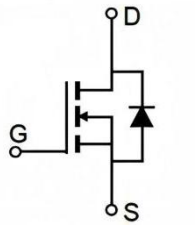
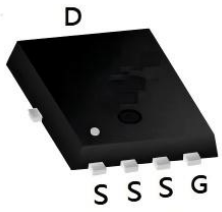
N-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DS}	100	V
$R_{DS(on)}$	4.5	mΩ
I_D	120	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

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25℃	I_D	120	A
Pulsed Drain Current (Note 1)		I_{DM}	520	A
Single Pulse Avalanche Energy (Note 1)		E_{AS}	750	mJ
Total Power Dissipation	T_C=25℃	P_D	210	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	℃

Note 1: Pulse test: 300μs pulse width, 2 % duty cycle

Thermal Characteristics

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	--	55	℃/W
Thermal Resistance from Junction-to-Case	$R_{\theta JC}$	--	0.71	℃/W

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

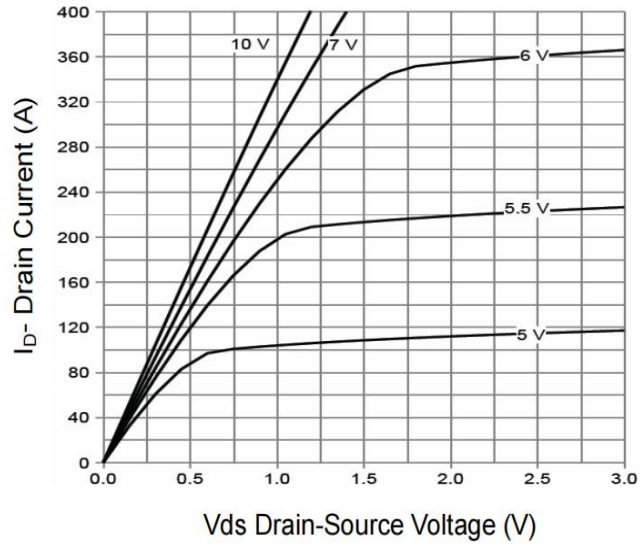
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	100	--	--	V
Gate-body Leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V	--	--	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V,V_{GS}=0V,T_J=25℃	--	--	1	uA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2	--	4	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=20A	--	4.5	5.6	mΩ
Forward Transconductance	gfs	V_{DS}=5V, I_D=65A	--	130	--	S
Input Capacitance	C_{iss}	V_{DS}=50V, V_{GS}=0V f=1MHz	--	4350	--	pF
Output Capacitance	C_{oss}		--	2150	--	
Reverse Transfer Capacitance	C_{rss}		--	220	--	
Total Gate Charge(Note 2)	Q_g	V_{GS}=10V,V_{DS}=50V I_D=65A	--	110	--	nC
Gate-Source Charge(Note 2)	Q_{gs}		--	33	--	
Gate-Drain Charge(Note 2)	Q_{gd}		--	30	--	
Turn-On Delay Time(Note 2)	$t_{d(on)}$	V_{DD}=50V, I_D=65A V_{GS}=10V, R_G=3Ω	--	23	--	ns
Rise Time(Note 2)	t_r		--	15	--	
Turn-Off Delay Time(Note 2)	$t_{d(off)}$		--	48	--	
Fall Time(Note 2)	t_f		--	16	--	

