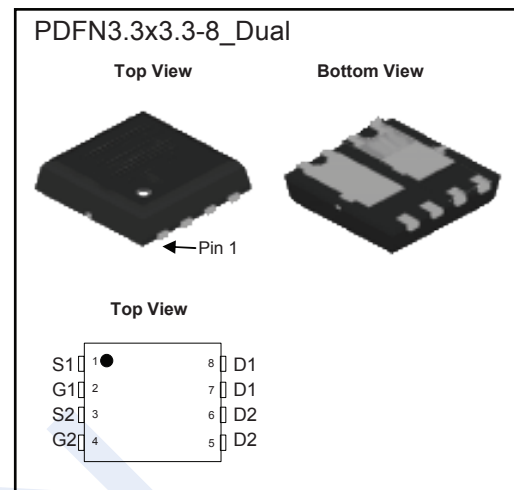
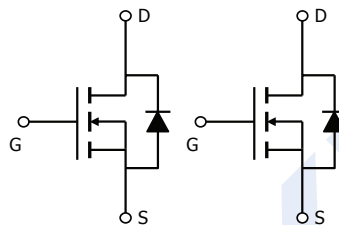


Dual N-Channel MOSFET

2KK5783DFN

■ Features

- V_{DS} (V) = 40 V
- I_D = 35 A (at V_{GS} = 10 V)
- $R_{DS(ON)}$ (at V_{GS} = 10 V) < 15 m Ω
- $R_{DS(ON)}$ (at V_{GS} = 4.5 V) < 19 m Ω

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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	40	V	
Gate-Source Voltage	V_{GS}	± 20		
Continuous Drain Current (Note 1, 3)	I_D	$T_A=25^\circ\text{C}$	35	A
		$T_A=100^\circ\text{C}$	27	
Pulsed Drain Current (Note 2)	I_{DM}	70		
Power Dissipation	P_D	$T_A=25^\circ\text{C}$	25	W
		$T_A=100^\circ\text{C}$	9	
Junction Temperature	T_J	150	$^\circ\text{C}$	
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 $T_A=25^\circ\text{C}$. 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 $t \leq 10\text{s}$ junction to ambient thermal resistance rating.

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■ 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	40			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 40 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	1.0		2.2	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10 V, I _D = 20 A		11	15	mΩ
		V _{GS} = 4.5 V, I _D = 15 A		15	19	
Forward Transconductance	g _{FS}	V _{DS} = 5 V, I _D = 20 A	20			S
Dynamic Characteristics (Note4)						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 20 V, f = 1 MHz		980	1200	pF
Output Capacitance	C _{oss}			130		
Reverse Transfer Capacitance	C _{rss}			80		
Total Gate Charge	Q _g	V _{GS} = 10V, V _{DS} = 20 V, I _D = 20 A		17		nC
Gate Source Charge	Q _{gs}			2.5		
Gate Drain Charge	Q _{gd}			4.5		
Switching Characteristics (Note 4)						
Turn-On Delay Time	t _{d(on)}	V _{GS} = 10V, V _{DS} = 20 V, R _L = 1 Ω, R _{GEN} = 3 Ω		6		ns
Turn-On Rise Time	t _r			12		
Turn-Off Delay Time	t _{d(off)}			26		
Turn-Off Fall Time	t _f			7		
Drain-Source Diode Characteristics (Note 2,3)						
Maximum Body-Diode Continuous Current	I _S				35	A
Diode Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = 1 A		0.75	1.2	V

Notes:

1. Repetitive rating, pulse width limited by junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

■ Marking

Marking	K5783 KA***
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Dual N-Channel MOSFET

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■ Typical Electrical And Thermal Characteristics

