



## Transistors

## ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±10	μA	V <sub>GS</sub> =±30V, V <sub>DS</sub> =0V
Drain-Source Breakdown Voltage	V <sub>(BR) DSS</sub>	200	—	—	V	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	—	—	25	μA	V <sub>DS</sub> =200V, V <sub>GS</sub> =0V
Gate Threshold Voltage	V <sub>GS(th)</sub>	2.0	—	4.0	V	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA
Static Drain-Source On-State Resistance	R <sub>DS(on)</sub> *	—	0.55	0.72	Ω	I <sub>D</sub> =2.5A, V <sub>GS</sub> =10V
Forward Transfer Admittance	Y <sub>fs</sub>   *	1.1	1.8	—	S	V <sub>DS</sub> =10V, I <sub>D</sub> =2.5A
Input Capacitance	C <sub>iss</sub>	—	292	—	pF	V <sub>DS</sub> =10V
Output Capacitance	C <sub>oss</sub>	—	92	—	pF	V <sub>GS</sub> =0V
Reverse Transfer Capacitance	C <sub>rss</sub>	—	28	—	pF	f=1MHz
Turn-On Delay Time	t <sub>d(on)</sub> *	—	10	—	ns	I <sub>D</sub> =2.5A, V <sub>DD</sub> ÷ 100V
Rise Time	t <sub>r</sub> *	—	22	—	ns	V <sub>GS</sub> =10V
Turn-Off Delay Time	t <sub>d(off)</sub> *	—	23	—	ns	R <sub>L</sub> =40Ω
Fall Time	t <sub>f</sub> *	—	28	—	ns	R <sub>G</sub> =10Ω
Total Gate Charge	Q <sub>g</sub> *	—	9.3	—	nC	V <sub>DD</sub> =100V
Gate-Source Charge	Q <sub>gs</sub> *	—	2.8	—	nC	V <sub>GS</sub> =10V
Gate-Drain Charge	Q <sub>gd</sub> *	—	3.7	—	nC	I <sub>D</sub> =5A

\* Pulsed

## ●Body diode characteristics (Source-drain) (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V <sub>SD</sub> *	—	—	1.5	V	I <sub>S</sub> = 5.0A, V <sub>GS</sub> =0V
Reverse recovery time	t <sub>rr</sub>	—	117	—	ns	I <sub>DR</sub> = 5.0A, V <sub>GS</sub> =0V
Reverse recovery charge	Q <sub>rr</sub>	—	0.37	—	μC	di/dt= 100A / μs

\* Pulsed

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●Electrical characteristic curves

