Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60V	3.8mΩ@10V	100A

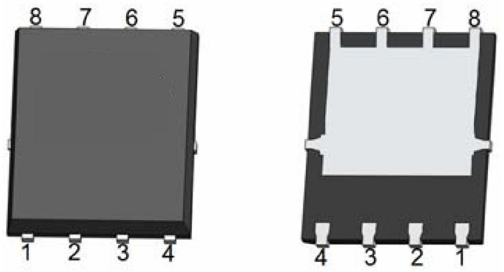
Feature

- Advanced shielded-gate trench technology
- Super low gate charge
- Low on-resistance

Application

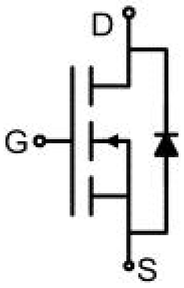
- Power switching application
- Uninterruptible power supply

Package

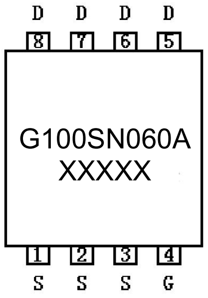


PDFN5*6-8L

Circuit diagram



Marking



Absolute maximum ratings (T_C=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	100	A
Continuous Drain Current (V_{GS}=10V ,T_C=100℃)	I_D (100℃)	85	A
Pulsed Drain Current (t_p =10μs)	I_{DM}	400	A
Single Pulse Avalanche Energy$^{1)}$	E_{AS}	140	mJ
Power Dissipation	P_D	125	W
Thermal Resistance Junction to Case	$R_{\theta JC}$	1	℃/W
Operating Junction Temperature	T_J	-55 ~ +150	℃
Storage Temperature Range	T_{STG}	-55 ~ +150	℃

Electrical characteristics (T_A=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} =0V, I_D =250μA	60			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =48V, V_{GS} =0V			1	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2	2.6	4	V
Drain-source on-resistance$^{2)}$	$R_{DS(on)}$	V_{GS} =10V, I_D =60A		2.8	3.8	mΩ
Dynamic characteristics$^{3)}$						
Input Capacitance	C_{iss}	V_{DS} =15V, V_{GS} =0V f =150kHz		4646		pF
Output Capacitance	C_{oss}			1250		
Reverse Transfer Capacitance	C_{rss}			55		
Total Gate Charge	Q_g	V_{DS} =48V, V_{GS} =10V, I_D =45A		63		nC
Gate-Source Charge	Q_{gs}			20		
Gate-Drain Charge	Q_{gd}			5.1		
Turn-on delay time	$t_{d(on)}$	V_{DS} =30V, V_{GS}=10V I_D =100A, R_G =3Ω		14		nS
Turn-on rise time	t_r			96		
Turn-off delay time	$t_{d(off)}$			40		
Turn-off fall time	t_f			115		
Source-Drain Diode characteristics						
Diode Forward Current	I_S				100	A
Diode Forward voltage$^{2)}$	V_{SD}	V_{GS} =0V, I_S =1A			1.2	V
Reverse Recovery Time	T_{rr}	V_{GS} =30V, I_S =30A di/dt =-100A/μs		53		nS
Reverse Recovery Charge	Q_{rr}			74		nC

Notes:

1) The EAS data shows Max. rating. The test condition is V_{DD} = 50V, V_{GS} = 10V, L = 0.5mH.

2) The data tested by pulsed, pulse width ≤300μs, duty cycle ≤2%.

3) Guaranteed by design,not subject to production.

