Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	8mΩ@10V	55A
	11mΩ@4.5V	

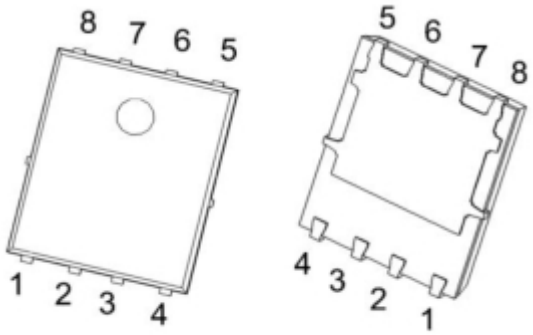
Feature

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

Applications

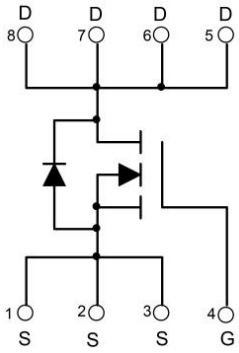
- DC-DC convertor
- Power Management

Package



PDFNWB5X6-8L

Circuit diagram



Marking

60N08G : Product code
*** : Month code.**

Absolute maximum ratings

(T_a=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[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	℃/ W
Operation and storage temperature	T_{STG}, T_J	-55~ +150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

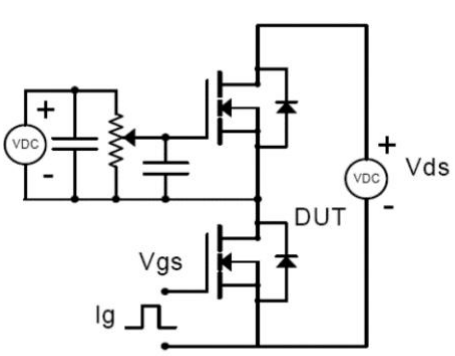
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	60			V
Gate-source leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} =0V			±100	uA
Drain-source leakage current	I_{DSS}	V_{DS} =48V,V_{GS} = 0V			1	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1	1.8	2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =20A		8	10	mΩ
		V_{GS} =4.5V, I_D =10A		11	15	
Dynamic Characteristics Reverse						
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=50V, f=100KHz		1204		pF
Output Capacitance	C_{oss}			194.1		
Reverse transfer capacitance	C_{rss}			9.9		
Switching Characteristics						
Total Gate Charge	Q_g	V_{GS}=10V ,V_{DS}=50V , I_D =25A		17.9		pF
Gate-Source Charge	Q_{gs}			3.8		
Gate-Drain Charge	Q_{gd}			4.2		
Turn-On Delay Time	$T_{d(on)}$	V_{GS}=10V, V_{DS}=50V, R_G =2Ω, I_D =25A		23.9		nS
Rise Time	T_r			4.6		
Turn-Off Delay Time	$T_{d(off)}$			37.8		
Fall Time	t_f			6.4		
Drain-Source Body Diode Characteristics						
Diode forward voltage	V_{SD}	V_{GS}=0V ,I_S=1A			1.3	V

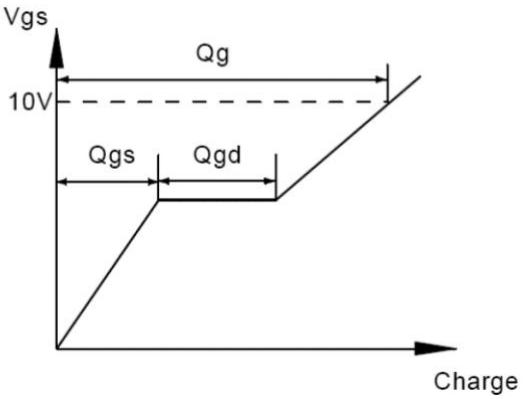
Note :

1. Calculated continuous current based on maximum allowable junction temperature.
2. Repetitive rating; pulse width limited by max. junction temperature.
3. Pd is based on max. junction temperature, using junction-case thermal resistance.
4. V_{DD}=30 V,V_{GS}=10 V, L=0.5 mH, starting T_j=25 °C.

