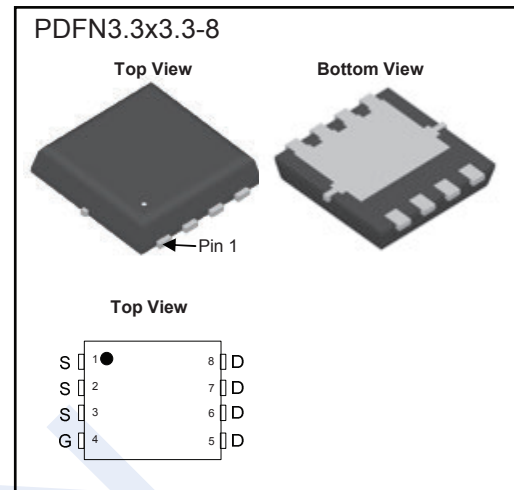
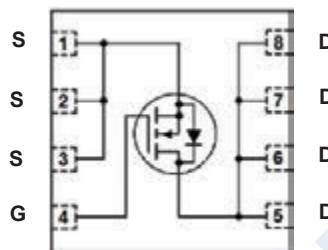


N-Channel MOSFET

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■ Features

- $V_{DS} (V) = 30 V$
- $I_D = 45 A$
- $R_{DS(ON)}$ (at $V_{GS} = 10 V$) $< 4.3 m\Omega$
- $R_{DS(ON)}$ (at $V_{GS} = 4.5 V$) $< 6 m\Omega$

■ 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.

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■ 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	1.1		1.9	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10 V, I _D = 20 A			4.3	mΩ
		V _{GS} = 4.5 V, I _D = 20 A			6.0	
Forward Transconductance	g _{FS}	V _{DS} = 5 V, I _D = 20 A		100		S
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 15 V, f = 1 MHz		2400		pF
Output Capacitance	C _{oss}			370		
Reverse Transfer Capacitance	C _{rss}			245		
Total Gate Charge	Q _g	V _{GS} = 10V, V _{DS} = 15 V, I _D = 20 A		44		nC
Gate Source Charge	Q _{gs}			7		
Gate Drain Charge	Q _{gd}			9		
Turn-On DelayTime	t _{d(on)}	V _{GS} = 10V, V _{DS} = 15 V, R _L = 0.75 Ω, R _{GEN} = 3.3 Ω		8		ns
Turn-On Rise Time	t _r			9		
Turn-Off DelayTime	t _{d(off)}			36		
Turn-Off Fall Time	t _f			9		
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

■ Marking

Marking	K5774 KC***
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■ Typical Characteristics (TA = 25 °C unless otherwise noted)

