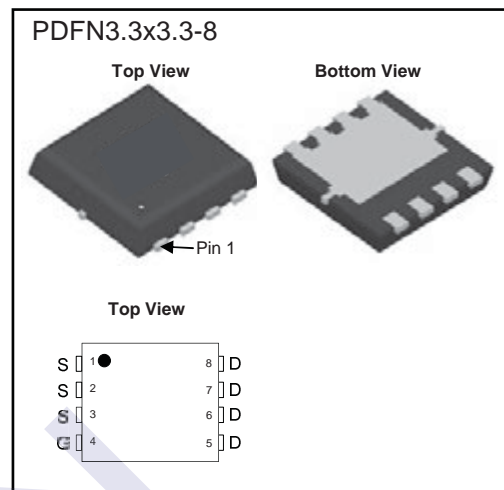
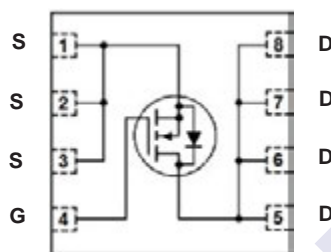


N-Channel MOSFET

2KK6008DFN

■ Features

- $V_{DS} (V) = 30 V$
- $I_D = 45 A$
- $R_{DS(ON)}$ (at $V_{GS} = 10 V$) $< 5 m\Omega$
- $R_{DS(ON)}$ (at $V_{GS} = 4.5 V$) $< 6.5 m\Omega$

■ Absolute Maximum Ratings ($T_A = 25^\circ C$ 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, 3)	I_D	$T_A = 25^\circ C$	45	A
		$T_A = 100^\circ C$	36	
Pulsed Drain Current (Note 2)	I_{DM}	140		
Power Dissipation	P_D	$T_A = 25^\circ C$	25	W
		$T_A = 100^\circ C$	9	
Junction Temperature	T_J	150	$^\circ C$	
Storage Temperature Range	T_{stg}	-55 to 150		

Notes:

1. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ C$. The value in any given application depends on the user's specific board design.
2. Repetitive rating, pulse width limited by junction temperature.
3. The current rating is based on the $t \leq 10s$ junction to ambient thermal resistance rating.

N-Channel MOSFET

2KK6008DFN

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	I _D = 250 μA, V _{GS} = 0V	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30 V, V _{GS} = 0 V			1	μA
Gate to Source Leakage Current	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Gate to Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.7	1.1	1.6	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10 V, I _D = 20 A		5	6.5	mΩ
		V _{GS} = 4.5 V, I _D = 20 A		6.5	10	
Forward Transconductance	g _{FS}	V _{DS} = 5 V, I _D = 20 A		50		S
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 15 V, f = 1 MHz		1230		pF
Output Capacitance	C _{oss}			420		
Reverse Transfer Capacitance	C _{rss}			150		
Total Gate Charge	Q _g	V _{GS} = 10V, V _{DS} = 15 V, I _D = 20 A		25.2		nC
Gate Source Charge	Q _{gs}			13		
Gate Drain Charge	Q _{gd}			3.6		
Turn-On DelayTime	t _{d(on)}	V _{GS} = 10V, V _{DS} = 15 V, R _L = 0.75 Ω, R _{GEN} = 3.3 Ω		6.5		ns
Turn-On Rise Time	t _r			2.5		
Turn-Off DelayTime	t _{d(off)}			17.5		
Turn-Off Fall Time	t _f			3.8		
Maximum Body-Diode Continuous Current	I _S				45	A
Diode Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = 20 A		0.78	1.3	V

N-Channel MOSFET

2KK6008DFN

■ Typical Characteristics (TA = 25 °C unless otherwise noted)