Typical Characteristics

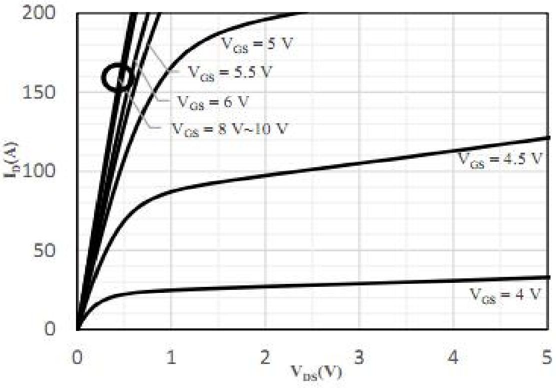


Fig 1 Typical Output Characteristics

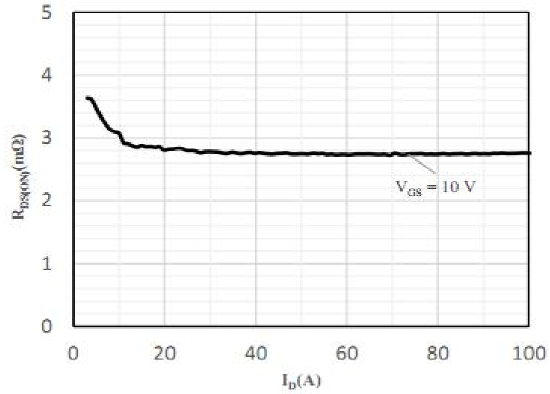


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

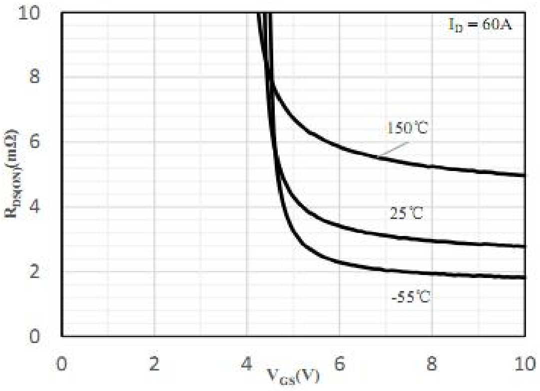


Fig 3 On-Resistance vs. Gate-Source Voltage

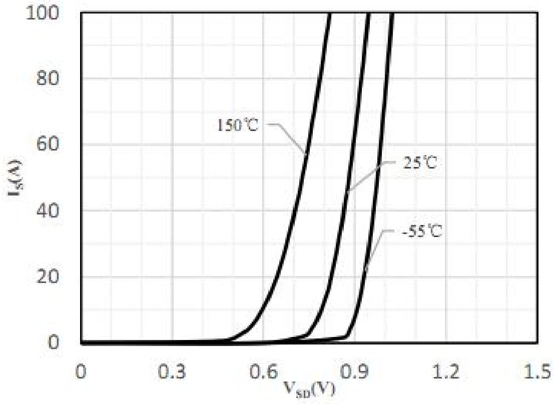


Fig 4 Body-Diode Characteristics

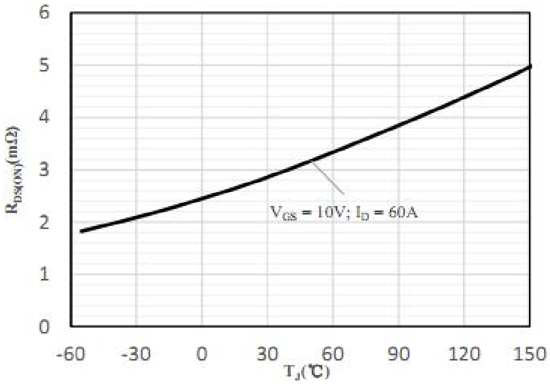


Fig 5 On-Resistance vs. Junction Temperature

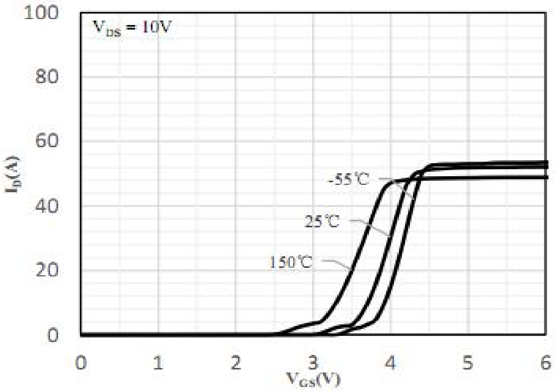


Fig 6 Transfer Characteristics

Typical Characteristics

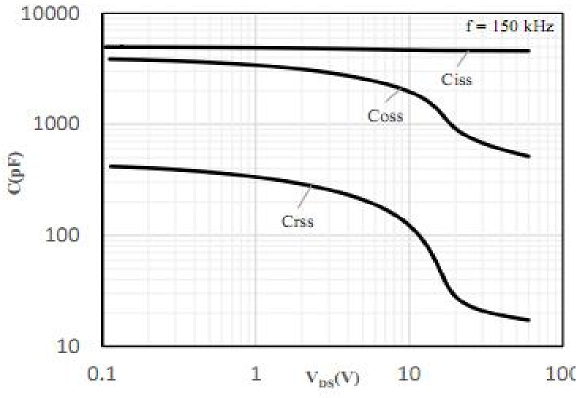


Fig 7 Capacitance Characteristics

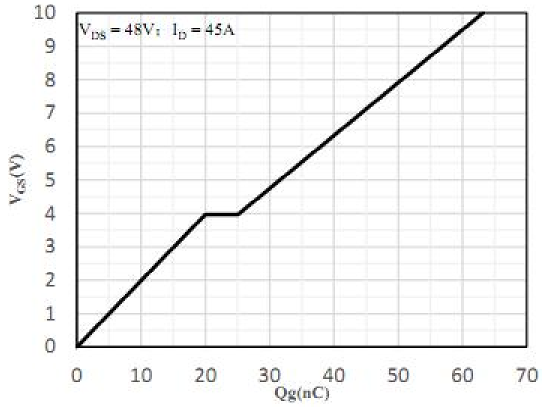


Fig 8 Gate-Charge Characteristics

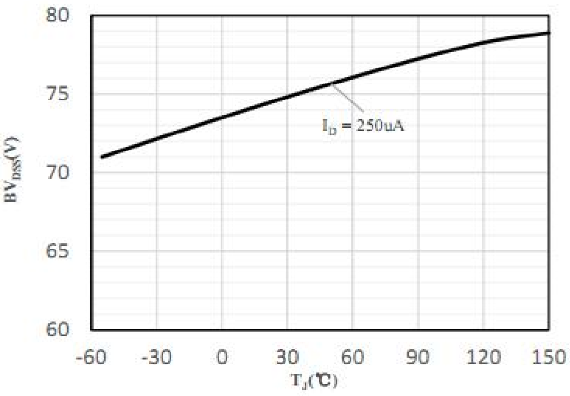


