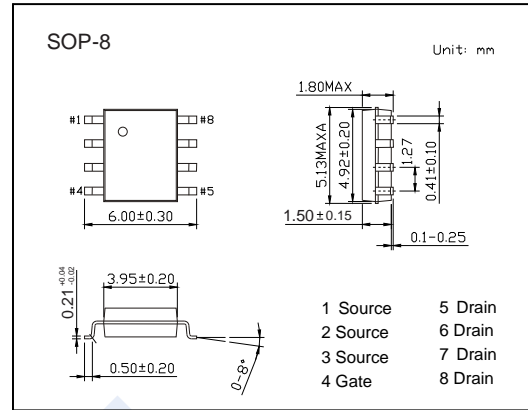
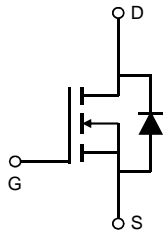


N-Channel MOSFET

2KK5130

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 23 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 4.0m \Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 7.5m \Omega (V_{GS} = 4.5V)$



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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	30	V	
Gate-Source Voltage	V_{GS}	± 20		
V_{DS} Spike	100ns V_{SPIKE}	36	V	
Continuous Drain Current	I_D	$T_A=25^\circ C$	23	A
		$T_A=70^\circ C$	14	
Pulsed Drain Current	I_{DM}	174		
Avalanche Current	I_{AS}	37		
Avalanche energy	$L=0.1mH$ E_{AS}	68	mJ	
Power Dissipation	P_D	$T_A=25^\circ C$	3.1	W
		$T_A=70^\circ C$	1.2	
Thermal Resistance.Junction- to-Ambient	R_{thJA}	$t \leq 10s$	40	$^\circ C/W$
		Steady-State	75	
Thermal Resistance.Junction- to-Lead	R_{thJL}	24		
Junction Temperature	T_J	150	$^\circ C$	
Storage Temperature Range	T_{stg}	-55 to 150		

N-Channel MOSFET

2KK5130

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Drain-Source Breakdown Voltage	V_{DSS}	$I_D=250\ \mu\text{A}$, $V_{GS}=0\text{V}$	30			V	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30\text{V}$, $V_{GS}=0\text{V}$			1	μA	
		$V_{DS}=30\text{V}$, $V_{GS}=0\text{V}$, $T_J=55^\circ\text{C}$			5		
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0\text{V}$, $V_{GS}=\pm 20\text{V}$			± 100	nA	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\ \mu\text{A}$	1.2		2.2	V	
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$, $I_D=20\text{A}$			4.0	$\text{m}\Omega$	
		$V_{GS}=10\text{V}$, $I_D=20\text{A}$, $T_J=125^\circ\text{C}$			5		
		$V_{GS}=4.5\text{V}$, $I_D=20\text{A}$			7.5		
Forward Transconductance	g_{FS}	$V_{DS}=5\text{V}$, $I_D=20\text{A}$		105		S	
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$, $V_{DS}=15\text{V}$, $f=1\text{MHz}$		2010		pF	
Output Capacitance	C_{oss}			898			
Reverse Transfer Capacitance	C_{rss}			124			
Gate Resistance	R_g		$V_{GS}=0\text{V}$, $V_{DS}=0\text{V}$, $f=1\text{MHz}$	0.9			2.7
Total Gate Charge (10V)	Q_g	$V_{GS}=10\text{V}$, $V_{DS}=15\text{V}$, $I_D=20\text{A}$		36	49	nC	
Total Gate Charge (4.5V)				17	23		
Gate Source Charge			Q_{gs}		6		
Gate Drain Charge			Q_{gd}		8		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS}=10\text{V}$, $V_{DS}=15\text{V}$, $R_L=0.75\Omega$, $R_{GEN}=3\Omega$		7.5		ns	
Turn-On Rise Time	t_r			4			
Turn-Off DelayTime	$t_{d(off)}$			37			
Turn-Off Fall Time	t_f			7.5			
Body Diode Reverse Recovery Time	t_{rr}	$I_F=20\text{A}$, $di/dt=500\text{A}/\mu\text{s}$		14		nC	
Body Diode Reverse Recovery Charge	Q_{rr}			20.3			
Maximum Body-Diode Continuous Current	I_S				4	A	
Diode Forward Voltage	V_{SD}	$I_S=1\text{A}$, $V_{GS}=0\text{V}$			1	V	

Note : The static characteristics in Figures 1 to 6 are obtained using $<300\ \mu\text{s}$ pulses, duty cycle 0.5% max.

