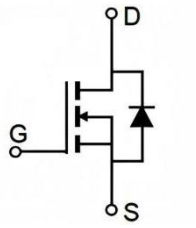
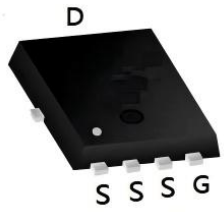
N-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DS}	200	V
$R_{DS(on)}$	82	mΩ
I_D	30	A





PDFN5x6

Features

- Split Gate Trench MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low RDS(ON)

Applications

- DC-DC converters
- Power management functions
- Synchronous-rectification applications

Absolute Maximum Ratings (Ta=25℃,unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	200	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25℃	I_D	30	A
	T_C=100℃		17	
Pulsed Drain Current		I_{DM}	63	A
Single Pulse Avalanche Energy		E_{AS}	130	mJ
Avalanche Current		I_{AS}	36	A
Total Power Dissipation	T_C=25℃	P_D	51	W
Storage Temperature Range		T_{STG}	-55 to 150	℃
Operating Junction Temperature Range		T_J	-55 to 150	℃

Thermal Characteristics

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	--	56	℃/W
Thermal Resistance Junction-Case	$R_{\theta JC}$	--	3.2	℃/W

Electrical Characteristics(T_J=25℃,unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	B_{VDSS}	V_{GS}=0V, I_D=250uA	200	--	--	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=1A	--	82	99	mΩ
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250uA	2.5	3.4	4.5	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=200V,V_{GS}=0V,T_J=25℃	--	--	1	uA
		V_{DS}=200V,V_{GS}=0V,T_J=100℃	--	--	100	
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	--	--	±100	nA
Forward Transconductance	gfs	V_{GS}=5V, I_D=10A	--	11	--	S
Gate Resistance	R_G	V_{DS}=0V,V_{GS}=0V, f=1MHz	--	2.0	--	Ω
Total Gate Charge	Q_g	I_D=10A, V_{DS}=100V V_{GS}=10V	--	6.5	--	nC
Gate-Source Charge	Q_{gs}		--	2.3	--	
Gate-Drain Charge	Q_{gd}		--	2.1	--	
Turn-On Delay Time	$T_{d(on)}$	V_{DD}=100V, R_G=2.7Ω V_{GS}=10V, I_D=10A	--	3.9	--	ns
Rise Time	T_r		--	3.2	--	
Turn-Off Delay Time	$T_{d(off)}$		--	6.4	--	
Fall Time	T_f		--	4.5	--	
Input Capacitance	C_{iss}	V_{DS}=100V, V_{GS}=0V , f=1MHz	--	380	--	pF
Output Capacitance	C_{oss}		--	64	--	
Reverse Transfer Capacitance	C_{rss}		--	9.4	--	

Diode Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Continuous Source Current	I_S	V_G=V_D=0V , Force Current	--	--	30	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V , I_S=60A ,T_J=25℃	--	--	1.3	V
Reverse Recovery Time	t_{rr}	di/dt=100A/μs T_J=25℃, I_F=10A	--	92	--	ns
Reverse Recovery Charge	Q_{rr}		--	287	--	nC

Notes:
1. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150℃
2. The EAS data shows Max. rating . The test condition is V_{DD}=100V,V_{GS}=10V,L=1mH.
3. The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
4. The data tested by pulsed , pulse width≤300us , duty cycle≤2%.
5. This value is guaranteed by design hence it is not included in the production test.

