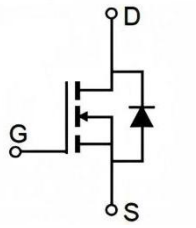
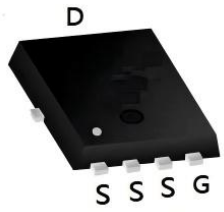
N-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DS}	40	V
$R_{DS(on)}$	5.5	mΩ
I_D	65	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}	40	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_C=25℃	I_D	65	A
	T_C=100℃		35	
Pulsed Drain Current [2]		I_{DM}	130	A
Single Pulse Avalanche Energy [3]		E_{AS}	48	mJ
Avalanche Current		I_{AS}	35	A
Total Power Dissipation [4]	T_C=25℃	P_D	39	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	℃

Thermal Characteristics

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance Junction-Ambient (Steady State)[1]	$R_{\theta JA}$	--	60	℃/W
Thermal Resistance from Junction-to-Case [1]	$R_{\theta JC}$	--	3.2	℃/W

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Parameters						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	40	--	--	V
Gate-body Leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V	--	--	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=32V,V_{GS}=0V,T_J=25℃	--	--	1	uA
		V_{DS}=32V,V_{GS}=0V,T_J=125℃	--	--	5	
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.35	--	3.0	V
Drain-Source On-Resistance [2]	$R_{DS(on)}$	V_{GS}=10V, I_D=12A	--	5.5	7.5	mΩ
		V_{GS}=4.5V, I_D=10A	--	8	13	
Dynamic Parameters						
Gate resistance	R_g	V_{DS}=0V, f=1MHz	--	1.7	--	Ω
Input Capacitance	C_{iss}	V_{DS}=15V, V_{GS}=0V f=1MHz	--	1048	--	pF
Output Capacitance	C_{oss}		--	187	--	
Reverse Transfer Capacitance	C_{rss}		--	178	--	
Gate Charge Characteristics						
Total Gate Charge	Q_g	V_{GS}=4.5V,V_{DS}=20V I_D=12A	--	28	--	nC
Gate-Source Charge	Q_{gs}		--	4	--	
Gate-Drain Charge	Q_{gd}		--	6	--	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=15V, I_D=1A V_{GS}=10V, R_G=3.3Ω	--	14.3	--	ns
Rise Time	t_r		--	5.6	--	
Turn-Off Delay Time	$t_{d(off)}$		--	20	--	
Fall Time	t_f		--	11	--	

Diode Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Diode continuous forward current [1, 5]	I_S	V_G=V_D=0V , Force Current	--	--	65	A
Diode Forward Voltage [2]	V_{SD}	V_{GS}=0V, I_S=1A ,T_J=25℃	--	--	1.0	V

Note :

1.The data tested by surface mounted on a 1 inch$_2$ FR-4 board with 2OZ copper.

2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%

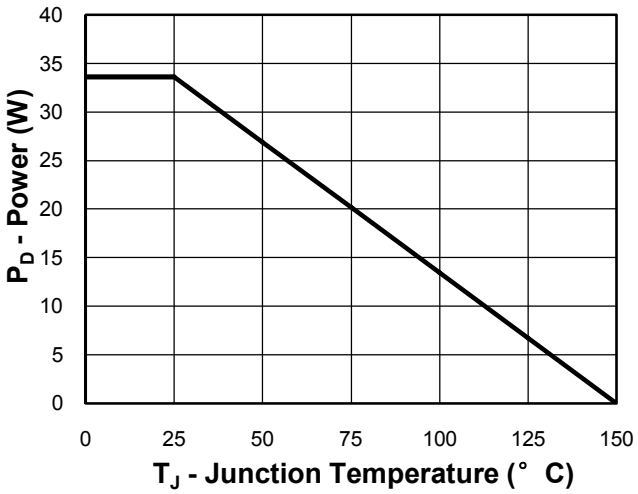
3.The EAS data shows Max. rating . The test condition is V_{DD}=25V,V_{GS}=10V,L=0.1mH,I_{AS}=35A