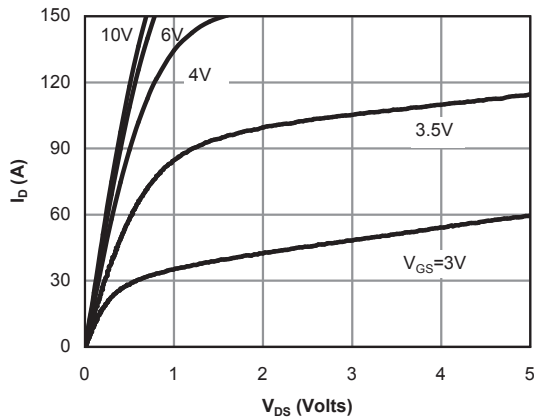


Fig 1: On-Region Characteristics

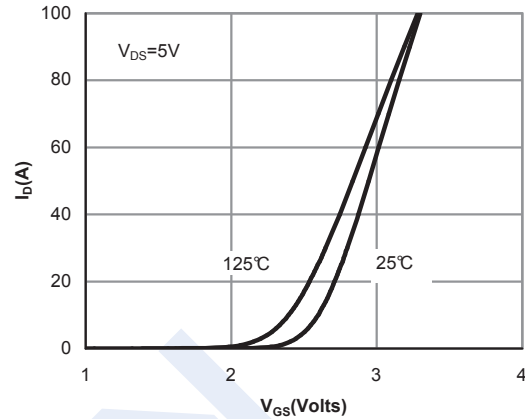


Figure 2: Transfer Characteristics

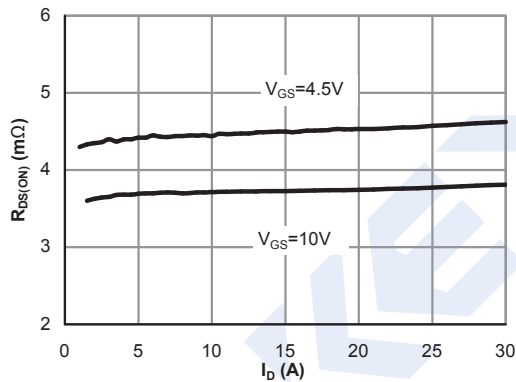


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

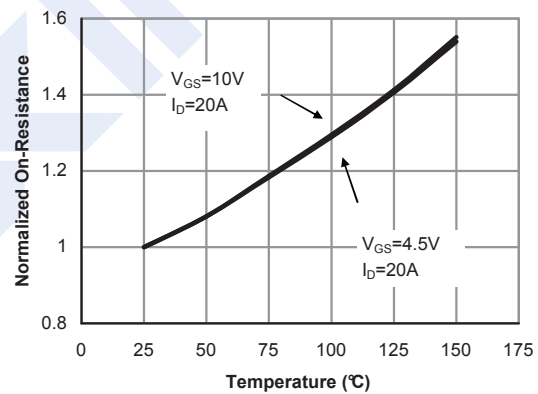


Figure 4: On-Resistance vs. Junction Temperature

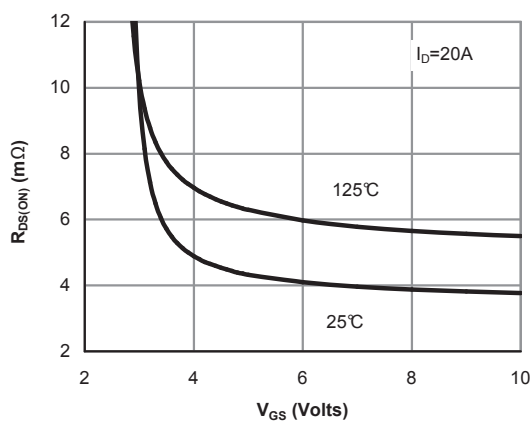


Figure 5: On-Resistance vs. Gate-Source Voltage

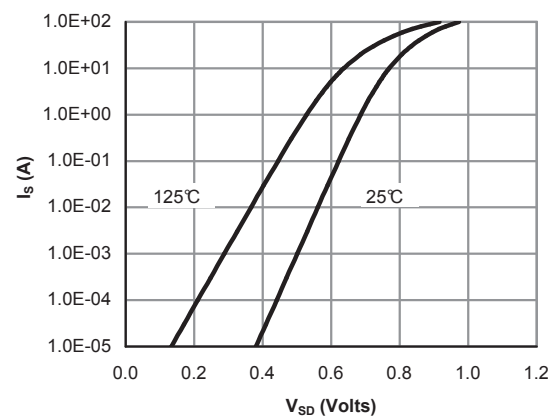


Figure 6: Body-Diode Characteristics

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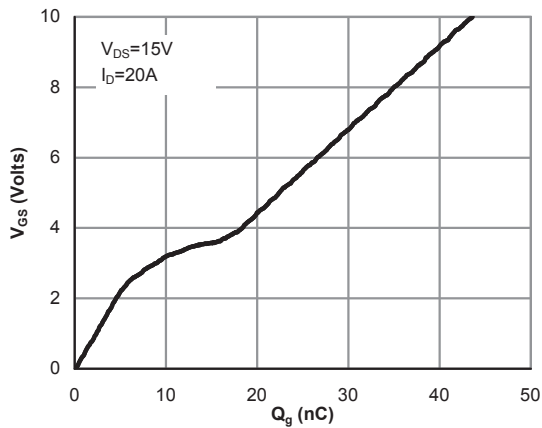


