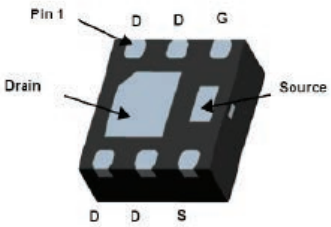
P-Channel MOSFET

2KJ6047DFN

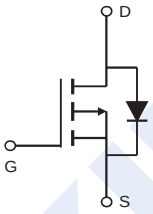
Features

- V_{DS} -30 V
- I_D (at V_{GS}=-10V) -8 A
- $R_{DS(ON)}$ (at V_{GS} = - 10V) ⩽ 32 mΩ
- $R_{DS(ON)}$ (at V_{GS} = - 4.5V) ⩽ 53 mΩ

DFN2X2-6



DFN2X2-6 bottom view



Absolute Maximum Ratings (T_A = 25℃ 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)	T_A=25℃	I_D	-8	A
	T_A=70℃		-6.3	
Pulsed Drain Current (Note 2)		I_{DM}	-32	
Power Dissipation (Note 1)	T_A=25℃	P_D	2.8	W
	T_A=70℃		1.8	
Thermal Resistance, Junction- to-Ambient (Note 1)		$R_{\theta JA}$	79	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

Notes:

1. Surface Mounted on 1in^2 FR4 Board.
2. Pulse width limited by maximum junction temperature.

2KJ6047DFN

■ Electrical Characteristics (T_J = 25℃ 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
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	-1.1		-2.3	V
Static Drain-Source On-Resistance (Note 3)	$R_{DS(ON)}$	V_{GS} = -10V, I_D = -8A			32	mΩ
		V_{GS} = -10V, I_D = -8A, T_J=125°C			41	
		V_{GS} = -4.5V, I_D = -6A			53	
Diode Forward Voltage (Note 3)	V_{SD}	I_S = -1 A,V_{GS} = 0V			-1.0	V
DYNAMIC CHARACTERISTICS (Note 4)						
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS} = -15V, f = 1MHz		530		pF
Output Capacitance	C_{oss}			114		
Reverse Transfer Capacitance	C_{rss}			75		
Total Gate Charge	Q_g	V_{DS} = -15V, V_{GS} = -10V, I_D = -8A		12	14.5	nC
Gate Source Charge	Q_{gs}			1.8		
Gate Drain Charge	Q_{gd}			3		
SWITCHING CHARACTERISTICS (Note 5)						
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=-10V, V_{DS}=-15V, R_L=1.8Ω, R_{GEN}=3Ω		8		ns
Turn-On Rise Time	t_r			6		
Turn-Off DelayTime	$t_{d(off)}$			26		
Turn-Off Fall Time	t_f			12		

Notes:

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

■ Marking

Marking	JAU

2KJ6047DFN

■ Typical Electrical and Thermal Characterisitics

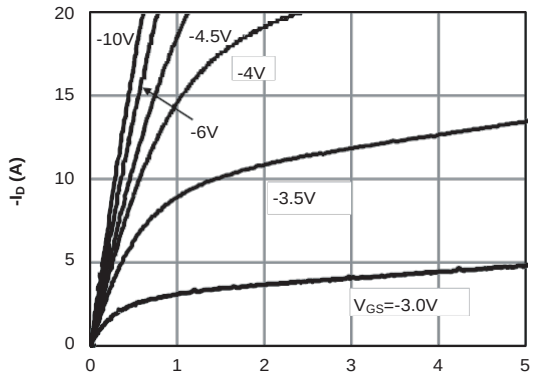


Fig 1: On-Region Characteristics

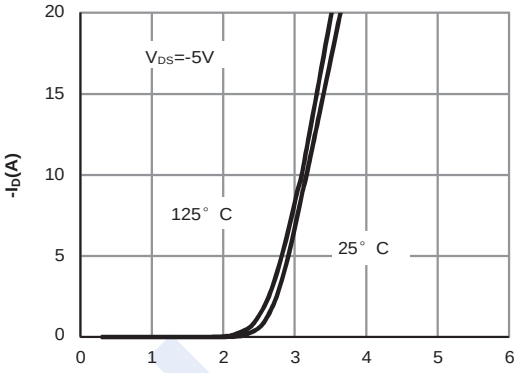


Figure 2: Transfer Characteristics

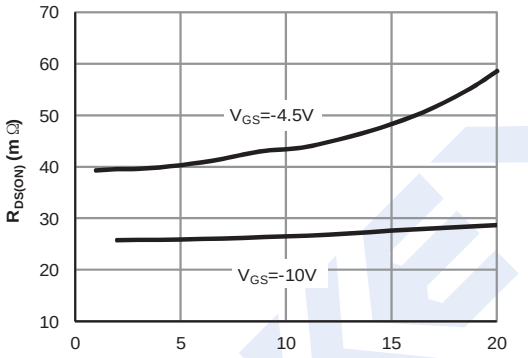


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

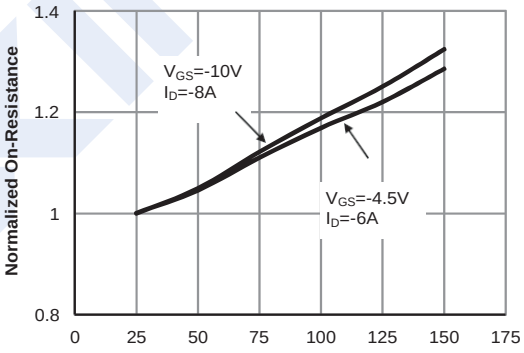


Figure 4: On-Resistance vs. Junction Temperature

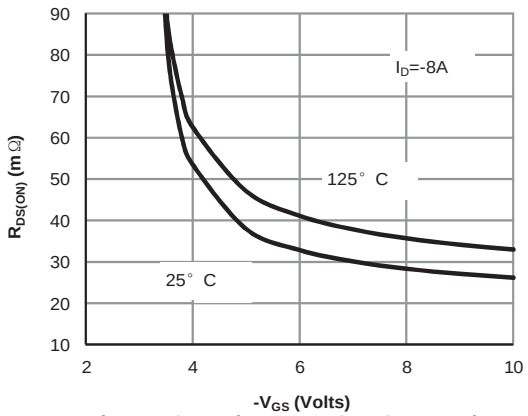


Figure 5: On-Resistance vs. Gate-Source Voltage

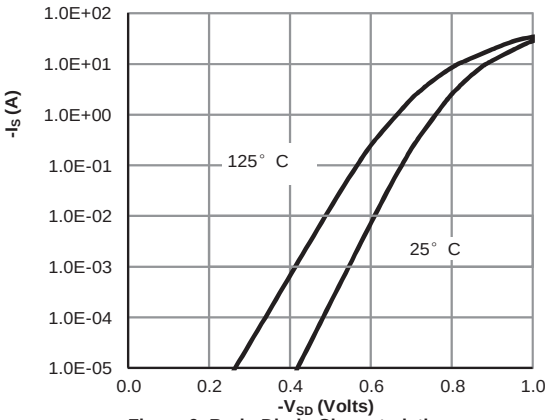


Figure 6: Body-Diode Characteristics

2KJ6047DFN

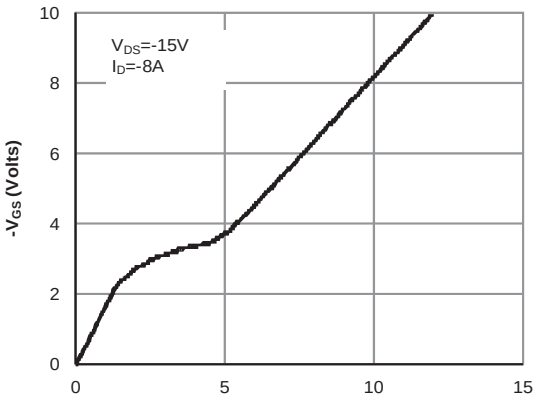


Figure 7: Gate-Charge Characteristics

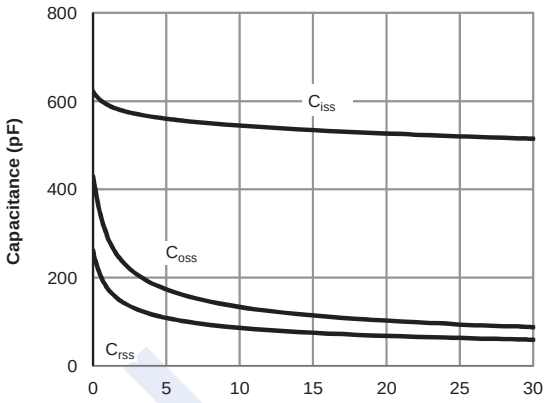


Figure 8: Capacitance Characteristics

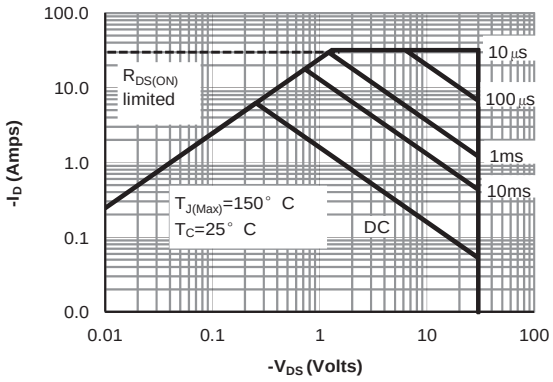


Figure 9: Maximum Forward Biased Safe Operating Area

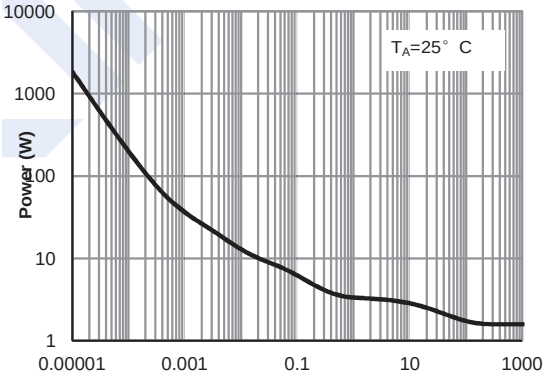


