Features

- Advance high cell density Trench Technology
- Low Gate Charge for fast switching
- Low $R_{DS(ON)}$ to minimize conductive loss
- Low Thermal resistance

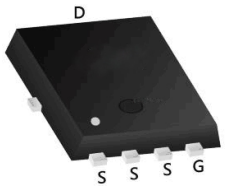
Product Summary

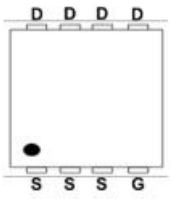
BVDSS	RDSON	ID
150V	8mΩ	75A

Application

- MB/VGA Vcore
- SMPS 2 nd Synchronous Rectifier
- POL application
- BLDC Motor driver

DFN5X6 Pin Configuration





Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	150	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current[1]	75	A
I_D@T_C=100℃		60	A
I_{DM}	Pulsed Drain Current[2]	270	A
EAS	Single Pulse Avalanche Energy[3]	231	mJ
P_D@T_C=25℃	Total Power Dissipation	125	W
P_D@T_C=100℃	Total Power Dissipation	50	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient [1](Steady State)	---	65	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case [1]	---	1.0	℃/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	150	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance2	V_{GS}=10V , I_D=20A	---	8.0	11.5	mΩ
		V_{GS}=4.5V , I_D=20A	---	---	---	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	2.5	3.2	4.5	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=100V , V_{GS}=0V	---	---	1.0	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
gFS	Forward Transconductance	V_{DS}=5V , I_D=20A	---	60	---	S
Rg	Gate resistance	VGS=0V,VDS=0V,f=1.0MHz	---	2.5	---	Ω
Q_g	Total Gate Charge	V_{DS}=75V , V_{GS}=10V , I_D=20A	---	30	---	nC
Q_{gs}	Gate-Source Charge		---	7.5	---	
Q_{gd}	Gate-Drain Charge		---	6.5	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=75V , V_{GS}=10V , R_G=6Ω, R_L=3.75Ω	---	30	---	ns
T_r	Rise Time		---	19.4	---	
$T_{d(off)}$	Turn-Off Delay Time		---	7.5	---	
T_f	Fall Time		---	6.5	---	
C_{iss}	Input Capacitance	V_{DS}=75V , V_{GS}=0V , f=1MHz	---	2181	---	pF
C_{oss}	Output Capacitance		---	363	---	
C_{rss}	Reverse Transfer Capacitance		---	7.9	---	
Diode Characteristics						
I_{SD}	Source-Drain Current		---	---	75	A
V_{SD}	Forward on Voltage	V_{GS}=0V , I_S=20A	---	---	1.0	V
t_{rr}	Reverse Recovery Time	I_S=20A , dI/dt=100A/μs , T_J=25℃	---	99	---	nS
Q_{rr}	Reverse Recovery Charge		---	318	---	nC

Note :
1. The maximum current rating is package limited.
2. Repetitive Rating: Pulse width limited by maximum junction temperature
3. EAS condition: TJ=25° C

