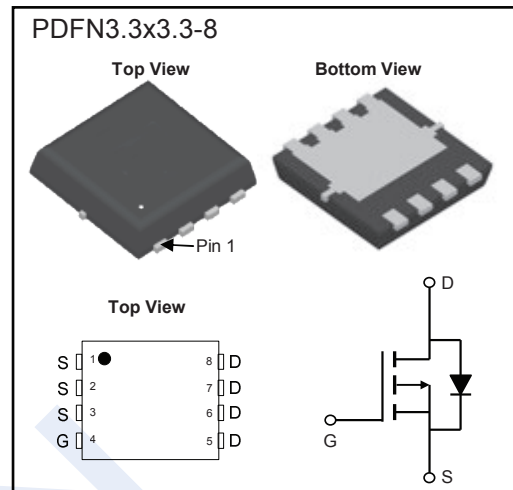


P-Channel MOSFET

2KJ6055DFN

■ Features

- V_{DS} -30 V
- I_D (at $V_{GS}=-10V$) -34 A
- $R_{DS(ON)}$ (at $V_{GS} = -10V$) < 7.8 m Ω
- $R_{DS(ON)}$ (at $V_{GS} = -4.5V$) < 12.3 m Ω

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current (Note 1)	I_D	$T_C=25^\circ\text{C}$	-34
		$T_C=100^\circ\text{C}$	-32.5
Pulsed Drain Current (Note 2)	I_{DM}	-136	A
Avalanche Energy $L=0.1\text{mH}$	E_{AS}	76	mJ
Power Dissipation (Note 1)	P_D	$T_C=25^\circ\text{C}$	30
		$T_C=100^\circ\text{C}$	12
		$T_A=25^\circ\text{C}$	5
Thermal Resistance, Junction- to-Lead (Note 1)	$R_{\theta JC}$	4.2	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction- to-Ambient (Note 1)	$R_{\theta JA}$	25	
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

Notes:

1. Surface mounted on 1.5" x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.
2. Pulse width limited by maximum junction temperature.

P-Channel MOSFET

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■ Electrical Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D = -250μA, V _{GS} = 0V	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -30V, V _{GS} = 0V			-1	μA
		V _{DS} = -30V, V _{GS} = 0V, T _J = 55°C			-5	
Gate-Body Leakage Current	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.0		-2.1	V
Static Drain-Source On-Resistance (Note 3)	R _{DS(on)}	V _{GS} = -10V, I _D = -20A			7.8	mΩ
		V _{GS} = -10V, I _D = -20A, T _J = 125°C			10.7	
		V _{GS} = -4.5V, I _D = -16A			12.3	
Diode Forward Voltage (Note 3)	V _{SD}	I _S = -5 A, V _{GS} = 0V			-1.2	V
DYNAMIC CHARACTERISTICS (Note 4)						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz		2830		pF
Output Capacitance	C _{oss}			430		
Reverse Transfer Capacitance	C _{rss}			365		
Gate resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		2		Ω
Total Gate Charge	Q _g	V _{DS} = -15V, V _{GS} = -10V, I _D = -20A		50	70	nC
Gate Source Charge	Q _{gs}			9		
Gate Drain Charge	Q _{gd}			12		
SWITCHING CHARACTERISTICS (Note 5)						
Turn-On Delay Time	t _{d(on)}	V _{GS} = -10V, V _{DS} = -15V, R _L = 0.75Ω, R _{GEN} = 3Ω		12.5		ns
Turn-On Rise Time	t _r			18		
Turn-Off Delay Time	t _{d(off)}			125		
Turn-Off Fall Time	t _f			66		
Reverse Recovery Time	t _{rr}	I _F = -20A, dI/dt = 500A/μs		32		ns
Reverse Recovery Charge	Q _{rr}			62		μC

Notes:

- Measured under pulsed conditions. Pulse width ≤ 300μs; duty cycle ≤ 2%.
- For design aid only, not subject to production testing.
- Switching characteristics are independent of operating junction temperatures.

