



## Transistor

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

## &lt;MOSFET&gt;

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I <sub>GSS</sub>	–	–	±10	μA	V <sub>GS</sub> =±12V, V <sub>DS</sub> =0V
Drain-source breakdown voltage	V <sub>(BR) DSS</sub>	–20	–	–	V	I <sub>D</sub> =–1mA, V <sub>GS</sub> =0V
Zero gate voltage drain current	I <sub>DSS</sub>	–	–	–1	μA	V <sub>DS</sub> =–20V, V <sub>GS</sub> =0V
Gate threshold voltage	V <sub>GS (th)</sub>	–0.7	–	–2.0	V	V <sub>DS</sub> =–10V, I <sub>D</sub> =–1mA
Static drain-source on-starte resistance	R <sub>DS (on)</sub> *	–	280	390	mΩ	I <sub>D</sub> =–1A, V <sub>GS</sub> =–4.5V
		–	310	430	mΩ	I <sub>D</sub> =–1A, V <sub>GS</sub> =–4V
		–	570	800	mΩ	I <sub>D</sub> =–0.5A, V <sub>GS</sub> =–2.5V
Forward transfer admittance	Y <sub>fs</sub>   *	0.7	–	–	S	V <sub>DS</sub> =–10V, I <sub>D</sub> =–0.5A
Input capacitance	C <sub>iss</sub>	–	150	–	pF	V <sub>DS</sub> =–10V
Output capacitance	C <sub>oss</sub>	–	20	–	pF	V <sub>GS</sub> =0V
Reverse transfer capacitance	C <sub>rss</sub>	–	20	–	pF	f=1MHz
Turn-on delay time	t <sub>d (on)</sub> *	–	9	–	ns	I <sub>D</sub> =–0.5A
Rise time	t <sub>r</sub> *	–	8	–	ns	V <sub>DD</sub> =–15V
Turn-off delay time	t <sub>d (off)</sub> *	–	25	–	ns	V <sub>GS</sub> =–4.5V
Fall time	t <sub>f</sub> *	–	10	–	ns	R <sub>L</sub> =30Ω R <sub>G</sub> =10Ω
Total gate charge	Q <sub>g</sub>	–	2.1	–	nC	V <sub>DD</sub> =–15V V <sub>GS</sub> =–5V
Gate-source charge	Q <sub>gs</sub>	–	0.5	–	nC	I <sub>D</sub> =–1A
Gate-drain charge	Q <sub>gd</sub>	–	0.5	–	nC	R <sub>L</sub> =15Ω R <sub>G</sub> =10Ω

\* Pulsed

## &lt;MOSFET&gt;

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V <sub>SD</sub>	–	–	–1.2	V	I <sub>S</sub> =–0.4A, V <sub>GS</sub> =0V

## &lt;Di&gt;

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage drop	V <sub>F</sub>	–	–	0.49	V	I <sub>F</sub> =0.7A
Reverse leakage	I <sub>R</sub>	–	–	200	μA	V <sub>R</sub> =20V

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●Electrical characteristic curves