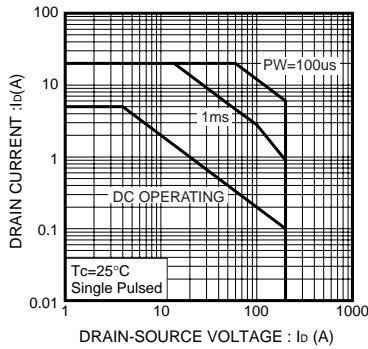


Fig.1 Maximum Safe Operating Area

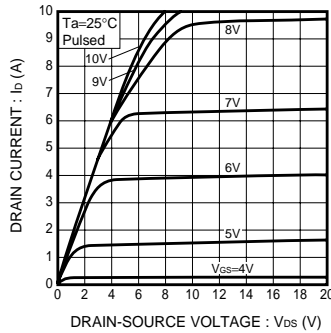


Fig.2 Typical Output Characteristics

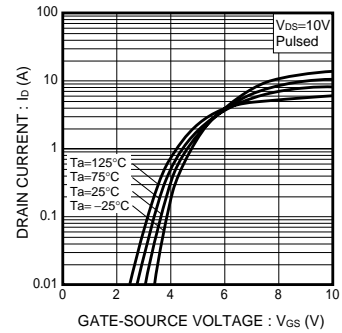


Fig.3 Typical Transfer Characteristics

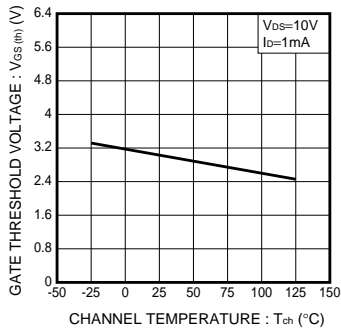


Fig.4 Gate Threshold Voltage vs. Channel Temperature

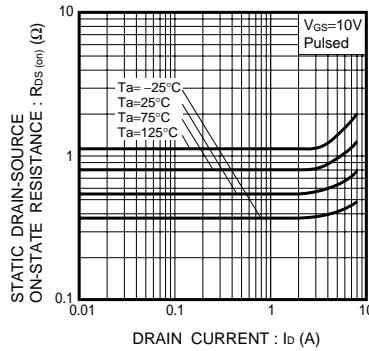


Fig.5 Static Drain-Source On-State Resistance vs. Drain Current

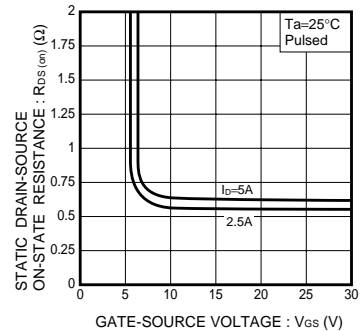


Fig.6 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

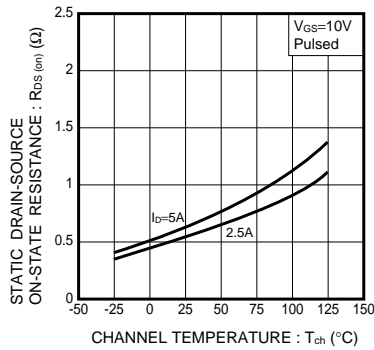


Fig.7 Static Drain-Source On-State Resistance vs. Channel Temperature

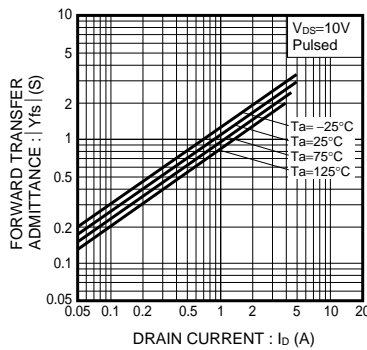


Fig.8 Forward Transfer Admittance vs. Drain Current

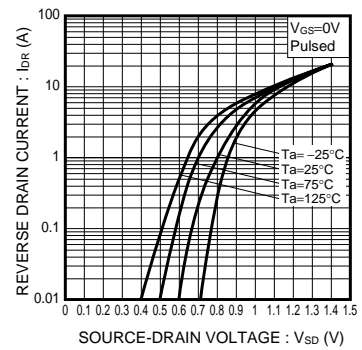


Fig.9 Reverse Drain Current vs. Source-Drain Voltage

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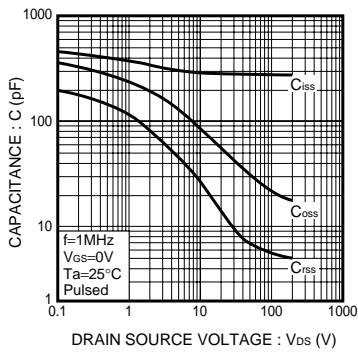


Fig.10 Typical Capacitance vs. Drain-Source Voltage

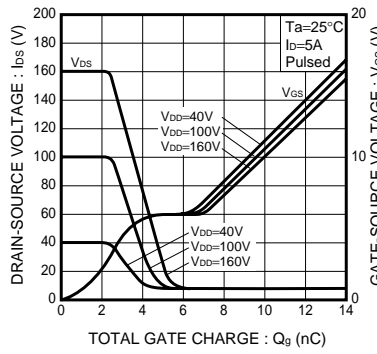


Fig.11 Dynamic Input Characteristics

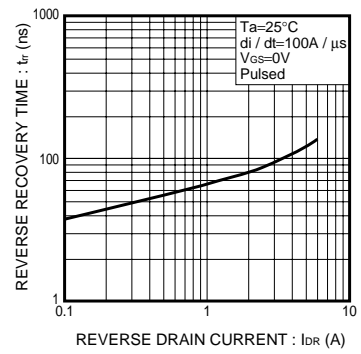


Fig.12 Reverse Recovery Time vs. Reverse Drain Current

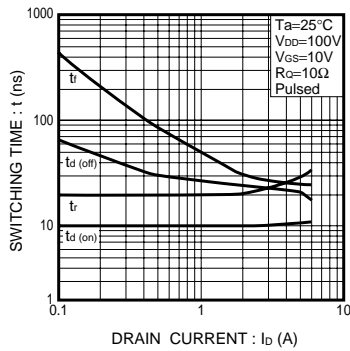


Fig.13 Switching Characteristics

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●Switching characteristics measurement circuit

