

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
120V	7mΩ@10V	80A

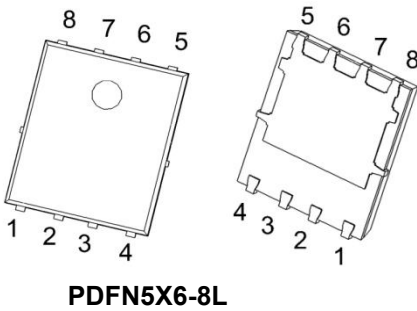
Feature

- Low RDS(on) & FOM
- Extremely low switching loss
- Excellent stability and uniformity
- Fast switching and soft recovery

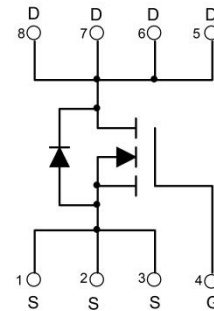
Applications

- Consumer electronic power supply
- Motor control Synchronous rectification
- Isolated DC/DC converter
- Investors

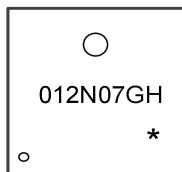
Package



Circuit diagram



Marking



012N07GH : Product code
* : Month code

Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain source voltage	V_{DS}	120	V
Gate source voltage	V_{GS}	± 20	V
Continuous drain current ¹⁾ , TC=25 °C	I_D	80	A
Pulsed drain current ²⁾ , TC=25 °C	I_{DM}	320	A
Power dissipation ³⁾ , TC=25 °C	P_D	78	W
Single pulsed avalanche energy ⁴⁾	E_{AS}	480	mJ
Thermal resistance, junction-case	$R_{\theta JC}$	1.6	°C/W
Operation and storage temperature	T_{stg}, T_j	-55 to 150	°C

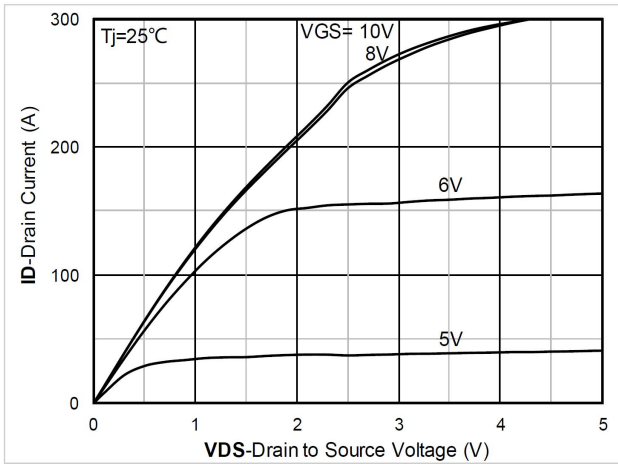
Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Test condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS}=0\text{ V}, I_D=250\ \mu\text{A}$	120			V
Drain-source leakage current	I_{DSS}	$V_{DS}=120\text{ V}, V_{GS}=0\text{ V}$			1	μA
Gate-source leakage current	I_{GSS}	$V_{GS}=\pm 20\text{ V}$			± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\ \mu\text{A}$	2	3	4	V
Drain-source on-state resistance	$R_{DS(on)}$	$V_{GS}=10\text{ V}, I_D=30\text{ A}$		7	9	m Ω
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{GS}=0\text{ V}, V_{DS}=25\text{ V}, f=1\text{ MHz}$		4356		pF
Output capacitance	C_{oss}			268		pF
Reverse transfer capacitance	C_{rss}			18		pF
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	$V_{GS}=10\text{ V}, V_{DS}=30\text{ V}, R_G=2.5\ \Omega, I_D=30\text{ A}$		18		ns
Rise time	t_r			46		ns
Turn-off delay time	$t_{d(off)}$			52		ns
Fall time	t_f			27		ns
Total gate charge	Q_g	$I_D=30\text{ A}, V_{DS}=30\text{ V}, V_{GS}=10\text{ V}$		83		nC
Gate-source charge	Q_{gs}			26		nC
Gate-drain charge	Q_{gd}			6.1		nC
Drain-Source Diode Characteristics						
Diode forward voltage	V_{SD}	$I_S=1\text{ A}, V_{GS}=0\text{ V}$			1.2	V

