

Transistors

●Electrical characteristics (Ta=25°C)

<It is the same characteristics for Tr1 and Tr2. MOS FET>

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I_{GSS}	–	–	±10	μA	$V_{GS}=\pm 12V, V_{DS}=0V$
Drain-source breakdown voltage	$V_{(BR)DSS}$	-20	–	–	V	$I_D=-1mA, V_{GS}=0V$
Zero gate voltage drain current	I_{DSS}	–	–	-1	μA	$V_{DS}=-20V, V_{GS}=0V$
Gate threshold voltage	$V_{GS(th)}$	-0.7	–	-2.0	V	$V_{DS}=-10V, I_D=-1mA$
Static drain-source on-state resistance	$R_{DS(on)}$ *	–	155	215	mΩ	$I_D=-1.5A, V_{GS}=-4.5V$
		–	170	235	mΩ	$I_D=-1.5A, V_{GS}=-4V$
		–	310	430	mΩ	$I_D=-0.75A, V_{GS}=-2.5V$
Forward transfer admittance	$ Y_{fs} $ *	1.0	–	–	S	$V_{DS}=-10V, I_D=-0.75A$
Input capacitance	C_{iss}	–	270	–	pF	$V_{DS}=-10V$
Output capacitance	C_{oss}	–	40	–	pF	$V_{GS}=0V$
Reverse transfer capacitance	C_{rss}	–	35	–	pF	$f=1MHz$
Turn-on delay time	$t_{d(on)}$ *	–	10	–	ns	$I_D=-0.75A$
Rise time	t_r *	–	12	–	ns	$V_{DD}\dot{=} -15V$ $V_{GS}=-4.5V$
Turn-off delay time	$t_{d(off)}$ *	–	45	–	ns	$R_L=20\Omega$
Fall time	t_f *	–	20	–	ns	$R_G=10\Omega$
Total gate charge	Q_g *	–	3.0	–	nC	$V_{DD}\dot{=} -15V, R_L=10\Omega$
Gate-source charge	Q_{gs} *	–	0.8	–	nC	$V_{GS}=-4.5V, R_G=10\Omega$
Gate-drain charge	Q_{gd} *	–	0.85	–	nC	$I_D=-1.5A$

*Pulsed

<Body diode (Source-drain)>

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_{SD}	–	–	-1.2	V	$I_S=-0.75A, V_{GS}=0V$

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●Electrical characteristic curves