■ Marking

Marking	J6055 KC****
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P-Channel MOSFET

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Typical Electrical and Thermal Characteristics

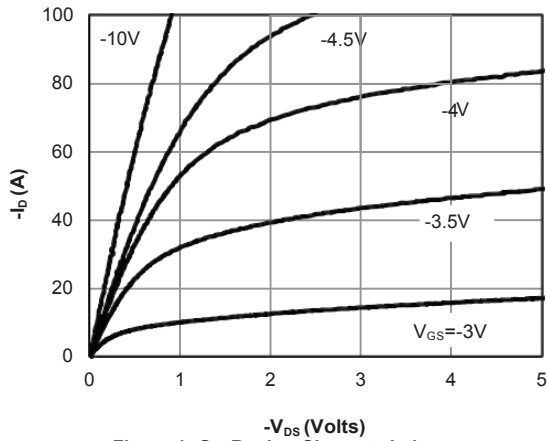


Figure 1: On-Region Characteristics

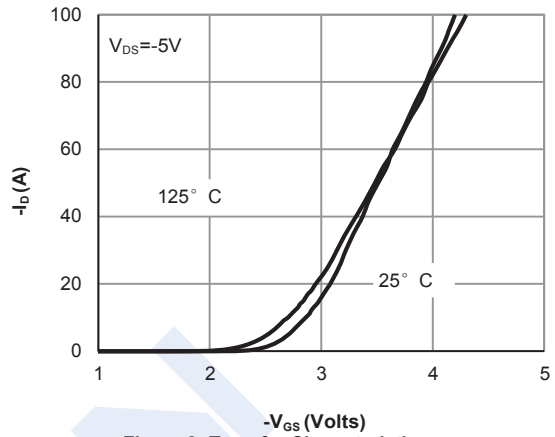


Figure 2: Transfer Characteristics

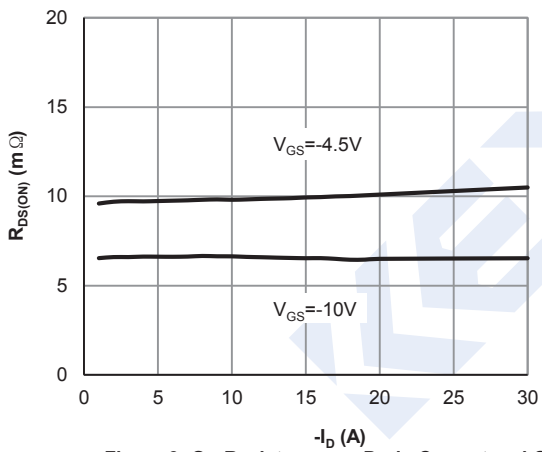


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

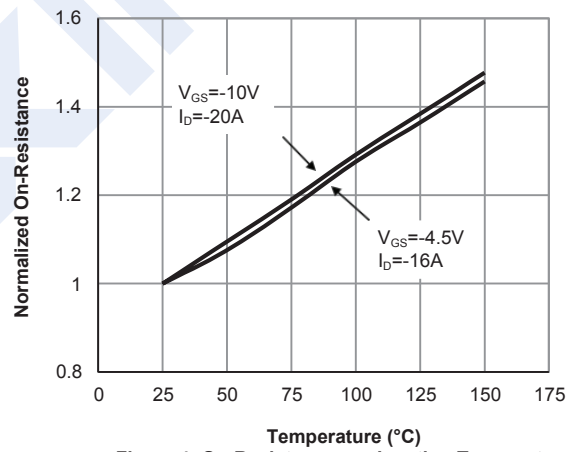


Figure 4: On-Resistance vs. Junction Temperature

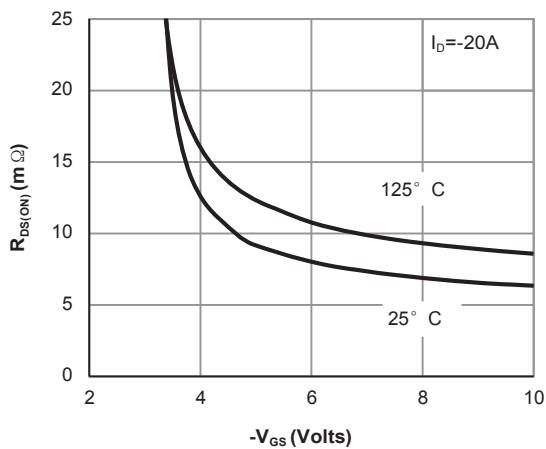


Figure 5: On-Resistance vs. Gate-Source Voltage

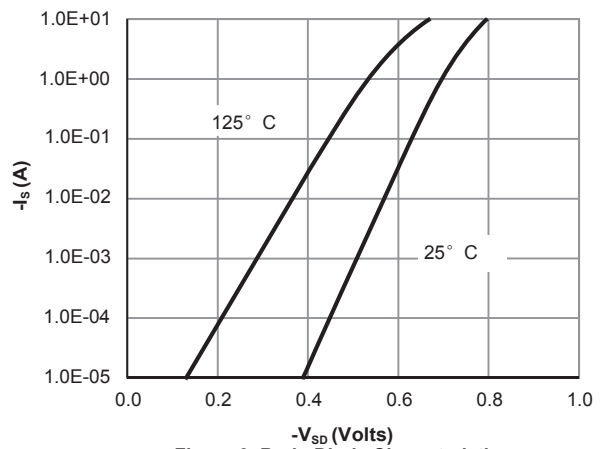


Figure 6: Body-Diode Characteristics

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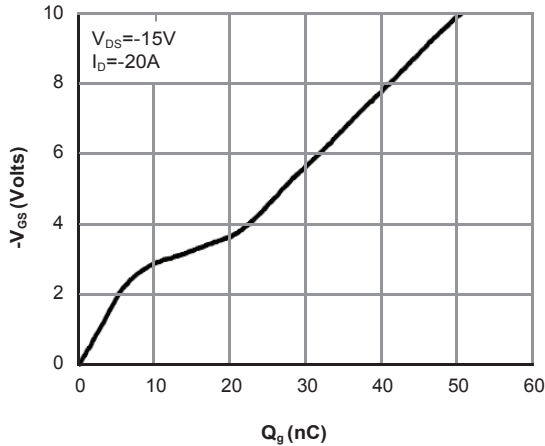