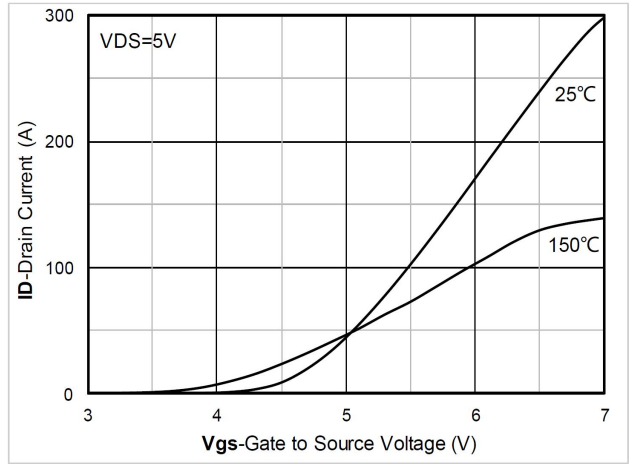
Notes:

- 1) Calculated continuous current based on maximum allowable junction temperature.
- 2) Repetitive rating; pulse width limited by max. junction temperature.
- 3) P_d is based on max. junction temperature, using junction-case thermal resistance.
- 4) $V_{DD}=50\text{ V}, V_G=10\text{ V}, R_G=25\ \Omega, L=0.5\text{ mH}$, starting $T_j=25\text{ °C}$.

