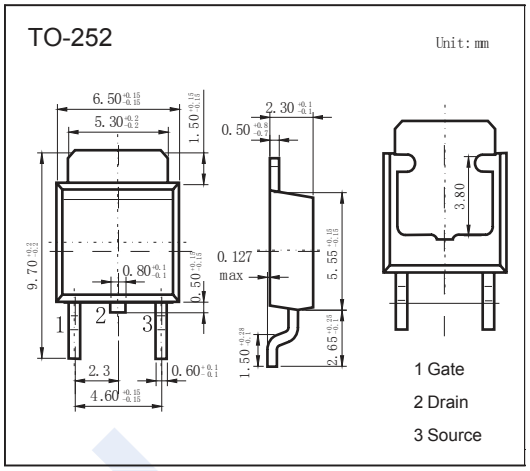
N-Channel MOSFET
2SK2094-Z



■ Features

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

■ Absolute Maximum Ratings Ta = 25℃

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	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: PW ≤ 10ms,Duty Cycle ≤ 50%

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=1 mA, V_{GS}=0V	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			100	uA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±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=30Ω ,R_G=10Ω		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/μs		100		

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■ Typical Characterisitics

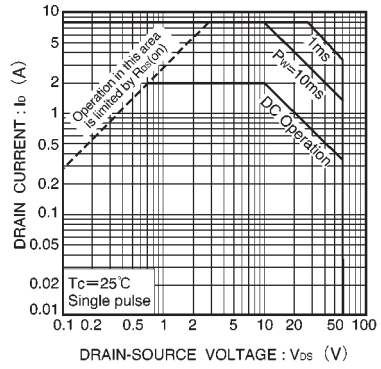

Fig.1 Maximum safe operating area

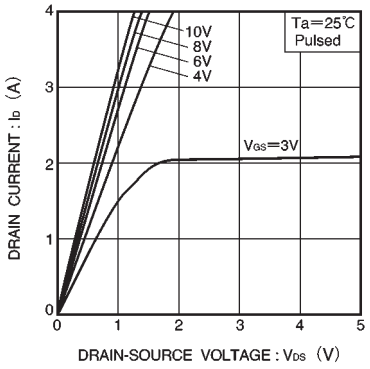

Fig.2 Typical output characteristics

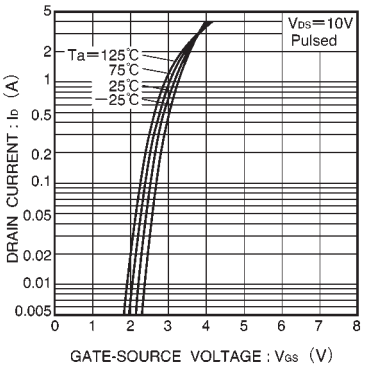

Fig.3 Typical transfer characteristics

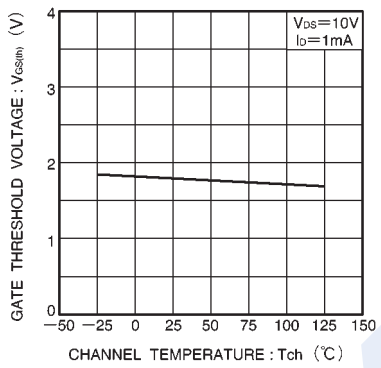

Fig.4 Gate threshold voltage vs. channel temperature

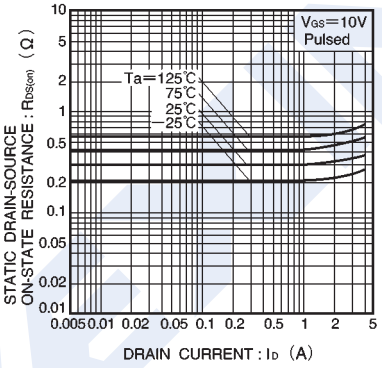

Fig.5 Static drain-source on-state resistance vs. drain current (Ⅰ)

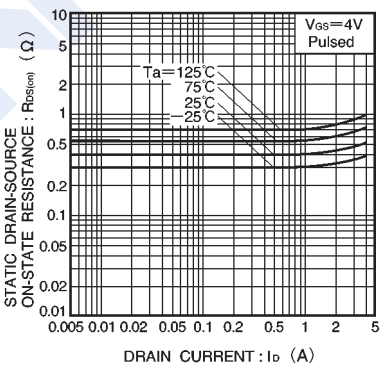

Fig.6 Static drain-source on-state resistance vs. drain current (Ⅱ)

