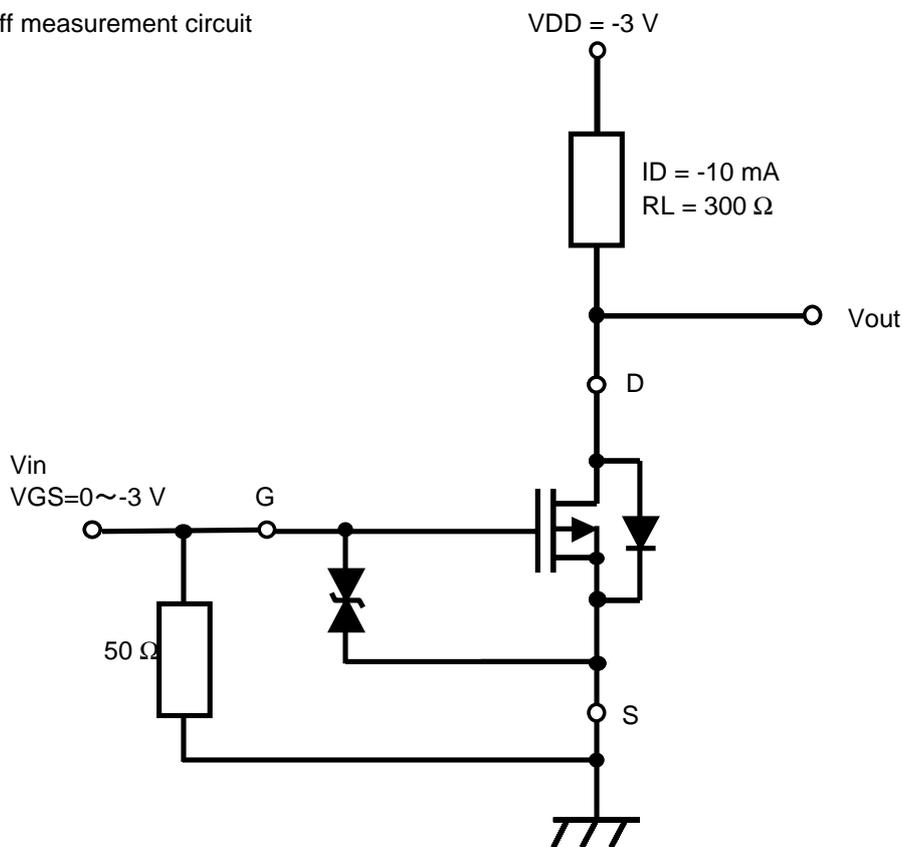
Note Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.

