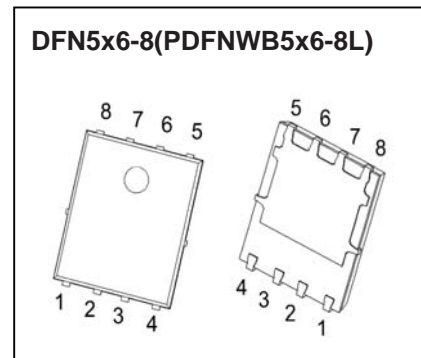
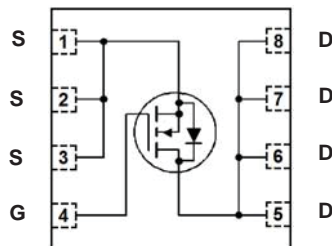


N-Channel MOSFET

2KK6015DFN

■ Features

- $V_{DS} (V) = 150 V$
- $I_D = 70 A$
- $R_{DS(ON)} = 13 m\Omega$ (typ.) @ $V_{GS} = 10 V$

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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	150	V	
Gate-Source Voltage	V_{GS}	± 20		
Continuous Drain Current	I_D	$T_C = 25^\circ C$	70	A
		$T_C = 100^\circ C$	49.5	
Pulsed Drain Current	I_{DM}	280		
Single Pulse Avalanche Energy (Note 1)	EAS	583	mJ	
Power Dissipation	P_D	150	W	
Thermal Resistance, Junction- to-Case (Note 2)	$R_{\theta JC}$	0.83		
Junction Temperature	T_J	150	$^\circ C$	
Storage Temperature Range	T_{stg}	-55 to 150		

Notes:

1. EAS condition : $T_J = 25^\circ C, V_{DD} = 50V, V_G = 10V, L = 0.5mH, R_g = 25\Omega$
2. Surface Mounted on FR4 Board, $t \leq 10$ sec. The value of $R_{\theta JA}$ is measured with the device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ C$. the maximum allowed junction temperature of $150^\circ C$. The value in any given application depends on the user's specific board design.

N-Channel MOSFET

2KK6015DFN

■ Electrical Characteristics (TA = 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	150			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 150 V, V _{GS} = 0 V			1	μA
Gate to Source Leakage Current	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
On Characteristics (Note 3)						
Gate to Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2.0		4.0	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10 V, I _D = 35 A		13	15	mΩ
Forward Transconductance	g _{FS}	V _{DS} = 5 V, I _D = 35 A		58		S
Dynamic Characteristics (Note 4)						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 75 V, f = 1 MHz		2200		pF
Output Capacitance	C _{oss}			289		
Reverse Transfer Capacitance	C _{rss}			11.2		
Switching Characteristics (Note 4)						
Total Gate Charge	Q _g	V _{GS} = 10V, V _{DS} = 75 V, I _D = 35 A		33		nC
Gate Source Charge	Q _{gs}			14.5		
Gate Drain Charge	Q _{gd}			8		
Turn-On Delay Time	t _{d(on)}	V _{GS} = 10V, V _{DD} = 75 V, I _D = 35A, R _G = 3 Ω		12.5		ns
Turn-On Rise Time	t _r			3.8		
Turn-Off Delay Time	t _{d(off)}			14		
Turn-Off Fall Time	t _f			3.5		
Drain-Source Diode Characteristics						
Body Diode Reverse Recovery Time	t _{rr}	I _F = 35A, di/dt = 100 A/μs		47		ns
Body Diode Reverse Recovery Charge	Q _{rr}			55		nC
Maximum Body-Diode Continuous Current	I _S				70	A
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} = 0 V, I _S = 35 A			1.2	V

Notes:

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

■ Marking

Marking	K6015 KC***
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N-Channel MOSFET

