

1. Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	20mΩ@10V	20A

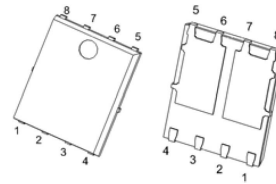
2. Features

- V_{DS} 100V
- I_D 20A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) <25mohm
- Very low on-resistance $R_{DS(on)}$
- Pb-free lead plating

3. Applications

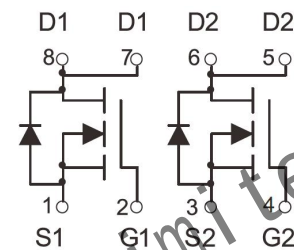
- DC/DC Converter
- Ideal for high-frequency switching and synchronous rectification

PDFNWB5*6-8L-A

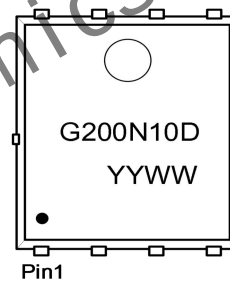


PIN1:GATE
PIN2:DRAIN
PIN3:SOURCE

Schematic diagram



Marking



G200N10D: Device Code
YY : Year Code
WW : Week Code

4. Absolute Maximum rating ($T_A = 25^{\circ}C$ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current		I_D	20	A
Pulsed Drain Current		I_{DM}	80	A
Total Power Dissipation	$T_C=25^{\circ}C$	P_D	43	W
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$	3.5	$^{\circ}C/W$
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to +150	$^{\circ}C$

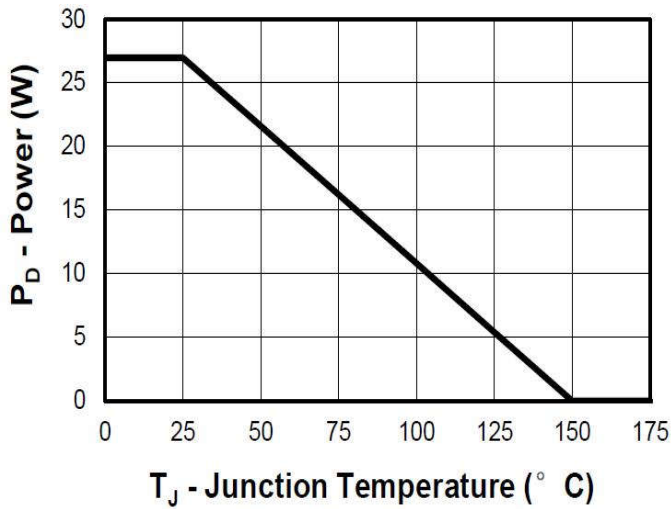
5. Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V I _D =250μA	100	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =0V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	± 100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.2	1.8	2.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =15A	-	20	25	mΩ
		V _{GS} =4.5V, I _D =10A	-	-	33	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f=1MHZ	-	825	-	pF
Output Capacitance	C _{oss}		-	312	-	
Reverse Transfer Capacitance	C _{rss}		-	24	-	
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{GS} =10V, V _{DD} =50V, I _D =20A R _{GEN} =3Ω	-	15	-	nS
Turn-on Rise Time	t _r		-	3.2	-	
Turn-Off Delay Time	t _{d(off)}		-	30	-	
Turn-Off Fall Time	t _f		-	7.6	-	
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =20A	-	22.7	-	nC
Gate-Source Charge	Q _{gs}		-	6.2	-	
Gate-Drain Charge	Q _{gd}		-	5.3	-	
Source - Drain Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =20A	-	-	1.2	V
Diode Forward Current	I _S		-	-	20	A