*2 FET2 ton, toff measurement circuit

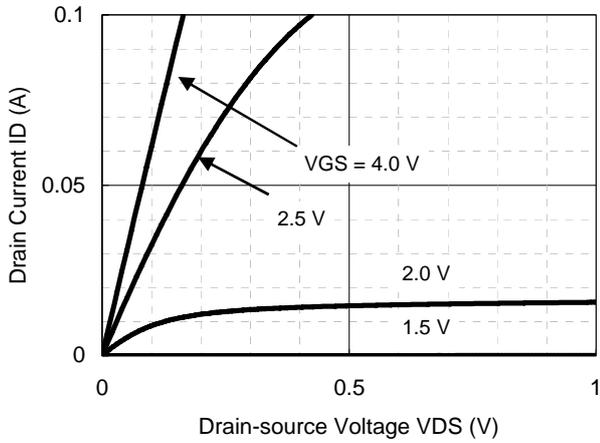
*1 FET1 ton, toff measurement circuit



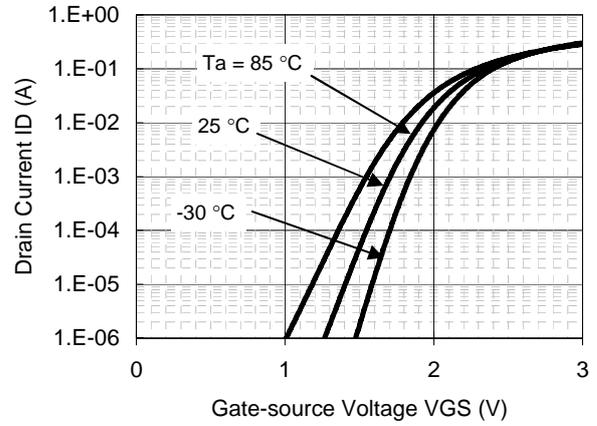
*2 FET2 ton, toff measurement circuit



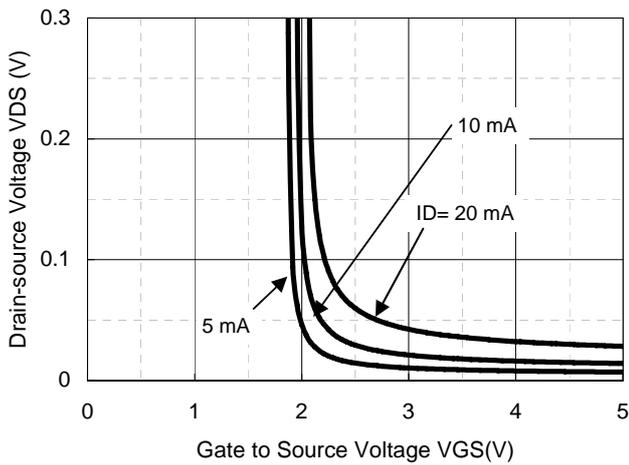
FET1(N-ch.)