Typical Characteristics

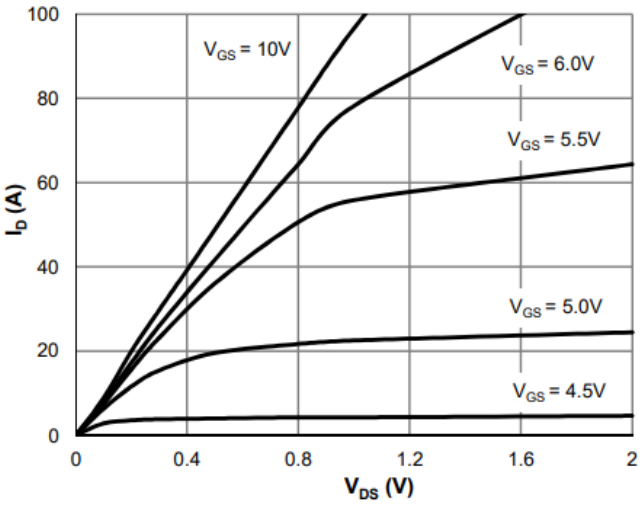


Fig.1 Saturation Characteristics

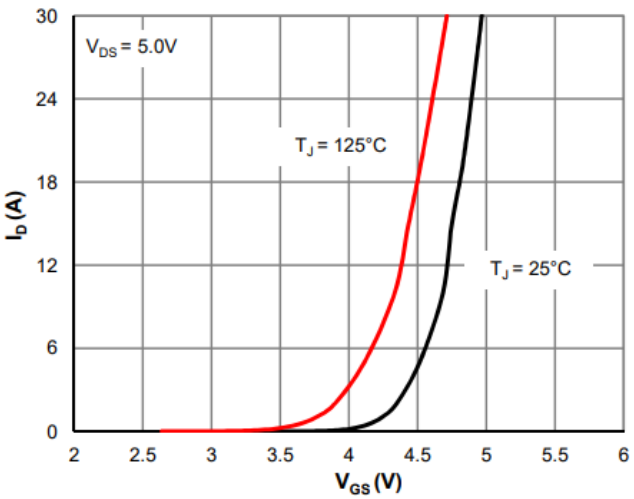


Fig.2 Transfer Characteristics

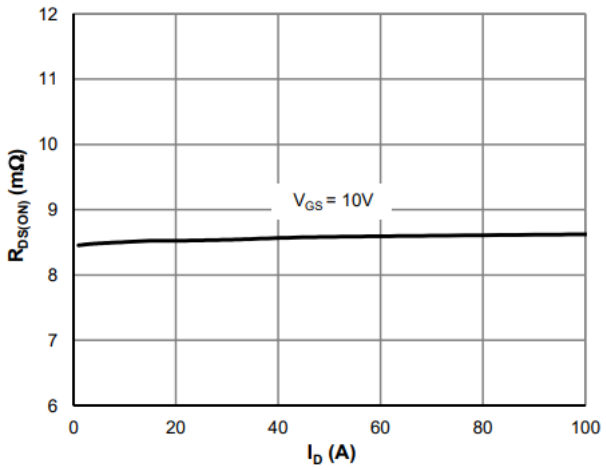


Fig.3 RDS(ON) vs. Drain Current

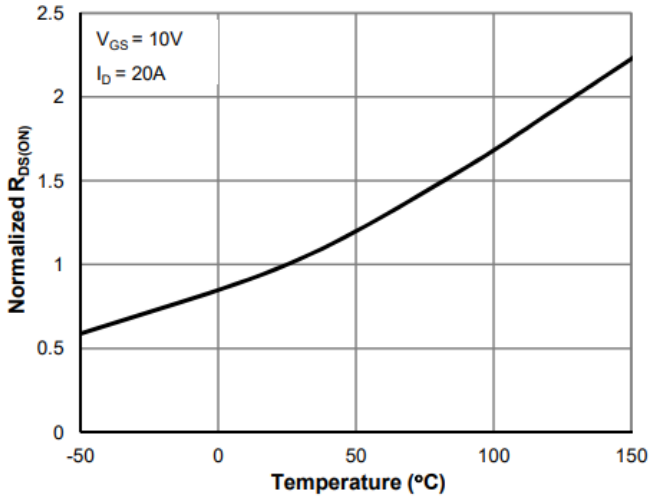


Fig.4 RDS(ON) vs. Junction Temperature

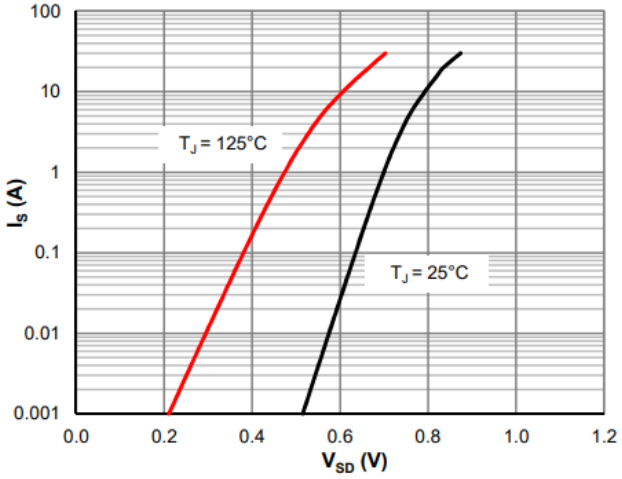