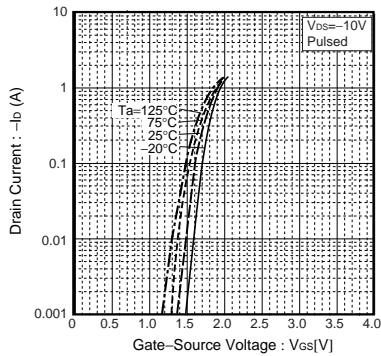


Fig.1 Typical Transfer Characteristics

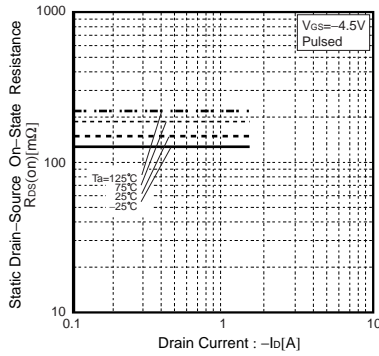


Fig.2 Static Drain-Source On-State Resistance vs. Drain Current

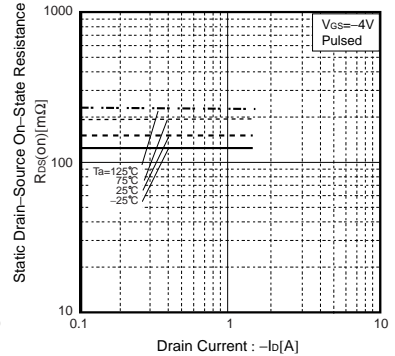


Fig.3 Static Drain-Source On-State Resistance vs. Drain Current

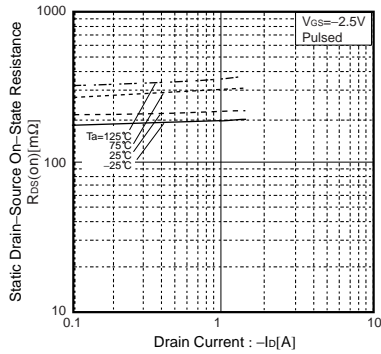


Fig.4 Static Drain-Source On-State Resistance vs. Drain Current

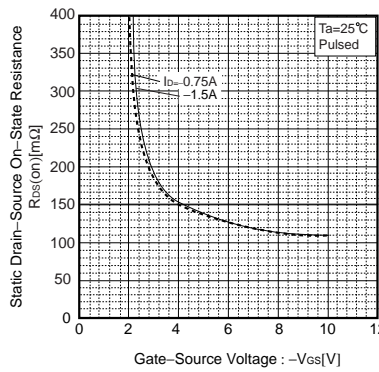


Fig.5 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

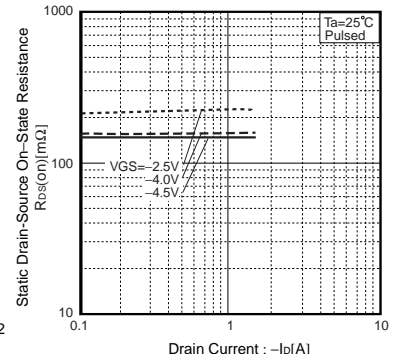


Fig.6 Static Drain-Source On-State Resistance vs. Drain Current

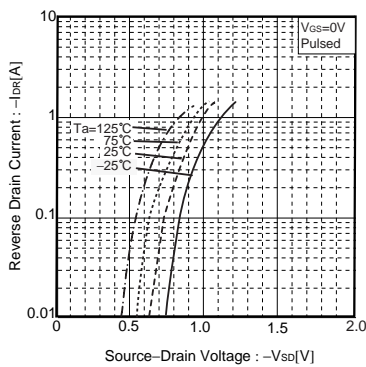


Fig.7 Reverse Drain Current vs. Source-Drain Voltage

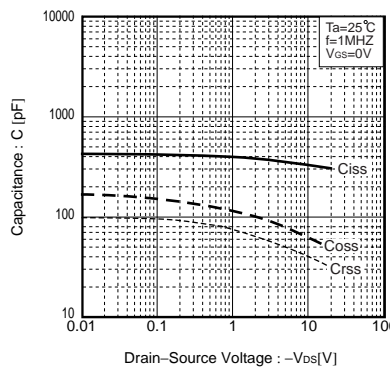


Fig.8 Typical Capacitance vs. Drain-Source Voltage

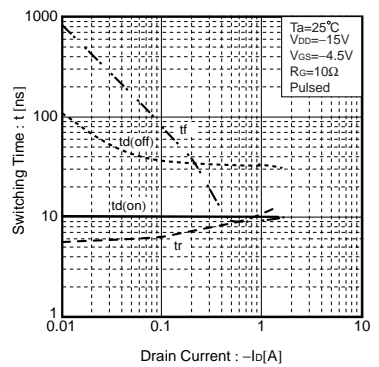


Fig.9 Switching Characteristics

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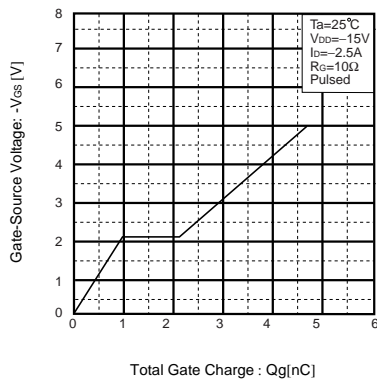


Fig.10 Dynamic Input Characteristics

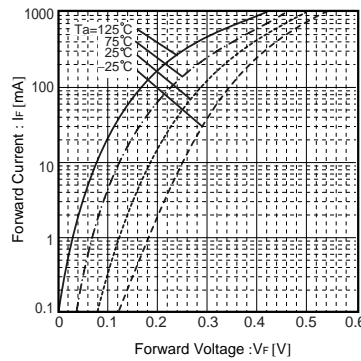


Fig.11 Forward Temperature Characteristics

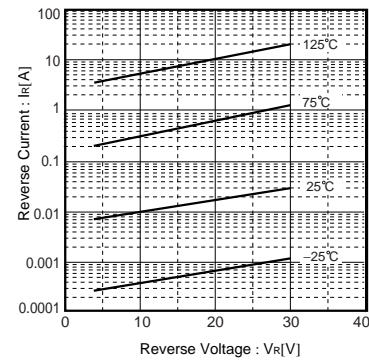


Fig.12 Reverse Temperature Characteristics

●Measurement circuits

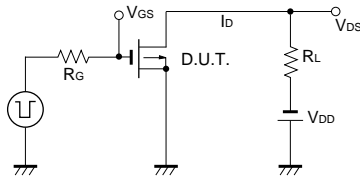


Fig.13 Switching Time Measurement Circuit

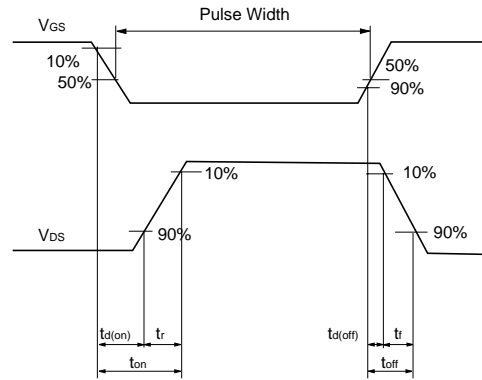


Fig.14 Switching Waveforms

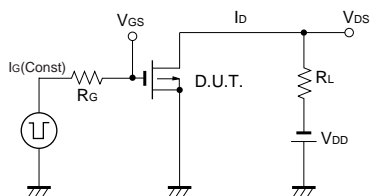


Fig.15 Gate Charge Measurement Circuit

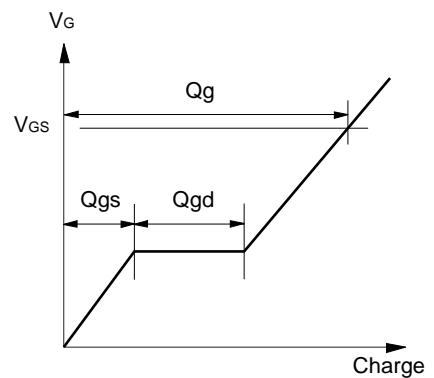


Fig.16 Gate Charge Waveforms

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