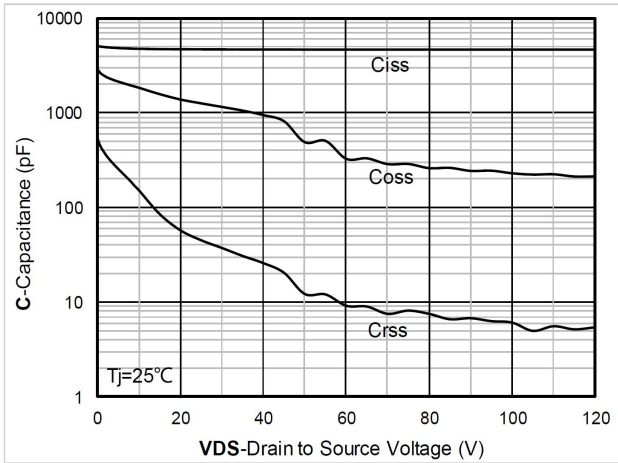
Typical Characteristics



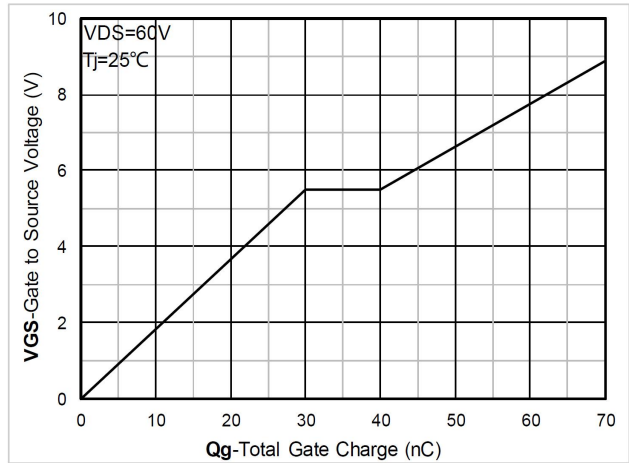
Output Characteristics



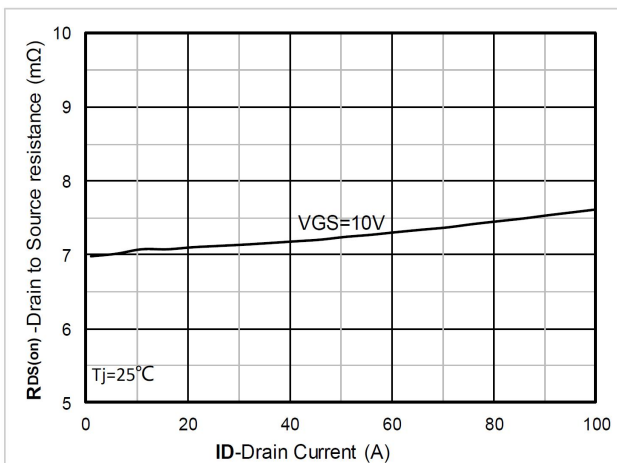
Transfer Characteristics



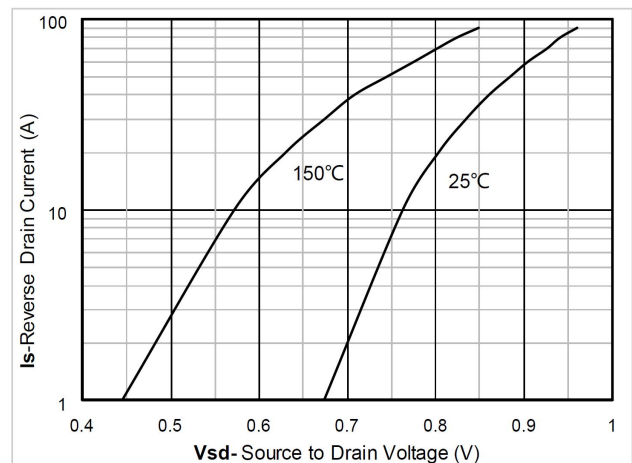
Capacitance Characteristics



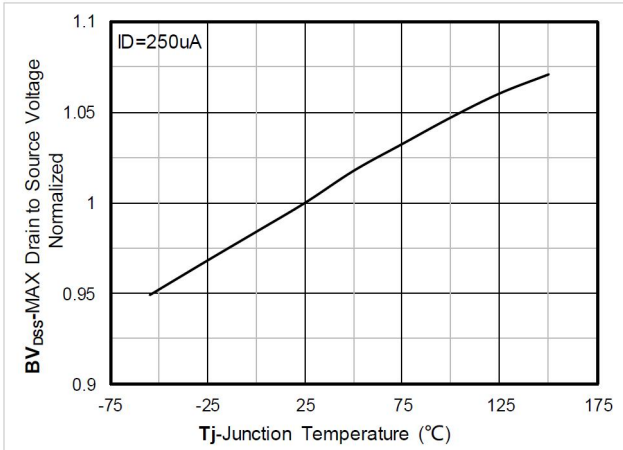
Gate Charge



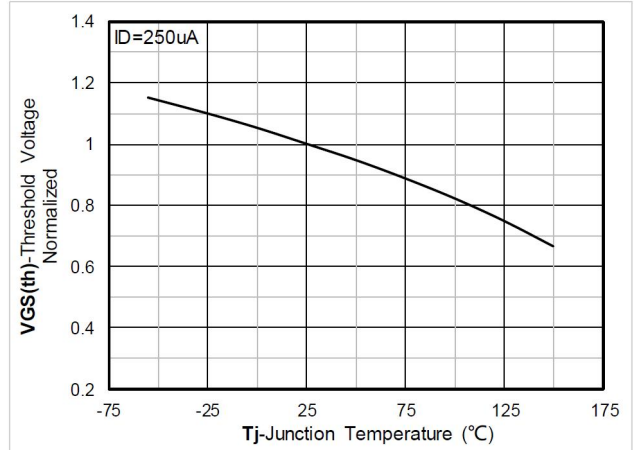
RDS(on) VS Drain Current



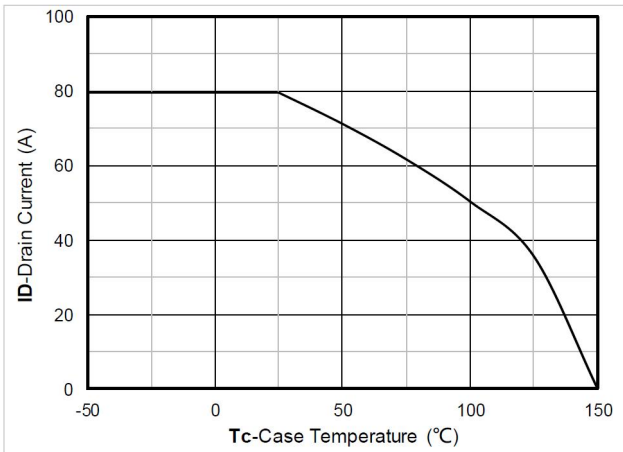
Forward characteristics of reverse diode