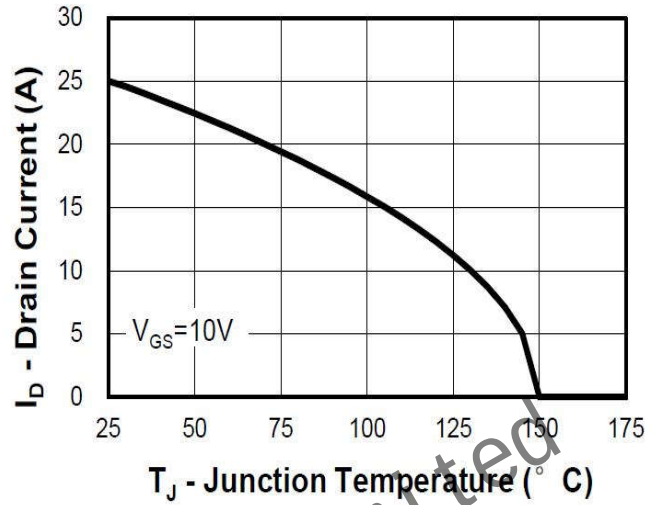
Note:

1. EAS condition: $T_j=25^\circ\text{C}, V_{DD}=50V, V_G=10V, L=0.5mH, R_g=25\Omega$.

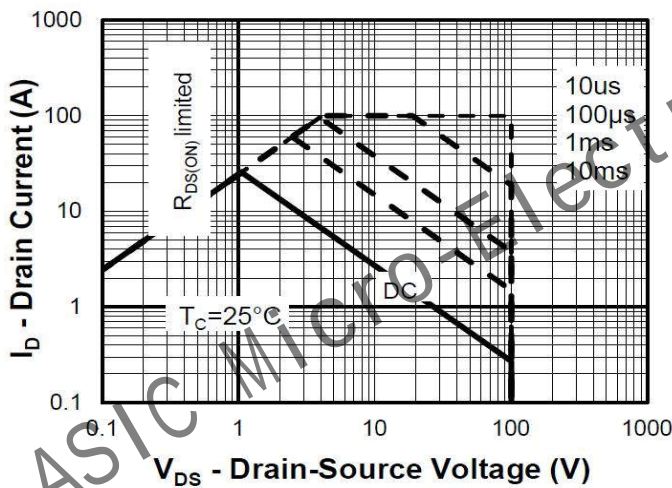
6. Typical Characteristic



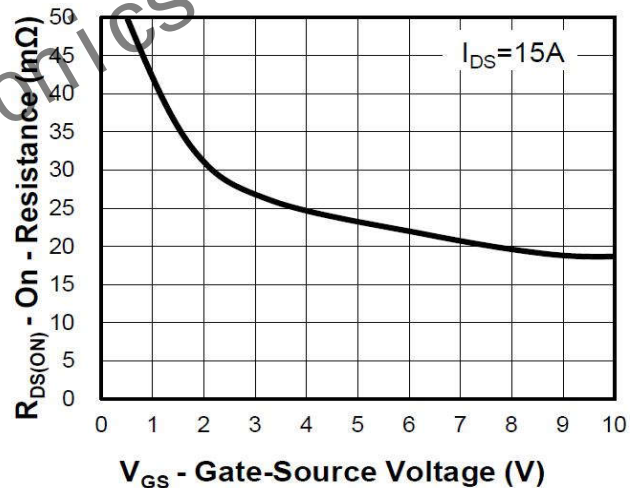
Power Dissipation



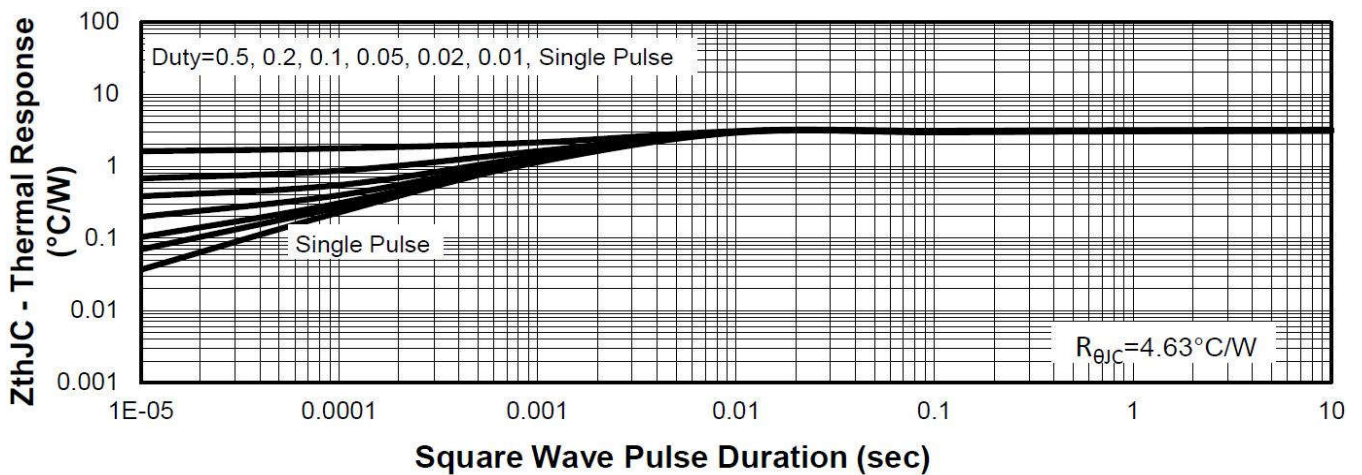
Drain Current



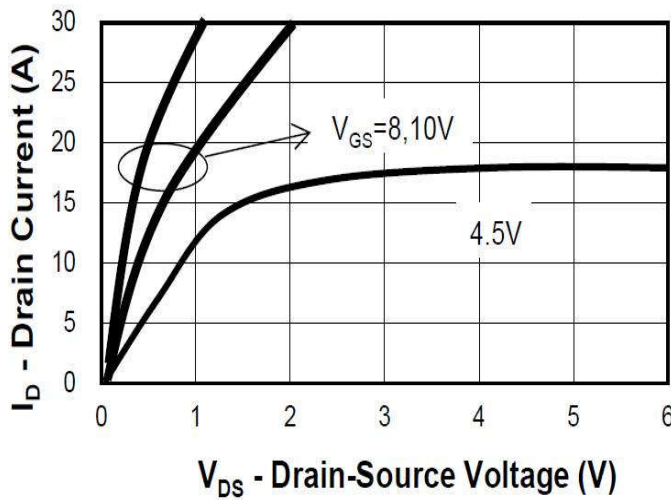
Safe Operation Area



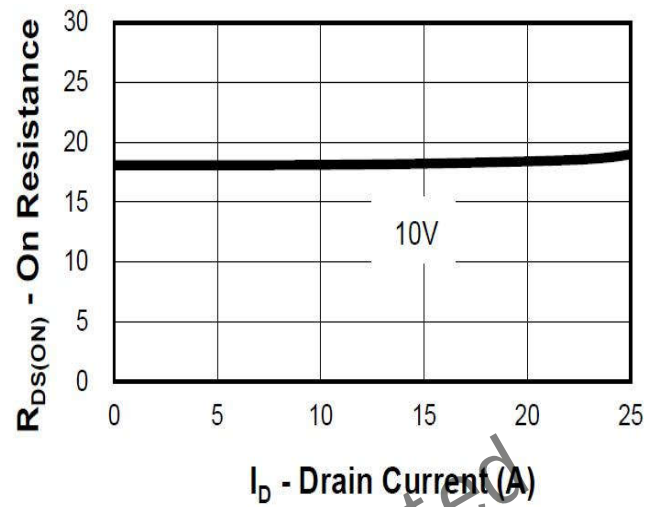
Drain Current