4.The power dissipation is limited by 150℃ junction temperature

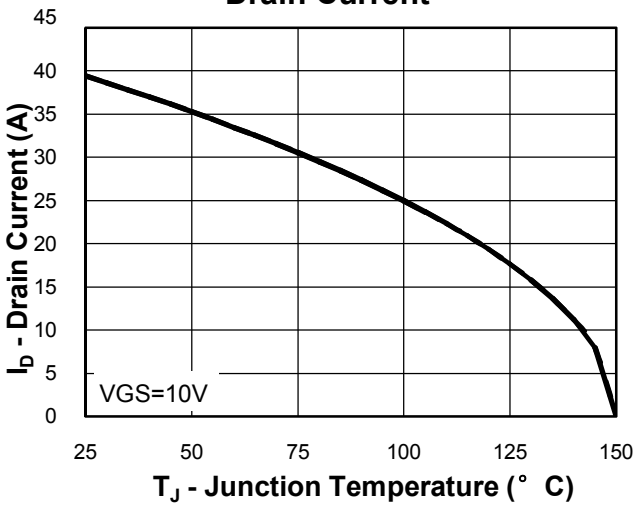
5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Characteristics

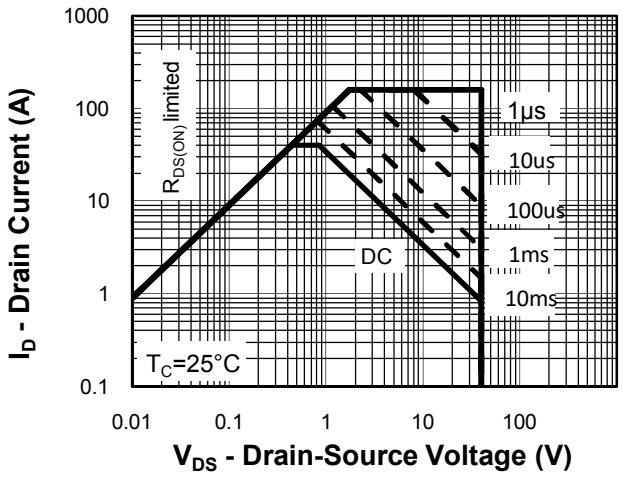
Power Dissipation



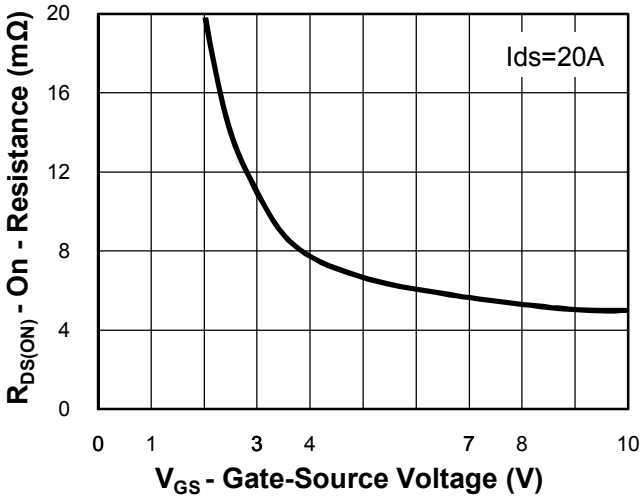
Drain Current



