

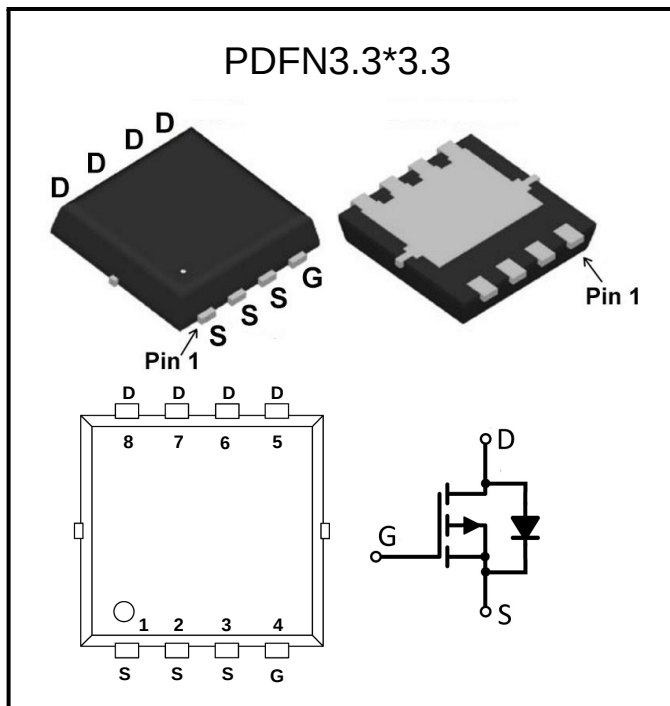
Features

- V_{DS}=-30V, I_D=-40A
- Typ.R_{DS(ON)} = 11mΩ(Typ.) @V_{GS} =-10V, I_d=-10A
- Typ.R_{DS(ON)} = 15mΩ(Typ.) @V_{GS} =-4.5V, I_d=-5A
- Fast Switching
- Low On-Resistance
- Halogen and Antimony Free, RoHS compliant

Applications

- Switch switching
- Power management in portable/desktop PCs

Package



Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Symbol	Parameter		Value	Units
V _{DS}	Drain-Source Voltage		-30	V
V _{GS}	Gate - Source Voltage		±25	
I _D	Drain Current	T _C =25°C	-40	A
		T _C =100°C	-28	
I _{DM}	Drain Current-Pulse		-160	A
I _{AS}	Avalanche Current(L=0.3mH)		22.5	A
E _{AS}	Avalanche Energy, Single Pulsed		75	mJ
P _D	Power Dissipation	T _C =25°C	39	W
		T _C =100°C	15	
T _J	Junction Temperature(Max)		-55 to 150	°C
T _{stg}	Storage Temperature		-55 to 150	

Thermal Characteristics

Parameter	Symbol	Conditions	Value.	Units
Thermal Resistance from Junction to Case	R _{ΘJC}	—	3.2	°C/W
Thermal Resistance From Junction to Ambient	R _{ΘJA}	—	56	



Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = -250uA	-30	—	—	V
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _{DS} = -250uA	-1.1	-1.5	-1.9	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -30V, V _{GS} = 0V	—	—	-1	uA
Gate- Source Leakage Current,Reverse	I _{GSS}	V _{GS} = ±25V, V _{DS} = 0V	—	—	±100	nA
Static Drain-source On Resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -10A	—	11	14.5	mΩ
		V _{GS} = -4.5V, I _D = -5A	—	15	19	
Input capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz	—	1230	—	pF
Output capacitance	C _{oss}		—	160	—	
Reverse transfer capacitance	C _{rss}		—	145	—	
Turn-on delay time	T _{d(on)}	V _{DS} = -15V, V _{GS} = -10V, R _L = 1Ω, R _G = 3Ω	—	18	—	nS
Turn-on Rise time	T _r		—	22	—	
Turn -Off Delay Time	T _{d(off)}		—	55	—	
Turn -Off Fall time	T _f		—	42	—	
Gate to Source Charge	Q _{gs}	V _{DS} = -15V, V _{GS} = -10V, I _D = -10A	—	6	—	nC
Gate to Drain Charge	Q _{gd}		—	4.3	—	
Gate to Drain Charge	Q _g		—	26.4	—	
Gate Resistance	R _g	f = 1MHz	—	10	—	Ω
Diode Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = -1A,	—	-0.75	-1	V
Reverse Recovery Time	T _{rr}	I _{SD} = -10A, V _{GS} = 0V di/dt = 100A/μs	—	32	—	nS
Reverse Recovery Charge	Q _{rr}		—	28	—	nC