Figure 7: Gate-Charge Characteristics

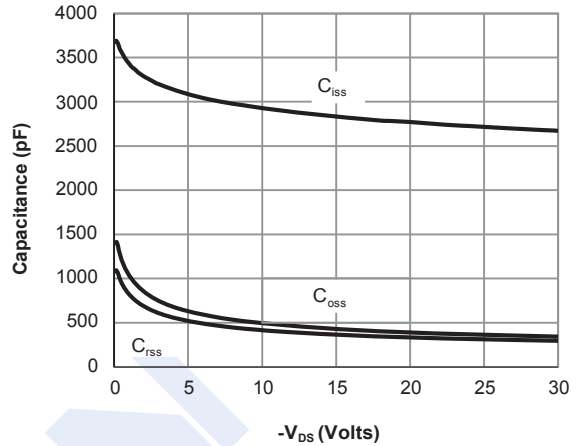


Figure 8: Capacitance Characteristics

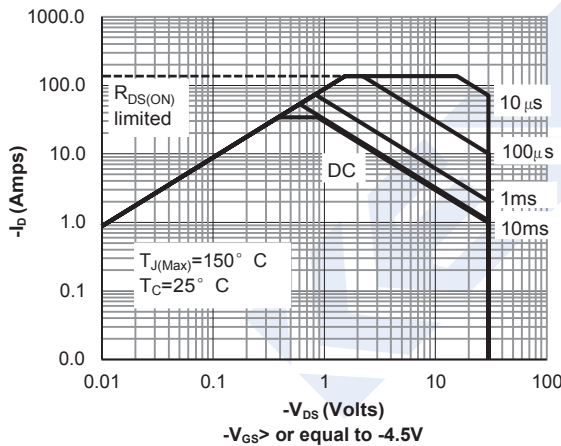


Figure 9: Maximum Forward Biased Safe Operating Area

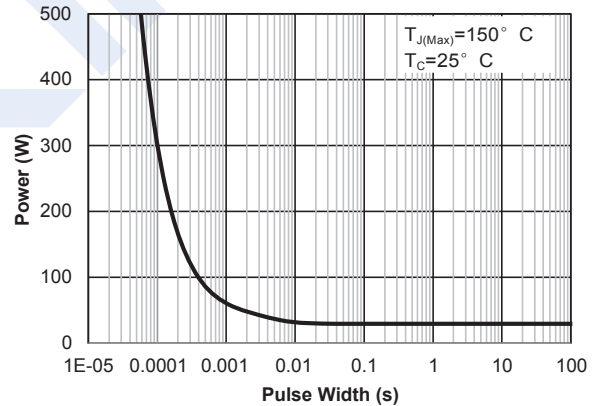


Figure 10: Single Pulse Power Rating Junction-to-Case