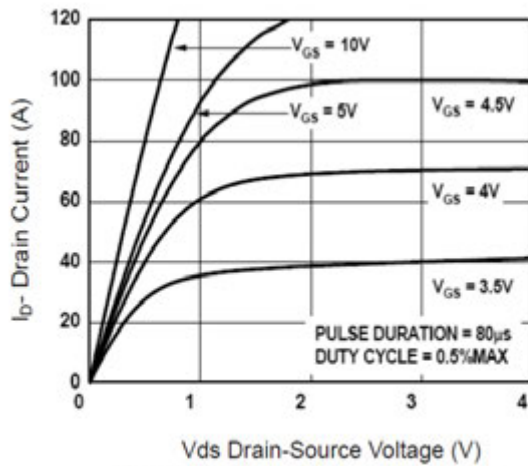


Figure 1 Output Characteristics

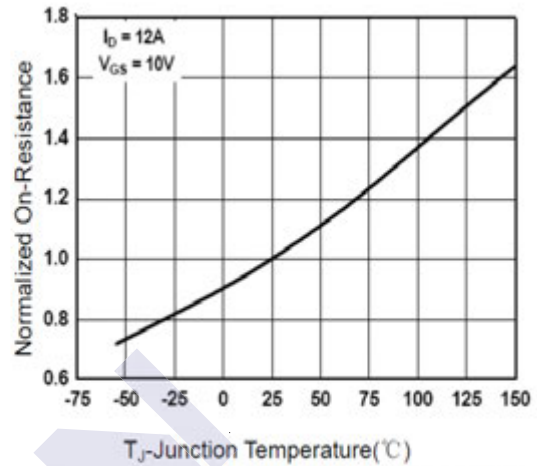


Figure 4 Rds(on)-Junction Temperature

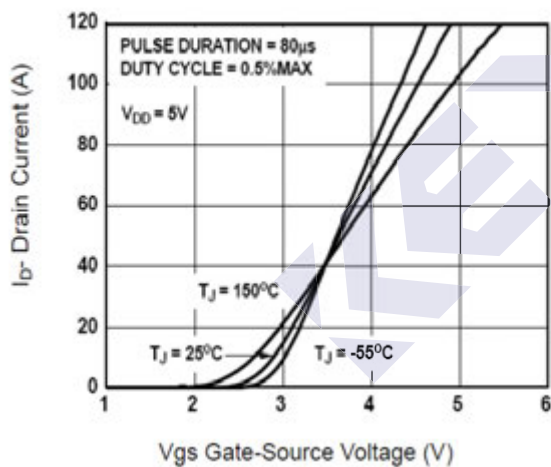


Figure 2 Transfer Characteristics

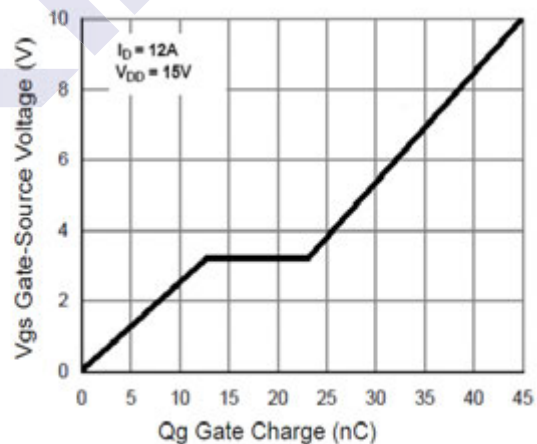


Figure 5 Gate Charge

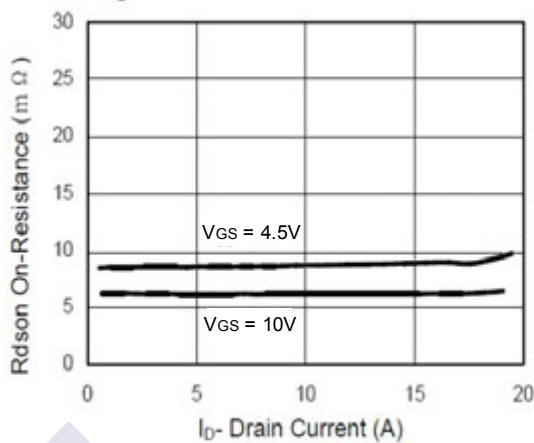