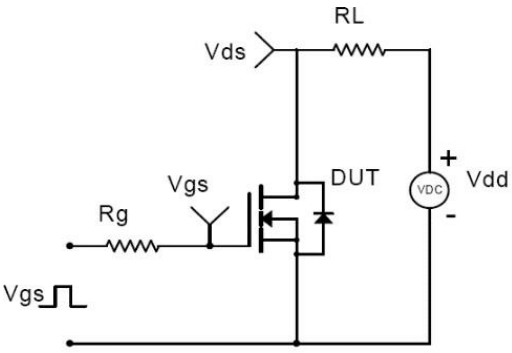
Test circuits and waveforms

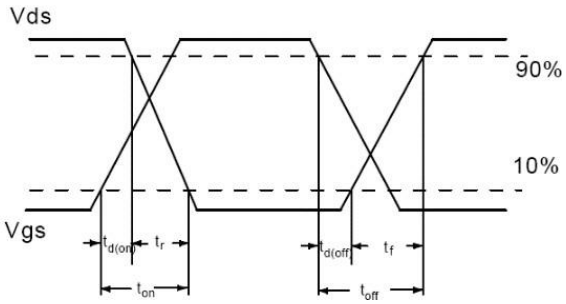
- Gate charge test circuit & waveform



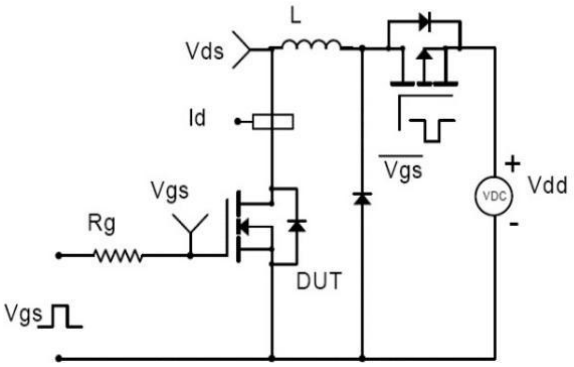


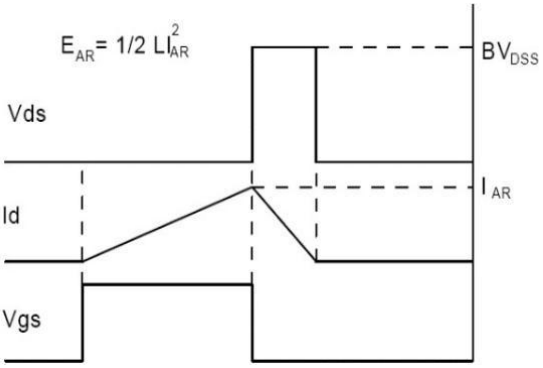
- Switching time test circuit & waveforms



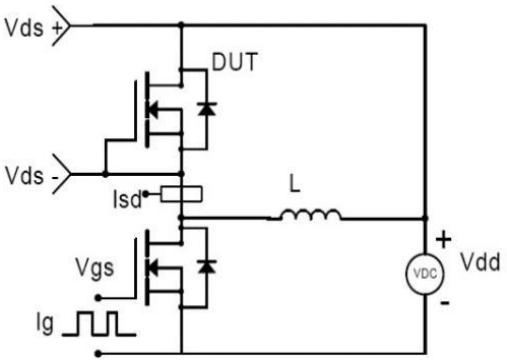


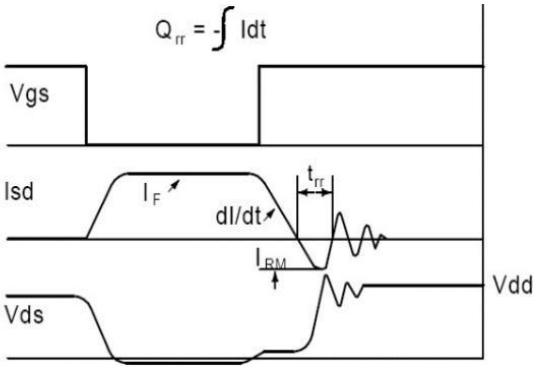
- Unclamped inductive switching (UIS) test circuit & waveforms