Figure 10: Single Pulse Power Rating Junction -to-Ambient

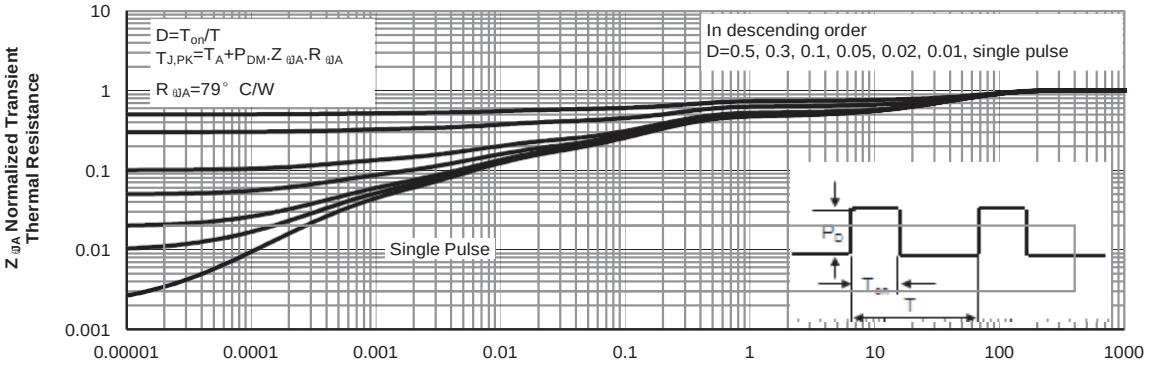
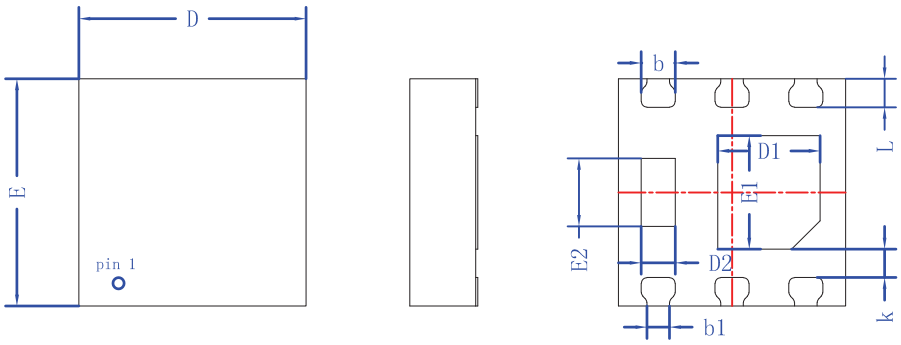
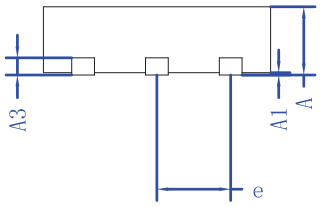


Figure 11: Normalized Maximum Transient Thermal Impedance

2KJ6047DFN

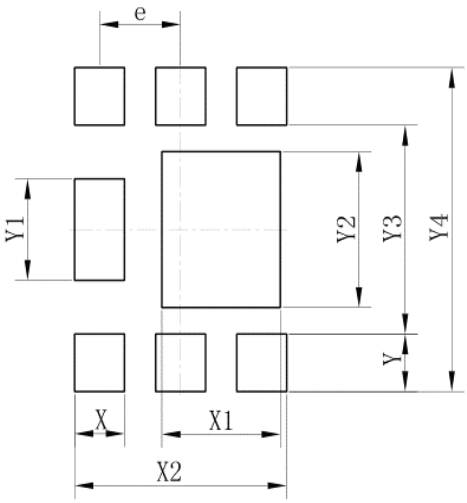
■ DFN2X2-6 Package Outline Dimensions





Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.50	0.55	0.65	0.022	0.024	0.026
A1	0.00	0.02	0.05	0.000	0.001	0.002
A3		0.152 REF.			0.006REF.	
D	1.90	2.00	2.10	0.075	0.079	0.083
D1	0.80	0.90	1.00	0.031	0.035	0.039
D2	0.20	0.30	0.40	0.008	0.012	0.016
E	1.90	2.00	2.10	0.075	0.079	0.083
E1	0.90	1.00	1.10	0.035	0.039	0.043
E2	0.50	0.60	0.70	0.020	0.024	0.028
b	0.25	0.30	0.35	0.010	0.012	0.014
b1	0.15	0.20	0.25	0.006	0.008	0.010
e		0.65TYP.			0.026TYP.	
k		0.20MIN.			0.006MIN.	
L	0.20	0.25	0.30	0.008	0.010	0.012

■ DFN2x2-6 Suggested Pad Layout



Dim	(mm)
X	0.40
X1	0.95
X2	1.70
e	0.65
Y	0.43
Y1	0.75
Y2	1.15
Y3	1.54
Y4	2.39