2KK6015DFN

Typical Characteristics

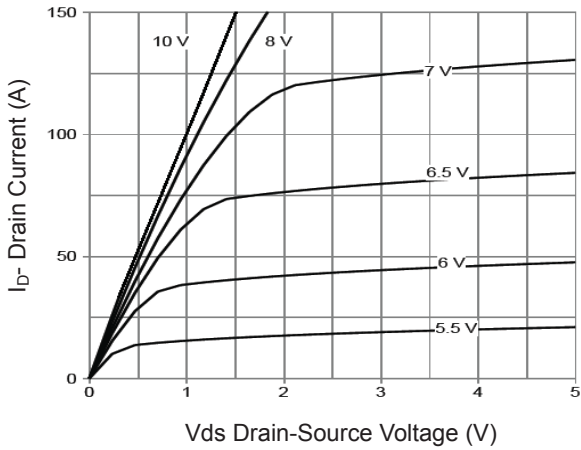


Figure 1 Output Characteristics

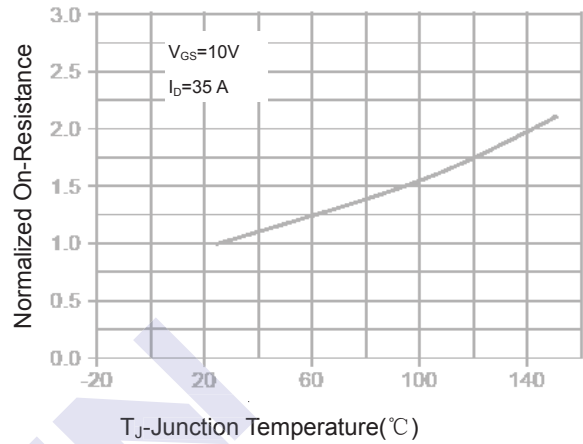


Figure 4 Rdson-Junction Temperature

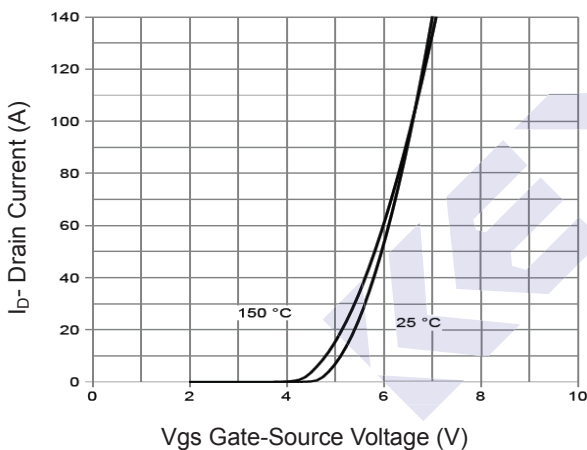


Figure 2 Transfer Characteristics

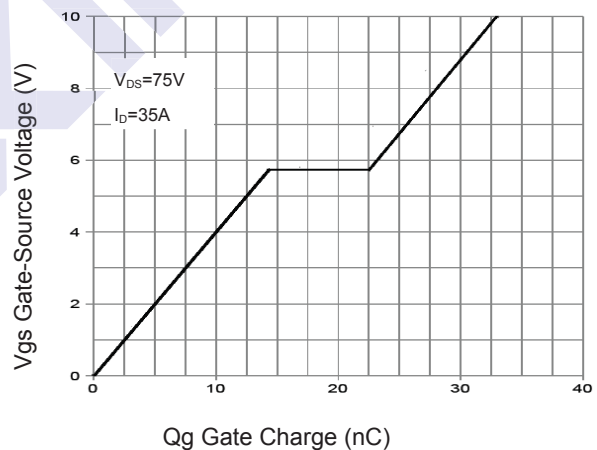


Figure 5 Gate Charge

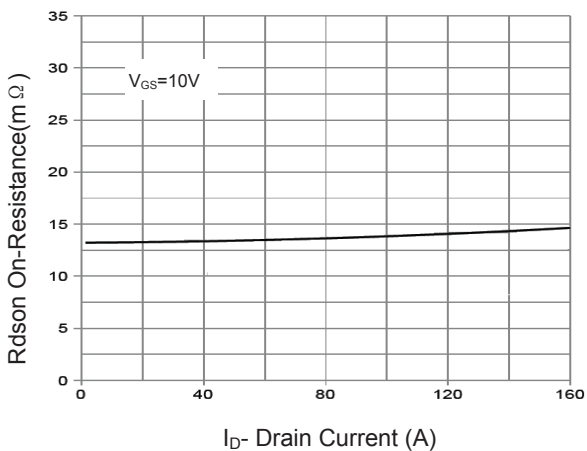


Figure 3 Rdson- Drain Current