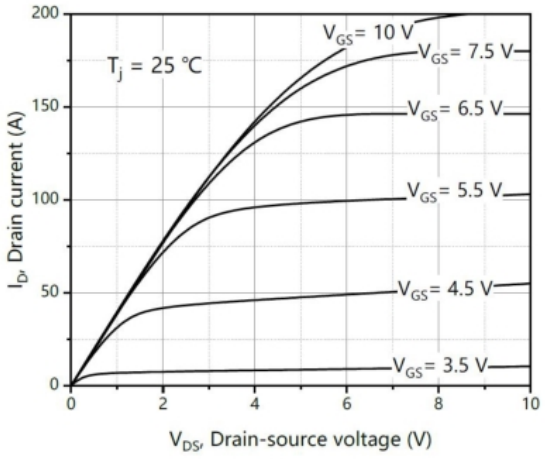


- Diode reverse recovery test circuit & waveforms

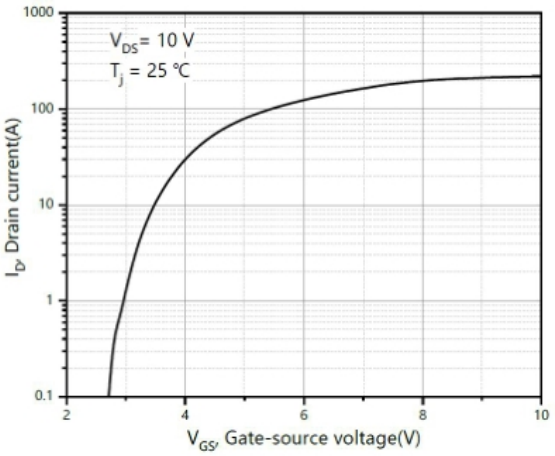




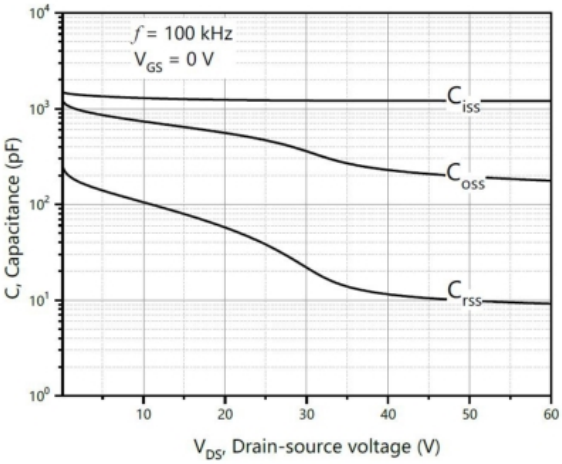
Typical Characteristics



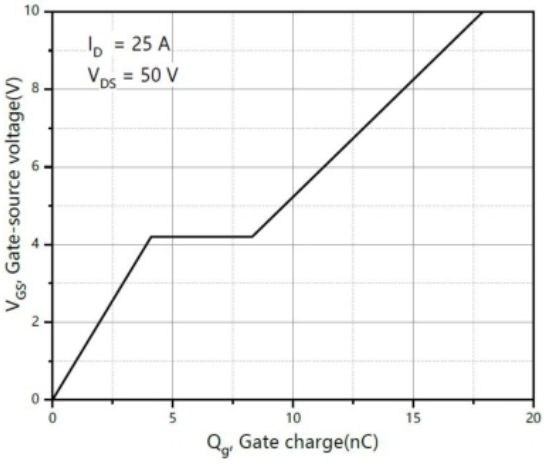
Output characteristics



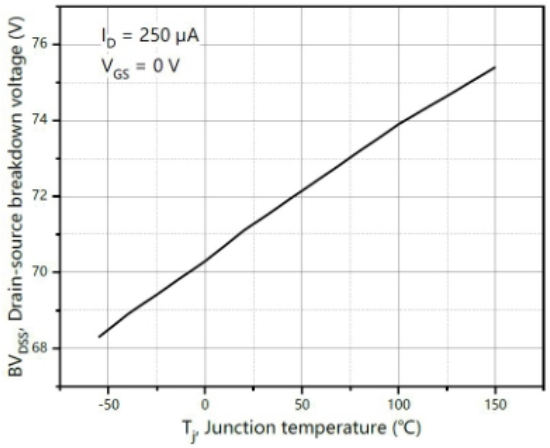
Transfer characteristics



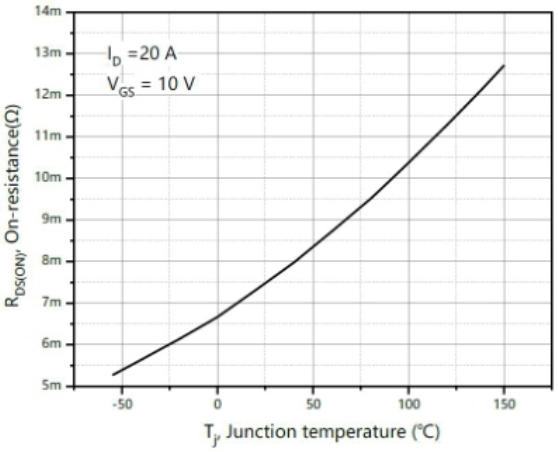
