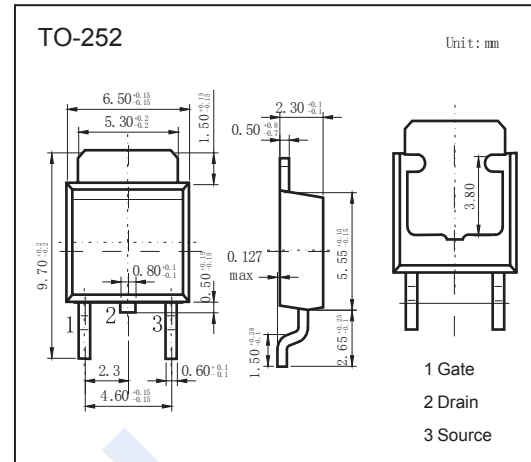


N-Channel MOSFET

2SK2094-Z

■ Features

- $V_{DS} (V) = 60V$
- $I_D = 2A$
- $R_{DS(ON)} < 0.35 \Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 0.5 \Omega$ ($V_{GS} = 4V$)



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	2	A
Pulsed Drain Current (Note.1)	I_{DM}	8	
Power Dissipation	P_D	20	W
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: $PW \leq 10ms$, Duty Cycle $\leq 50\%$

■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$I_D=1mA, V_{GS}=0V$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			100	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=10V, I_D=1mA$	1		2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=1A$			0.35	Ω
		$V_{GS}=4V, I_D=1A$			0.5	
Forward Transconductance	g_{FS}	$V_{DS}=10V, I_D=1A$	1			S
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=10V, f=1MHz$		400		pF
Output Capacitance	C_{oss}			150		
Reverse Transfer Capacitance	C_{rss}			50		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS}=10V, V_{DS}=30V, I_D=1A, R_L=30\Omega, R_G=10\Omega$		10		ns
Turn-On Rise Time	t_r			20		
Turn-Off DelayTime	$t_{d(off)}$			100		
Turn-Off Fall Time	t_f			40		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=2A, V_{GS}=0, di/dt=100A/\mu s$		100		

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■ Typical Characteristics

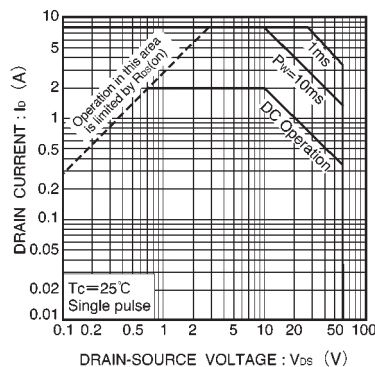


Fig.1 Maximum safe operating area

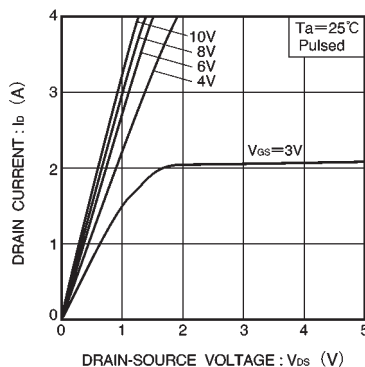


Fig.2 Typical output characteristics

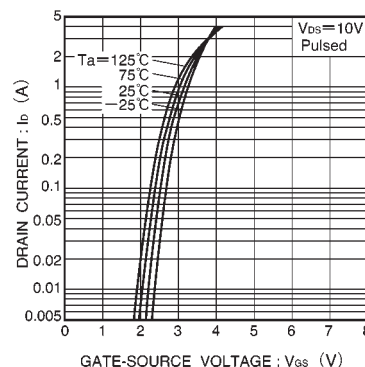


Fig.3 Typical transfer characteristics

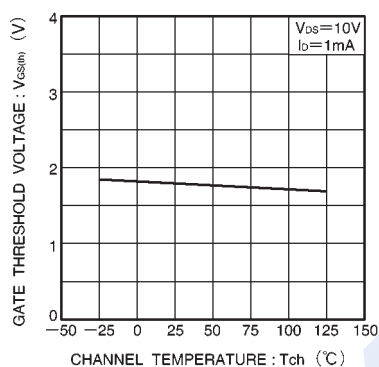


Fig.4 Gate threshold voltage vs. channel temperature

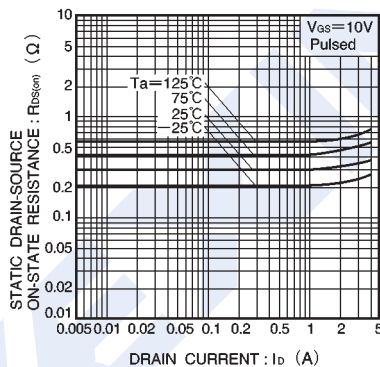


Fig.5 Static drain-source on-state resistance vs. drain current (I)

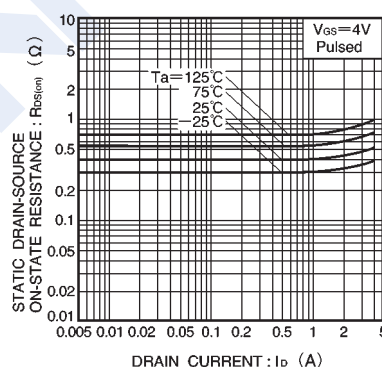


Fig.6 Static drain-source on-state resistance vs. drain current (II)

