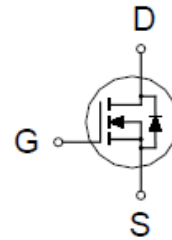
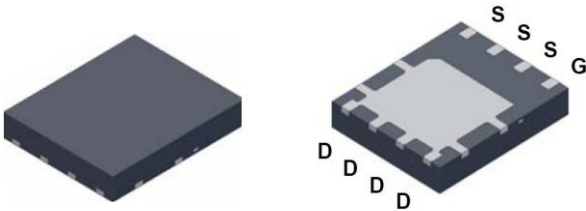


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N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
40V	8mΩ @ $V_{GS} = 10V$	30A



PDFN 5*6P

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ °C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	40	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	$T_C = 25\text{ °C}$ (Package Limited)	I_D	30	A
	$T_C = 25\text{ °C}$ (Silicon Limited)		68	
	$T_C = 100\text{ °C}$		43	
Pulsed Drain Current ¹		I_{DM}	150	
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	19	
	$T_A = 70\text{ °C}$		15	
Avalanche Current		I_{AS}	51	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	130	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	62.5	W
	$T_C = 100\text{ °C}$		25	
Power Dissipation	$T_A = 25\text{ °C}$	P_D	2.5	
	$T_A = 70\text{ °C}$		1.6	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	Steady-State	$R_{\theta JC}$		2	°C / W
Junction-to-Ambient	Steady-State	$R_{\theta JA}$		50	

¹Pulse width limited by maximum junction temperature.

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ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

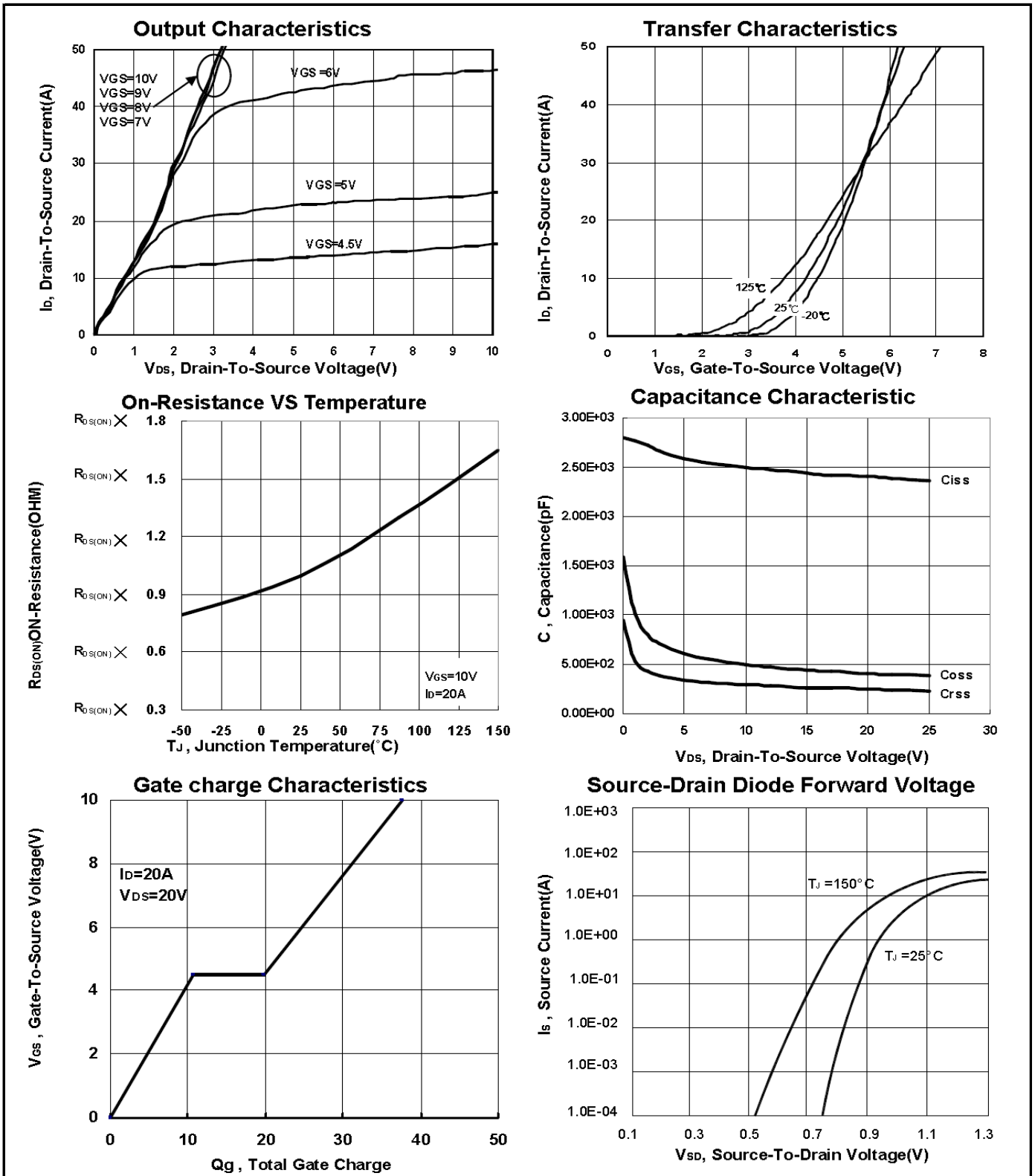
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS	
			MIN	TYP	MAX		
STATIC							
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	40			V	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.5	2	3	V	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 32V, V _{GS} = 0V ,			1	μA	
		V _{DS} = 30V, V _{GS} = 0V , T _J = 55 °C			10		
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 20A		14	22	mΩ	
		V _{GS} = 10V, I _D = 20A		6.5	8		
Forward Transconductance ¹	g _{fs}	V _{DS} = 15V, I _D = 20A		40		S	
DYNAMIC							
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 20V, f = 1MHz		2370		pF	
Output Capacitance	C _{oss}			388			
Reverse Transfer Capacitance	C _{rss}			249			
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		1		Ω	
Total Gate Charge ²	Q _g	V _{GS} =10V	I _D = 20A, V _{GS} = 10V V _{DS} = 0.5V _{(BR)DSS}	44		nC	
		V _{GS} =4.5V		20			
Gate-Source Charge ²	Q _{gs}	11					
Gate-Drain Charge ²	Q _{gd}	10					
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 20V, R _L = 1Ω, I _D ≅ 20A, V _{GS} =10V, R _{GEN} =6Ω		19			nS
Rise Time ²	t _r			18			
Turn-Off Delay Time ²	t _{d(off)}		58				
Fall Time ²	t _f		20				
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)							
Continuous Current	I _S				14	A	
Forward Voltage ¹	V _{SD}	I _F =20A, V _{GS} = 0V			1.3	V	
Reverse Recovery Time	t _{rr}	I _F =20A, dI _F /dt=100A/μS		32		nS	
Reverse Recovery Charge	Q _{rr}			19		nC	

¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

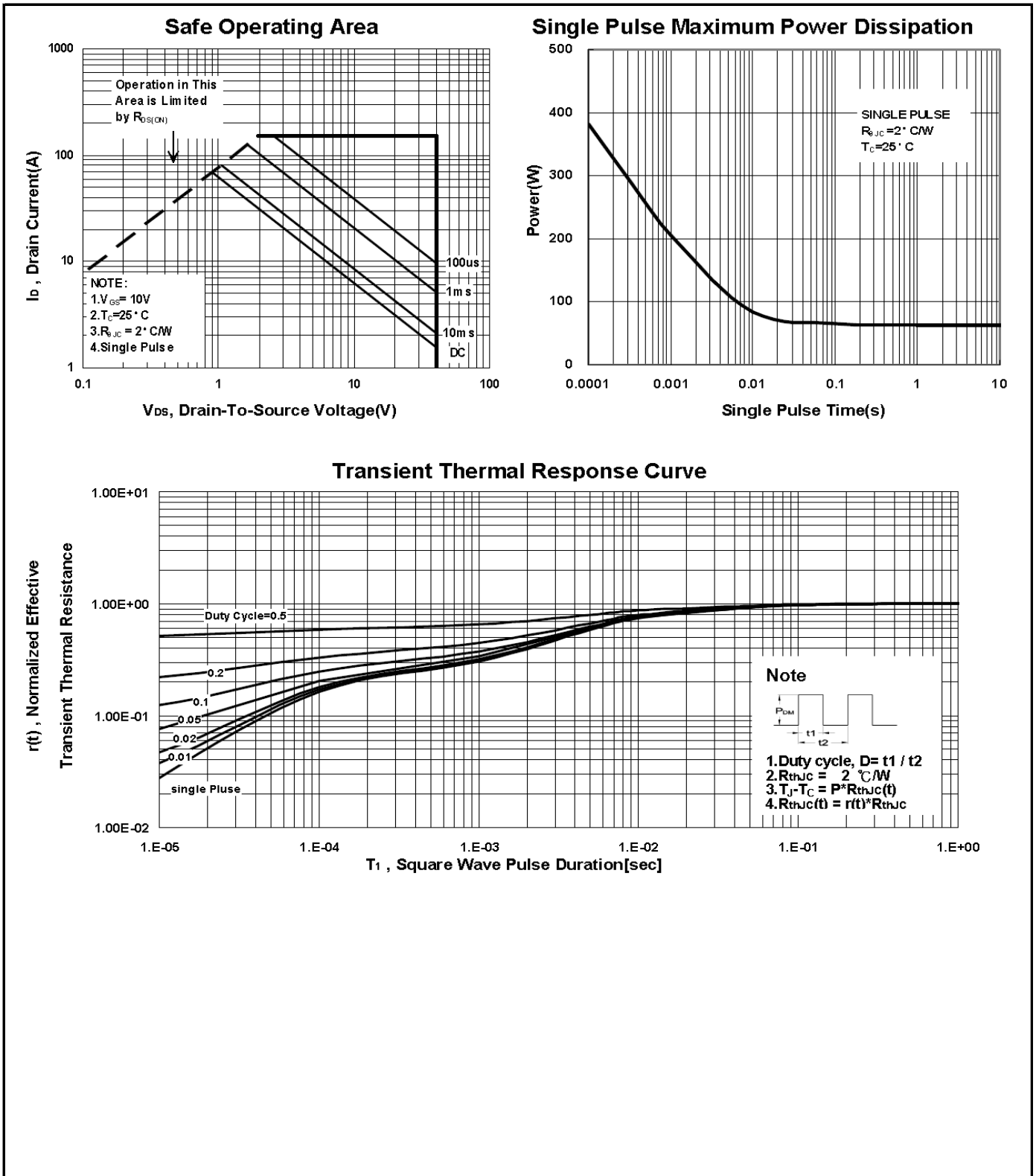
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Package Dimension

PDFN 5x6P MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8		5.15	J	3.33		3.78
B	5.44		5.9	K	0.9		
C	5.9		6.35	L	0.35		0.712
D	0.33		0.51	M	0°		12°
E		1.27		N	4.8		5.5
F	0.8		1.25	O	0.05		0.3
G	0.15		0.34	P	0.06		0.2
H	3.61		4.31	S	3.69		4.19
I	0.35		0.71				

