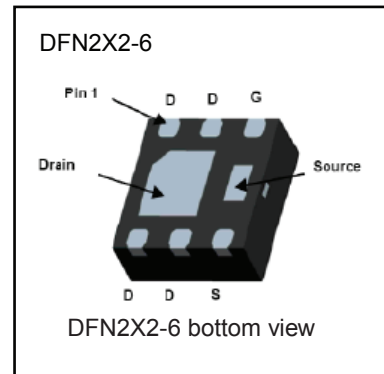
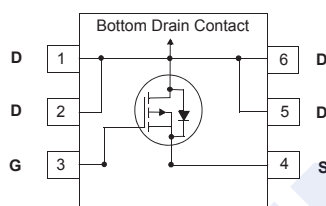


## P-Channel MOSFET

## 2KJ6050DFN

## ■ Features

- $V_{DS} (V) = -20V, I_D = -16A$
- $R_{DS(ON)} < 18m\Omega @ V_{GS} = -4.5V$
- $R_{DS(ON)} < 22m\Omega @ V_{GS} = -2.5V$

■ Absolute Maximum Ratings (T<sub>c</sub> = 25°C Unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	-20	V
Gate-Source Voltage	V <sub>GS</sub>	±12	
Continuous Drain Current	I <sub>D</sub>	-16	A
Pulsed Drain Current (Note 1)	I <sub>DM</sub>	-65	
Power Dissipation	P <sub>D</sub>	18	W
Thermal Resistance, Junction- to-Ambient (Note 2)	R <sup>θ</sup> <sub>JA</sub>	50	°C/W
Thermal Resistance, Junction- to-Case (Note 2)	R <sup>θ</sup> <sub>JC</sub>	6.9	
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.

## P-Channel MOSFET

## 2KJ6050DFN

■ Electrical Characteristics (T<sub>c</sub> = 25°C Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =-250μA, V <sub>GS</sub> =0V	-20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V			-1	μA
		V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V, T <sub>A</sub> =55°C			-5	
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	-0.4	-0.7	-1.0	V
Static Drain-Source On-Resistance (Note 3)	R <sub>DS(on)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-7A		16	18	mΩ
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-6A		19	22	
		V <sub>GS</sub> =-1.8V, I <sub>D</sub> =-2.5A		25	45	
Forward Transconductance (Note 3)	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-7A	20			S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-10V, f=1MHz (Note 4)		2700		pF
Output Capacitance	C <sub>oss</sub>			680		
Reverse Transfer Capacitance	C <sub>rss</sub>			590		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-5A, V <sub>GS</sub> = -4.5V (Note 4)		35		nC
Gate Source Charge	Q <sub>gs</sub>			5		
Gate Drain Charge	Q <sub>gd</sub>			10		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1A, V <sub>GS</sub> = -4.5 V, R <sub>G(ext)</sub> = 1.2 Ω (Note 4)		11		ns
Turn-On Rise Time	t <sub>r</sub>			35		
Turn-Off Delay Time	t <sub>d(off)</sub>			30		
Turn-Off Fall Time	t <sub>f</sub>			10		
Body-Diode Continuous Current (Note 3)	I <sub>S</sub>				-16	A
Diode Forward Voltage (Note 3)	V <sub>SD</sub>	I <sub>SD</sub> =-1.25 A, V <sub>GS</sub> =0V		-0.8	-1.2	V

Notes:

- Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
- Guaranteed by design, not subject to production.

## ■ Marking

Marking	JBX
---------	-----

# P-Channel MOSFET

## 2KJ6050DFN

■ Typical Characteristics (T<sub>J</sub> = 25 °C unless otherwise noted)

