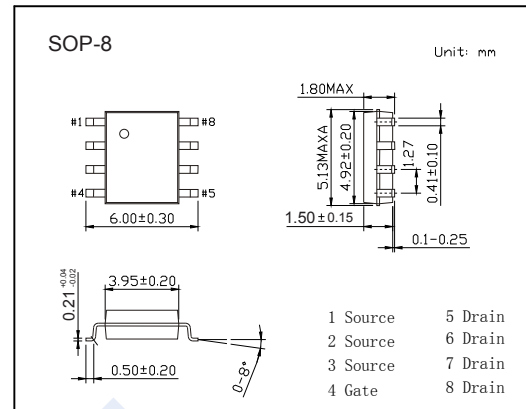
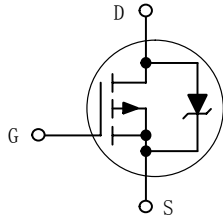


P-Channel MOSFET

2KJ6071

■ Features

- $V_{DS}(V) = -20V$
- $I_D = -10 A$ ($V_{GS} = -10V$)
- $R_{DS(ON)} = 17.5 m\Omega$ ($V_{GS} = -10V$)
- $R_{DS(ON)} = 21.5 m\Omega$ ($V_{GS} = -4.5V$)
- Diode Exhibits High Speed, Soft Recovery



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

Parameter		Symbol	10 seconds	steady state	Unit
Drain-Source Voltage		V_{DS}	-20		V
Gate-Source Voltage		V_{GS}	± 12		
Continuous Drain Current	$T_a = 25^\circ C$	I_D	-10	-8.8	A
	$T_a = 70^\circ C$		-8	-6.4	
Maximum Operating Drain Current			-5.5	-4.5	
Pulsed Drain Current (Note.1)		I_{DM}	-50	-44	
Power Dissipation	$T_a = 25^\circ C$	P_D	2.5	1.6	W
Maximum Operating Power Dissipation			0.6	0.4	
Avalanche Energy (Note.2)	$T_J = 25^\circ C$	E_{AS}	500		mJ
Thermal Resistance. Junction- to-Ambient		R_{thJA}	50	80	$^\circ C/W$
Junction Temperature		T_J	150		$^\circ C$
Lead Temperature for Soldering Purposes		T_L	260		
Junction Storage Temperature Range		T_{stg}	-55 to 150		

Note.1: Pulse Test: Pulse Width < 300us, Duty Cycle < 2%.

Note.2: $V_{DD} = -20 V$, $V_{GS} = -4.5V$, Peak $I_L = 5A$, $L = 40 mH$, $R_G = 25\Omega$

P-Channel MOSFET

2KJ6071

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =-250 μA, V _{GS} =0V	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V, T _J =25°C			-1	μA
		V _{DS} =-20V, V _{GS} =0V, T _J =70°C			-5	
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250 μA	-0.4		-0.9	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-10A		17.5	22	mΩ
		V _{GS} =-4.5V, I _D =-8.8A		21.5	30	
Forward Transconductance	g _{FS}	V _{DS} =-10V, I _D =-10A		30		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-16V, f=1MHz		3100	3640	pF
Output Capacitance	C _{oss}			1100	1670	
Reverse Transfer Capacitance	C _{rss}			475	1010	
Total Gate Charge	Q _g	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-10A		48	70	nC
Gate Source Charge	Q _{gs}			6.5		
Gate Drain Charge	Q _{gd}			17		
Turn-On DelayTime	t _{d(on)}	V _{GS} =-4.5V, V _{DS} =-10V, I _D =1A, R _G =6 Ω		25	35	ns
Turn-On Rise Time	t _r			40	65	
Turn-Off DelayTime	t _{d(off)}			110	190	
Turn-Off Fall Time	t _f			110	190	
Turn-On DelayTime	t _{d(on)}	V _{GS} =-4.5V, V _{DS} =-10V, I _D =10A, R _G =6 Ω		25		
Turn-On Rise Time	t _r			100		
Turn-Off DelayTime	t _{d(off)}			100		
Turn-Off Fall Time	t _f			125		
Body Diode Reverse Recovery Time	t _{rr}	I _F =-2.1A, V _{GS} =0, di/dt=100A/μs		65	100	
	t _a			25		
	t _b			40		
Body Diode Reverse Recovery Charge	Q _{rr}			75		nC
Maximum Body-Diode Continuous Current	I _S				-10	A
Diode Forward Voltage	V _{SD}	I _S =-2.1A, V _{GS} =0V		-0.72	-1.2	V
		I _S =-2.1A, V _{GS} =0V, T _J =125°C		-0.6		
		I _S =-10A, V _{GS} =0V		-0.9		
		I _S =-10A, V _{GS} =0V, T _J =125°C		-0.75		