Electrical Characteristics Diagrams

Figure 1: On-Regin Characteristics

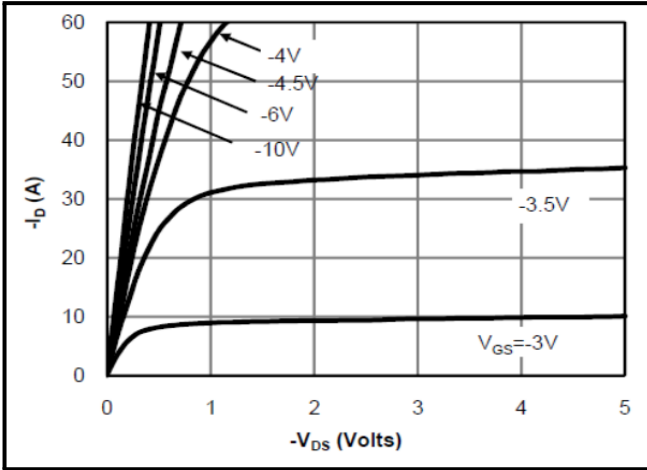


Figure 2: Transfer Characteristics

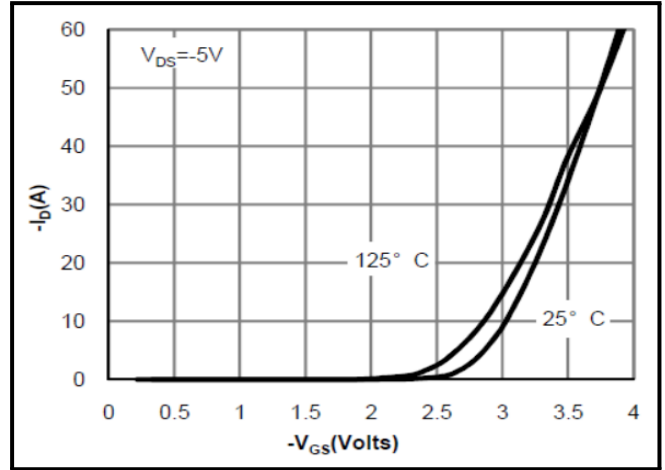


Figure 3: On-Resistance vs. Drain Current and Gate

