

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	7.5mΩ@10V	55A
	10mΩ@4.5V	

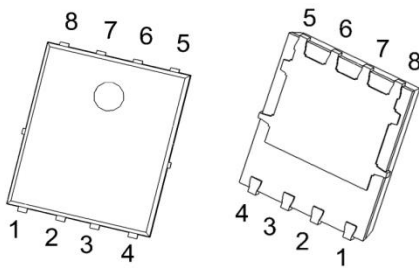
Feature

- Low RDS(on)
- Fast switching Speed
- 100% Single Pulse avalanche energy Test

Application

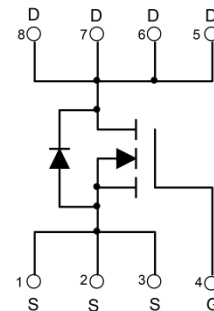
- DC-DC convertor
- Power Management

Package

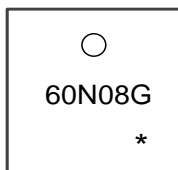


PDFNWB5X6-8L

Circuit diagram



Marking



60N08G : Product code
* : Month code.

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

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	60	V
Gate-source voltage	V_{GS}	± 20	V
Continuous drain current ¹⁾ , (T _C =25 °C)	I_D	55	A
Pulsed drain current ²⁾	I_{DM}	220	A
Power dissipation ³⁾ , (T _C =25 °C)	P_D	81	W
Single pulsed avalanche energy ⁴⁾	E_{AS}	144	mJ
Thermal resistance, junction-case	$R_{\theta JC}$	1.54	°C/W
Operation and storage temperature	T_{STG}, T_J	-55 to 150	°C

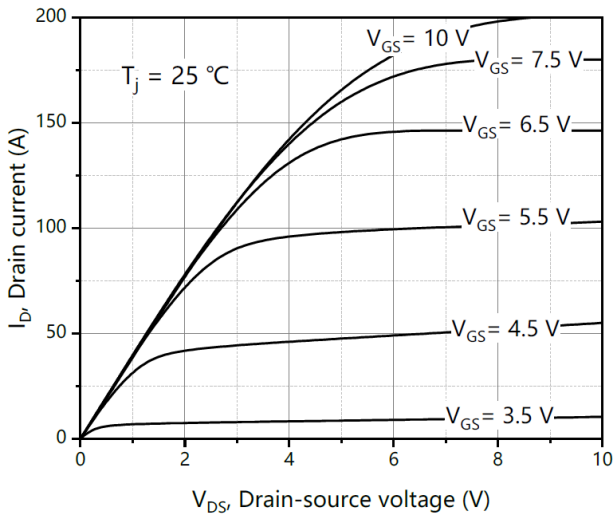
Electrical characteristics (T_A=25 °C, unless otherwise noted)

Parameter	Symbol	Test condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS}=0\text{ V}, I_D=250\ \mu\text{A}$	60			V
Gate-source leakage current	I_{GSS}	$V_{GS}=\pm 20\text{ V}$			± 100	nA
Drain-source leakage current	I_{DSS}	$V_{DS}=48\text{ V}, V_{GS}=0\text{ V}$			1	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\ \mu\text{A}$	1	1.7	2.5	V
Drain-source on-state resistance	$R_{DS(on)}$	$V_{GS}=10\text{ V}, I_D=20\text{ A}$		7.5	9.5	m Ω
		$V_{GS}=4.5\text{ V}, I_D=10\text{ A}$		10	13.5	
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{GS}=0\text{ V}, V_{DS}=50\text{ V}, f=100\text{ kHz}$		1204		pF
Output capacitance	C_{oss}			194.1		
Reverse transfer capacitance	C_{rss}			9.9		
Switching Characteristics						
Total gate charge	Q_g	$V_{GS}=10\text{ V}, V_{DS}=50\text{ V}, I_D=25\text{ A}$		17.9		nC
Gate-source charge	Q_{gs}			3.8		
Gate-drain charge	Q_{gd}			4.2		
Turn-on delay time	$t_{d(on)}$	$V_{GS}=10\text{ V}, V_{DS}=50\text{ V}, R_G=2\ \Omega, I_D=25\text{ A}$		23.9		ns
Rise time	t_r			4.6		
Turn-off delay time	$t_{d(off)}$			37.8		
Fall time	t_f			6.4		
Body Diode Characteristics						
Diode forward voltage	V_{SD}	$I_S=1\text{ A}, V_{GS}=0\text{ V}$			1.3	V