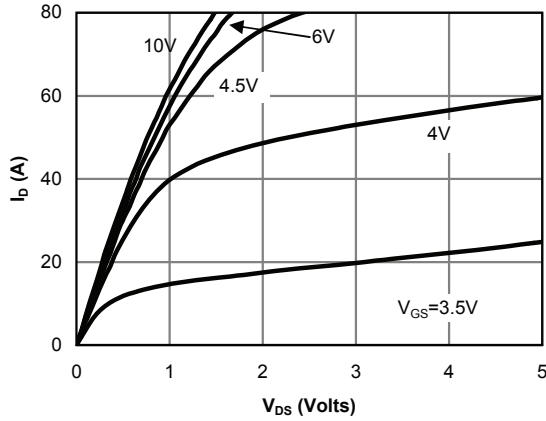


Fig 1: On-Region Characteristics

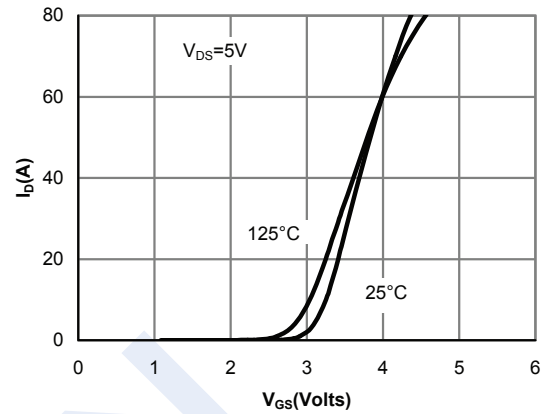


Figure 2: Transfer Characteristics

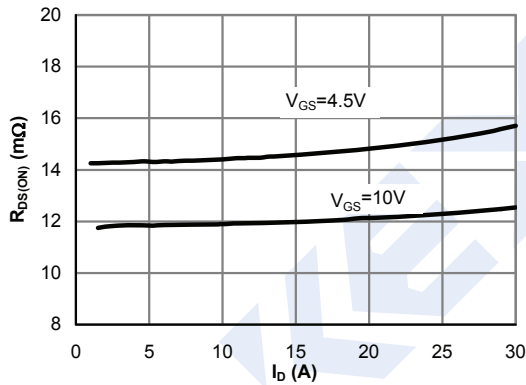


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

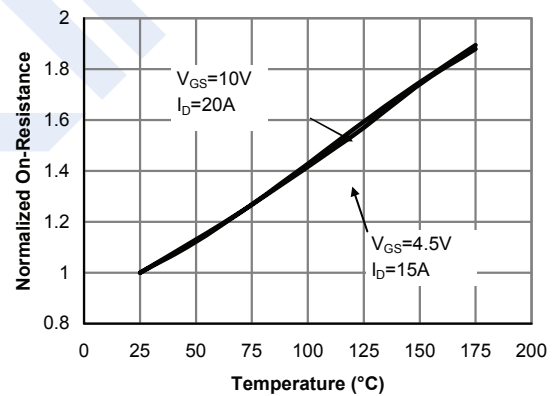


Figure 4: On-Resistance vs. Junction Temperature

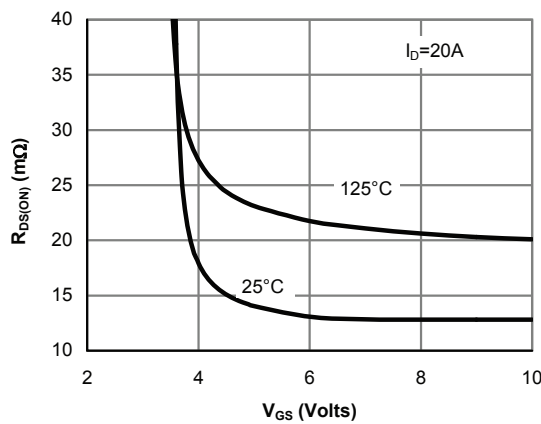


Figure 5: On-Resistance vs. Gate-Source Voltage

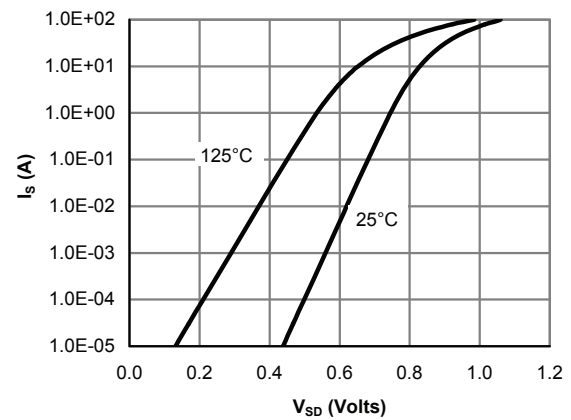


Figure 6: Body-Diode Characteristics

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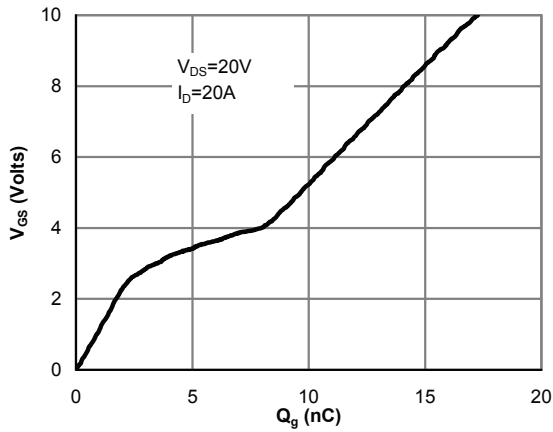