■ Marking

Marking	J6071 KC***
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P-Channel MOSFET 2KJ6071

■ Typical Characteristics

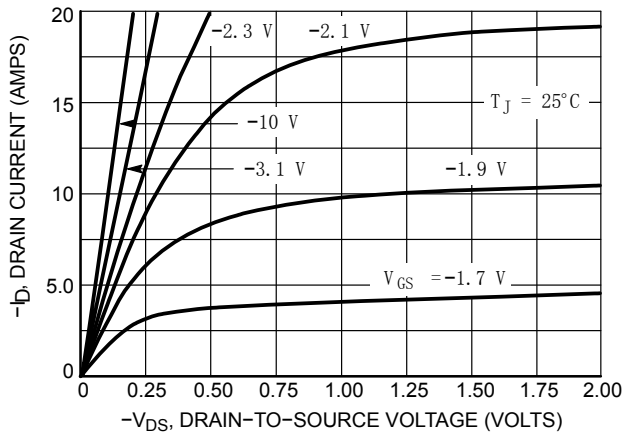


Figure 1. On-Region Characteristics

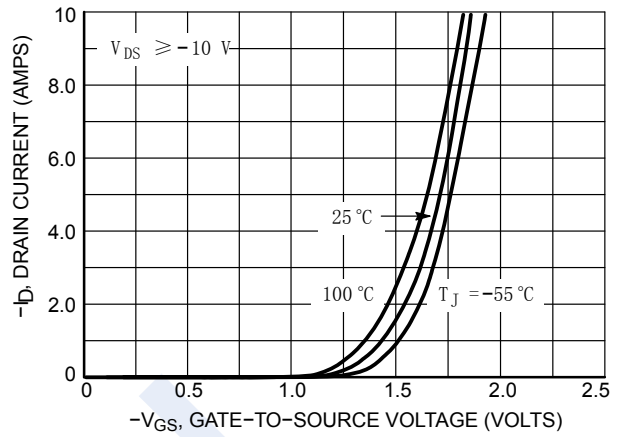


Figure 2. Transfer Characteristics

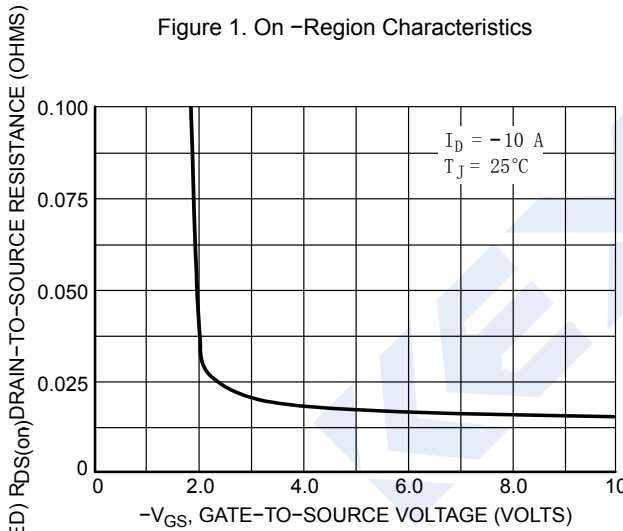


Figure 3. On-Resistance versus Gate-To-Source Voltage