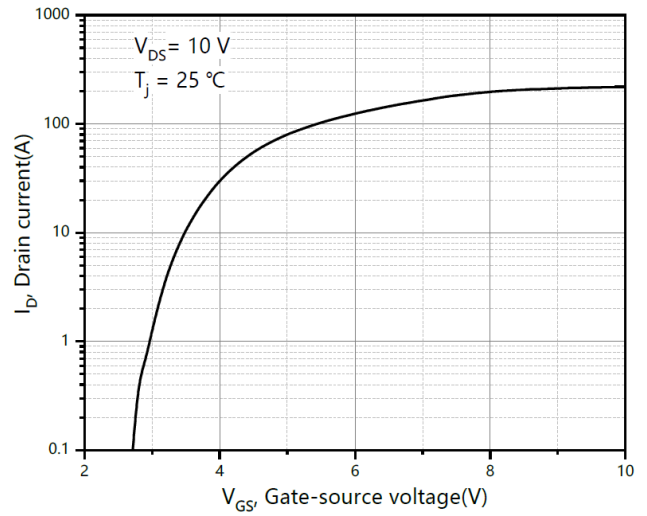
Note:

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. $V_{DD}=30\text{ V}, V_{GS}=10\text{ V}, L=0.5\text{ mH}$, starting $T_J=25\text{ }^\circ\text{C}$.