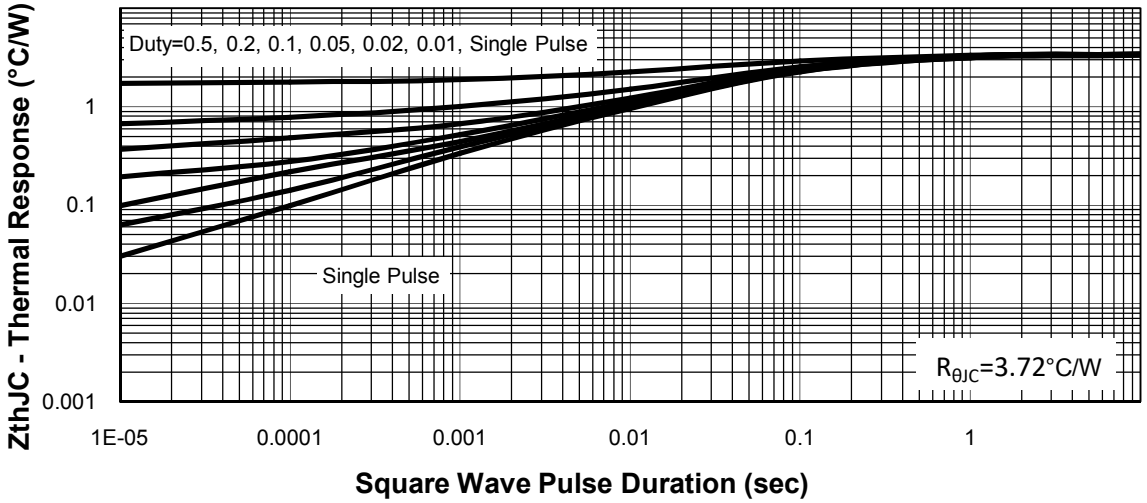
Safe Operation Area



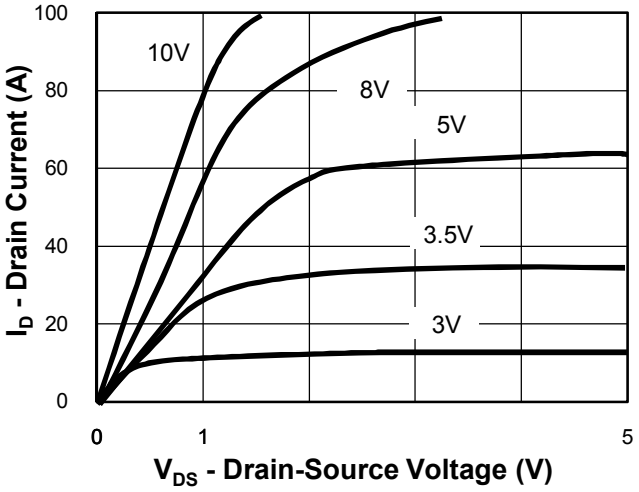
Drain Current



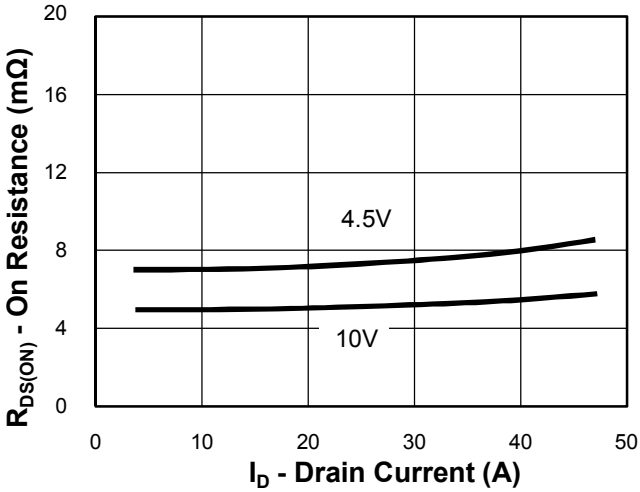
Thermal Transient Impedance



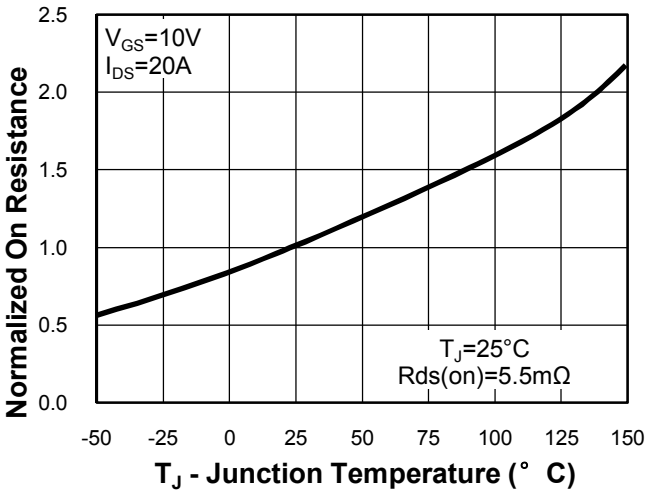
Output Characteristics



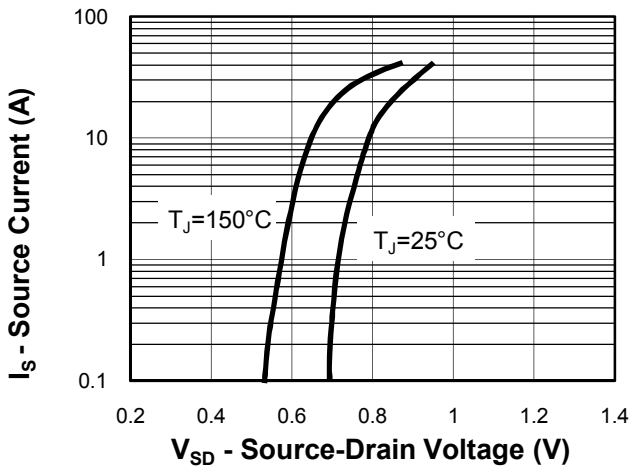
Drain-Source On Resistance