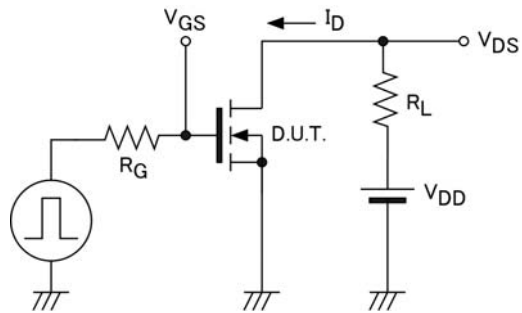


Fig.1-1 Switching time measurement circuit

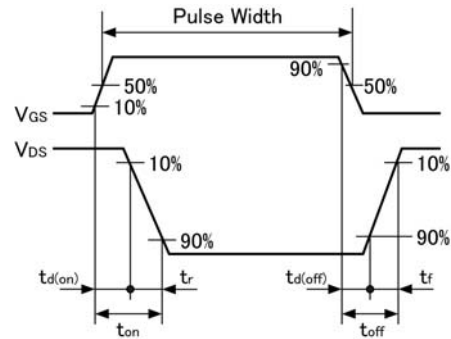


Fig.1-2 Switching waveforms

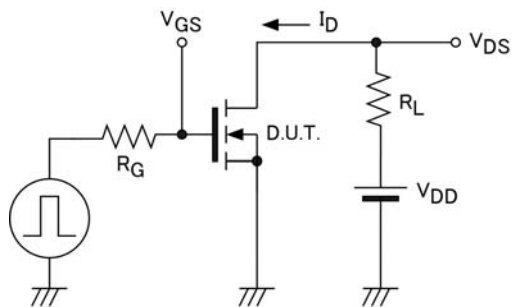


Fig.2-1 Gate charge measurement circuit

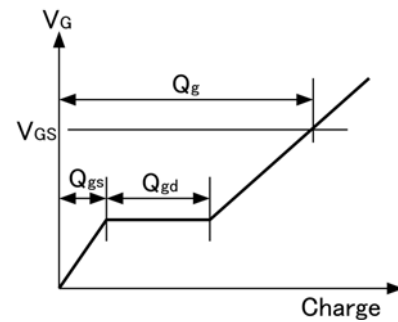


Fig.2-2 Gate charge waveform

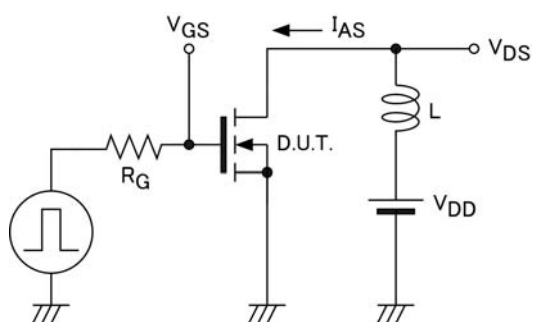


Fig.3-1 Avalanche measurement circuit

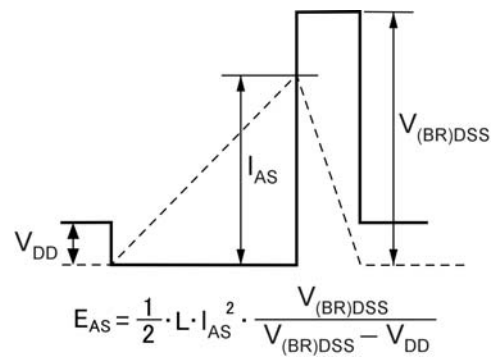


Fig.3-2 Avalanche waveform

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