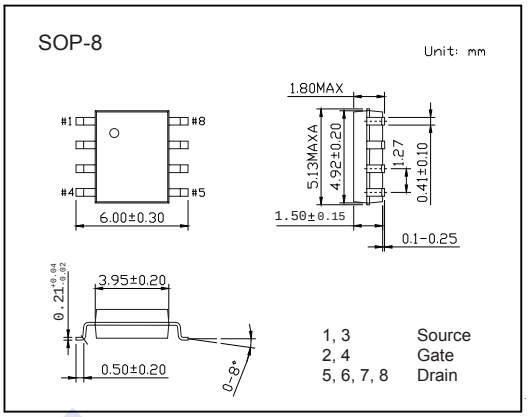
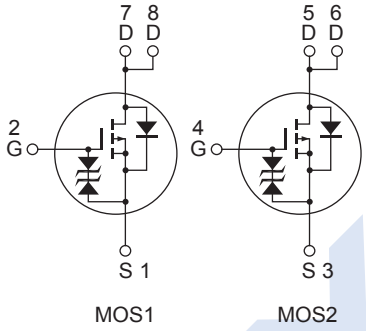
Dual P-Channel MOSFET

2KJ6030



■ Features

- $V_{DS\ (V)}$ = -20V
- I_D = -6A
- $R_{DS(ON)}$ < 30mΩ @ V_{GS} = -4.5V
- $R_{DS(ON)}$ < 50mΩ @ V_{GS} = -2.5V



■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current	I_D	-6	A
Pulsed Drain Current (Note 1)	I_{DP}	-48	
Power Dissipation (Note 2)	P_D	2	W
Power Dissipation (Note 3)		3	
Junction Temperature	T_J	150	℃
Junction Storage Temperature Range	T_{stg}	-55 to 150	

Note 1. PW ⩽ 10 μs, duty cycle ⩽ 1%

2. 1 Drive operation: When using the glass epoxy board (FR4 40 × 40 × 1.6 mm), PW ⩽ 10 s

3. 2 Drive operation: When using the glass epoxy board (FR4 40 × 40 × 1.6 mm), PW ⩽ 10 s

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■ Electrical Characteristics (T_a = 25℃ Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-10mA, V_{GS}=0V	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V			-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±10	
Gate Threshold Voltage	$V_{GS(off)}$	V_{DS}=-10V , I_D=-1mA	-0.4		-1.4	V
Static Drain-Source On-Resistance (Note 4)	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-3A			30	mΩ
		V_{GS}=-2.5V, I_D=-3A			50	
Forward Transconductance (Note 4)	g_{FS}	V_{DS}=-10V, I_D=-3A	6			S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-10V, f=1MHz		1550		pF
Output Capacitance	C_{oss}			400		
Reverse Transfer Capacitance	C_{rss}			300		
Total Gate Charge	Q_g	V_{DS}=-10V, I_D=-6A, V_{GS} = –4.5V		18		nC
Gate Source Charge	Q_{gs}			3		
Gate Drain Charge	Q_{gd}			6.5		
Turn-On DelayTime	$t_{d(on)}$	V_{DS}=-10V, I_D=-3A, V_{GS} = –4.5 V, R_L = 3.3 Ω, R_G = 4.7 Ω		25		ns
Turn-On Rise Time	t_r			50		
Turn-Off DelayTime	$t_{d(off)}$			85		
Turn-Off Fall Time	t_f			40		
Diode Forward Voltage (Note 4)	V_{SD}	I_{SD}=-6 A,V_{GS}=0V			-1.1	V
Reverse Recovery Time	t_{rr}	I_F=-6A, V_{GS} = 0 di/dt = 20A/μs		60		nS

Note 4. Pulse Test

■ Marking

Marking	J6030 KA***

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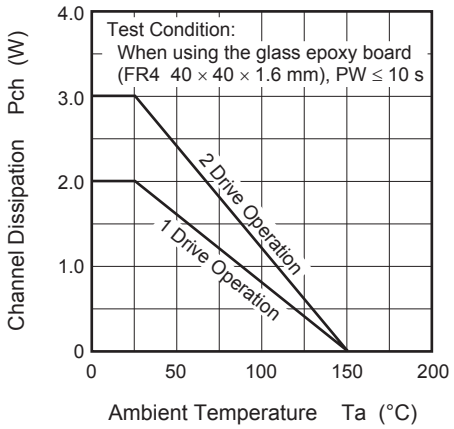
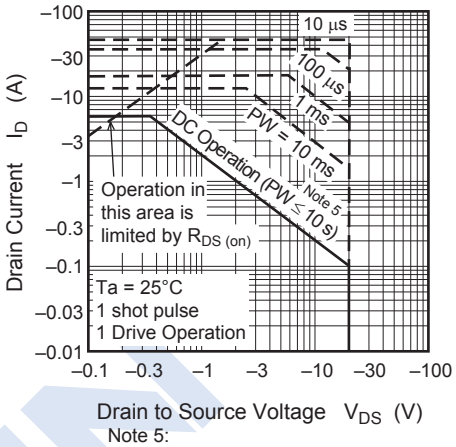
■ Typical Characterisitics