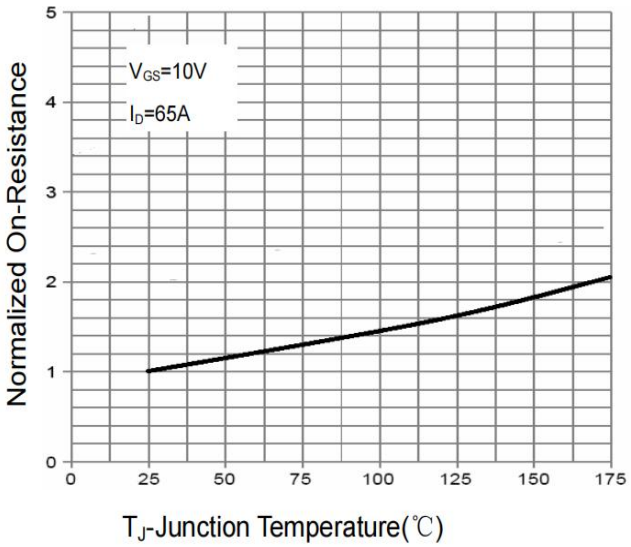
Diode Characteristics

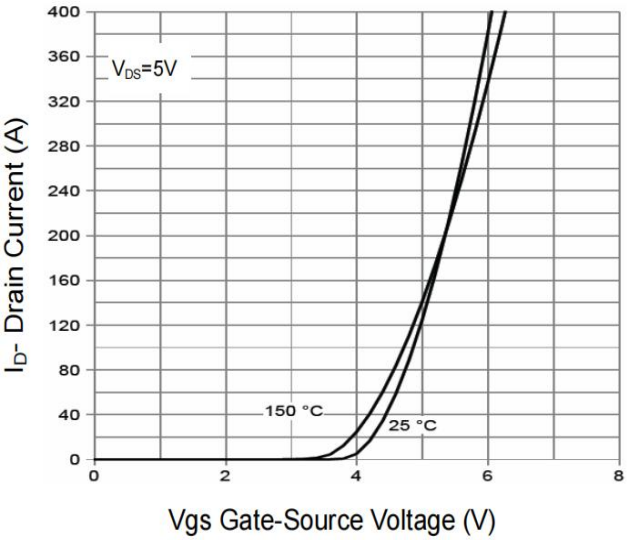
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Diode continuous forward current	I_S	V_G=V_D=0V , Force Current	--	--	120	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V , I_S=40A ,T_J=25℃	--	0.86	1.2	V
Reverse Recovery Time (Note 2)	t_{rr}	dI/dt=100A/μs, I_F=65A	--	70	--	ns
Reverse Recovery Charge (Note 2)	Q_{rr}		--	117	--	nC

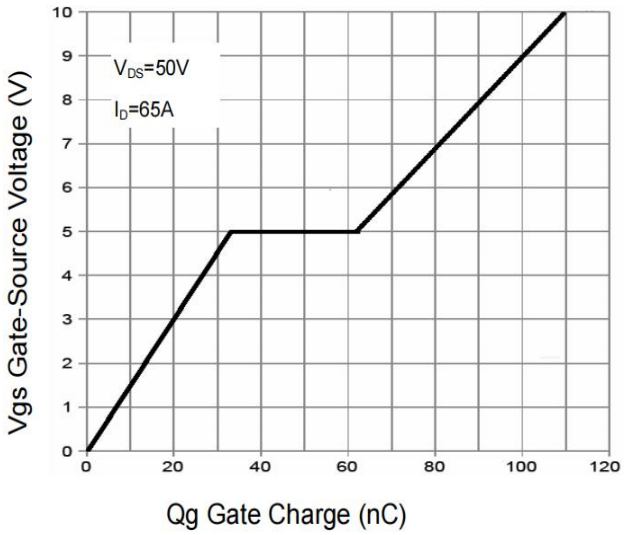
Note 2 :Pulse test: 300μs pulse width, 2 % duty cycle