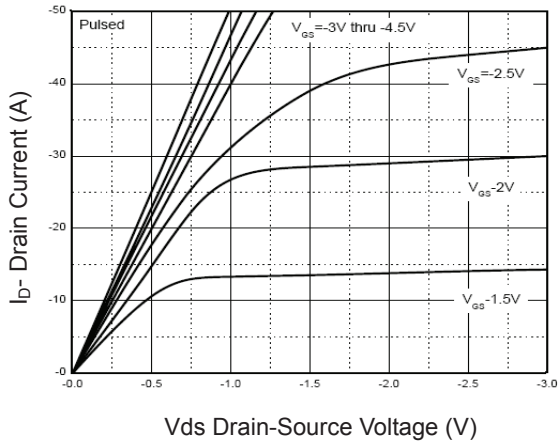


Figure 1 Output Characteristics

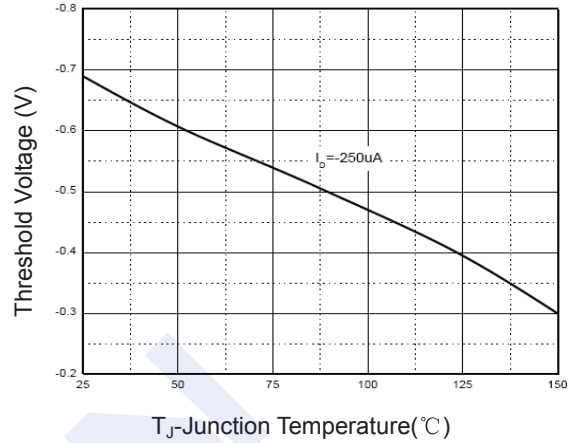


Figure 2 Drain Current

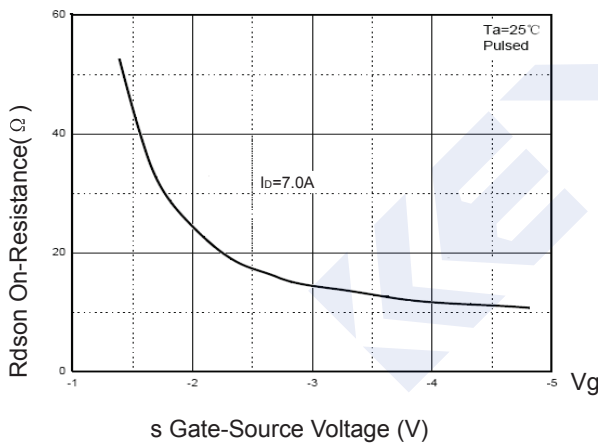


Figure 3 Rdson vs Vgs

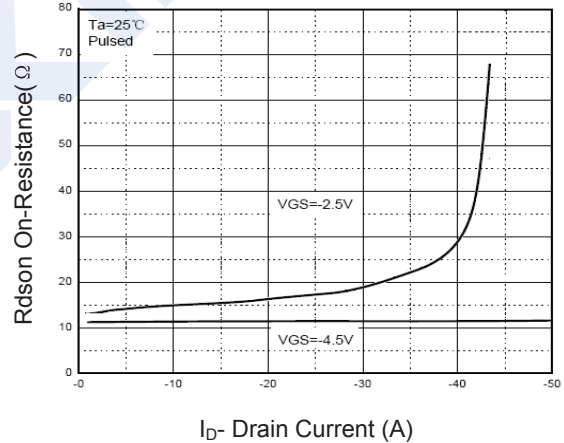


Figure 4 Drain-Source On-Resistance

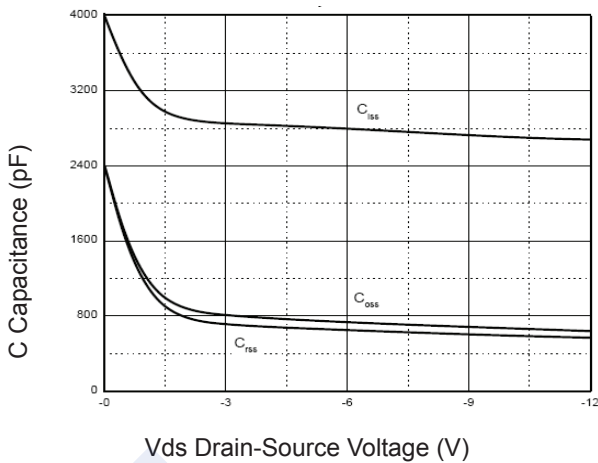


Figure 5 Capacitance vs Vds

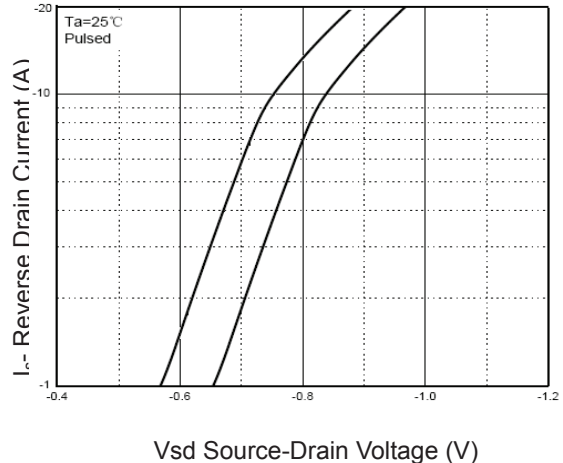
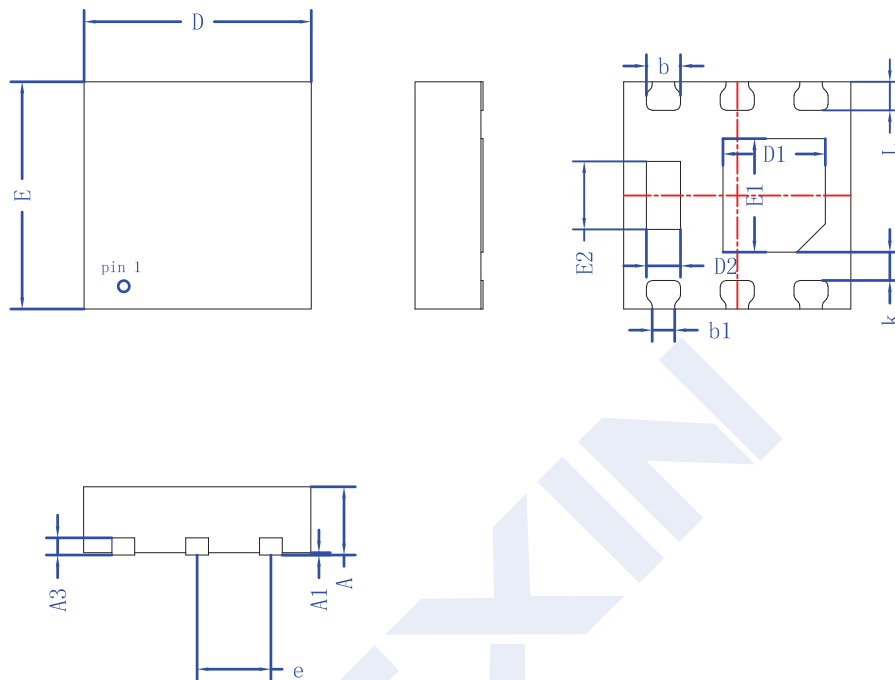


Figure 6 Source- Drain Diode Forward

## P-Channel MOSFET

## 2KJ6050DFN

## ■ 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