Typical Characteristics

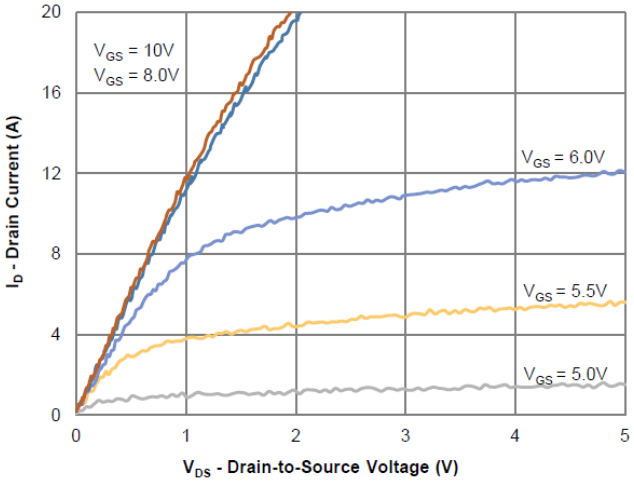


Figure 1: Output Characteristics

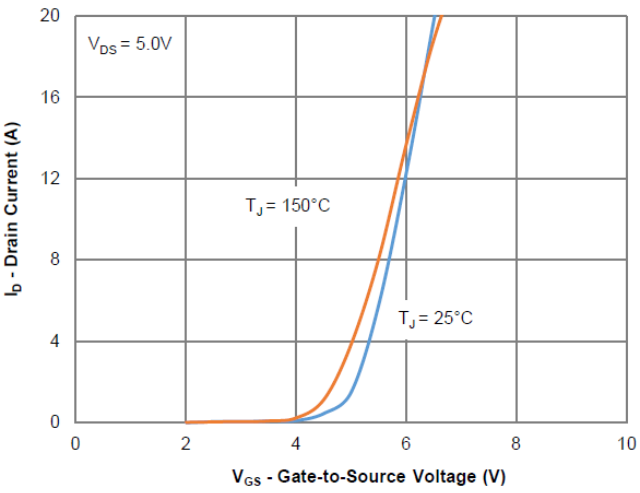


Figure 2: Transfer Characteristics

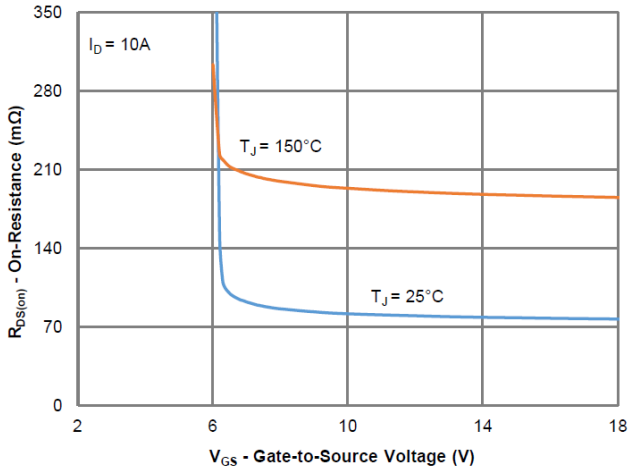


Figure 3: On-Resistance vs. Gate-Source Voltage

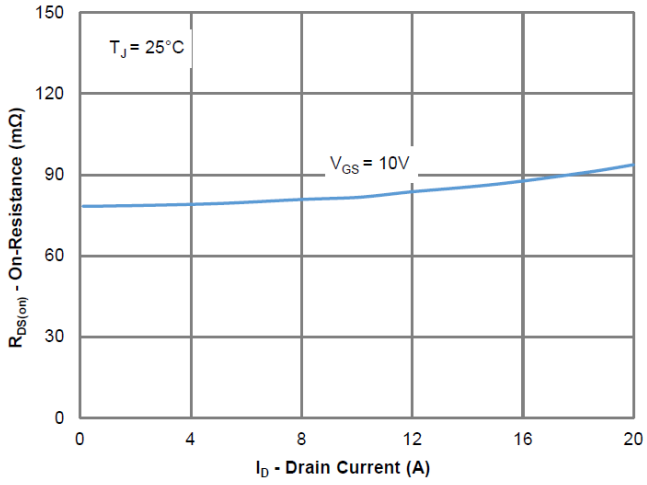


Figure 4: On-Resistance vs. Drain Current and Gate Voltage

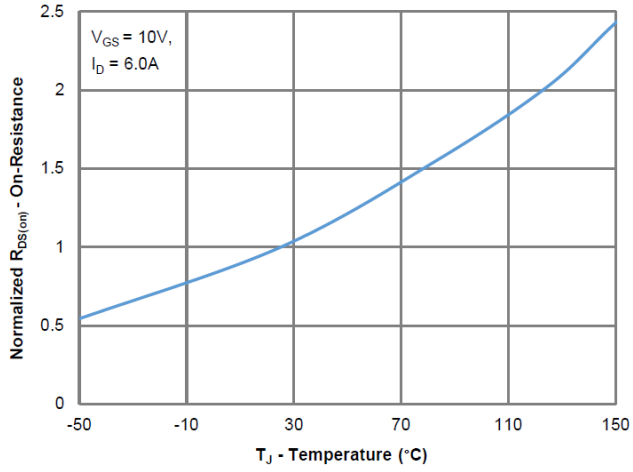