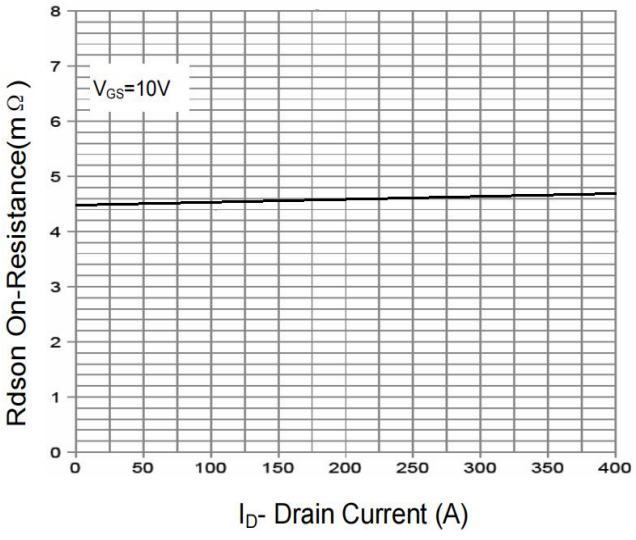
Typical Characteristics

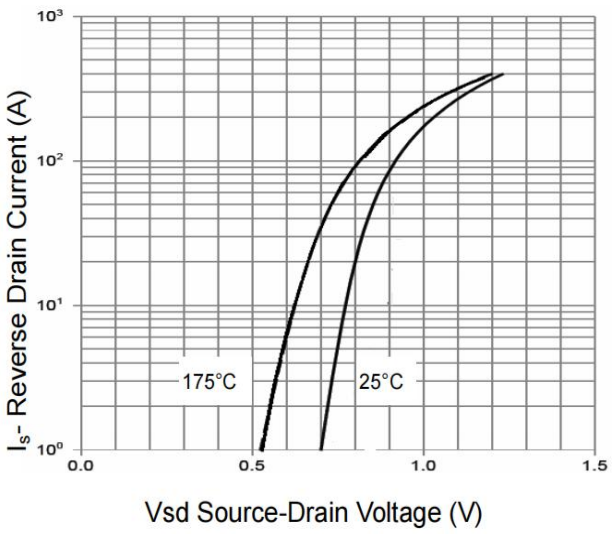


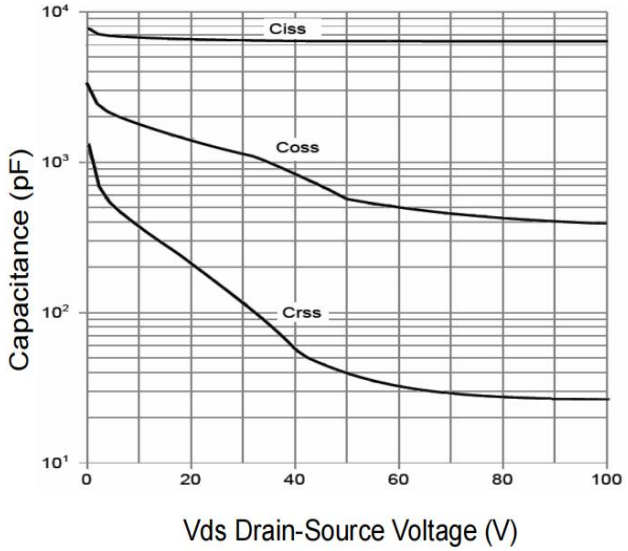


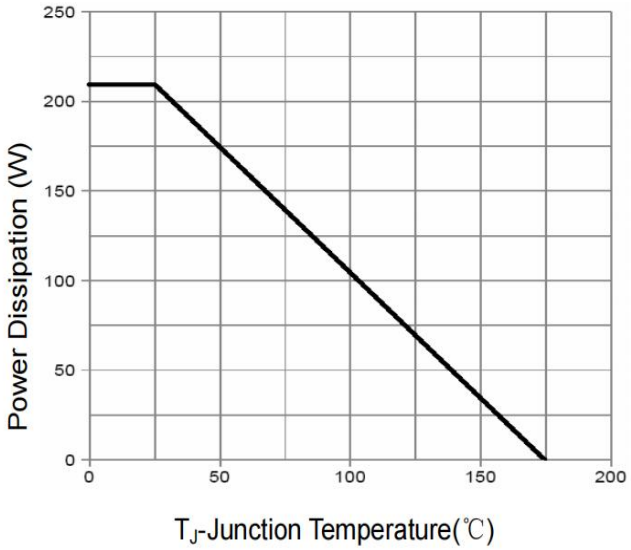


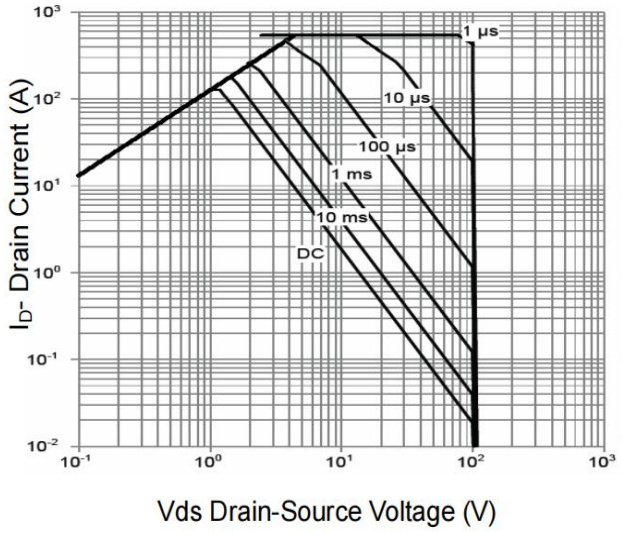


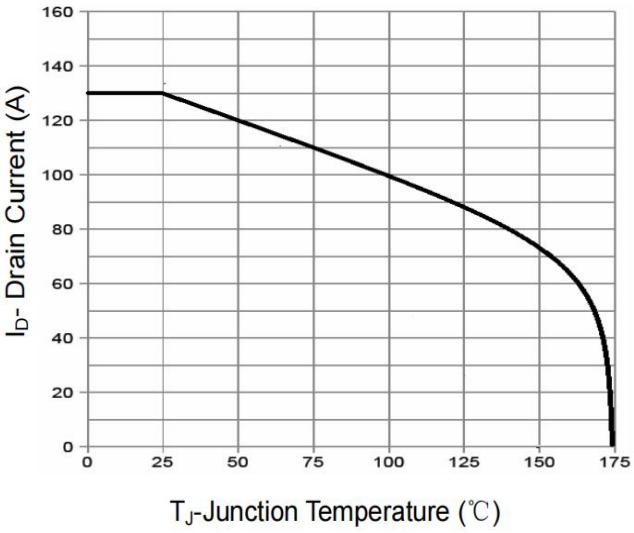


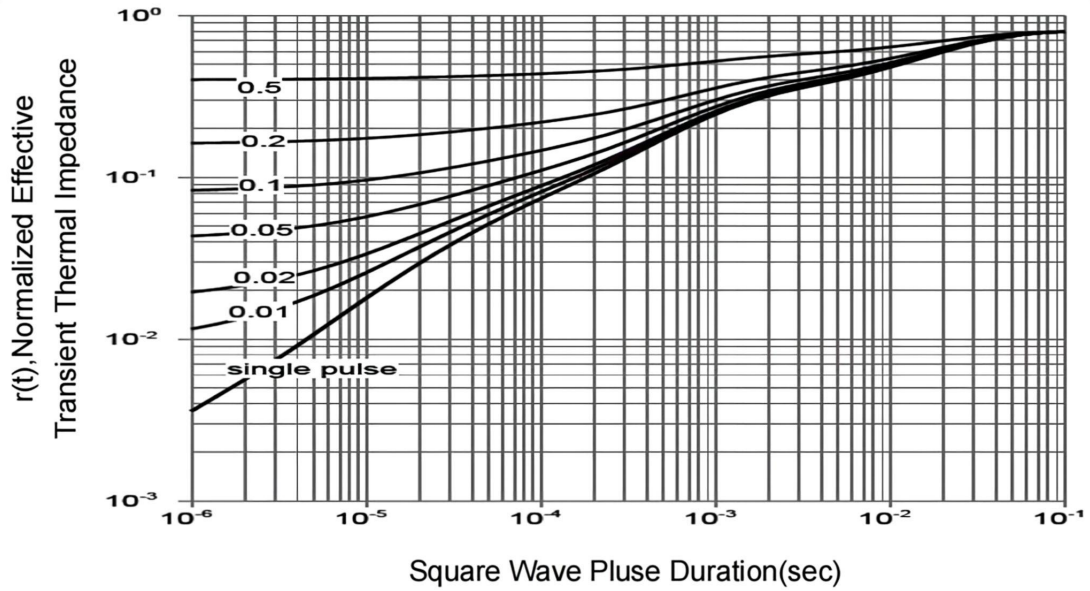



Ciss
Coss
Crss
Capacitance (pF)
Vds Drain-Source Voltage (V)


Power Dissipation (W)
TJ-Junction Temperature(℃)