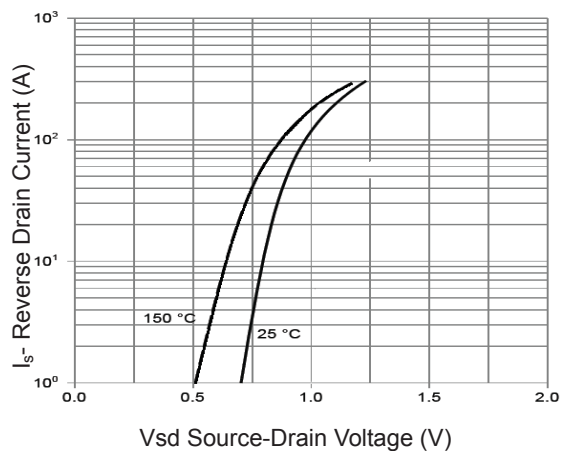


Figure 6 Source- Drain Diode Forward

N-Channel MOSFET

2KK6015DFN

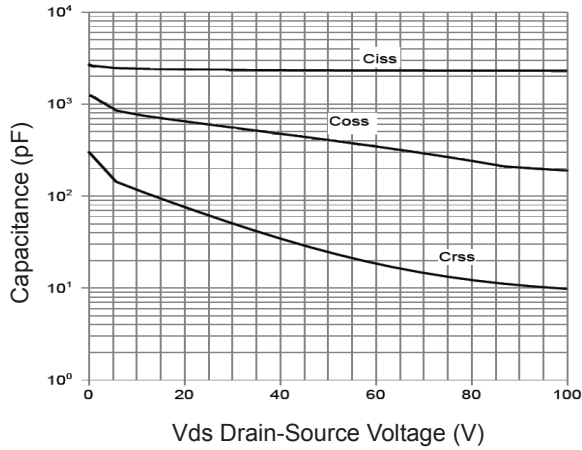


Figure 7 Capacitance vs Vds

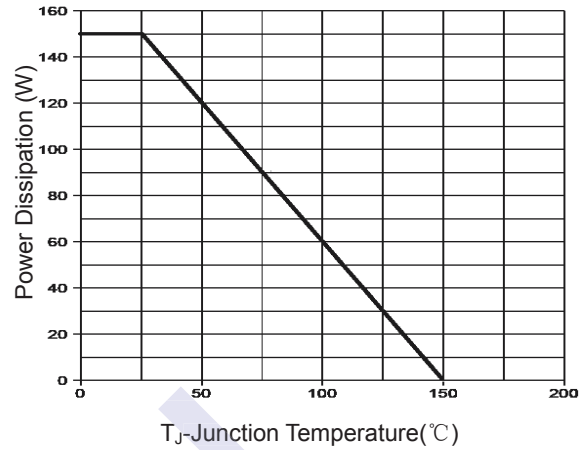


Figure 9 Power De-rating

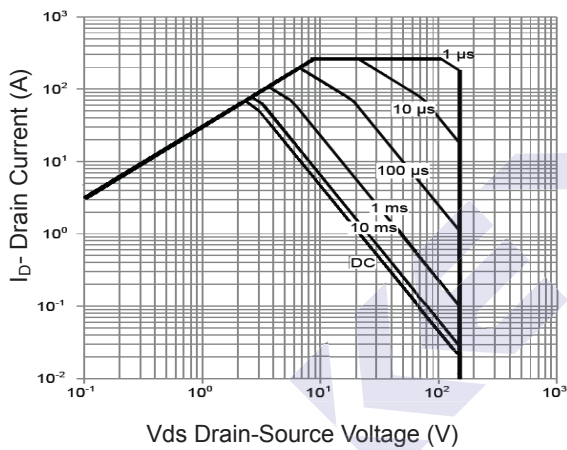


Figure 8 Safe Operation Area

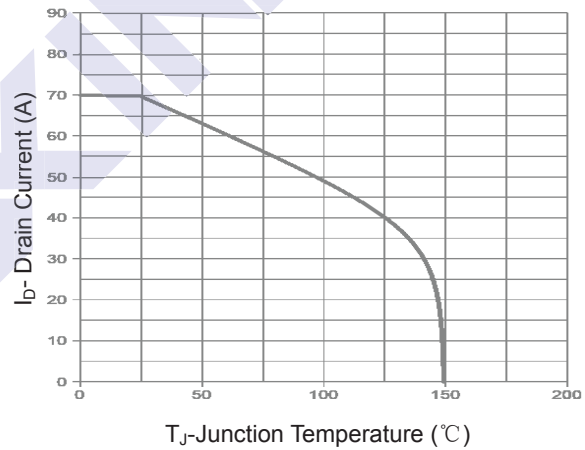


Figure 10 Current De-rating

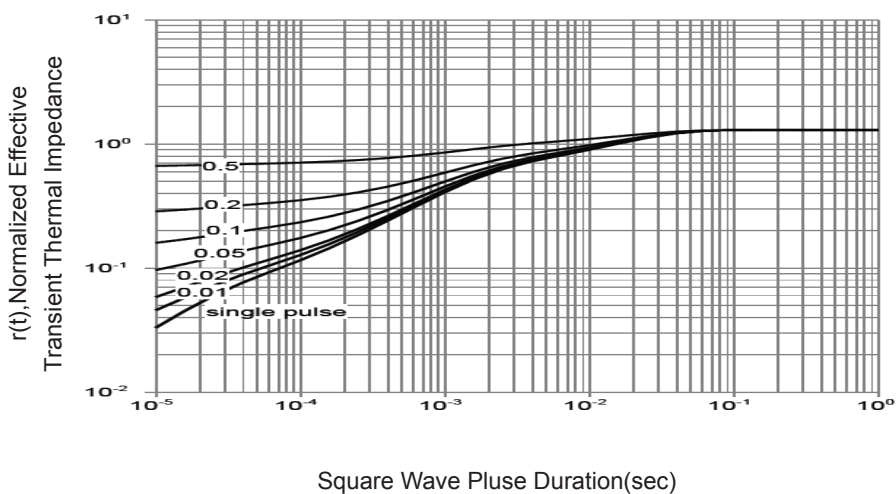