Capacitances



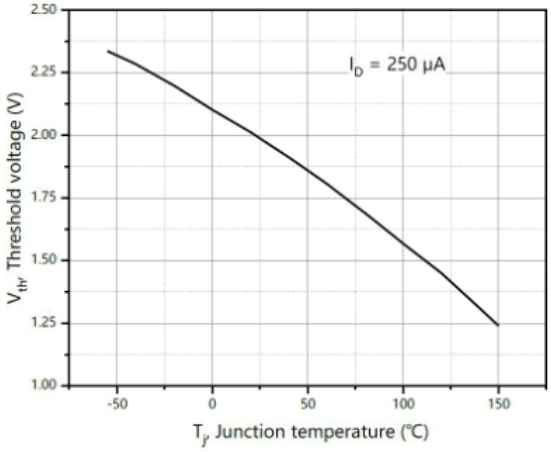
Gate charge



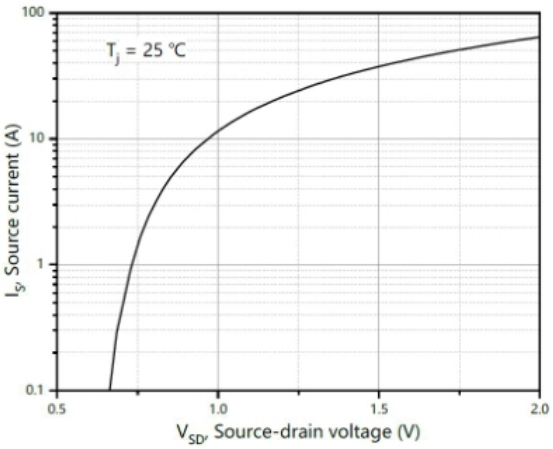
Drain-source breakdown voltage



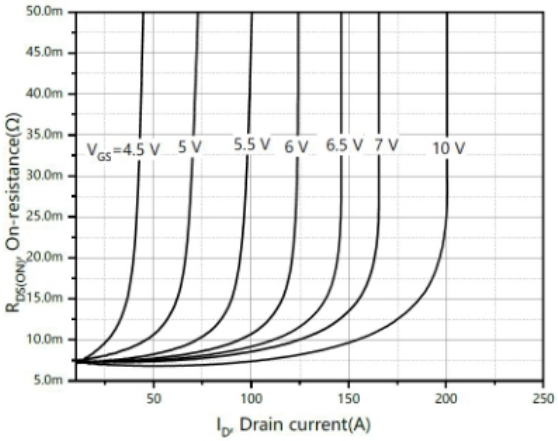
Drain-source on-state resistance



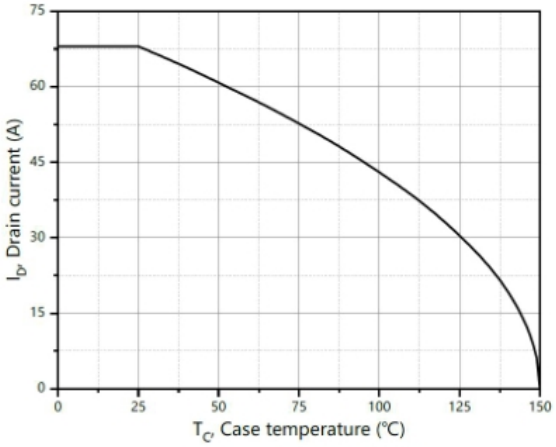
Threshold voltage



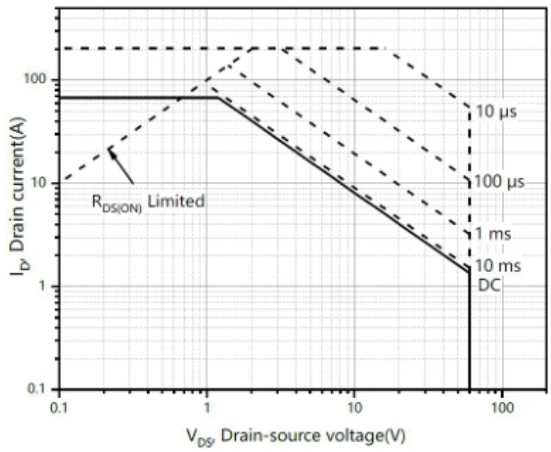
Forward characteristic of body diode