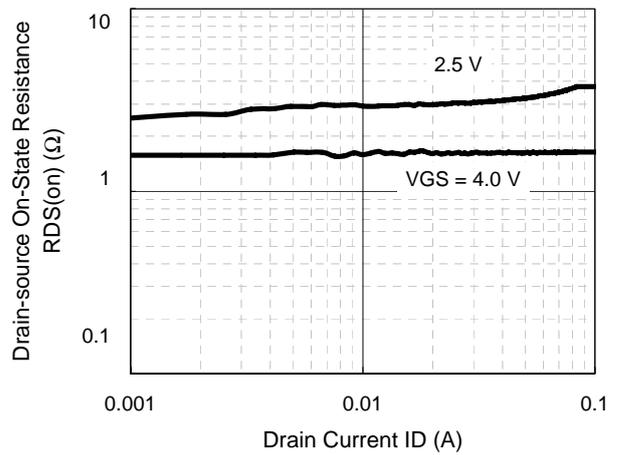
$I_D - V_{DS}$



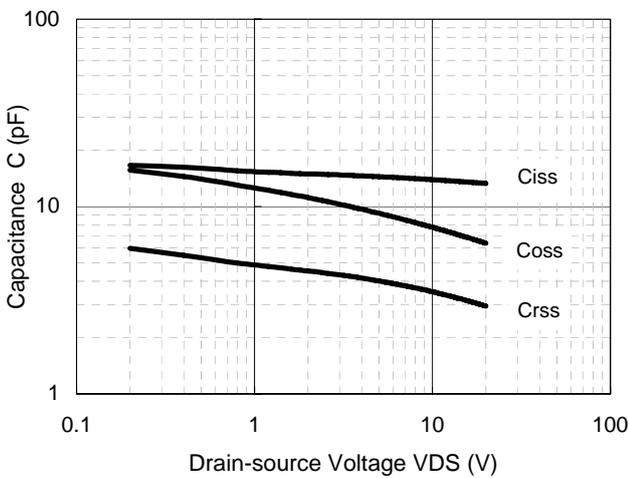
$I_D - V_{GS}$



$V_{DS} - V_{GS}$

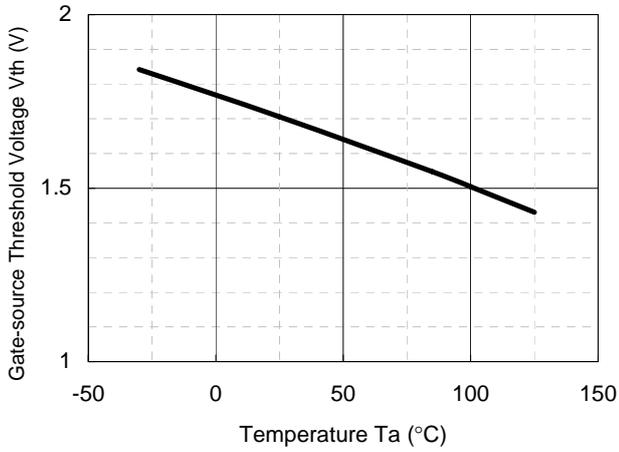


$R_{DS(on)} - I_D$

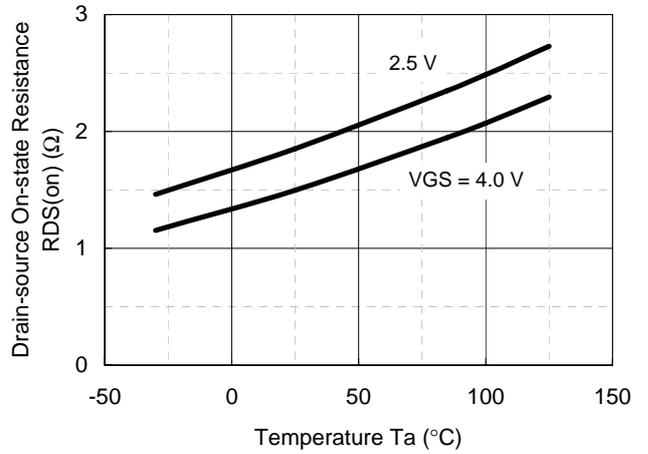


Capacitance - V_{DS}

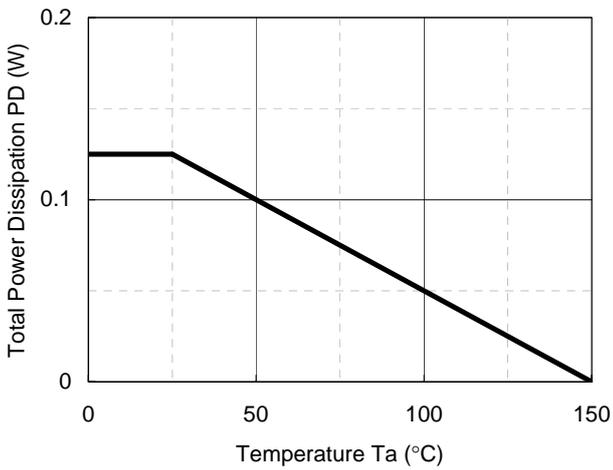
FET1(N-ch.)