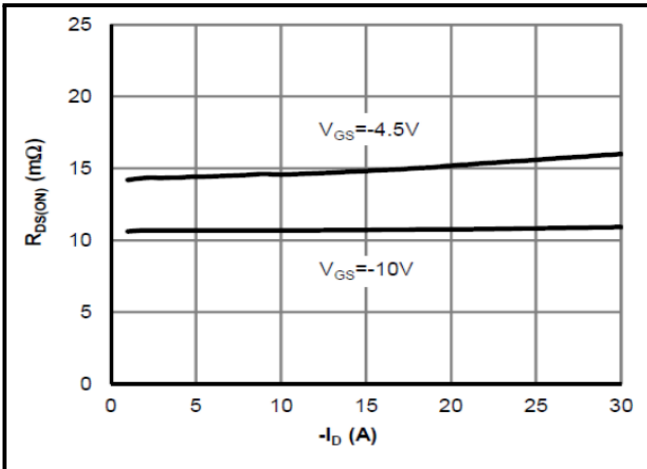


Figure 4: On-Resistance vs. Junction Temperature

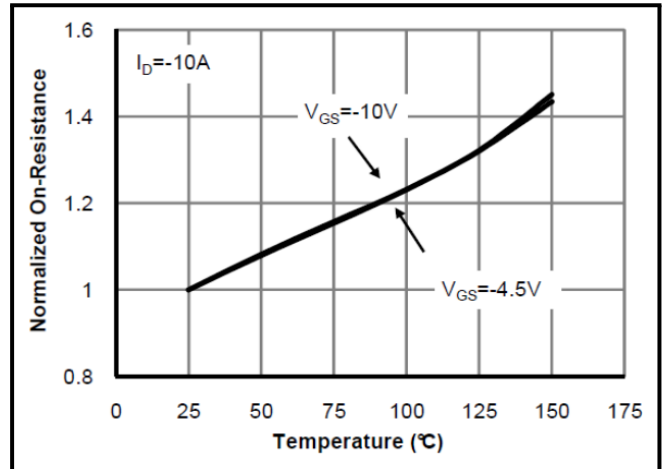


Figure 5: On-Resistance vs. Gate-Source Voltage

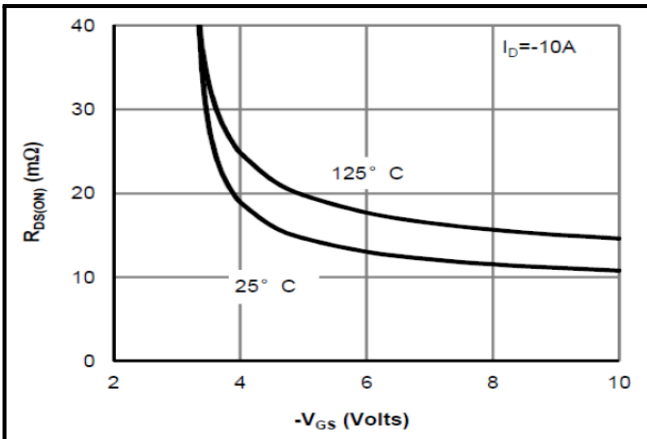
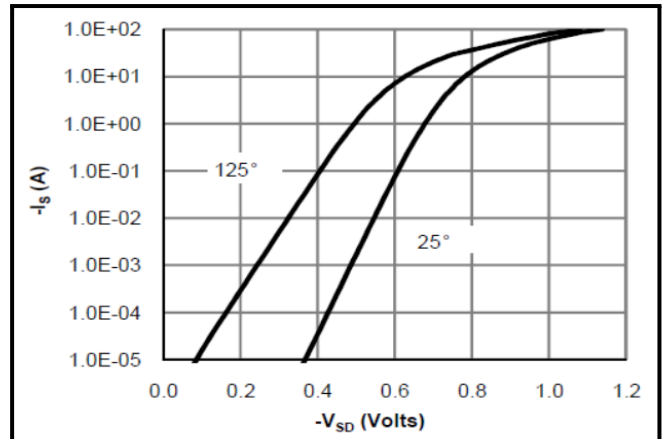