Fig.5 Body-Diode Characteristics

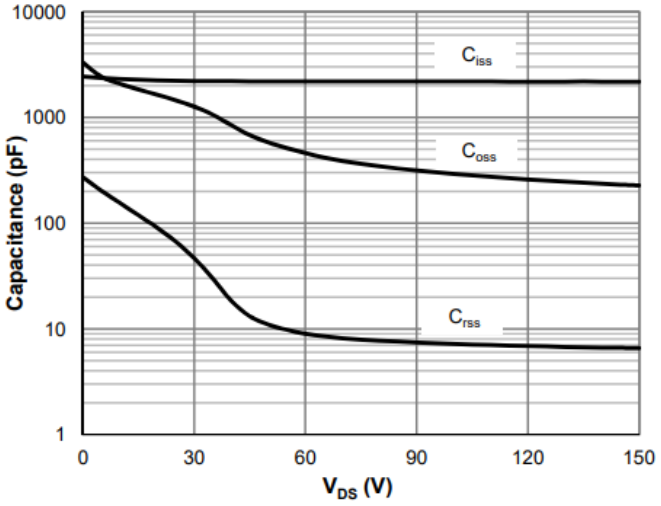


Fig.6 Capacitance Characteristics

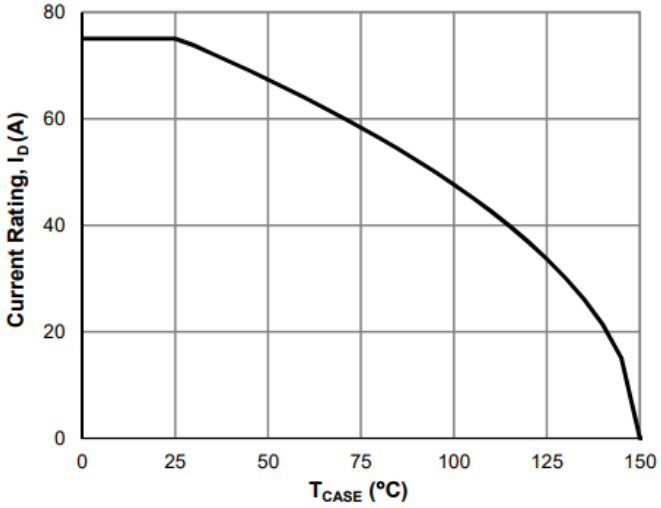


Fig.7 Current De-rating

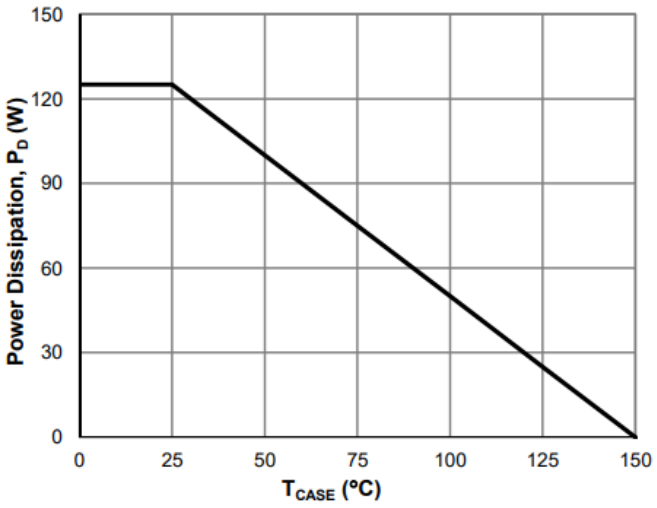


Fig.8 Power De-rating

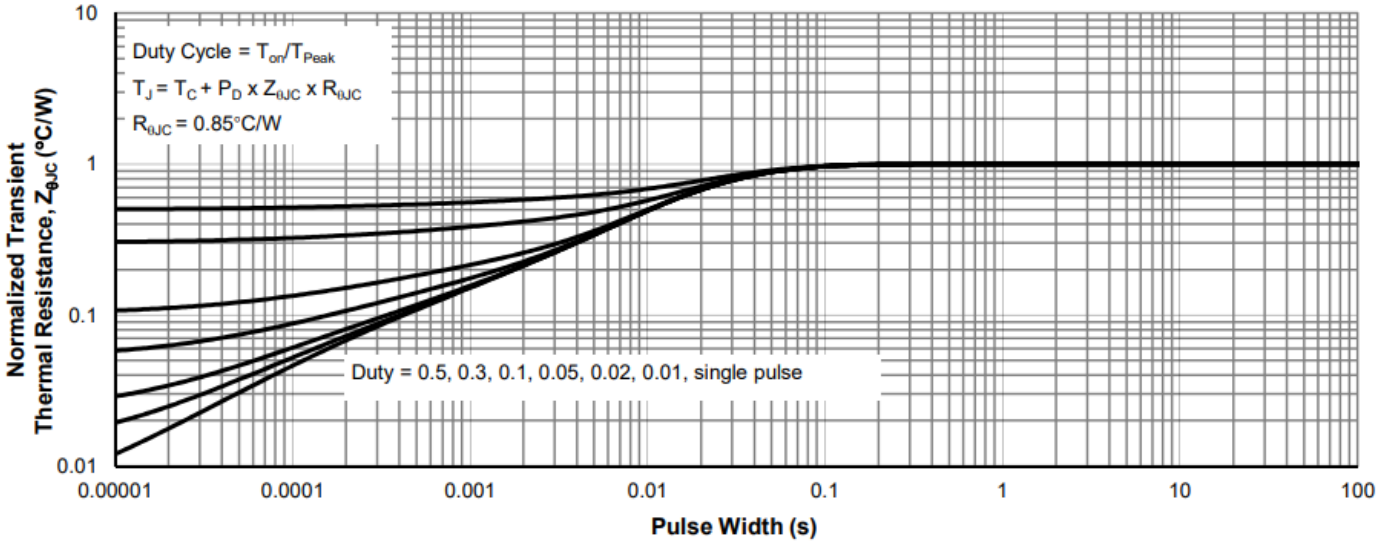


Fig.9 Normalized Maximum Transient Thermal Impedance

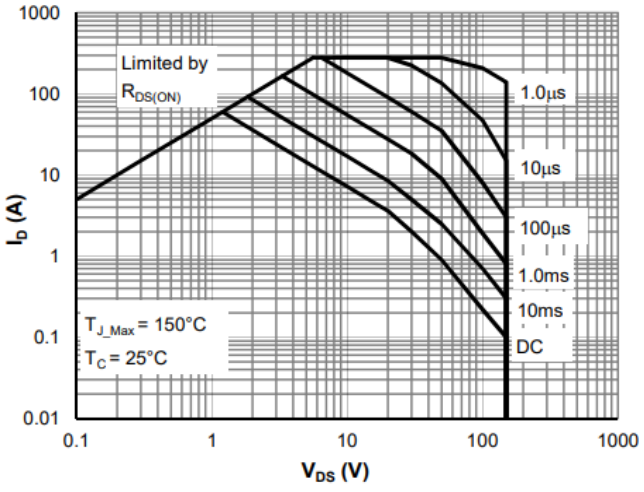


