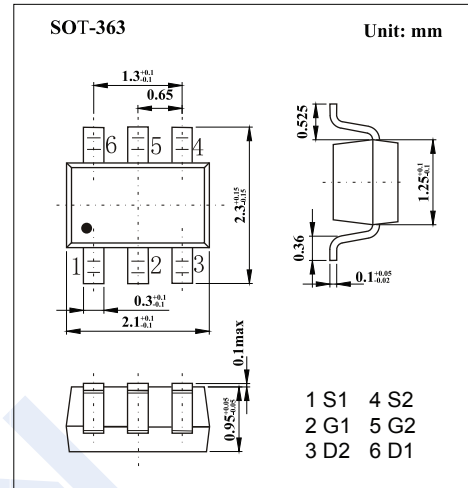
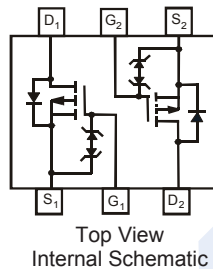


Dual P-channel MOSFET

2KJ6051

■ Features

- $BV_{DSS} = -20\text{ V}$
- $I_D = -0.9\text{ A @ } V_{GS} = -4.5\text{ V}$
- $R_{DS(ON)} < 520\text{ m}\Omega @ V_{GS} = -4.5\text{ V}$
- $R_{DS(ON)} < 700\text{ m}\Omega @ V_{GS} = -2.5\text{ V}$
- $R_{DS(ON)} < 950\text{ m}\Omega @ V_{GS} = -1.8\text{ V}$
- ESD Protected Gate

■ Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	-20	V	
Gate-Source Voltage	V_{GS}	± 8		
Continuous Drain Current (Note 1)	I_D	$T_A = 25^\circ\text{C}$	-0.6	A
		$T_A = 70^\circ\text{C}$	-0.48	
Pulsed Drain Current (Note 2)	I_{DM}	-3		
Thermal Resistance, Junction- to-Ambient (Note 1)	$R_{\theta JA}$	460	$^\circ\text{C/W}$	
Thermal Resistance, Junction- to-Lead (Note 3)	$R_{\theta JL}$	350		
Power Dissipation (Note 1)	P_D	$T_A = 25^\circ\text{C}$	0.3	W
		$T_A = 70^\circ\text{C}$	0.19	
Junction Temperature	T_J	150	$^\circ\text{C}$	
Storage Temperature Range	T_{stg}	-55 to 150		

Notes:

1. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$. The value in any given application depends on the user's specific board design. The current rating is based on the $t \leq 10\text{ s}$ thermal resistance rating.
2. Repetitive rating, pulse width limited by junction temperature.
3. The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.

Dual P-channel MOSFET

2KJ6051

■ Electrical Characteristics (T_J = 25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D = -250 μA, V _{GS} = 0V	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -16 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -16 V, V _{GS} = 0 V, T _J =55°C			-5	
Gate to Source Leakage Current	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 8 V			±10	
ON Characteristics						
Gate to Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.5		-0.9	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -4.5 V, I _D = -0.6 A			520	mΩ
		V _{GS} = -4.5 V, I _D = -0.6 A, T _J =125°C			700	
		V _{GS} = -2.5 V, I _D = -0.5 A			700	
		V _{GS} = -1.8 V, I _D = -0.4 A			950	
Forward Transconductance	g _{FS}	V _{DS} = -5V, I _D = -0.6 A		1.7		S
Charges and Capacitances						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = -10 V, f = 1 MHz		114	140	pF
Output Capacitance	C _{oss}			17		
Reverse Transfer Capacitance	C _{rss}			14		
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz		12	17	Ω
Total Gate Charge	Q _g	V _{GS} = -4.5 V, V _{DS} = -10 V, I _D = -0.6 A		1.44	1.8	nC
Gate Source Charge	Q _{gs}			0.14		
Gate Drain Charge	Q _{gd}			0.35		
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{GS} = -4.5 V, V _{DS} = -10 V, R _L = 16.7 Ω, R _{GEN} = 3 Ω		6.5		ns
Turn-On Rise Time	t _r			6.5		
Turn-Off Delay Time	t _{d(off)}			18.2		
Turn-Off Fall Time	t _f			5.5		
Drain-Source Diode Characteristics						
Reverse Recovery Time	t _{rr}	I _F =-0.6A, di/dt=100A/μs		10	13	ns
Reverse Recovery Charge	Q _{rr}			3		nC
Diode Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = -0.5 A		-0.86	-1	V
Maximum Continuous Current	I _S				-0.4	A