Figure 3 Rds(on)- Drain Current

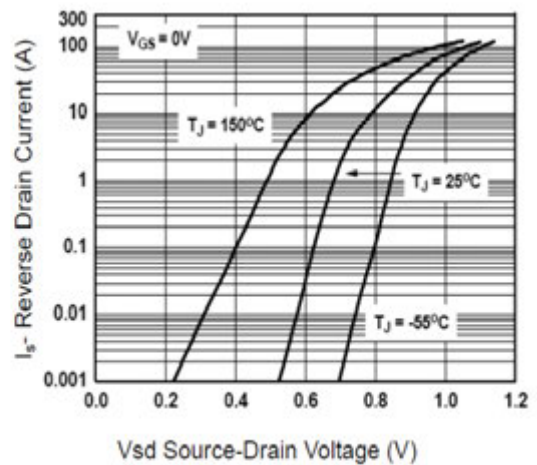


Figure 6 Source- Drain Diode Forward

N-Channel MOSFET

2KK6008DFN

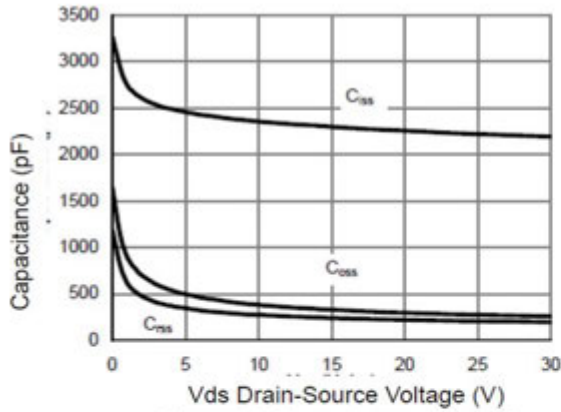


Figure 7 Capacitance vs Vds

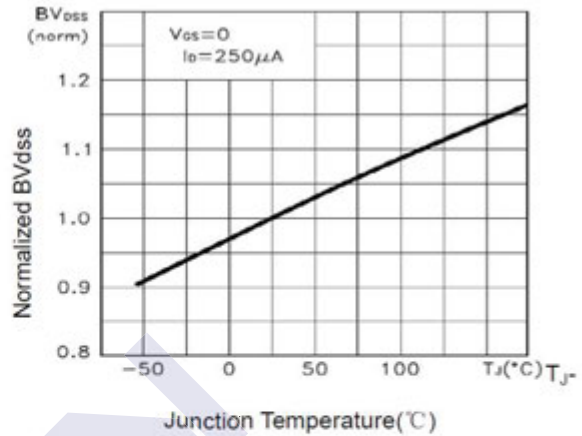


Figure 9 BV_{DSS} vs Junction Temperature

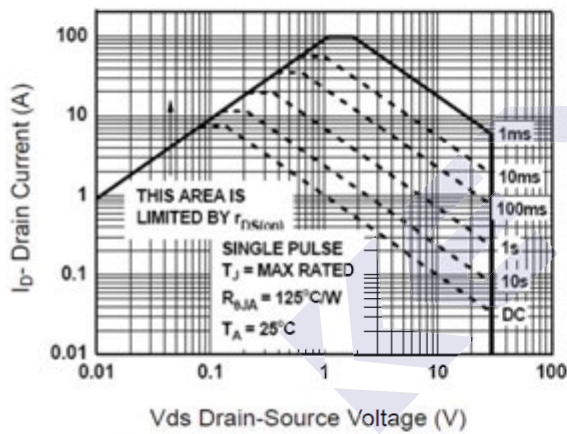


