



Product Summary

V_{(BR)DSS}	R_{DS(on)TYP}	I_D
60V	26mΩ@10V	20A

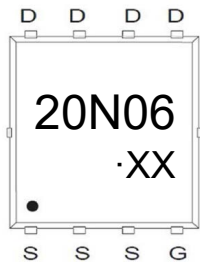
Feature

- High density cell design for ultra low Rdson
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation
- Special process technology for high ESD capability

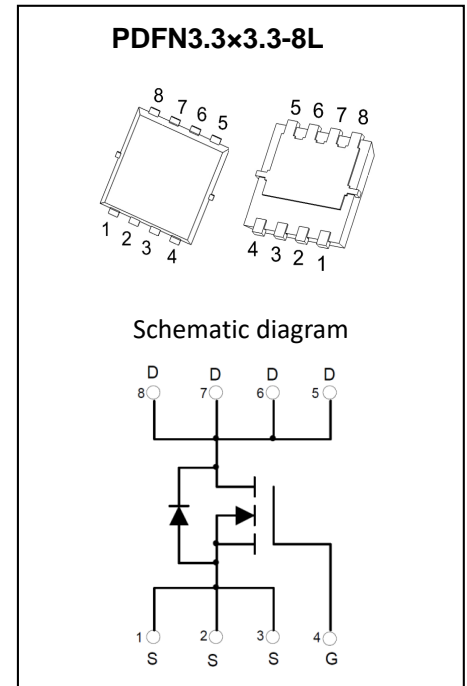
Application

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

MARKING:



20N06 = Device code
 Solid dot = Pin1 indicator
 XX = Date Code



ABSOLUTE MAXIMUM RATINGS (T_C=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	I _D	20	A
Pulsed Drain Current	I _{DM}	60	A
Single Pulse Avalanche Energy ⁵	E _{AS}	70	mJ
Total Power Dissipation	P _D	1.5	W
Thermal Resistance from Junction to Ambient	R _{θJA}	83.3	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55~ +150	°C

MOSFET ELECTRICAL CHARACTERISTICS($T_c=25^\circ\text{C}$ unless otherwise noted)

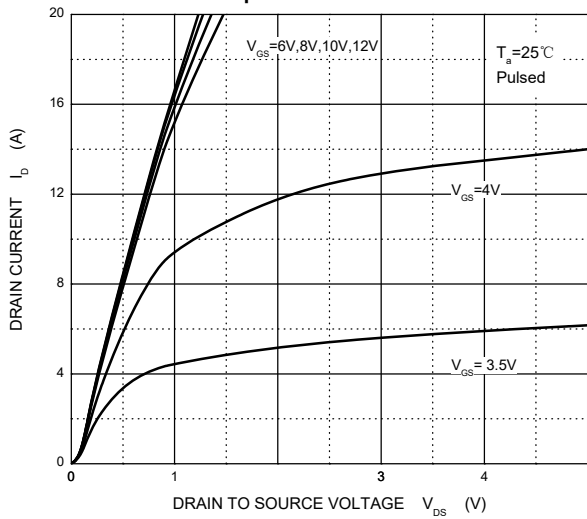
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage ³	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	2	3	V
Drain-source on-resistance ³	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10A$		26	35	m Ω
Forward transconductance ³	g_{FS}	$V_{DS} = 6V, I_D = 10A$	18			S
Dynamic characteristics⁴						
Input Capacitance	C_{iss}	$V_{DS} = 30V, V_{GS} = 0V, f = 1MHz$		960		pF
Output Capacitance	C_{oss}			62		
Reverse Transfer Capacitance	C_{rss}			54		
Switching Characteristics⁴						
Total Gate Charge@-4.5V	Q_g	$V_{DS} = 48V, V_{GS} = 10V, I_D = 15A$		12		nC
Gate-Source Charge	Q_{gs}			4.1		
Gate-Drain Charge	Q_{gd}			4.5		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 30V, V_{GS} = 10V, R_L = 15\Omega, R_G = 2.5\Omega$		5		ns
Turn-on rise time	t_r			2.6		
Turn-off delay time	$t_{d(off)}$			17		
Turn-off fall time	t_f			2.5		
Diode Characteristics						
Continuous Source Current ²	I_S	$V_G = V_D = 0V, \text{Force Current}$			20	A
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = 1A, T_J = 25^\circ\text{C}$		0.72	1.2	V

Note :