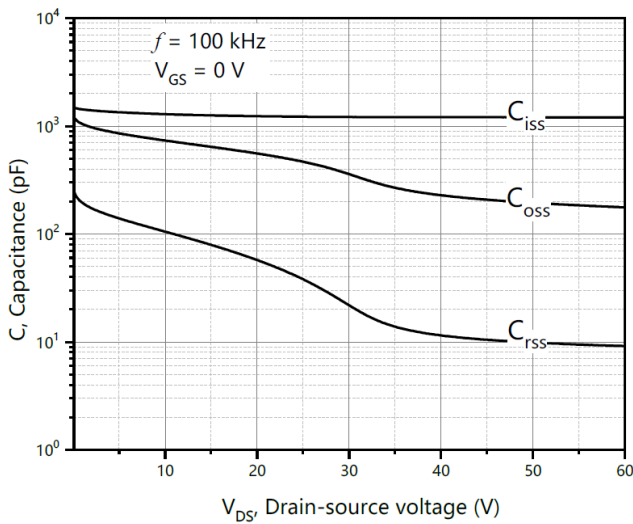
Typical Characteristics



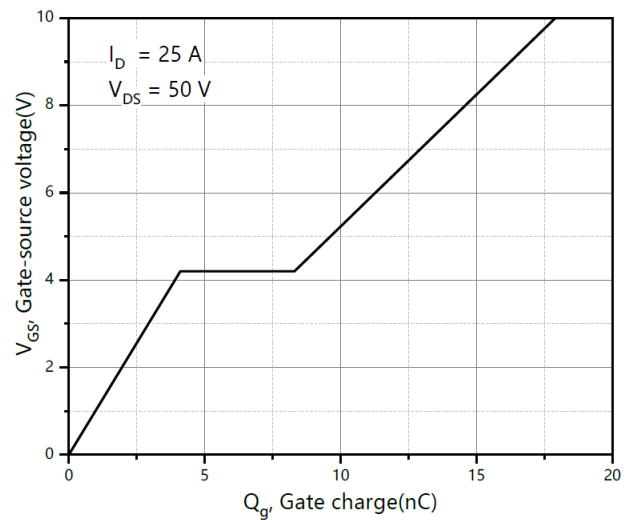
Output characteristics



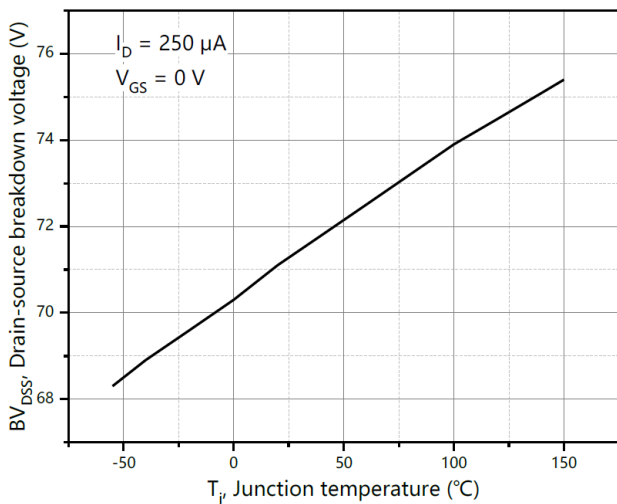
Transfer characteristics



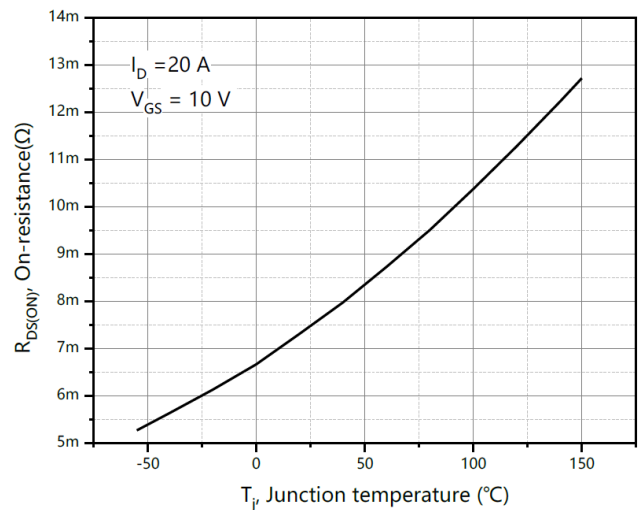
Capacitances



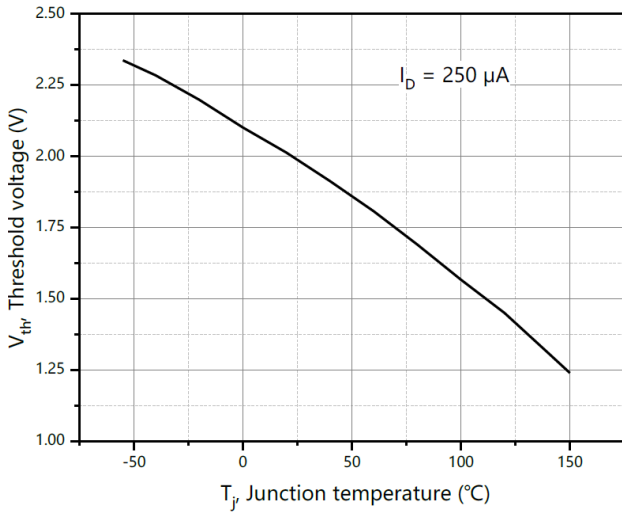
Gate charge



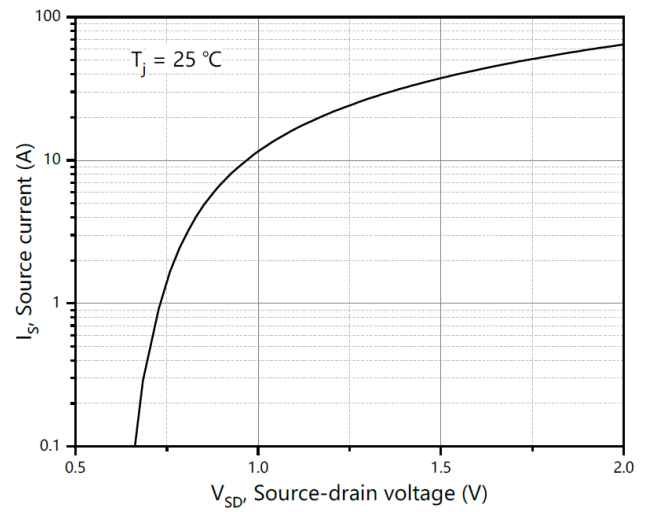
Drain-source breakdown voltage



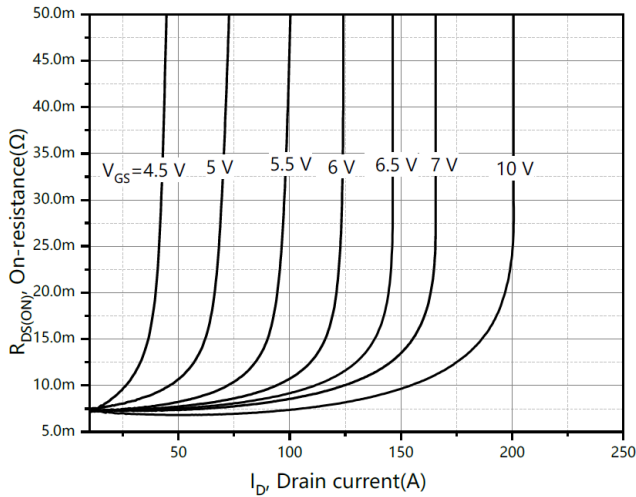
Drain-source on-state resistance



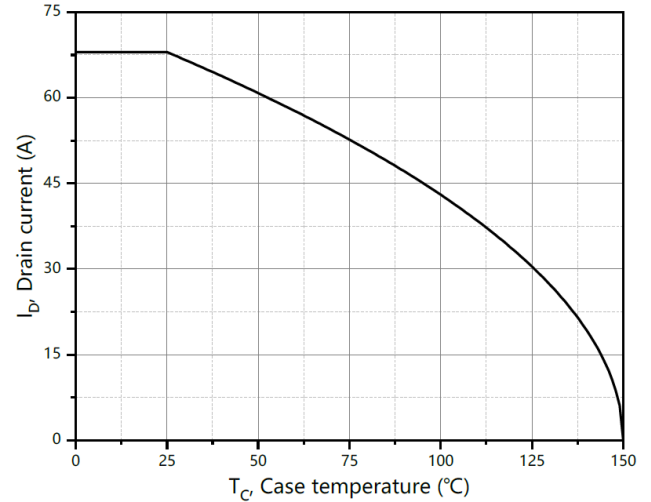
Threshold voltage