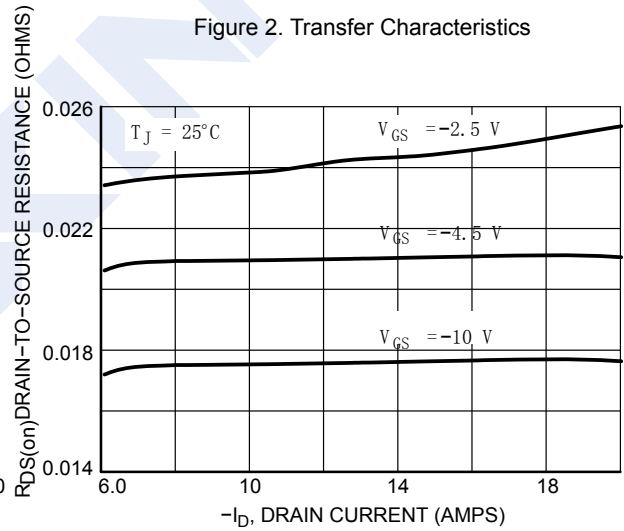


Figure 4. On-Resistance versus Drain Current and Gate Voltage

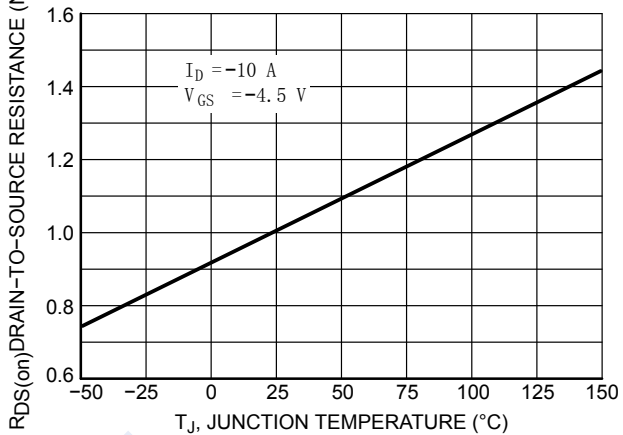


Figure 5. On-Resistance Variation with Temperature

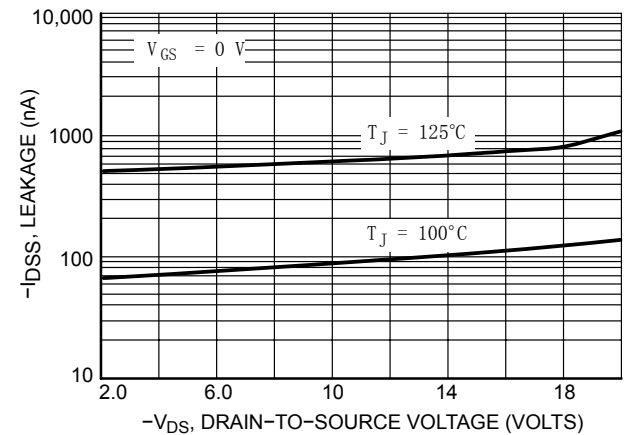


Figure 6. Drain-To-Source Leakage Current versus Voltage

P-Channel MOSFET 2KJ6071

■ Typical Characteristics

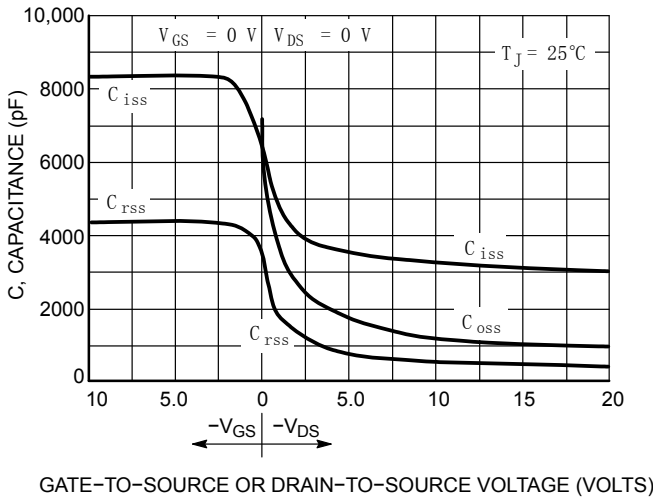