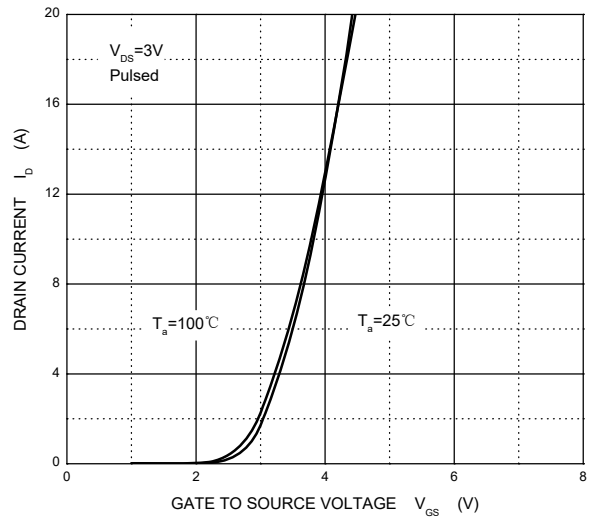
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production
5. EAS condition : $T_J = 25^\circ\text{C}, V_{DD} = 30V, V_G = 10V, L = 0.5mH, R_g = 25\Omega$

Typical Electrical and Thermal Characteristics

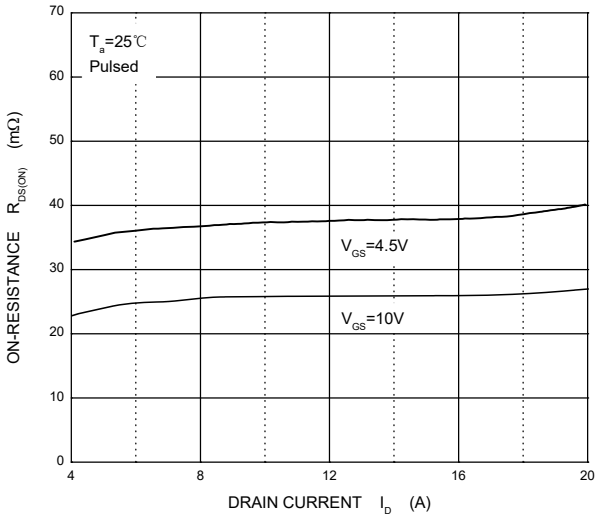
Output Characteristics



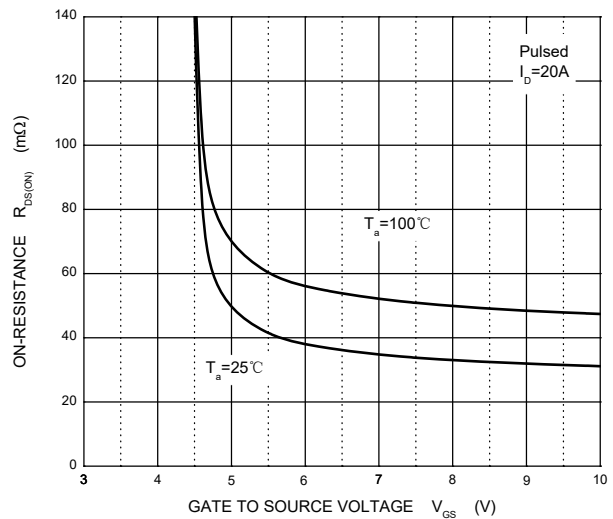
Transfer Characteristics



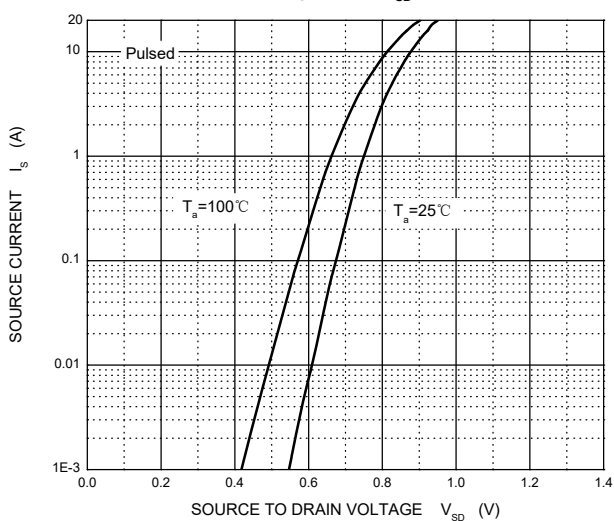