Notes:

- The static characteristics in Figures 1 to 6 are obtained using 80 μs pulses, duty cycle 0.5% max.
- These tests are performed with the device mounted on 1 in² FR-4 board with 2oz. Copper, in a still air environment with T_A=25°C. The SOA curve provides a single pulse rating.

■ Marking

Marking	JBZ
---------	-----

Dual P-channel MOSFET

2KJ6051

Typical Electrical and Thermal Characteristics

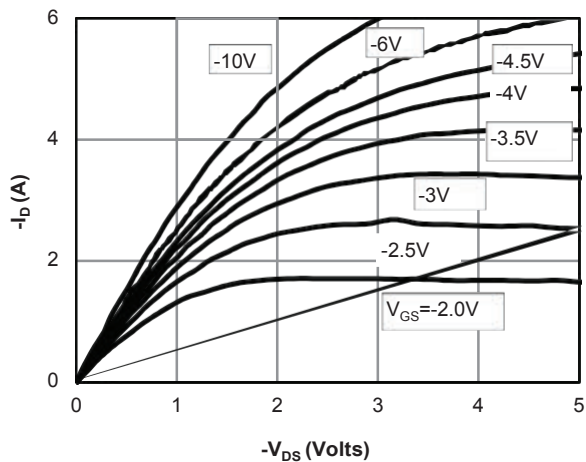


Fig 1: On-Region Characteristics