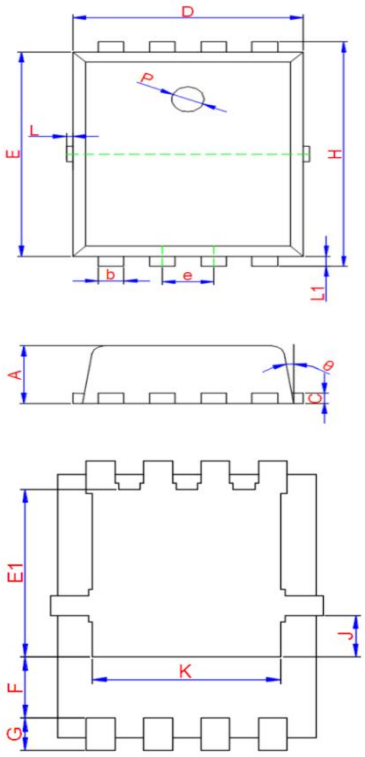

1 μs
10 μs
100 μs
1 ms
10 ms
DC
ID- Drain Current (A)
Vds Drain-Source Voltage (V)


ID- Drain Current (A)
TJ-Junction Temperature (℃)


0.5
0.2
0.1
0.05
0.02
0.01
single pulse
r(t),Normalized Effective Transient Thermal Impedance
Square Wave Pluse Duration(sec)

Package Outline

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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