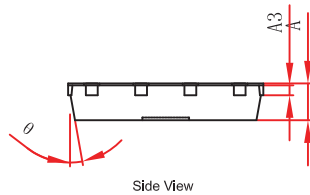
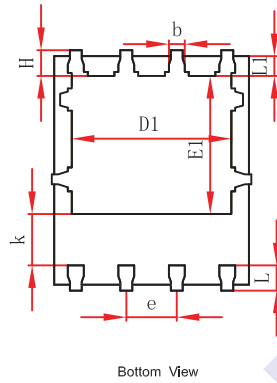
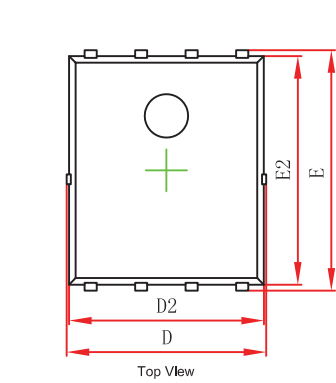


Figure 11 Normalized Maximum Transient Thermal Impedance

N-Channel MOSFET

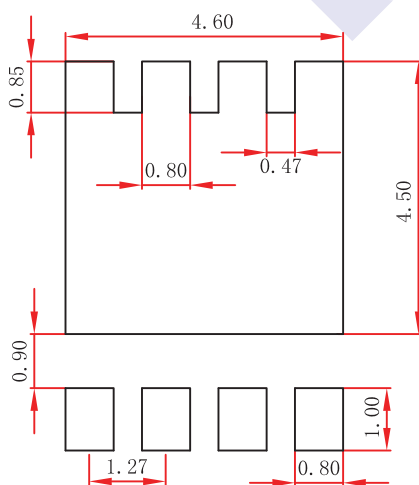
2KK6015DFN

DFN5x6-8(PDFNWB5x6-8L) Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°

DFN5x6-8(PDFNWB5x6-8L) Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.