Power vs. Temperature Derating

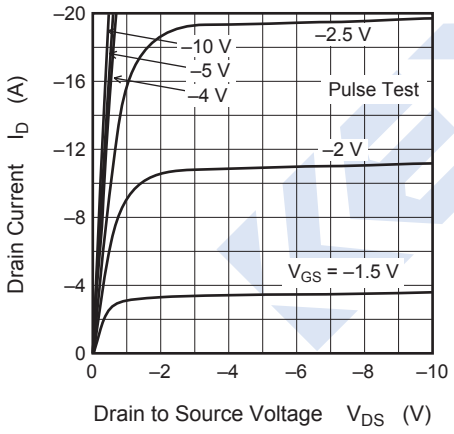


Maximum Safe Operation Area

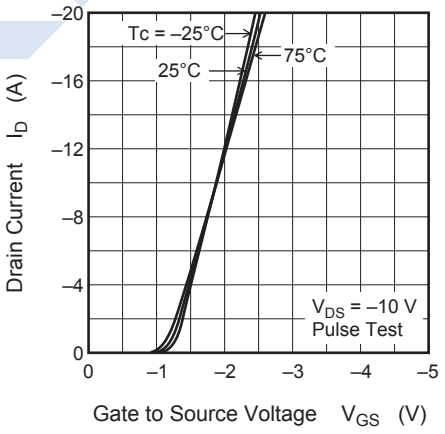


Note 5:
When using the glass epoxy board
(FR4 40 × 40 × 1.6 mm)

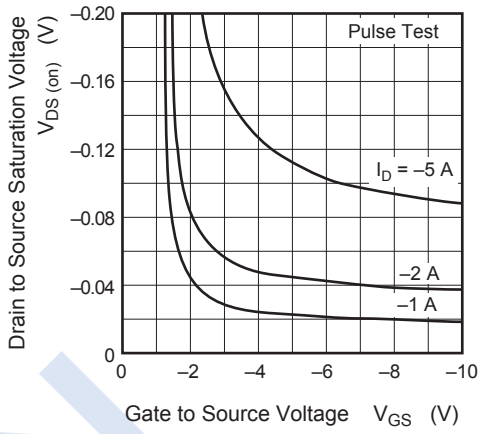
Typical Output Characteristics



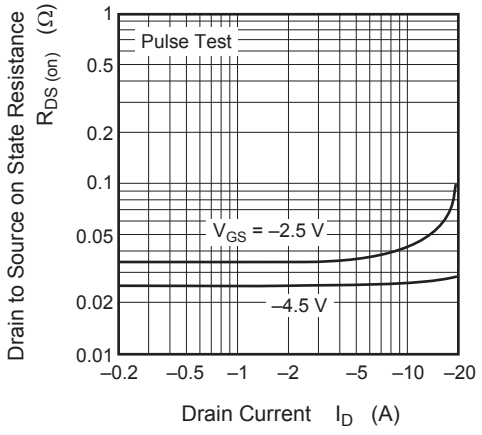
Typical Transfer Characteristics



Drain to Source Saturation Voltage vs.
Gate to Source Voltage



Static Drain to Source on State Resistance
vs. Drain Current



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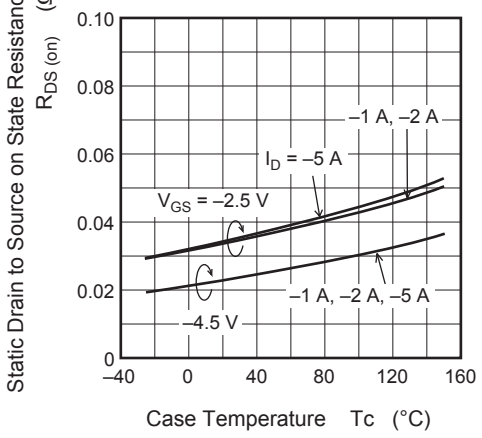
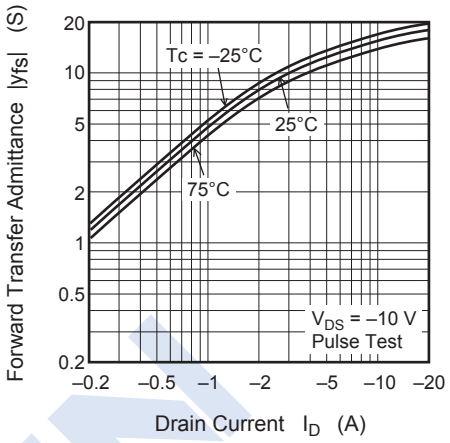
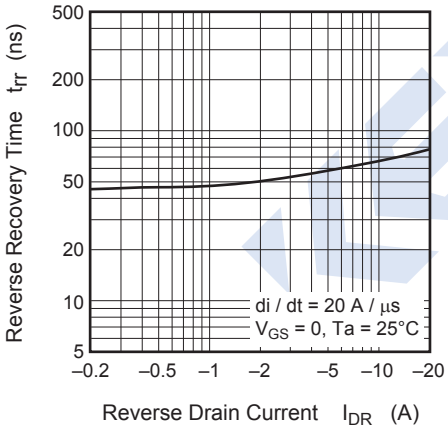
Static Drain to Source on State Resistance vs. Temperature