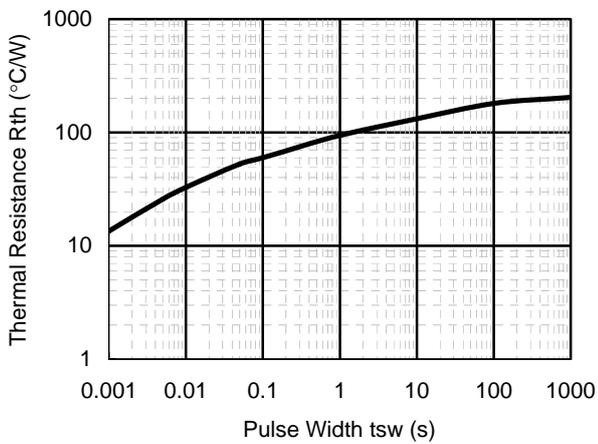
V_{th} - T_a



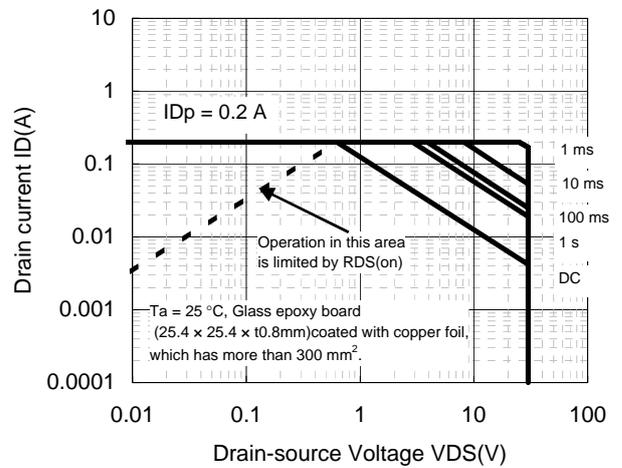
$R_{DS(on)}$ - T_a



P_D - T_a

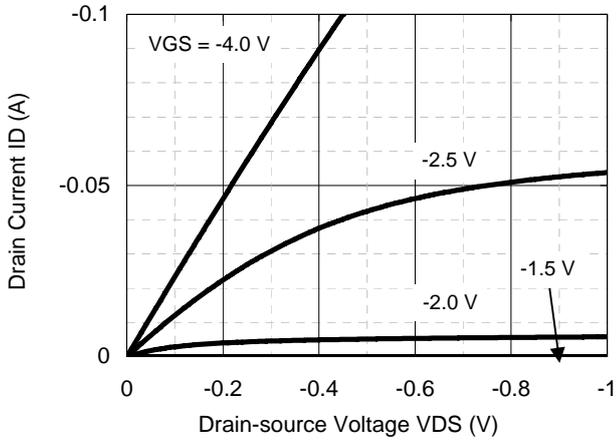


R_{th} - t_{sw}

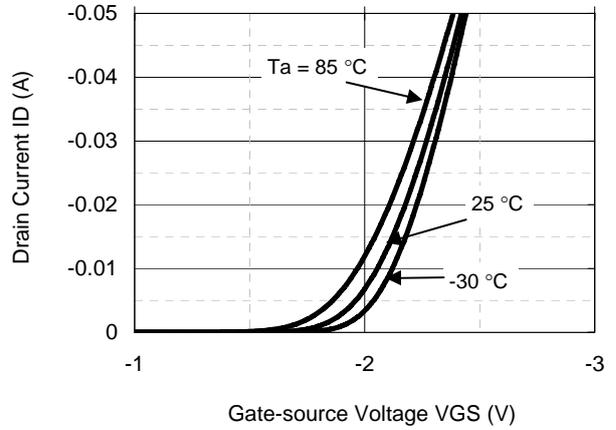


Safe Operating Area

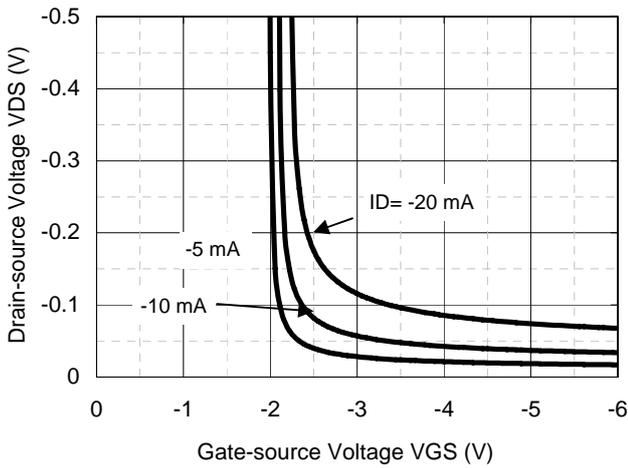
FET2(P-ch.)