■ Marking

Marking	K5130 KC***
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N-Channel MOSFET 2KK5130

■ Typical Characteristics

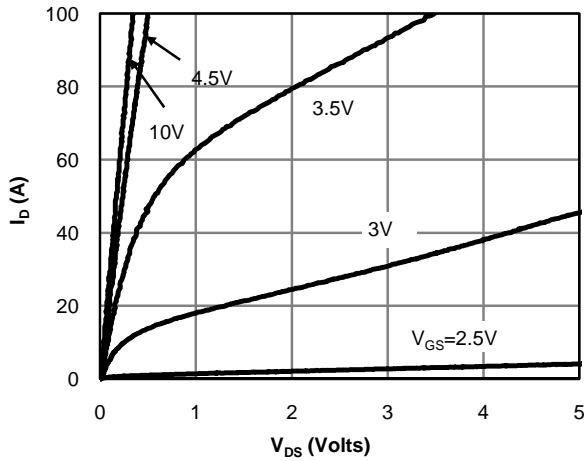


Fig 1: On-Region Characteristics

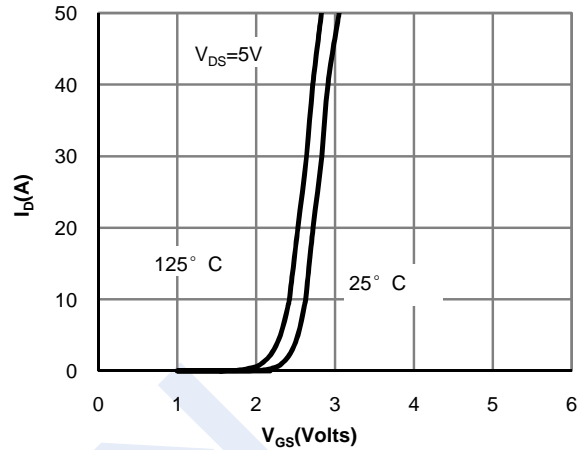


Figure 2: Transfer Characteristics

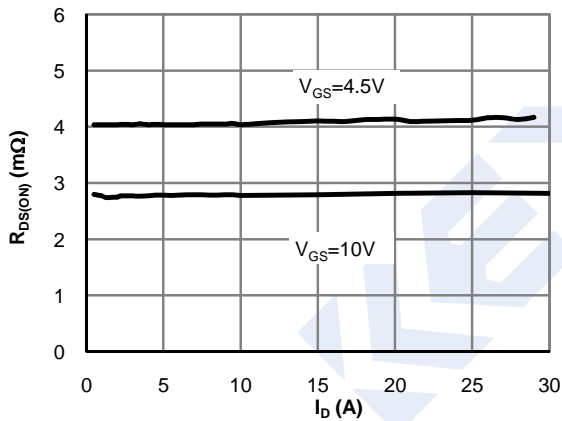


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