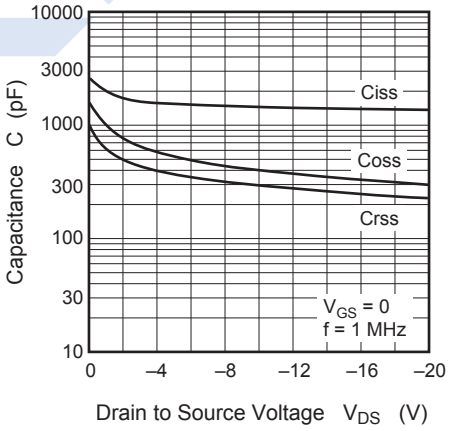
Forward Transfer Admittance vs. Drain Current



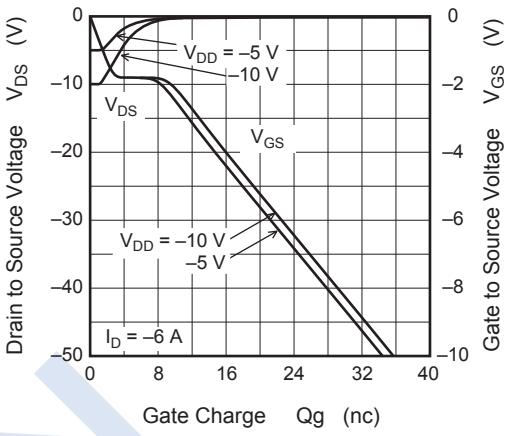
Body-Drain Diode Reverse Recovery Time



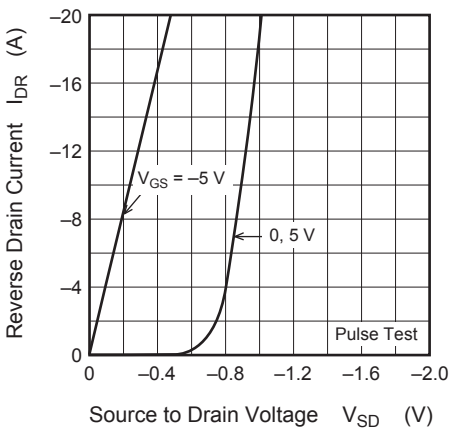
Typical Capacitance vs. Drain to Source Voltage



Dynamic Input Characteristics



Reverse Drain Current vs. Source to Drain Voltage



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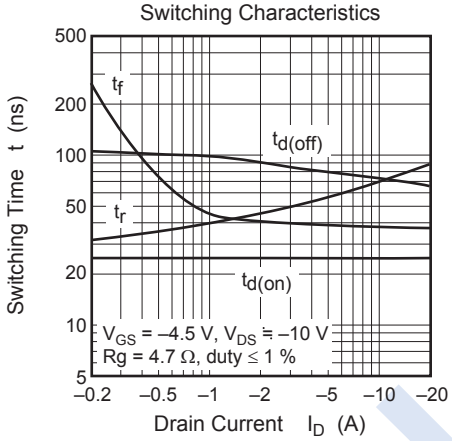
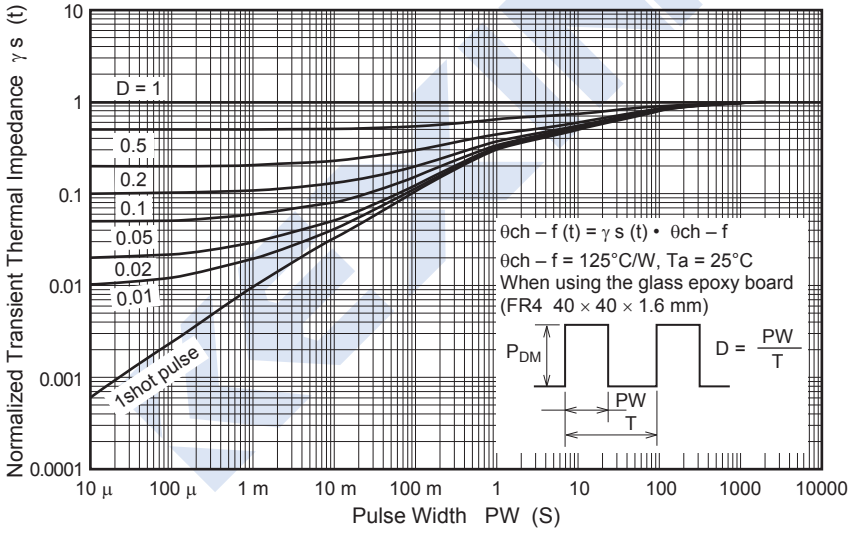
Switching Characteristics



Normalized Transient Thermal Impedance vs. Pulse Width (1 Drive Operation)



Normalized Transient Thermal Impedance vs. Pulse Width (2 Drive Operation)