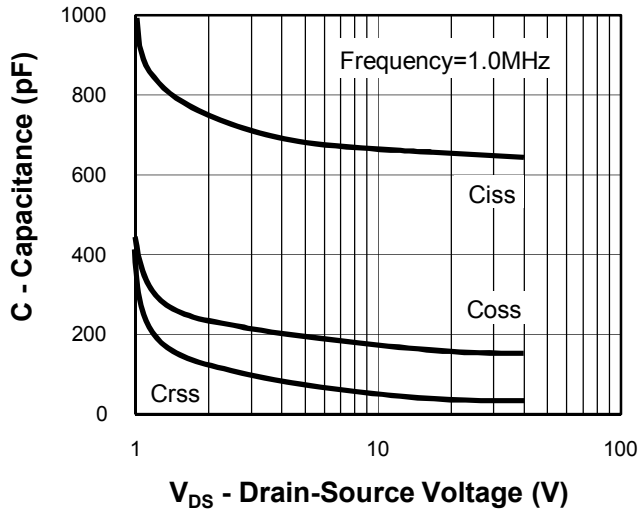
Drain-Source On Resistance



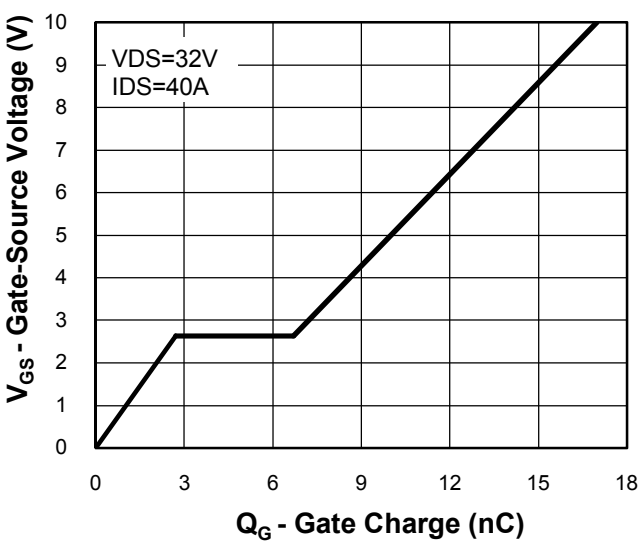
Source-Drain Diode Forward



Capacitance

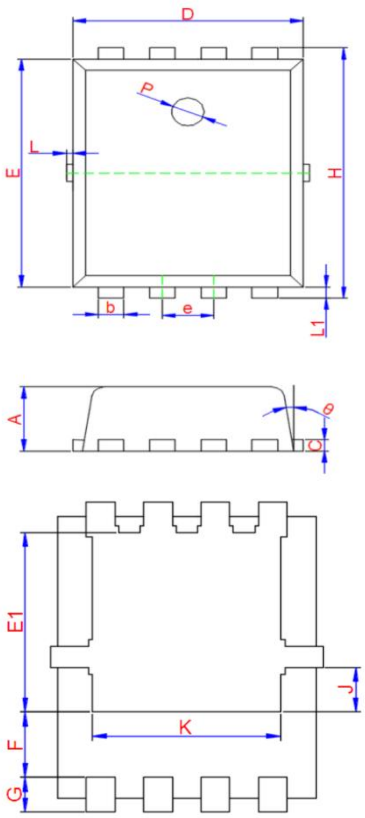


Gate Charge



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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