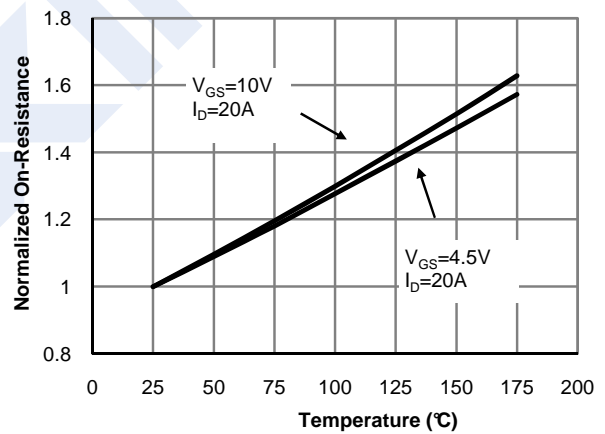


Figure 4: On-Resistance vs. Junction Temperature

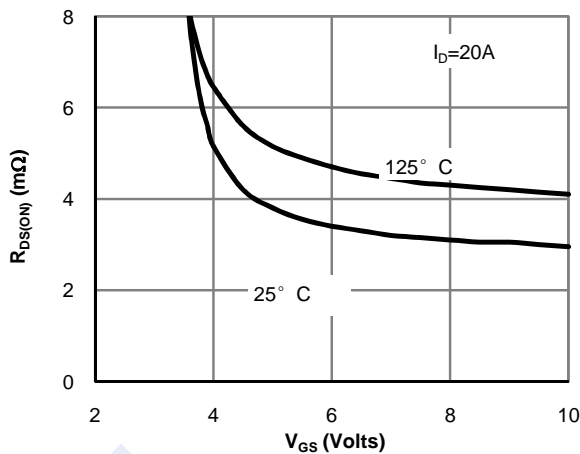


Figure 5: On-Resistance vs. Gate-Source Voltage

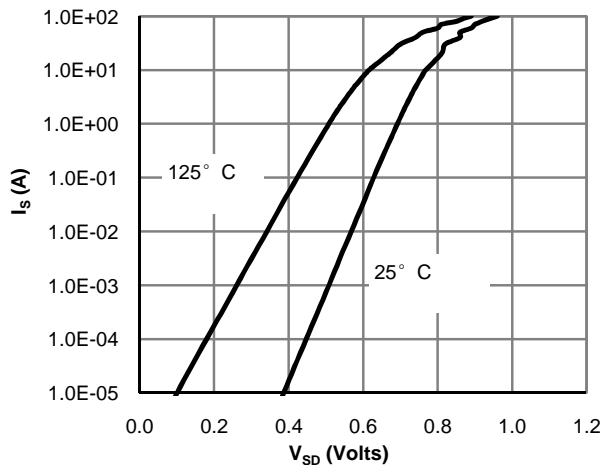


Figure 6: Body-Diode Characteristics

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■ Typical Characteristics

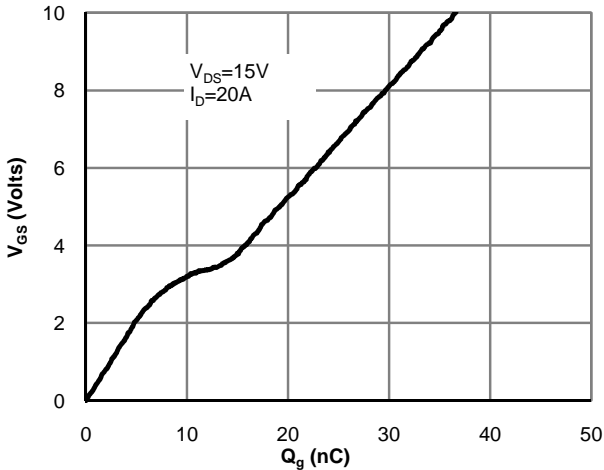