Fig.10 Maximum Safe Operating Area

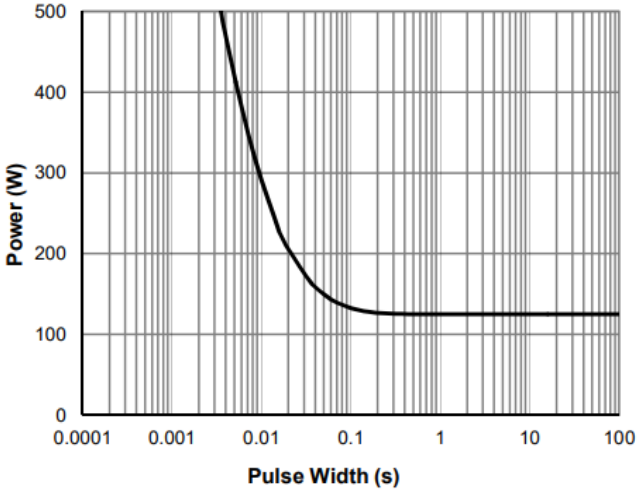
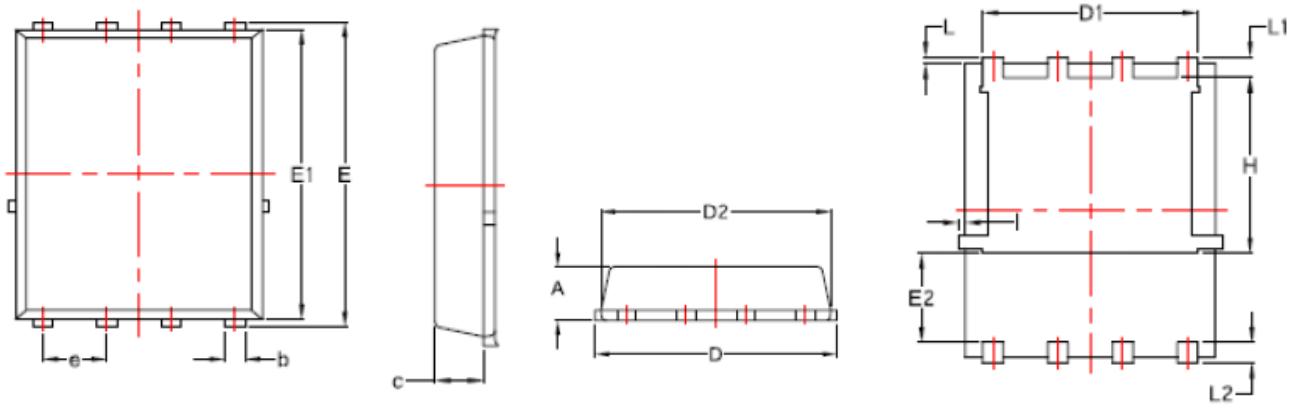


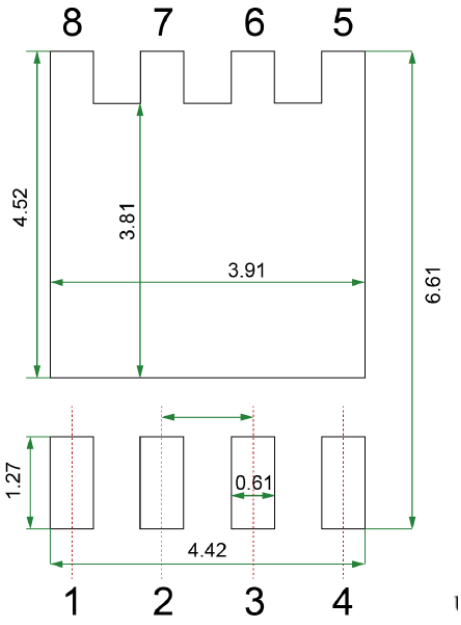
Fig.11 Single Pulse Power Rating, Junction-to-Case

DFN5×6 Outline



Land Pattern (Only for Reference)
Unit：mm

SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.20	0.0354	0.0474
b	0.30	0.51	0.0118	0.0200
c	0.60	1.046	0.0236	0.0412
D	4.80	5.45	0.1890	0.2146
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.20	0.1890	0.2047
E	5.90	6.35	0.2323	0.2500
E1	5.65	6.06	0.2224	0.2386
E2	1.10	-	0.0433	-
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.61	0.0150	0.0240
L2	0.30	0.71	0.0118	0.0280
H	3.30	3.92	0.1300	0.1543
I	-	0.18	-	0.0070



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