Figure 5: On-Resistance vs. Junction Temperature

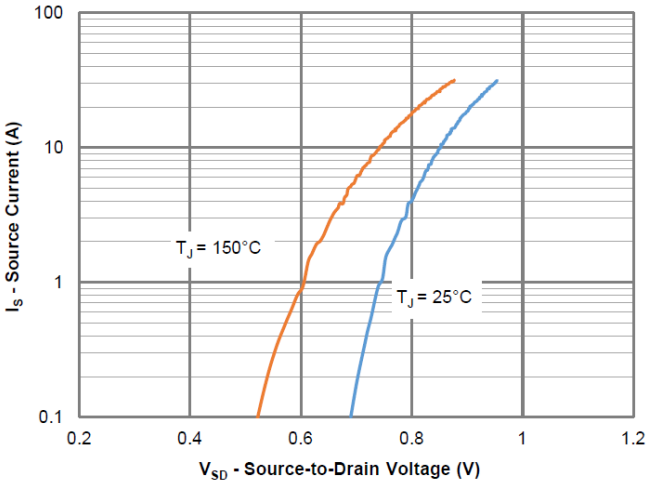


Figure 6: Source-Drain Diode Forward Voltage

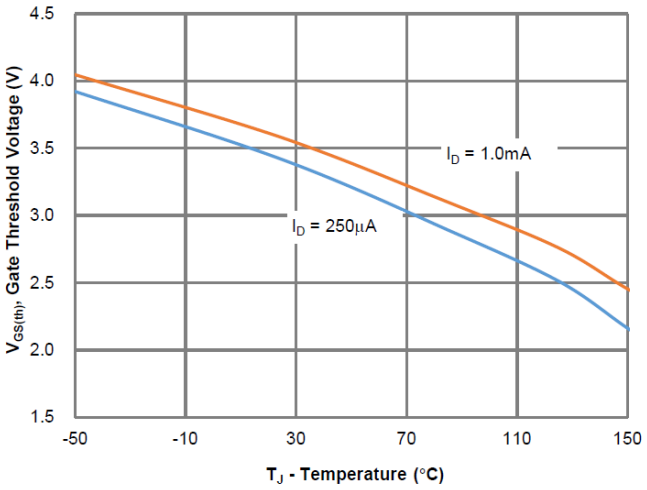


Figure 7: Gate Threshold Variation vs. Junction Temperature

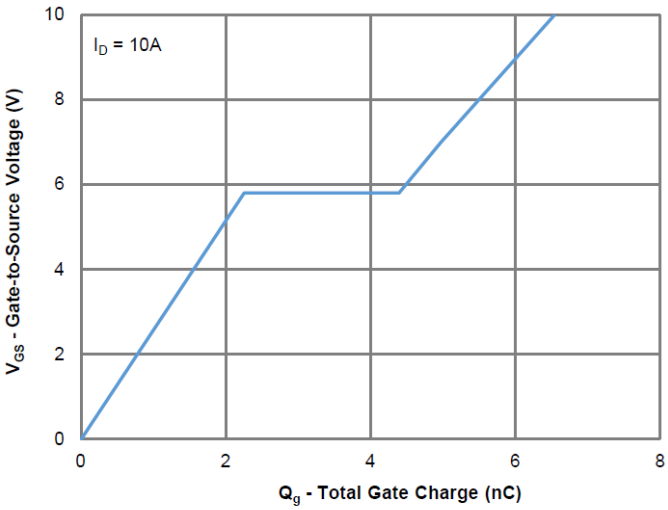


Figure 8: Gate Charge Characteristics

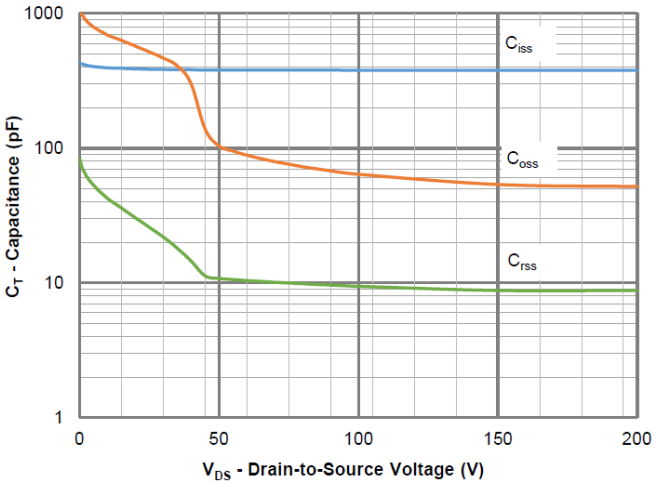