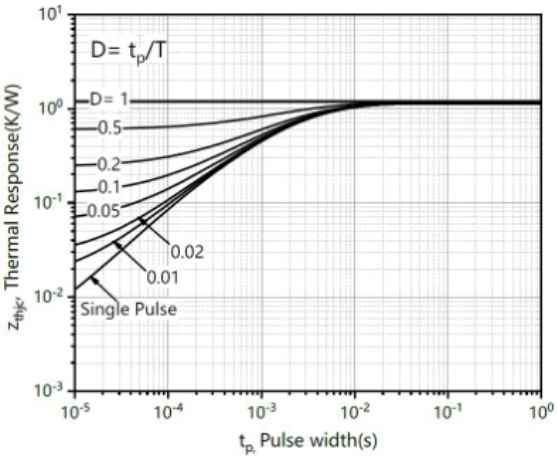
Drain-source on-state resistance



Drain current

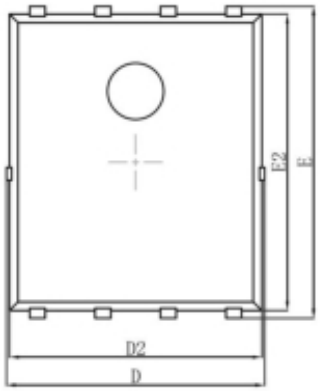


Safe operation area T_C=25 ℃

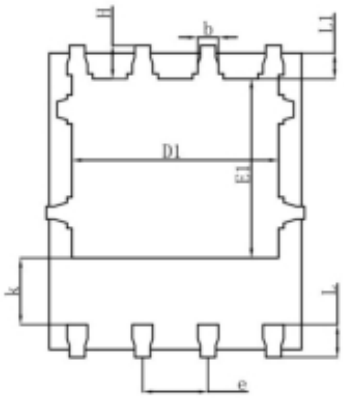


Max. transient thermal impedance

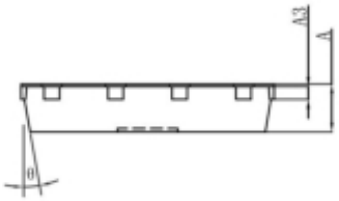
PDFNWB5X6-8L Package Information



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°