Figure 6: Body-Diode Characteristics



Electrical Characteristics Diagrams

Figure 7: Gate-Charge Characteristics

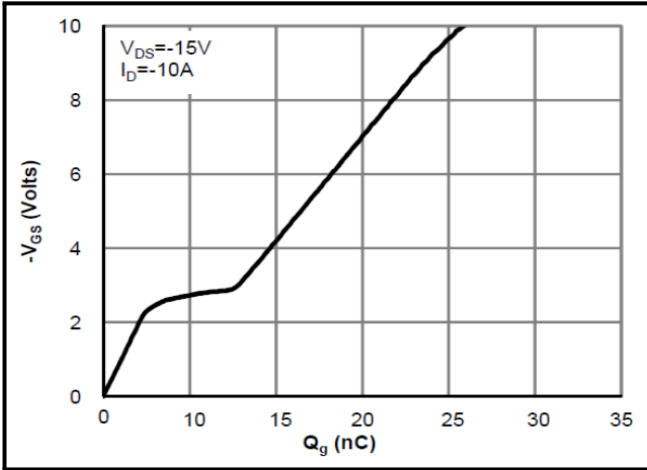


Figure 8: Capacitance Characteristics

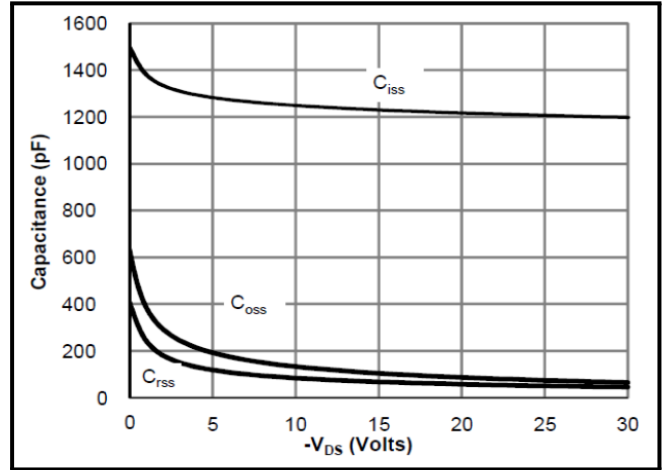


Figure 9: Maximum Forward Biased Safe Operating

Area

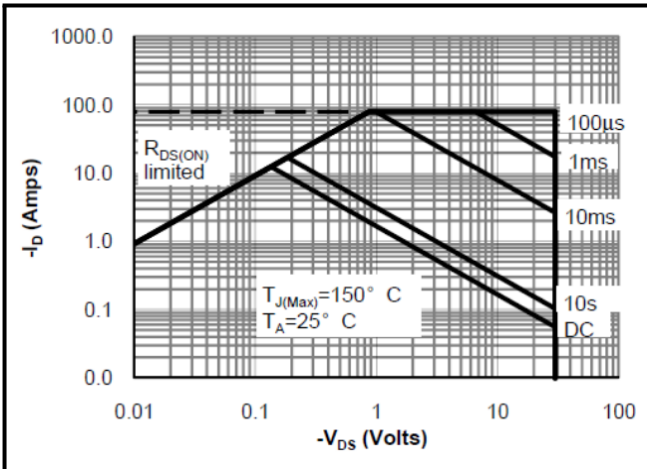


Figure 10: Single Pulse Power Rating Junction-to-

Ambient

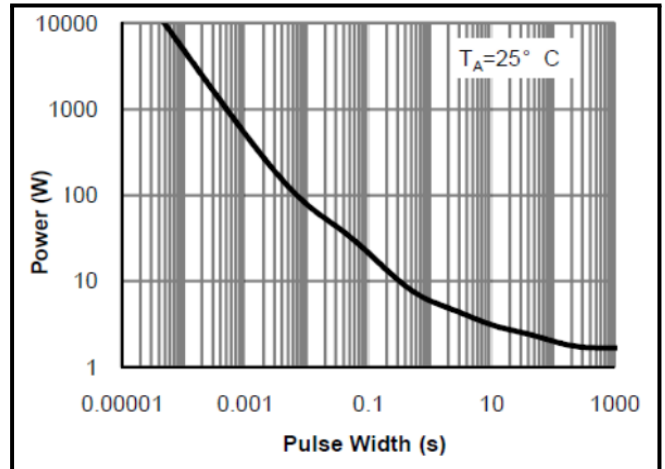
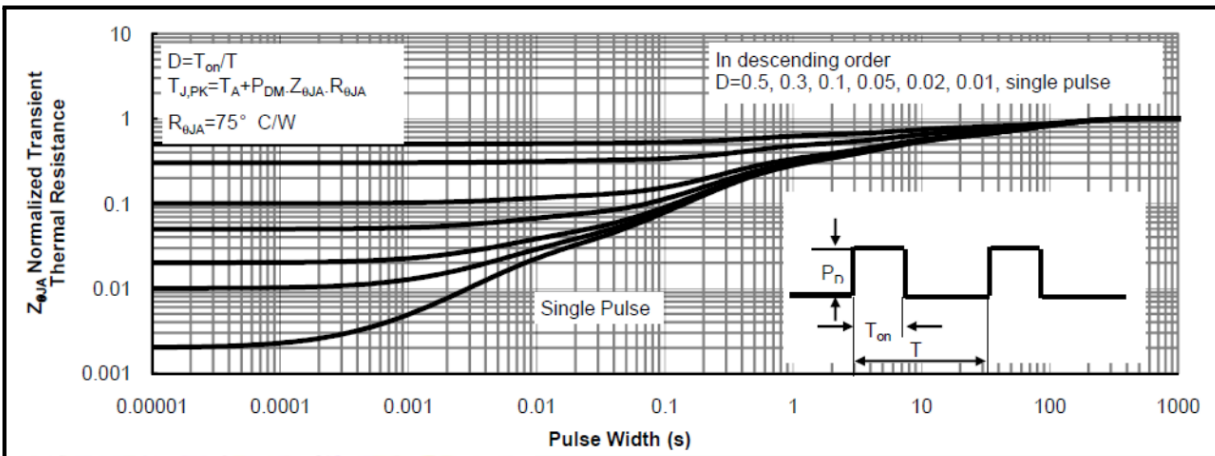