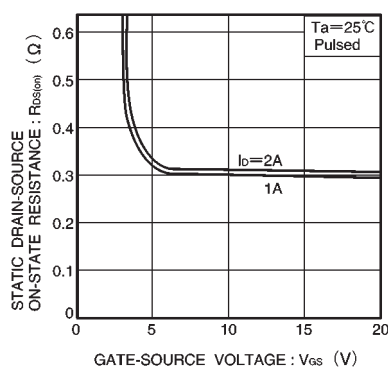


Fig.7 Static drain-source on-state resistance vs. gate-source voltage

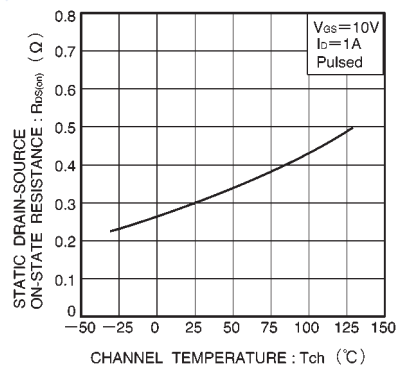


Fig.8 Static drain-source on-state resistance vs. channel temperature

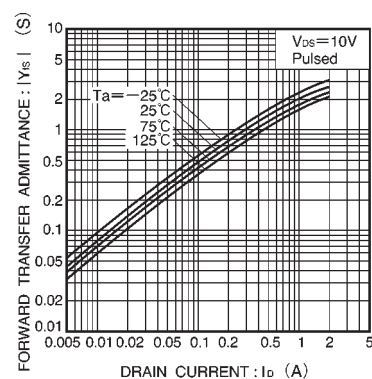


Fig.9 Forward transfer admittance vs. drain current

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■ Typical Characteristics

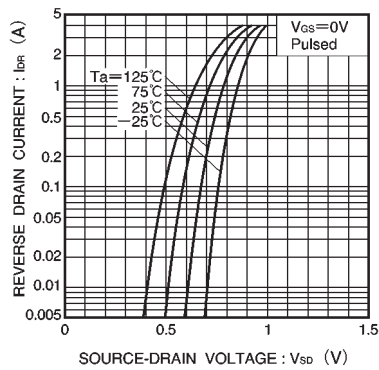


Fig.10 Reverse drain current vs. source-drain voltage (I)

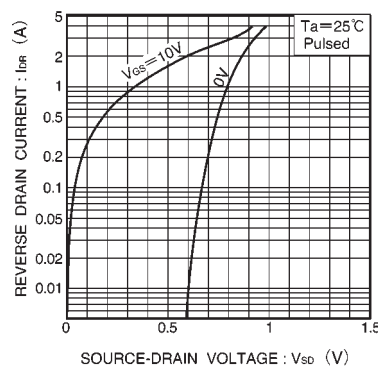


Fig.11 Reverse drain current vs. source-drain voltage (II)

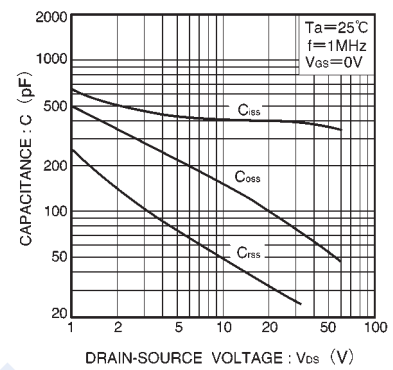


Fig.12 Typical capacitance vs. drain-source voltage

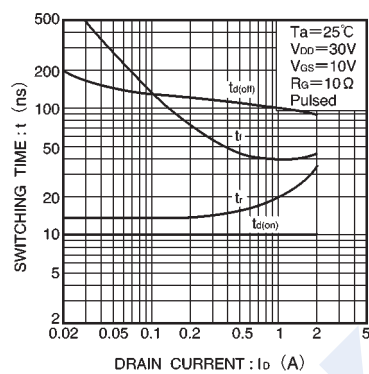


Fig.13 Switching characteristics
(See Figure. 15 and 16 for the measurement circuit and resultant waveforms)

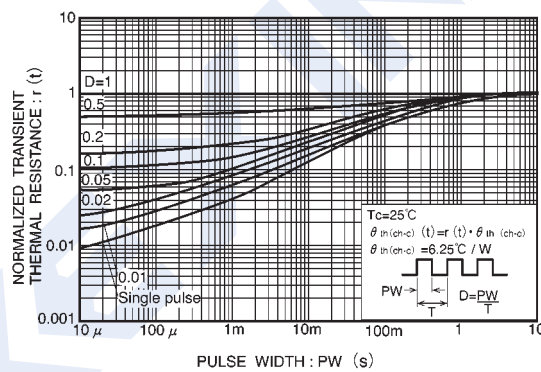


Fig.14 Normalized transient thermal resistance vs. pulse width