Figure 7. Capacitance Variation

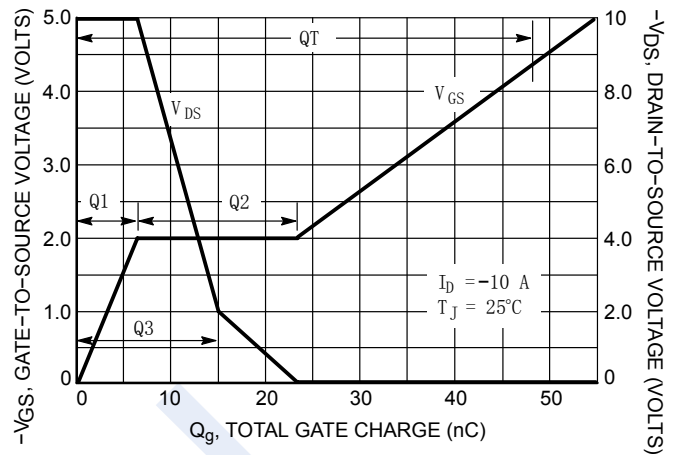


Figure 8. Gate-to-Source and Drain-to-Source Voltage versus Total Charge

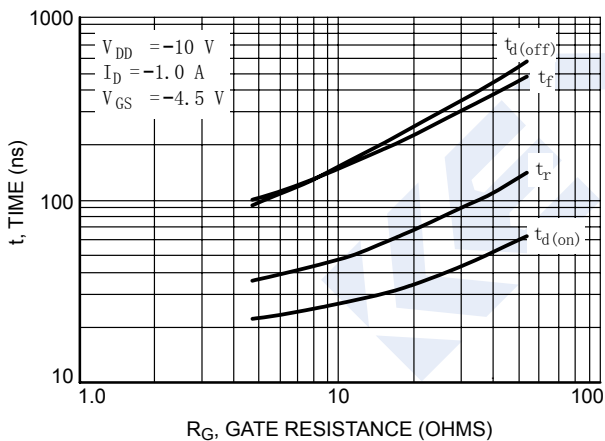


Figure 9. Resistive Switching Time Variation versus Gate Resistance

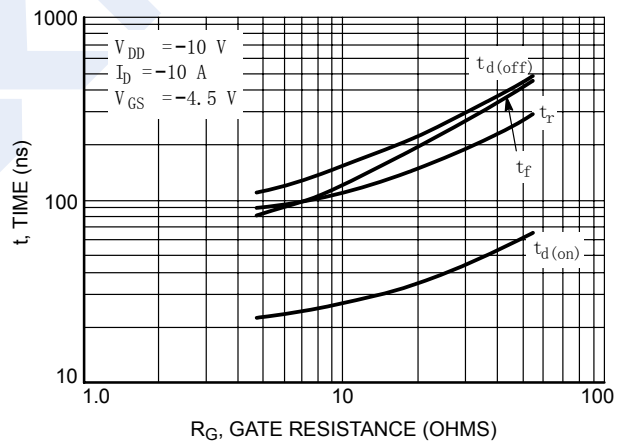


Figure 10. Resistive Switching Time Variation versus Gate Resistance

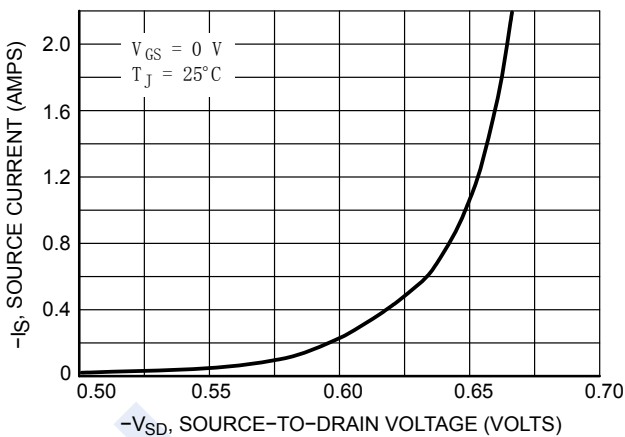