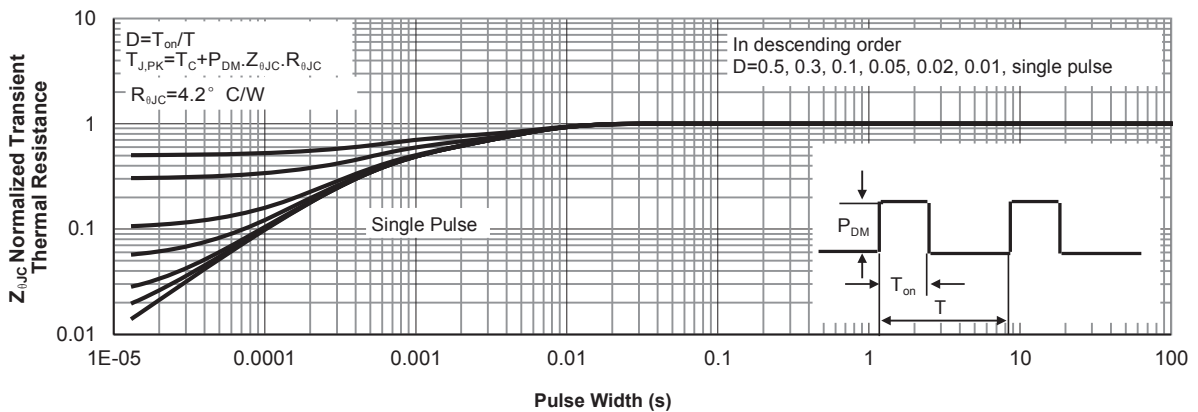
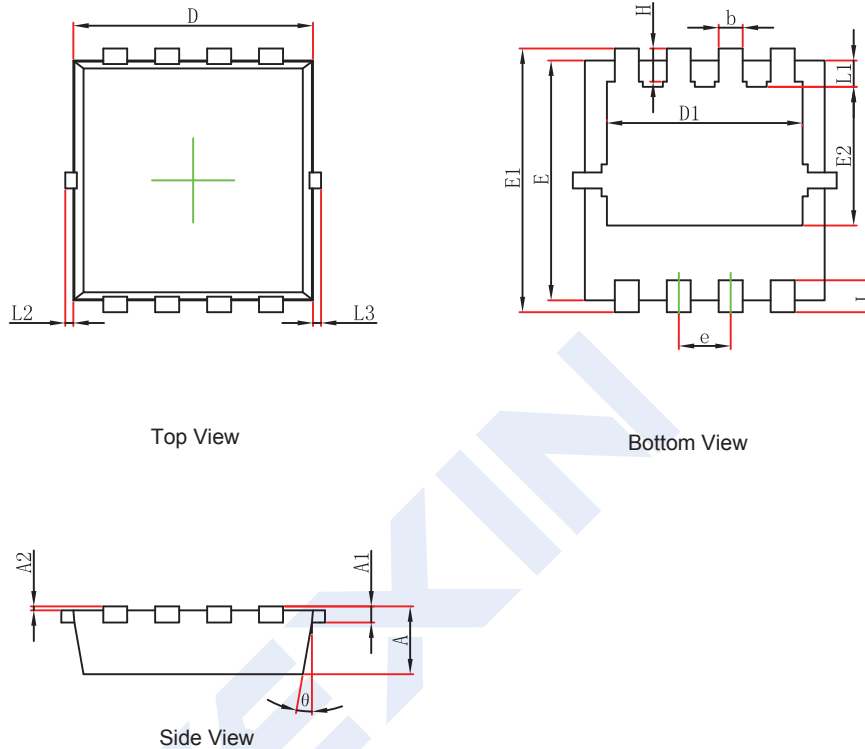


Figure 11: Normalized Maximum Transient Thermal Impedance

P-Channel MOSFET

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■ PDFN3.3x3.3-8 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	3.050	3.250	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°