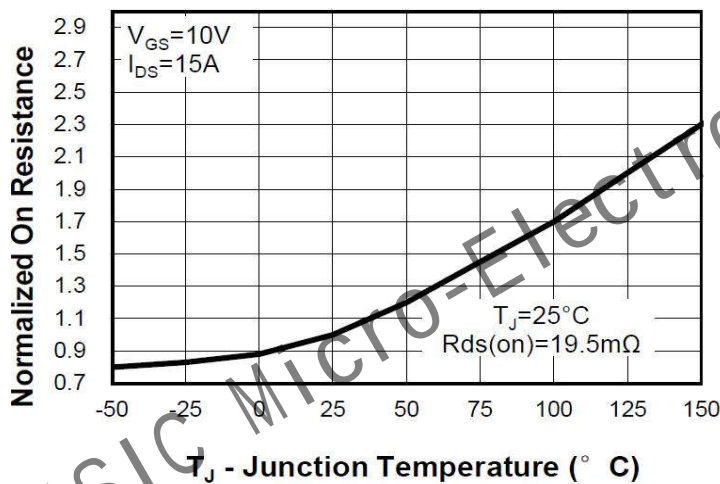
Thermal Transient Impedance



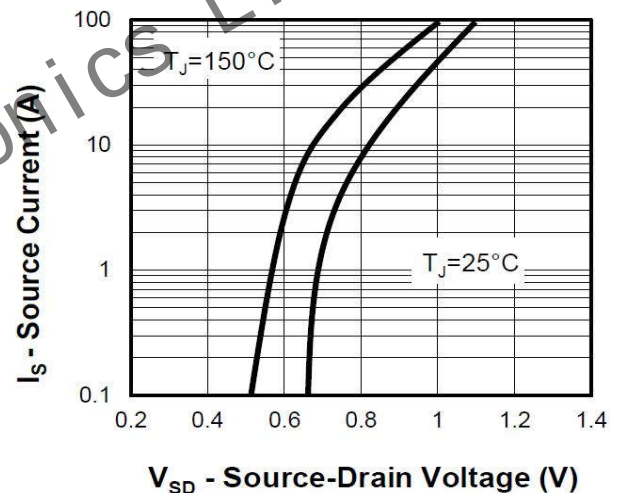
Output Characteristics



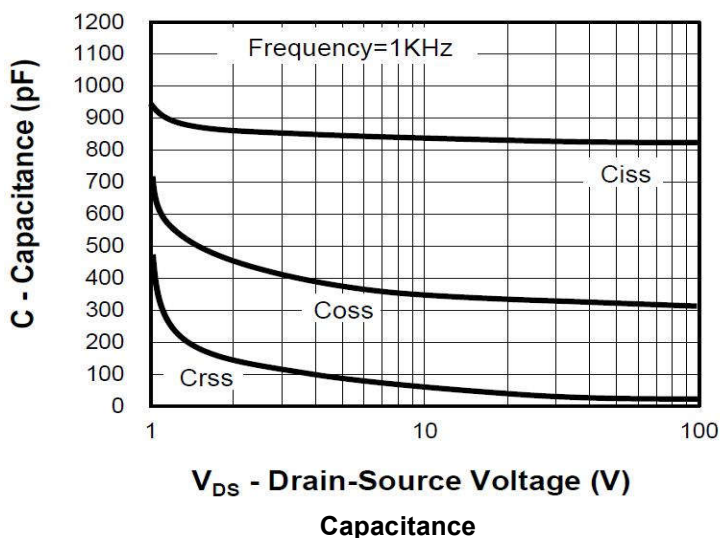
Drain-Source On Resistance



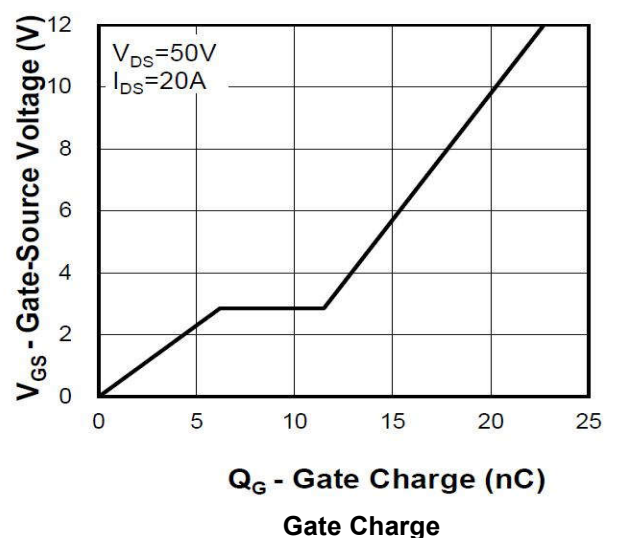
Drain-Source On Resistance



Source-Drain Diode Forward

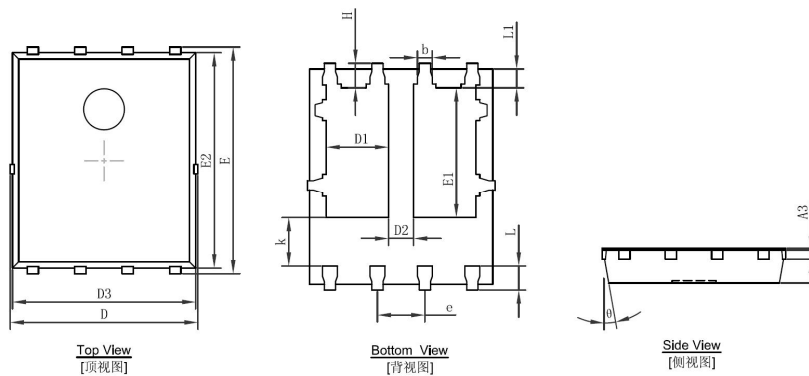


Capacitance



Gate Charge

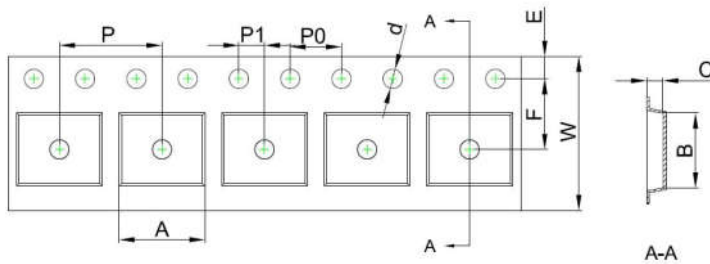
7. Dimension



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.900	1.000	0.035	0.039