Figure 11. Diode Forward Voltage versus Current

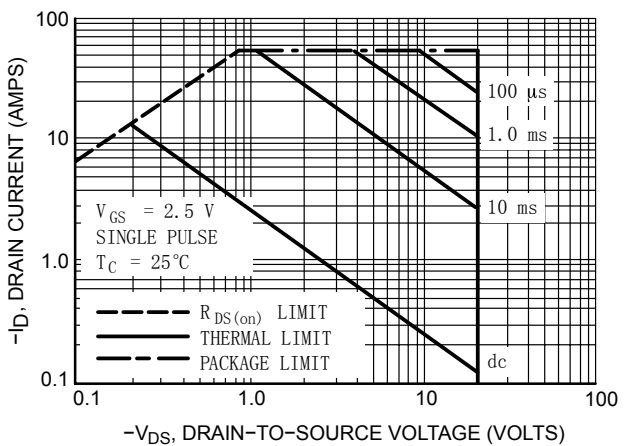


Figure 12. Maximum Rated Forward Biased Safe Operating Area

P-Channel MOSFET 2KJ6071

■ Typical Characteristics

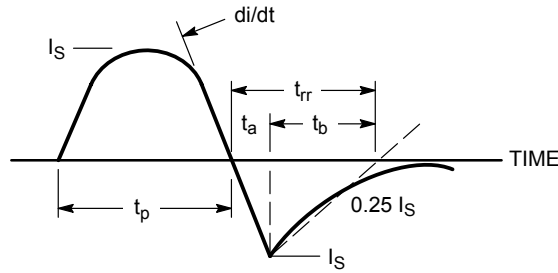


Figure 13. Diode Reverse Recovery Waveform

TYPICAL ELECTRICAL CHARACTERISTICS

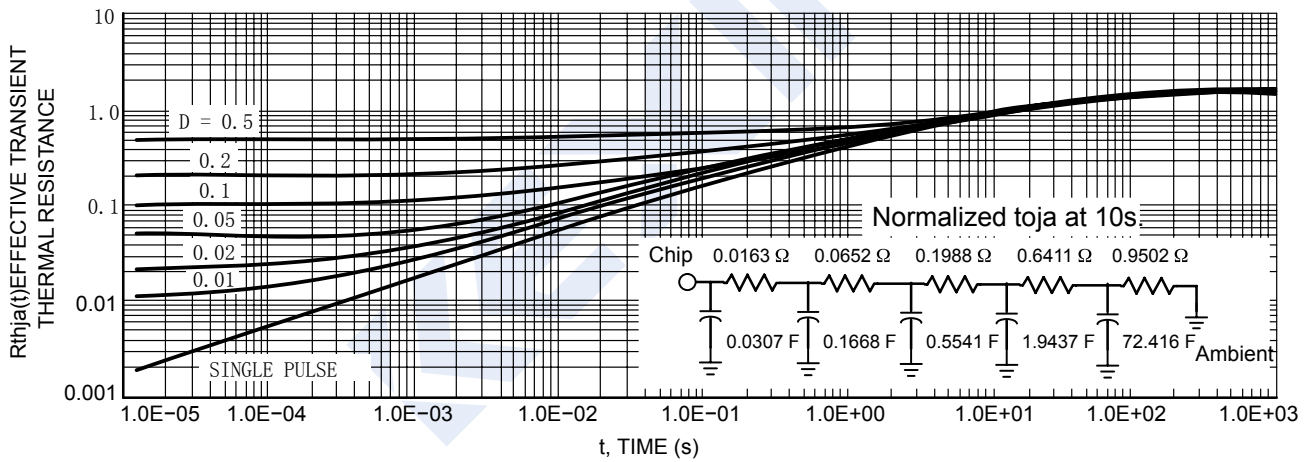


Figure 14. Thermal Response