Figure 7: Gate-Charge Characteristics

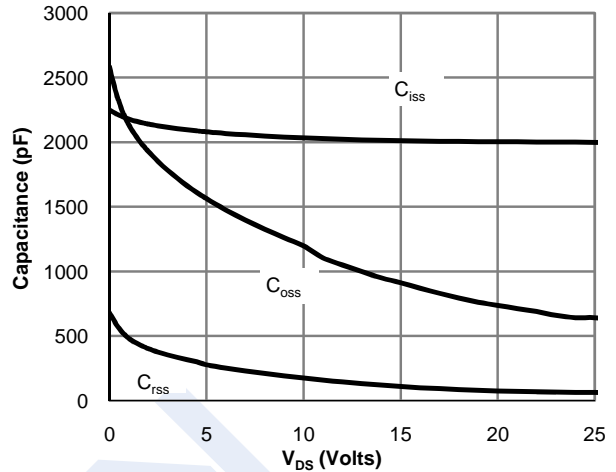


Figure 8: Capacitance Characteristics

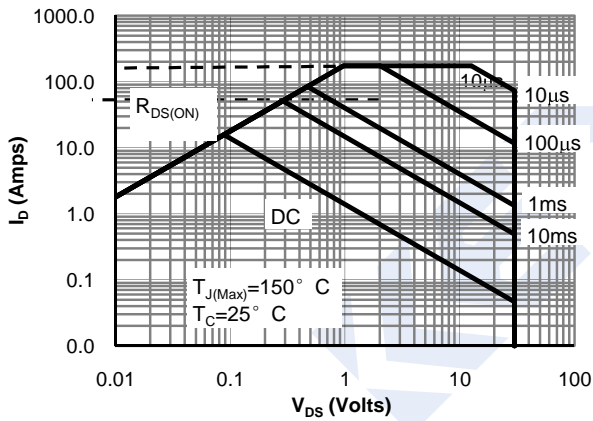


Figure 9: Maximum Forward Biased Safe Operating Area

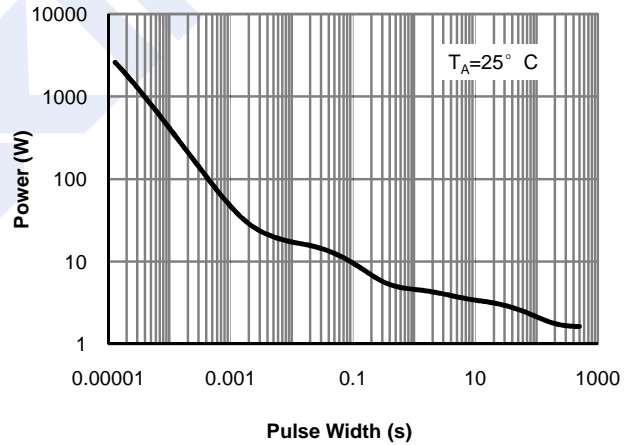


Figure 14: Single Pulse Power Rating Junction-to-Ambient

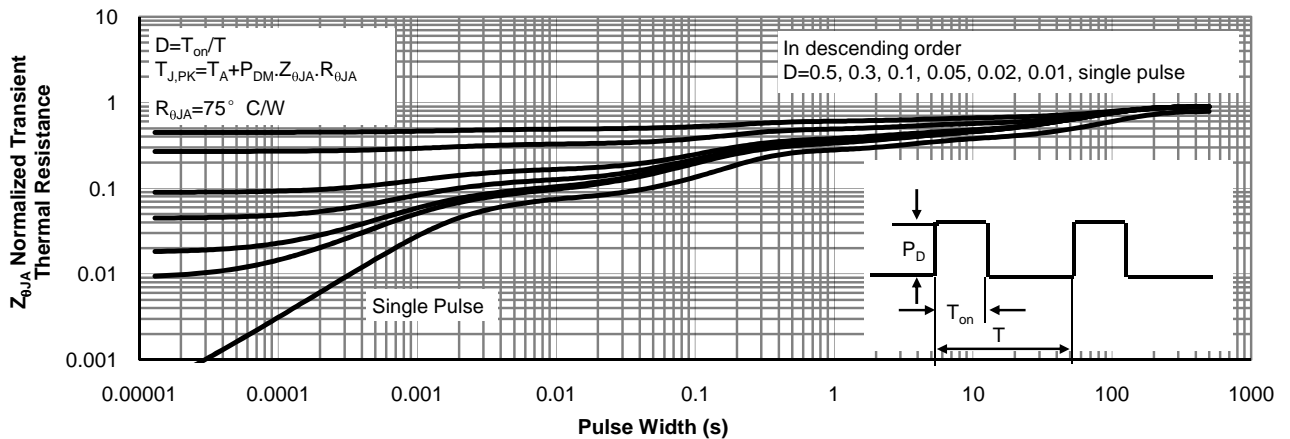


Figure 15: Normalized Maximum Transient Thermal Impedance