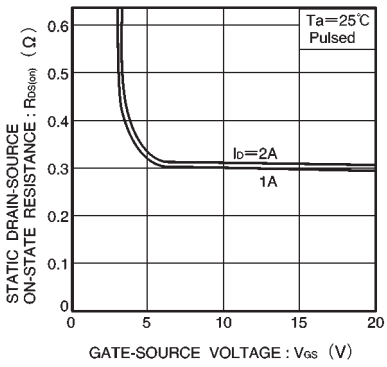

Fig.7 Static drain-source on-state resistance vs. gate-source voltage

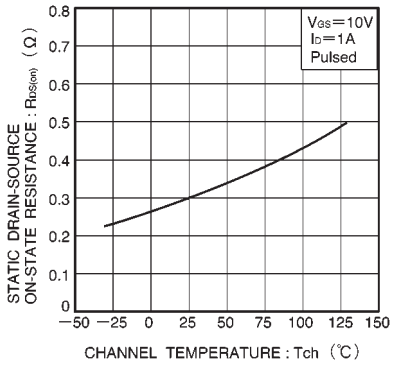

Fig.8 Static drain-source on-state resistance vs. channel temperature

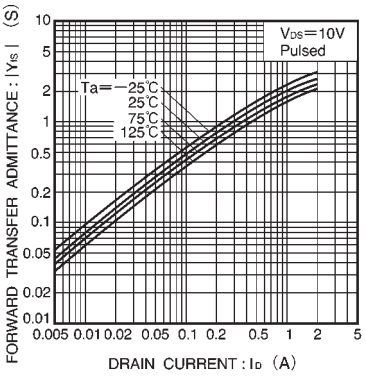

Fig.9 Forward transfer admittance vs. drain current

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■ Typical Characterisitics

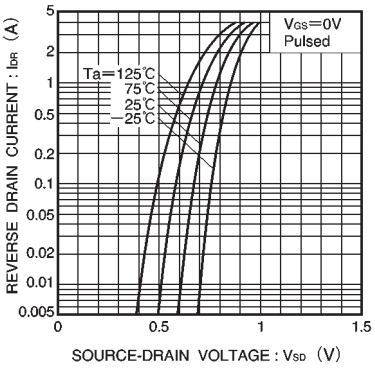

Fig.10 Reverse drain current vs. source-drain voltage (Ⅰ)

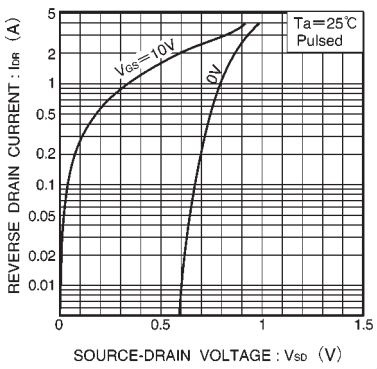

Fig.11 Reverse drain current vs. source-drain voltage (Ⅱ)

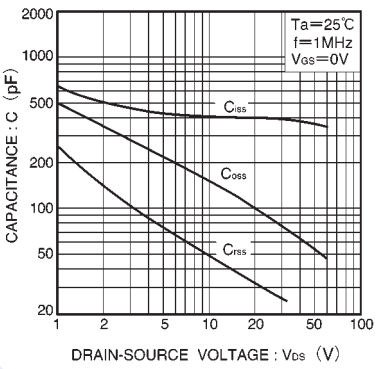

Fig.12 Typical capacitance vs. drain-source voltage

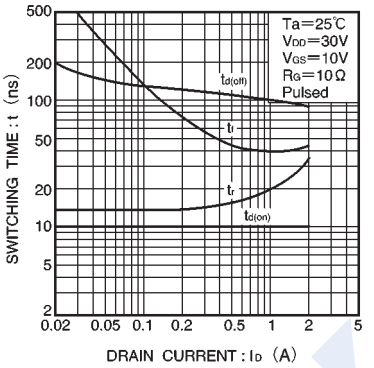

Fig.13 Switching characteristics (See Figure. 15 and 16 for the measurement circuit and resultant waveforms)

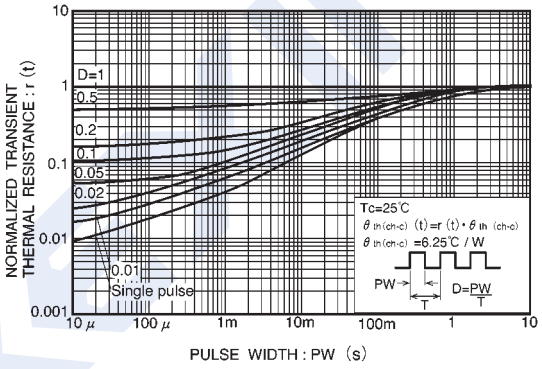

Fig.14 Normalized transient thermal resistance vs. pulse width