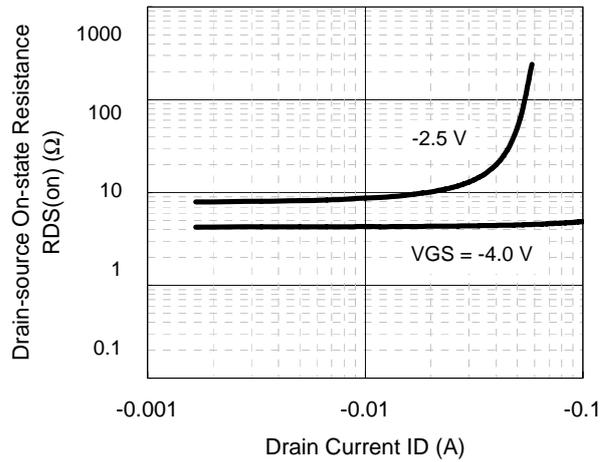
ID - VDS



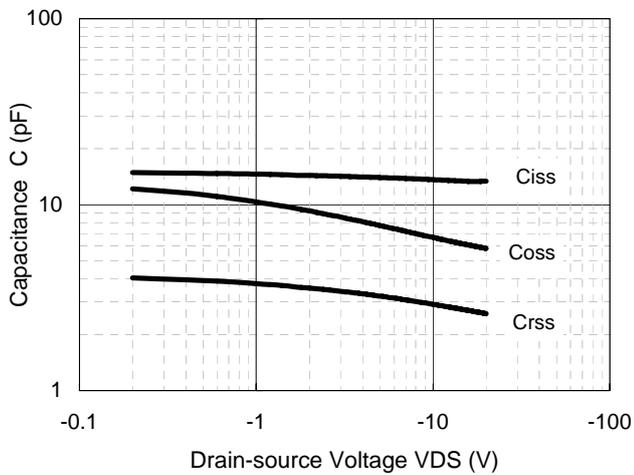
ID - VGS



VDS - VGS

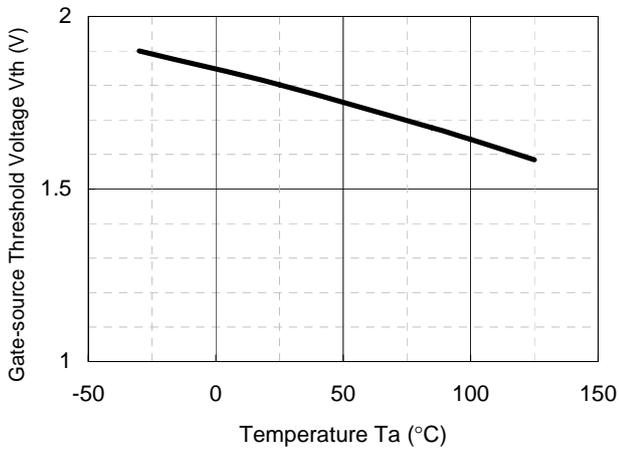


RDS(on) - ID

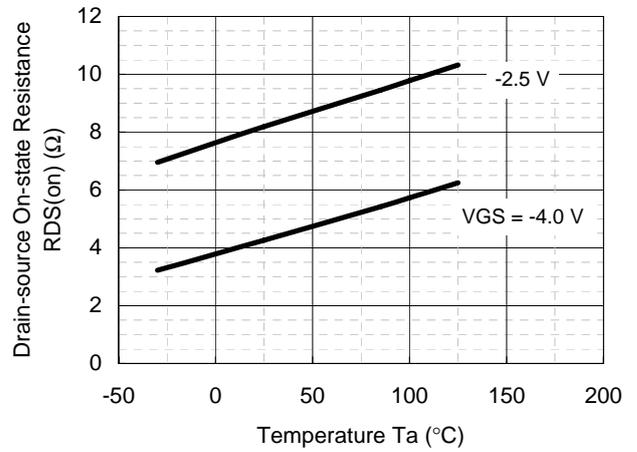


Capacitance - VDS

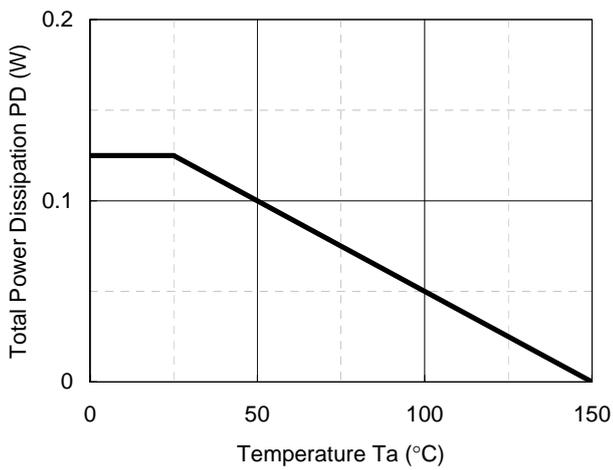
FET2(P-ch.)