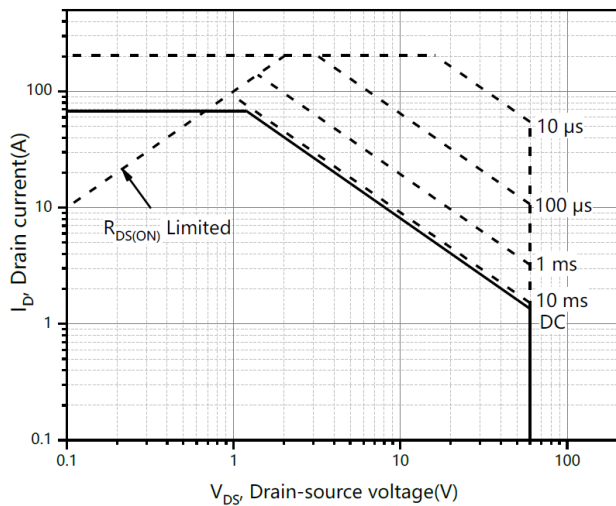
Forward characteristic of body diode



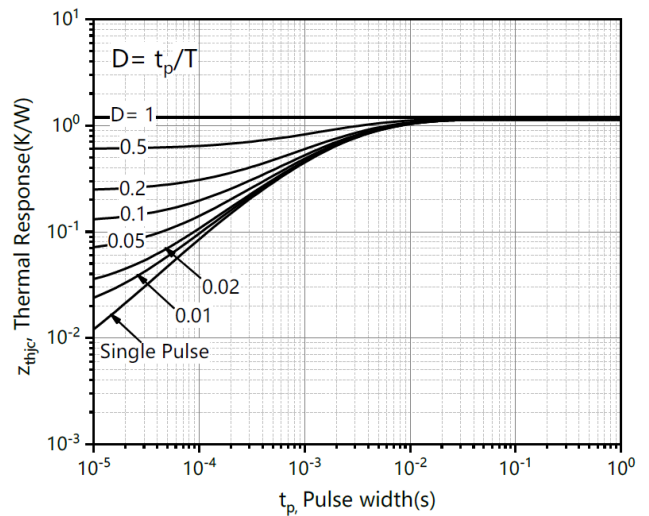
Drain-source on-state resistance



Drain current



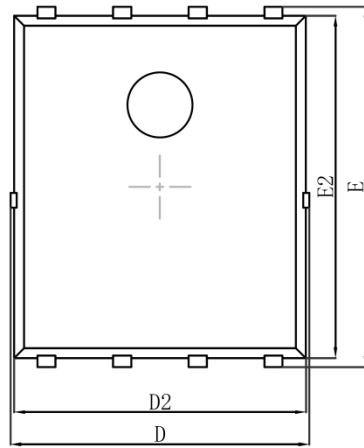
Safe operation area $T_C=25 \text{ }^\circ\text{C}$



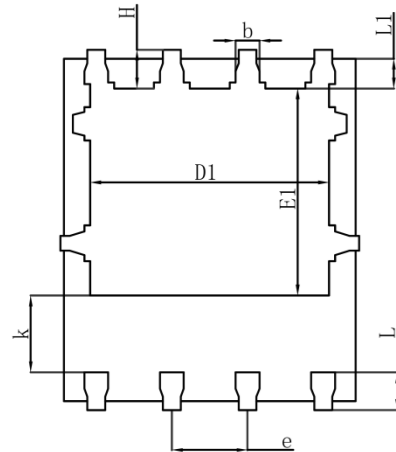
Max. transient thermal impedance



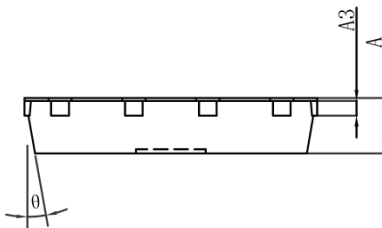
PDFN5X6-8L Package Information



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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