Fig 9 Normalized Breakdown Voltage vs. Junction Temperature

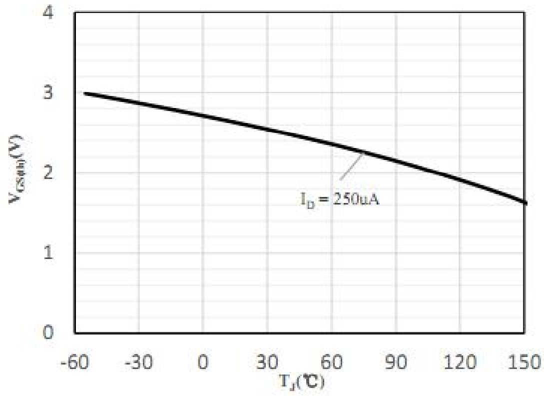


Fig 10 $V_{GS(th)}$ vs. Junction Temperature

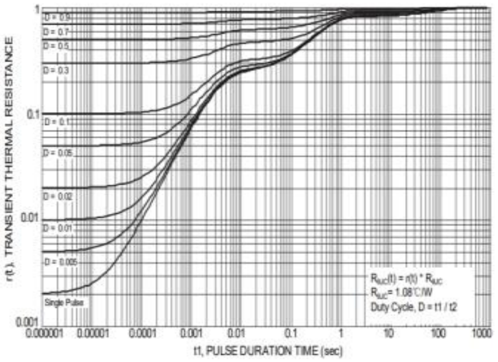


Fig 11 Transient Thermal Resistance

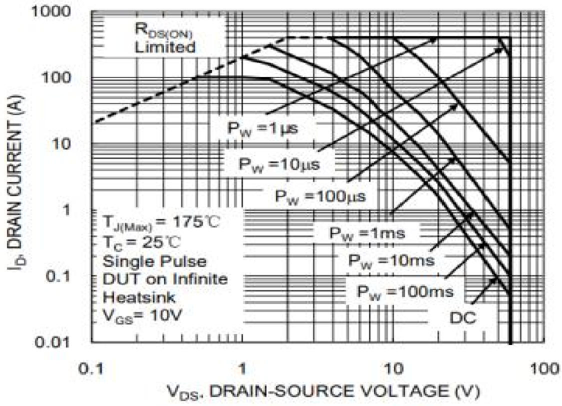
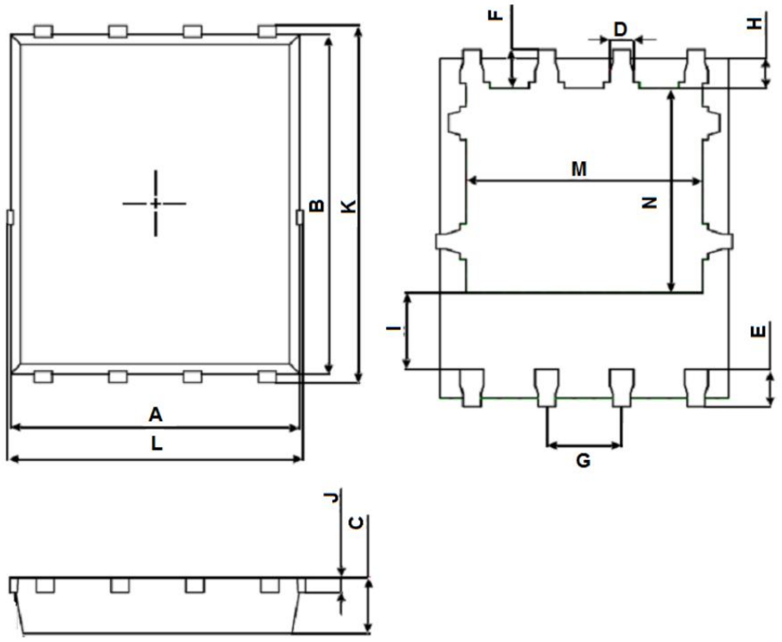


Fig 12 Safe Operation Area

PDFN5*6-8L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.824	4.976	0.190	0.196
B	5.674	5.826	0.223	0.229
C	0.900	1.000	0.035	0.039
D	0.350	0.450	0.014	0.018
E	0.559	0.711	0.022	0.028
F	0.574	0.726	0.023	0.029
G	1.250	1.290	0.049	0.051
H	0.424	0.576	0.017	0.023
I	1.190	1.390	0.047	0.055
J	0.154	0.354	0.006	0.014
K	5.974	6.126	0.235	0.241
L	4.944	5.096	0.195	0.201
M	3.910	4.110	0.154	0.162
N	3.375	3.575	0.133	0.141