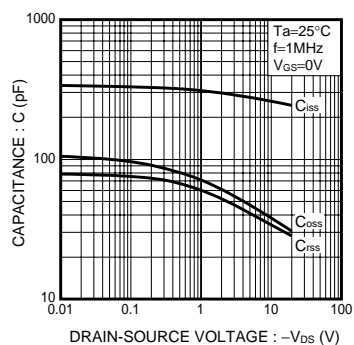


Fig.1 Typical Capacitance vs. Drain-Source Voltage

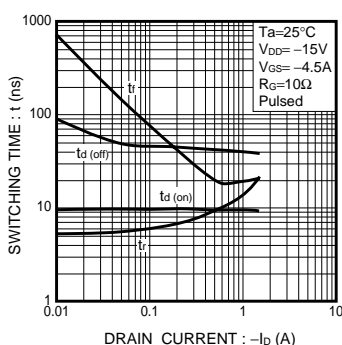


Fig.2 Switching Characteristics

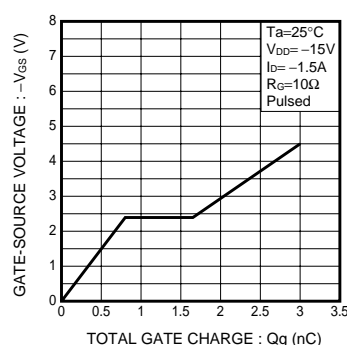


Fig.3 Dynamic Input Characteristics

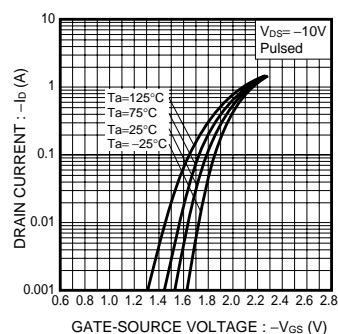


Fig.4 Typical Transfer Characteristics

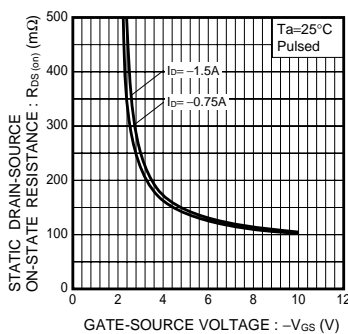


Fig.5 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

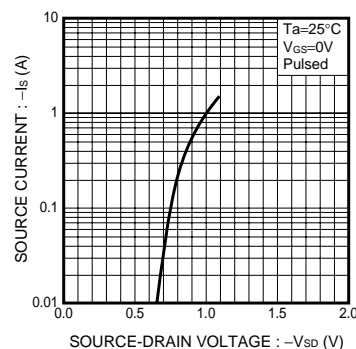


Fig.6 Source Current vs. Source-Drain Voltage

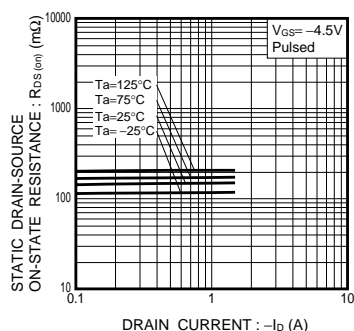


Fig.7 Static Drain-Source On-State Resistance vs. Drain Current (I)

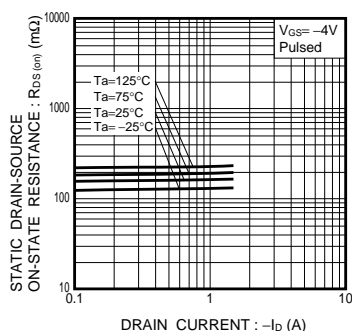


Fig.8 Static Drain-Source On-State Resistance vs. Drain Current (II)

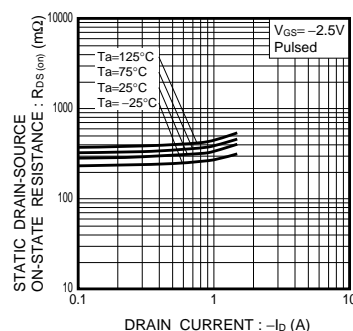


Fig.9 Static Drain-Source On-State Resistance vs. Drain Current (III)

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● Measurement circuits

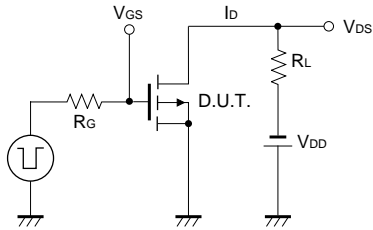


Fig.10 Switching Time Measurement Circuit

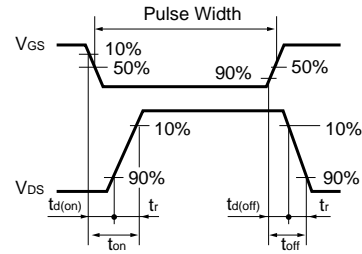


Fig.11 Switching Waveforms

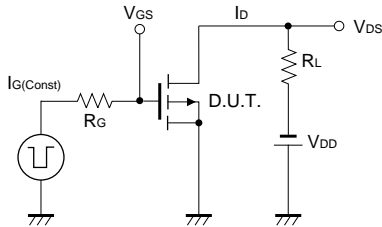


Fig.12 Gate Charge Measurement Circuit

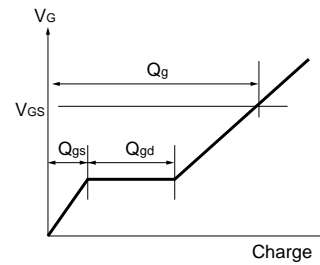


Fig.13 Gate Charge Waveform

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