Figure 9: Capacitance Characteristics

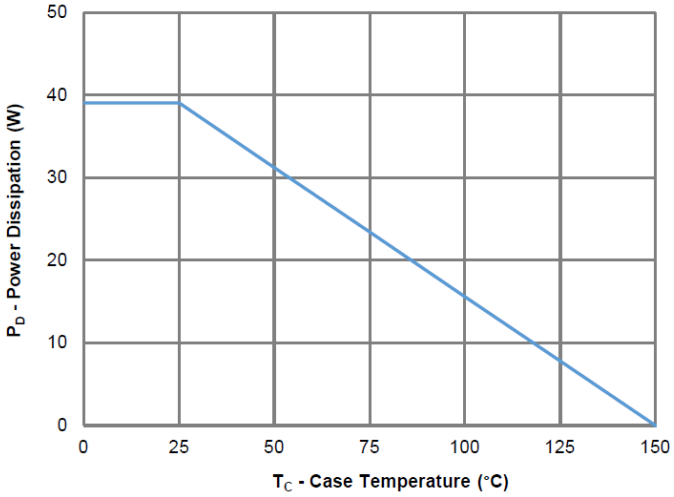


Figure 10: Power Derating

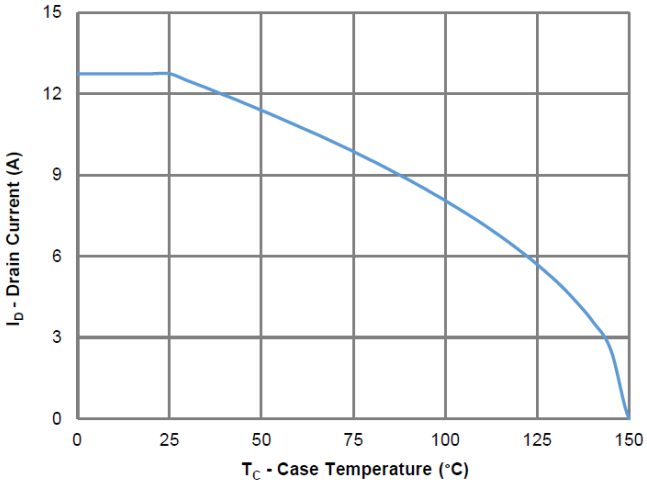


Figure 11: Current Derating

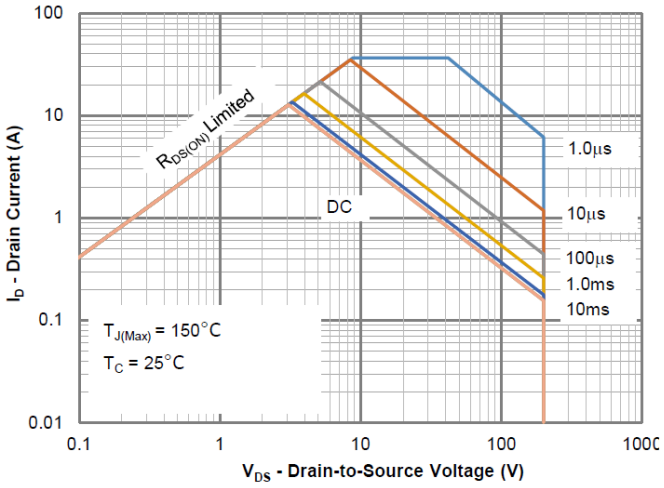


Figure 12: Safe Operating Area

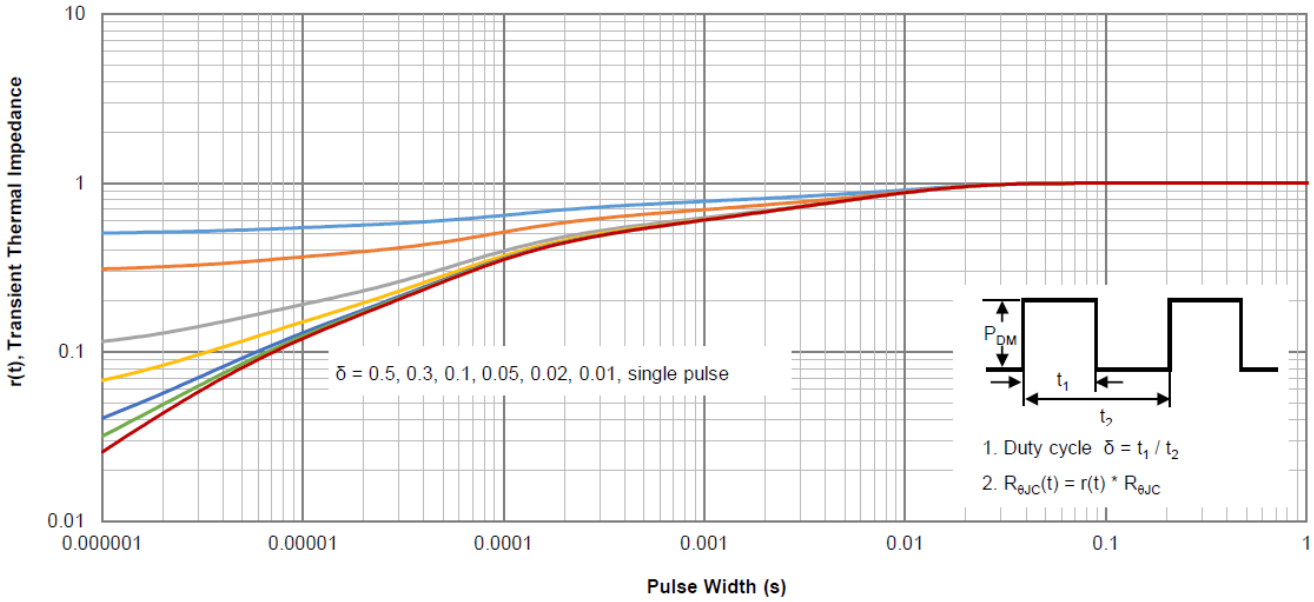
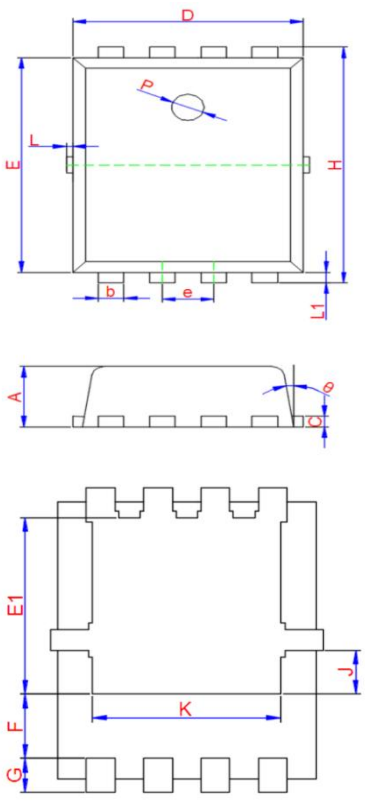


Figure 13: Normalized Maximum Transient Thermal Impedance

Package Outline Dimensions (Units: mm)

PDFN5x6



Symbol	Dimensions in mm		
	Min.	Typ.	Max.
A	0.800	1.050	1.200
b	0.250	0.350	0.490
c		0.254TYP.	
D	4.800	5.000	5.100
e		1.270TYP.	
E	5.650	5.800	5.900
E1		3.400TYP.	
F		1.300TYP.	
G		0.600TYP.	
H	5.950	6.080	6.200
J		0.950TYP.	
K		4.000TYP	
L	-	-	0.150
L1	0.100	0.140	0.180
P		1.180TYP.	
θ	6°	10°	14°

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