A3	0.254 REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	1.470	1.870	0.058	0.074
D2	0.470	0.870	0.019	0.034
E1	3.375	3.575	0.133	0.141
D3	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°

8. Tape and Reel

PDFN5*6-8L Embossed Carrier Tape

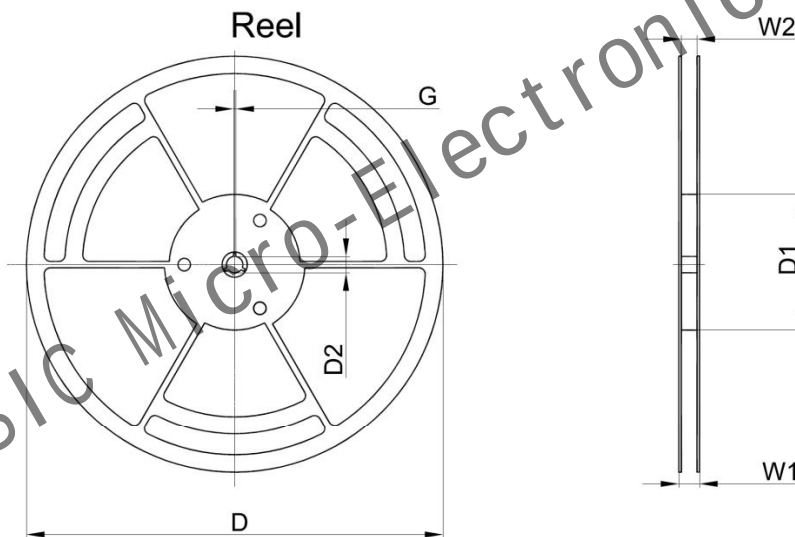


Packaging Description:

PDFNWB5*6-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 5,000 units per 13" or 33.0 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter											
Pkg type	A	B	C	d	E	F	P0	P	P1	W	
PDFNWB5*6-8L	6.30	5.30	1.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00	

PDFN5*6-8L Reel



Dimensions are in millimeter						
Reel Option	D	D1	D2	G	W1	W2
13"Dia	Ø330.00	100.00	13.00	1.90	17.60	12.40

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)
5,000 pcs	13 inch	5,000 pcs	340×336×29	50,000 pcs	353×346×365

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