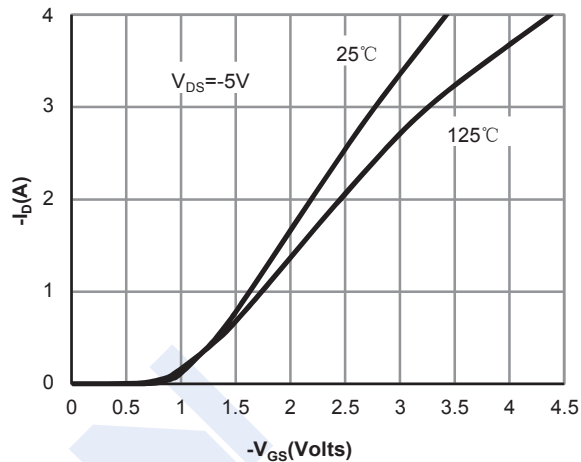


Figure 2: Transfer Characteristics

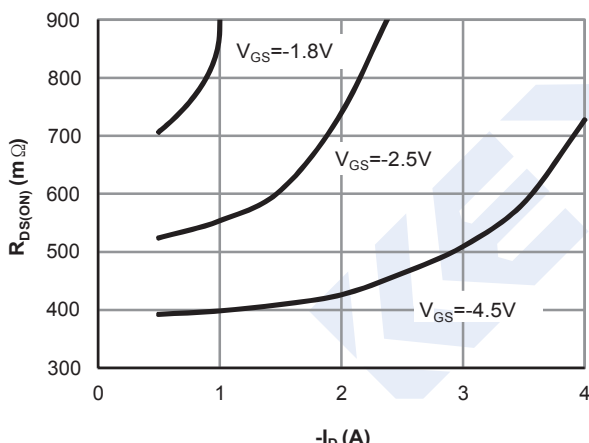


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

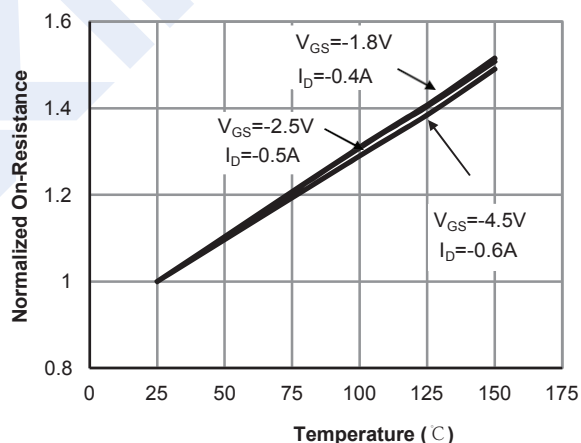


Figure 4: On-Resistance vs. Junction Temperature

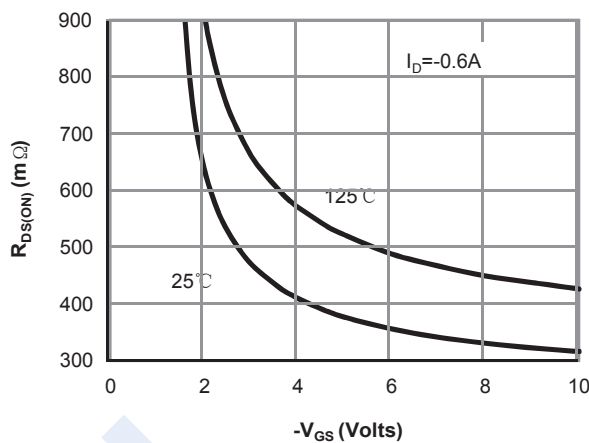


Figure 5: On-Resistance vs. Gate-Source Voltage

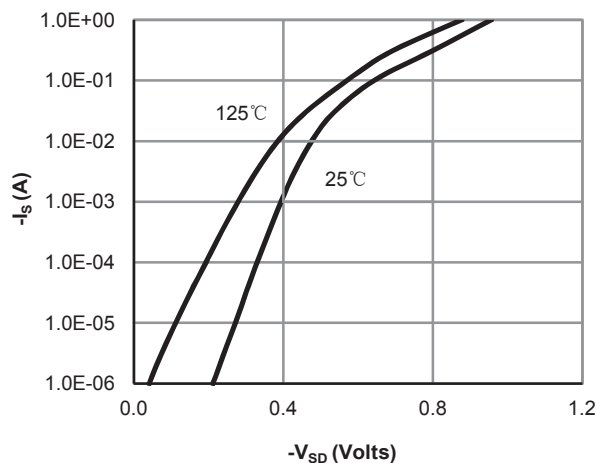


Figure 6: Body-Diode Characteristics

Dual P-channel MOSFET

2KJ6051