Figure 7: Gate-Charge Characteristics

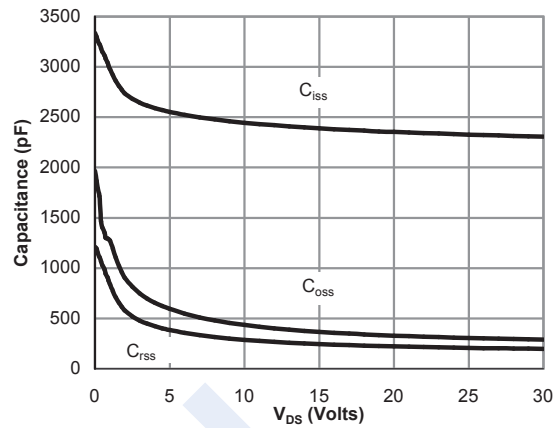


Figure 8: Capacitance Characteristics

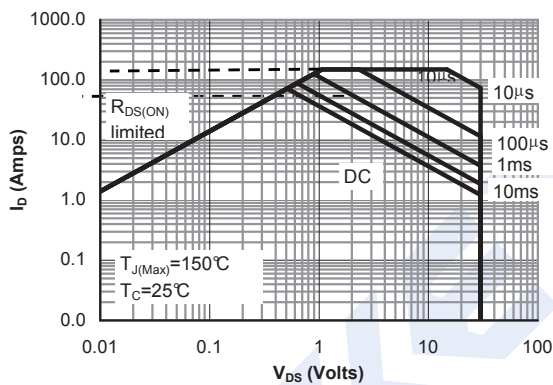


Figure 9: Maximum Forward Biased Safe Operating Area

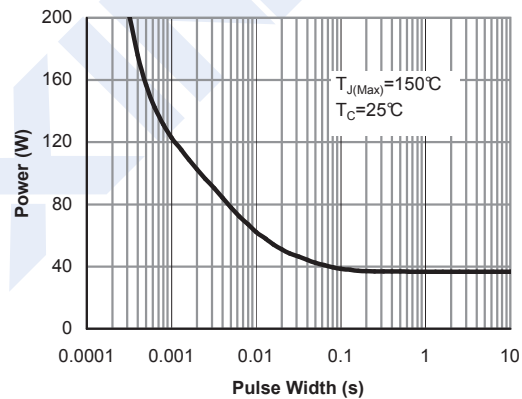


Figure 10: Single Pulse Power Rating Junction-to-Case

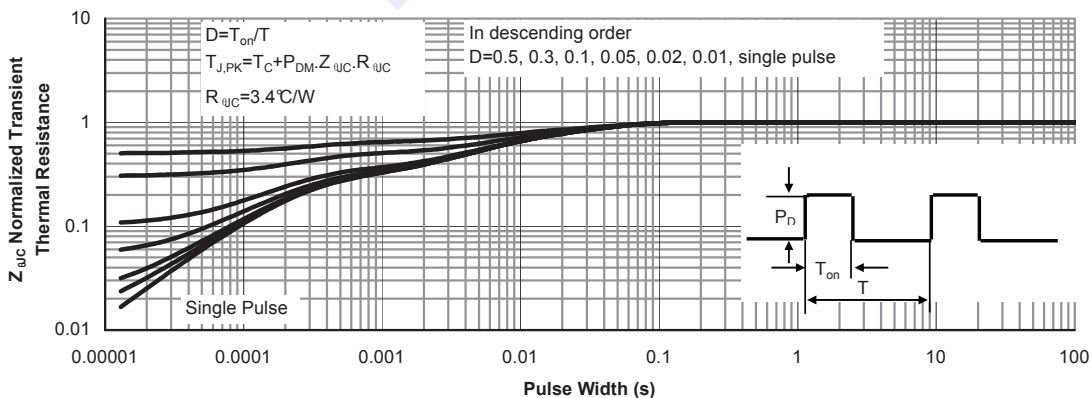
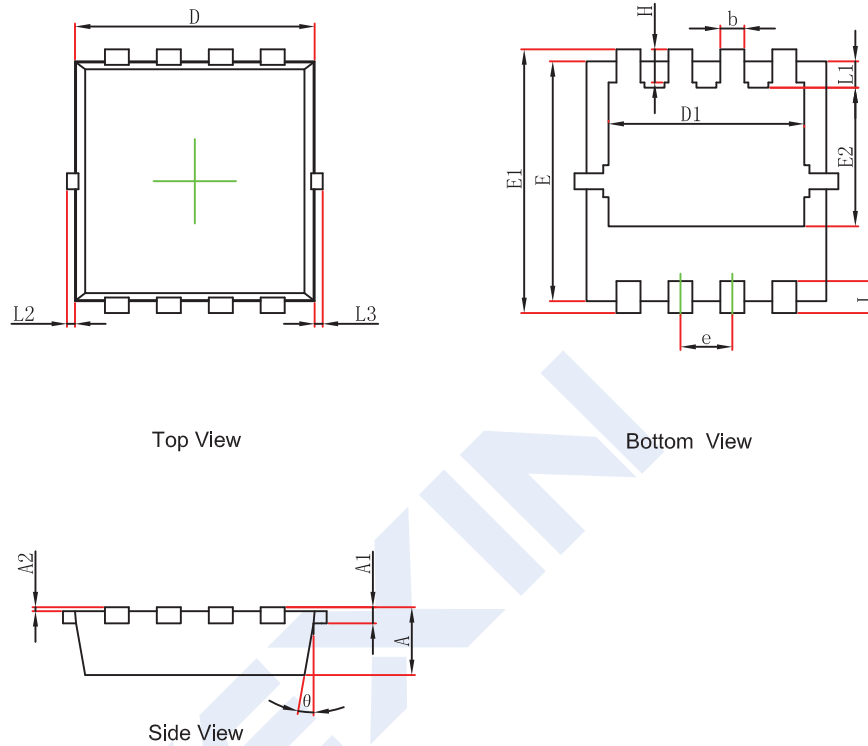


Figure 11: Normalized Maximum Transient Thermal Impedance

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■ PDFN3.3x3.3-8 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°