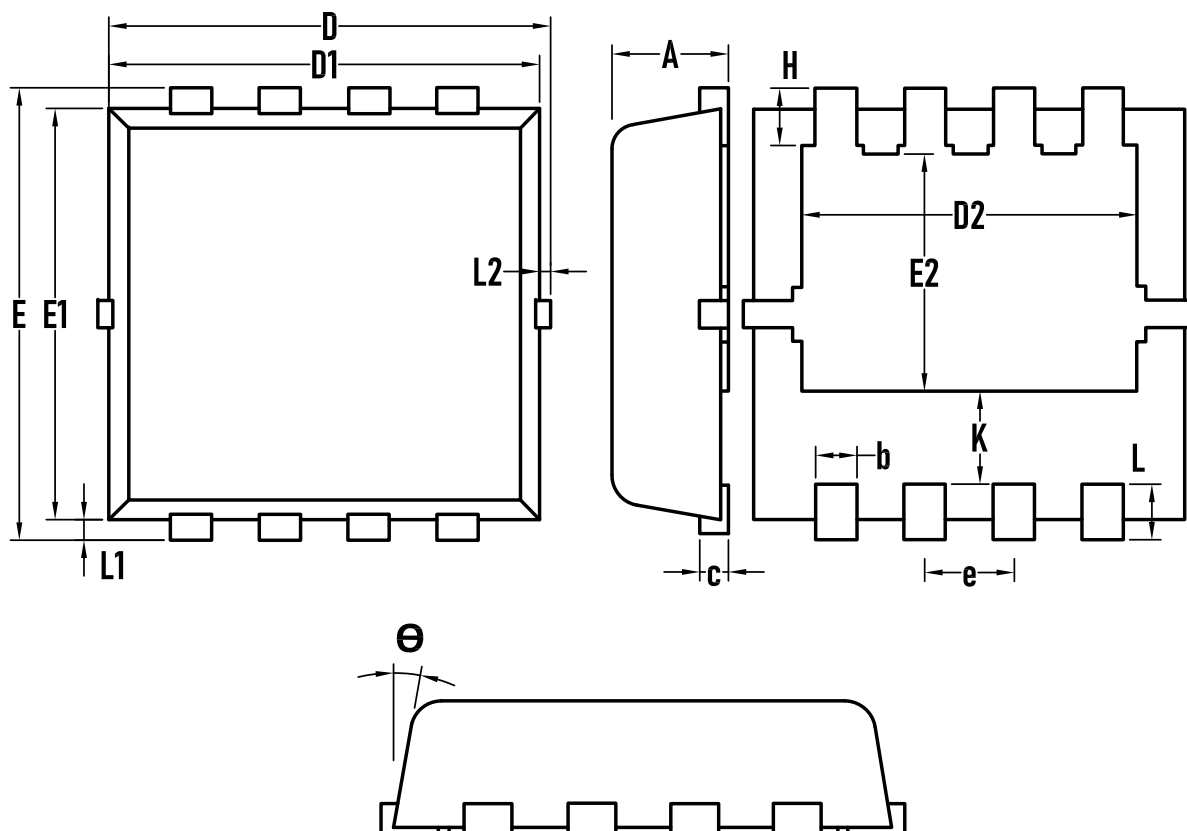


Figure 11: Normalized Maximum Transient Thermal Impedance



Packaging Tape -PDFN3.3*3.3



SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	0.70	0.80	0.90
b	0.25	0.30	0.35
c	0.14	0.15	0.20
D	3.10	3.30	3.50
D1	3.05	3.15	3.25
D2	2.35	2.45	2.55
e	0.55	0.65	0.75
E	3.10	3.30	3.50
E1	2.90	3.00	3.10
E2	1.64	1.74	1.84
H	0.32	0.42	0.52
K	0.59	0.69	0.79
L	0.25	0.40	0.55
L1	0.10	0.15	0.20
L2	—	—	0.15
θ	8°	10°	12°