Figure 8 Safe Operation Area

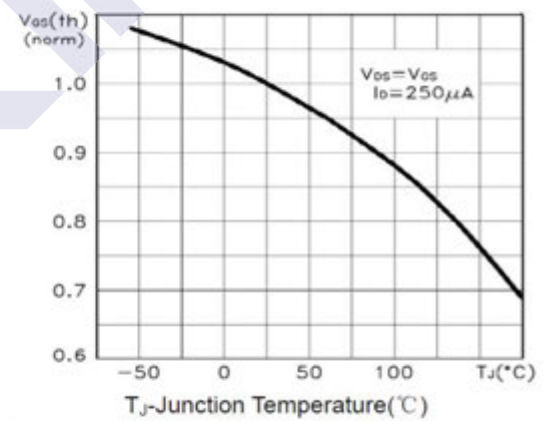


Figure 10 $V_{GS(th)}$ vs Junction Temperature

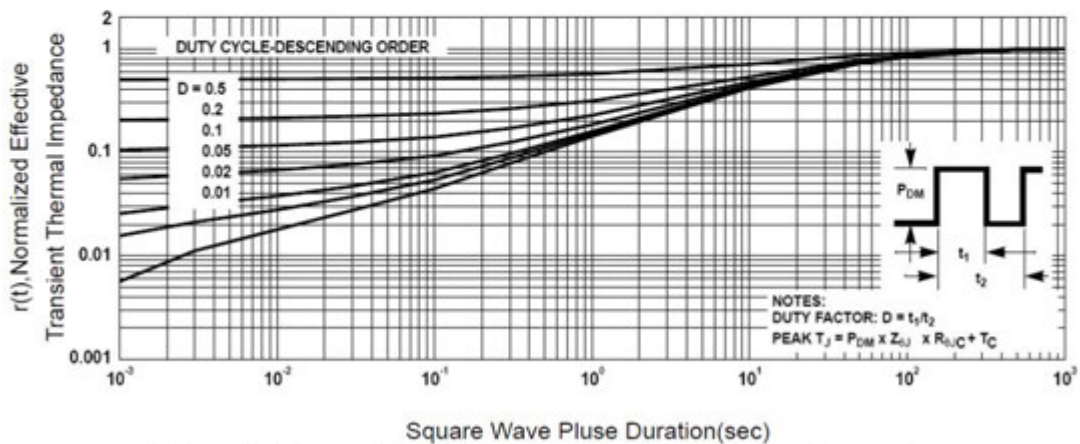
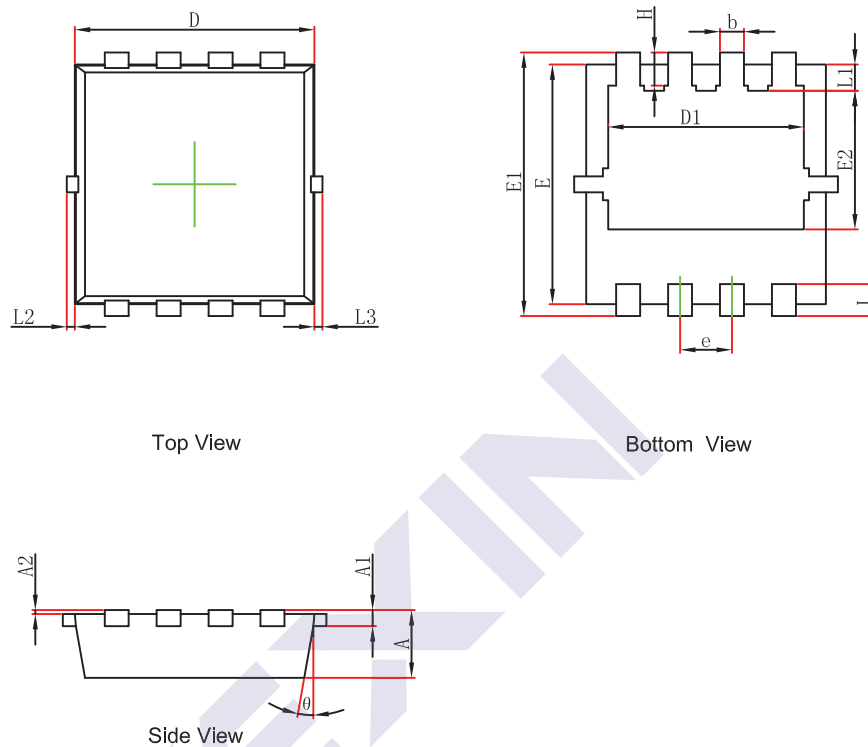


Figure 11 Normalized Maximum Transient Thermal Impedance

N-Channel MOSFET

2KK6008DFN

■ 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°