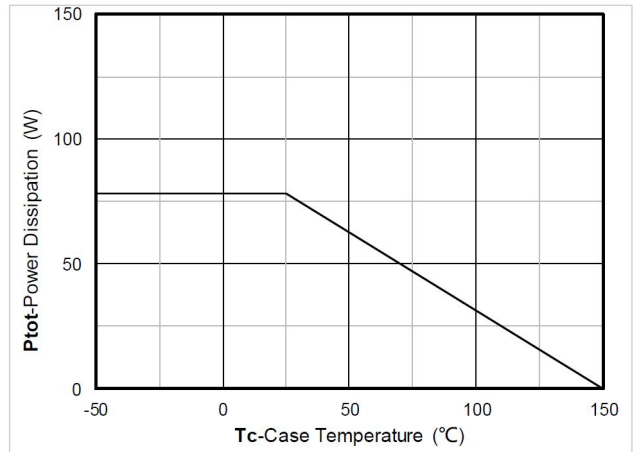
Normalized breakdown voltage



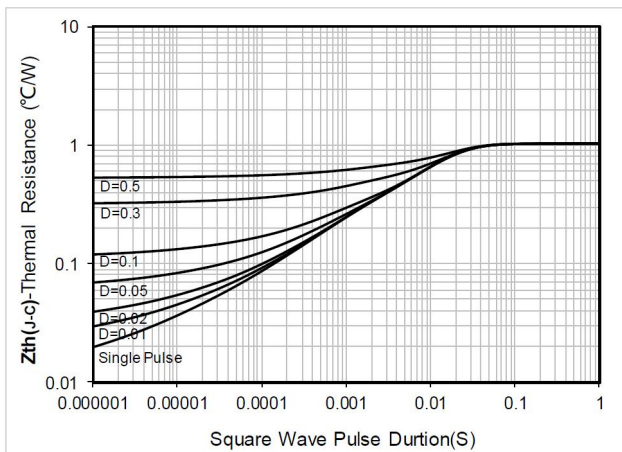
Normalized Threshold voltage



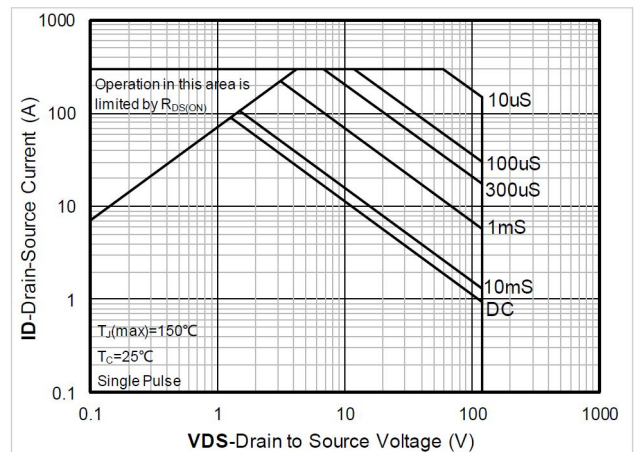
Current dissipation



Power dissipation



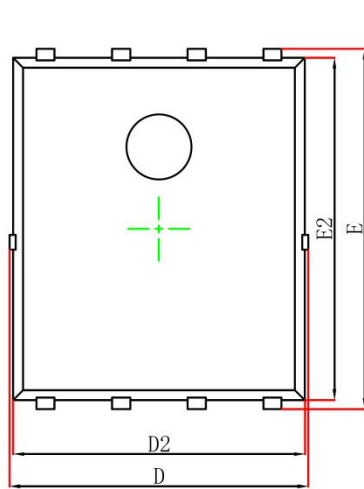
Maximum Transient Thermal Impedance



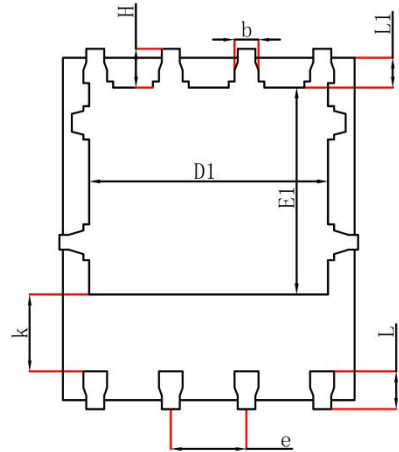
Safe Operation Area



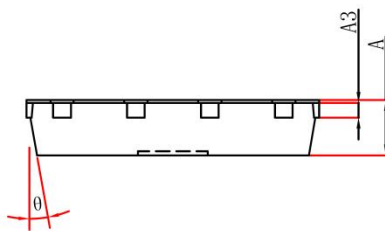
PDFN5X6-8L Package Information



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°

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