Figure 7: Gate-Charge Characteristics

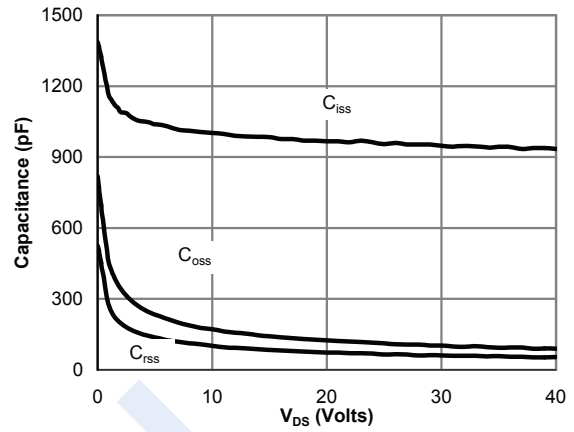


Figure 8: Capacitance Characteristics

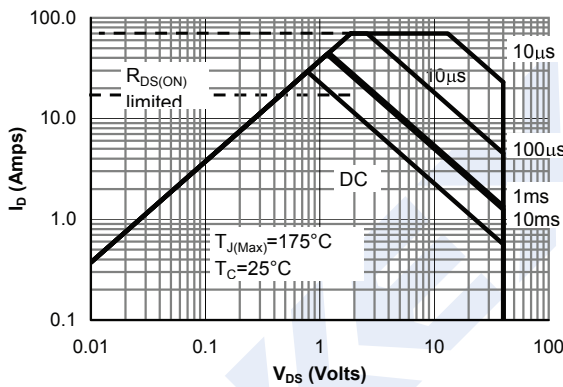


Figure 9: Maximum Forward Biased Safe Operating Area

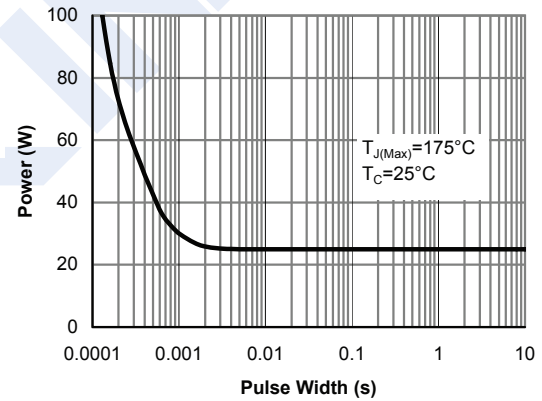


Figure 10: Single Pulse Power Rating Junction-to-Case

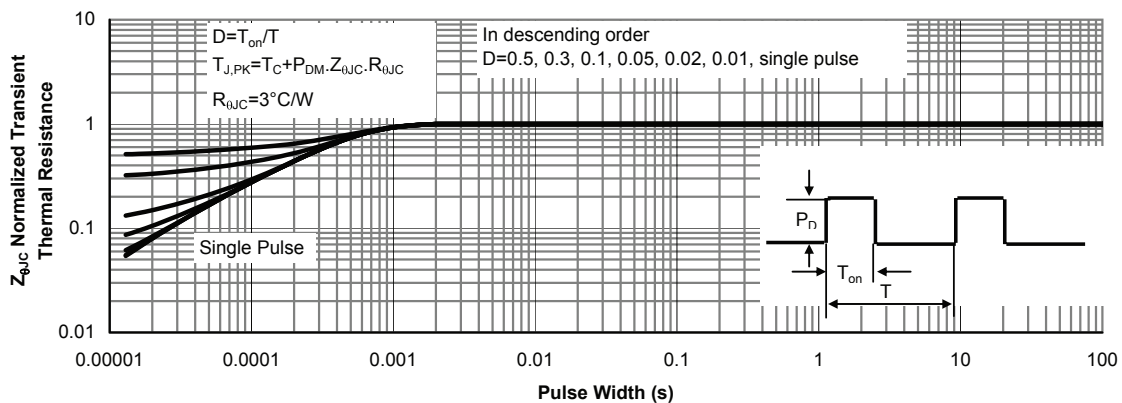


Figure 11: Normalized Maximum Transient Thermal Impedance

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