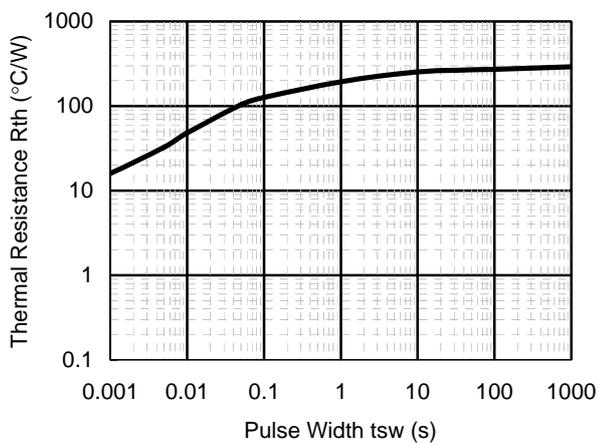
V_{th} - T_a



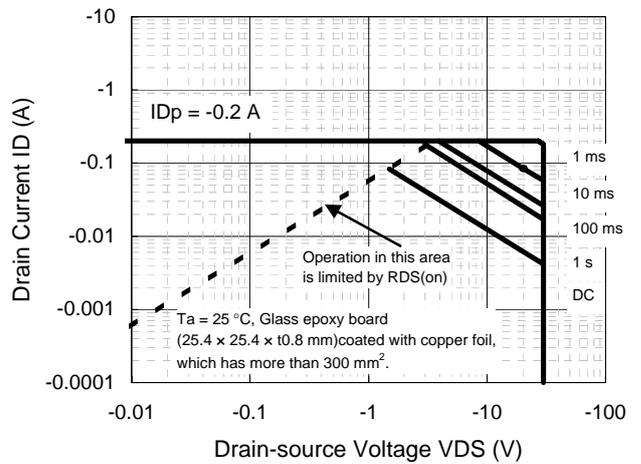
$R_{DS(on)}$ - T_a



P_D - T_a



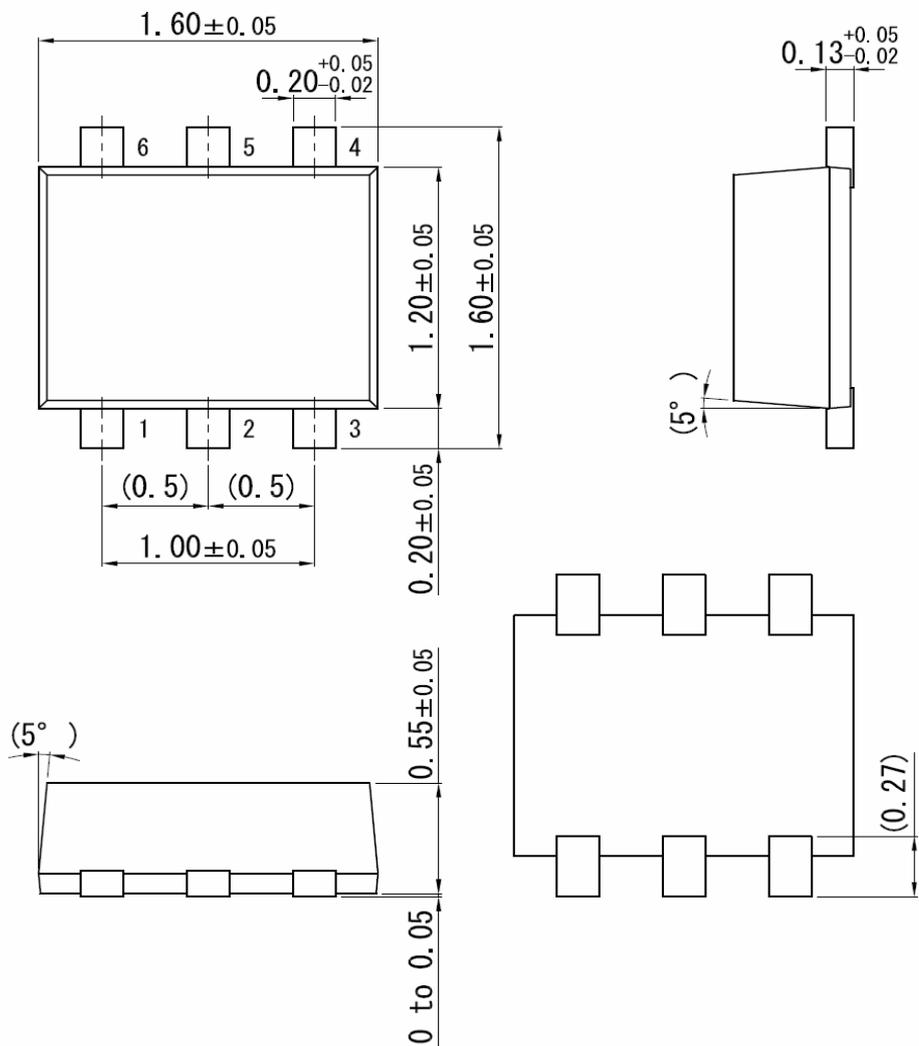
R_{th} - t_{sw}



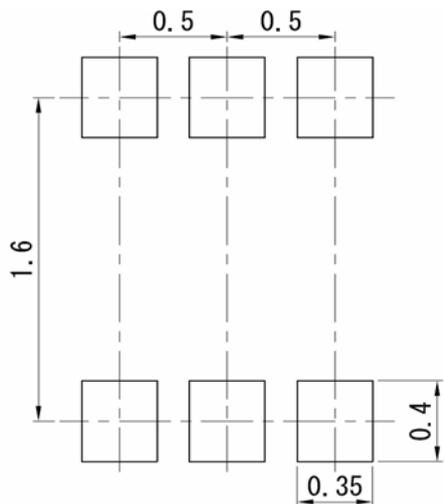
Safe Operating Area

SSMin6-F3-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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