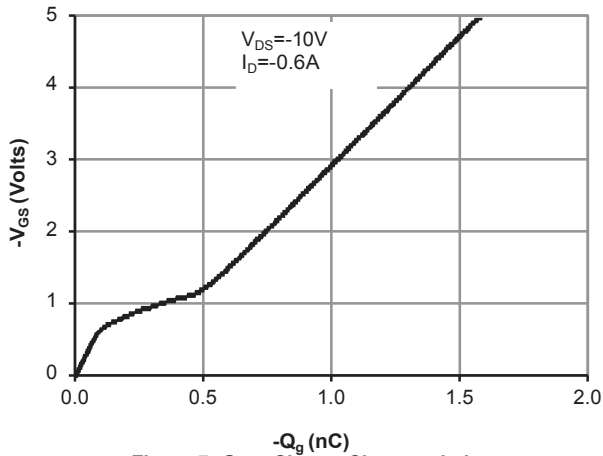


Figure 7: Gate-Charge Characteristics

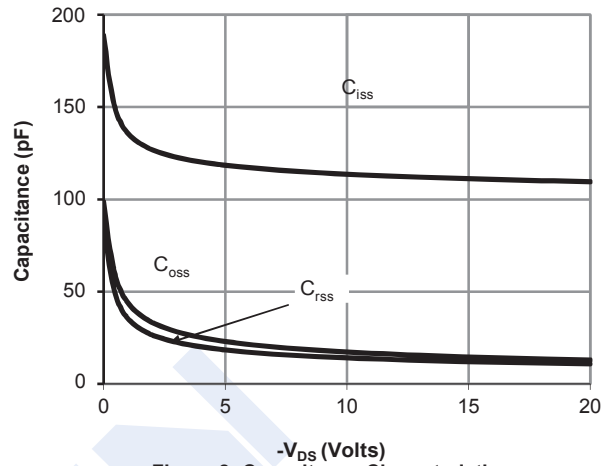


Figure 8: Capacitance Characteristics

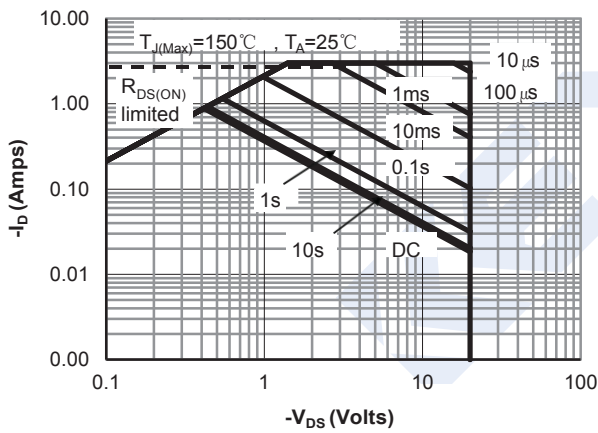


Figure 9: Maximum Forward Biased Safe Operating Area (Note 5)

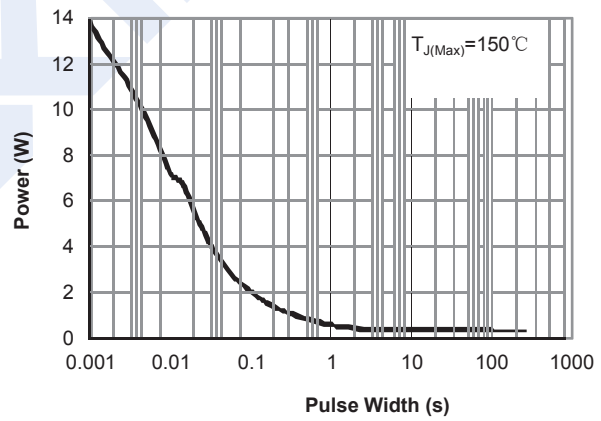


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note 5)

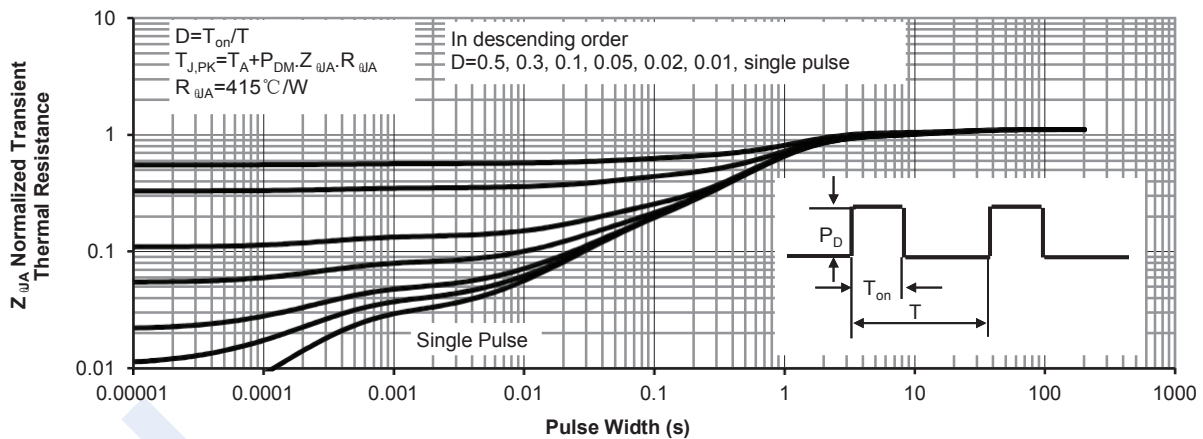


Figure 11: Normalized Maximum Transient Thermal Impedance