$R_{DS(ON)}$ — I_D



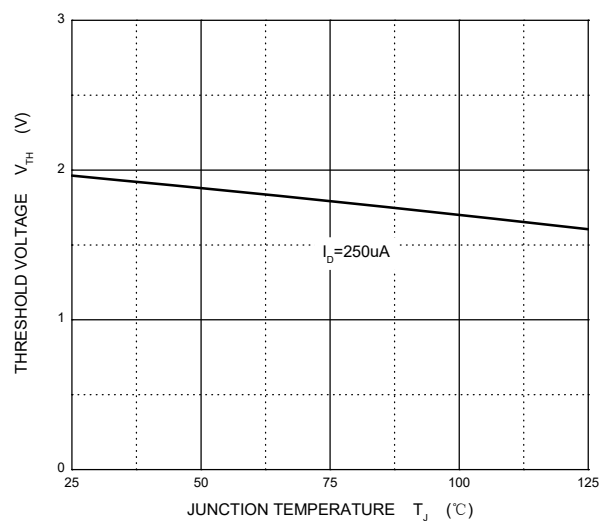
$R_{DS(ON)}$ — V_{GS}



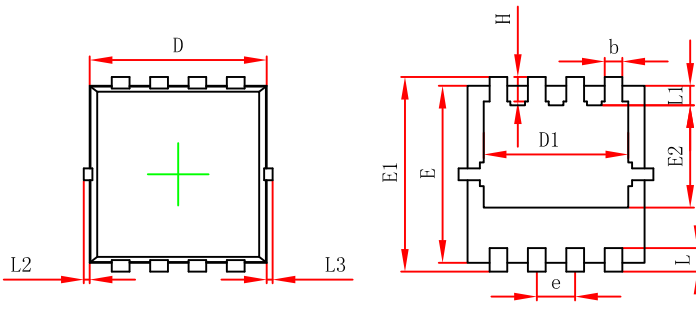
I_S — V_{SD}



Threshold Voltage

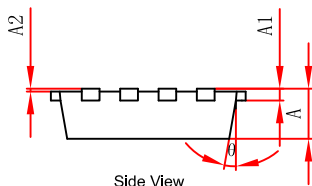


PDFN3.3*3.3-8L Package Information



Top View
[顶视图]

Bottom View
[背视图]

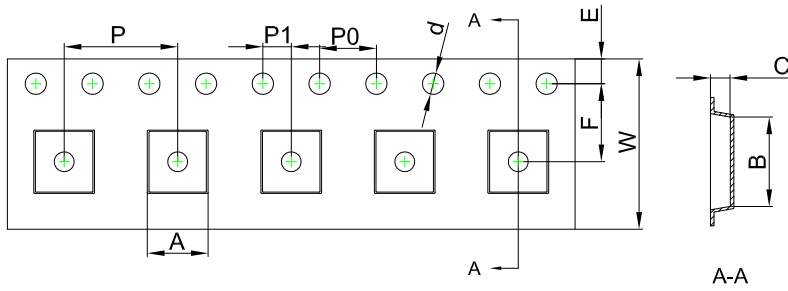


Side View
[侧视图]

Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°

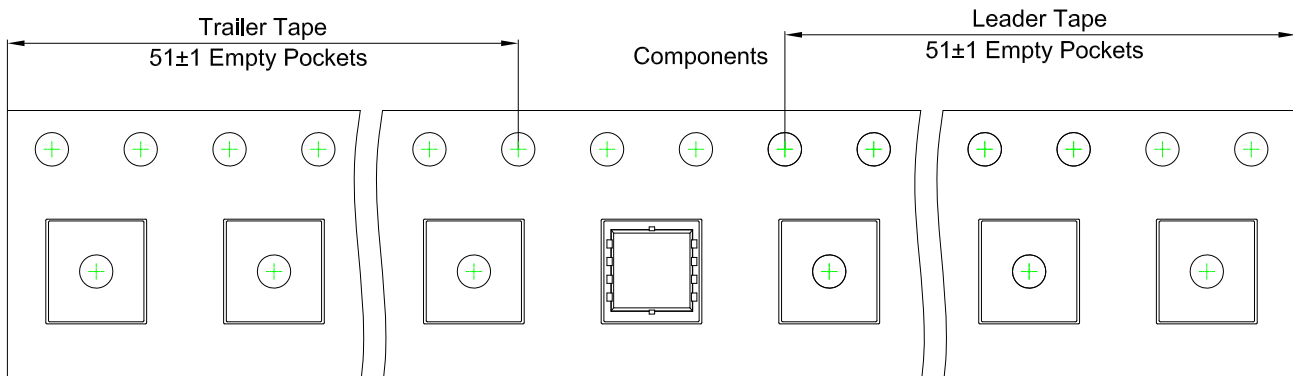
PDFNWB3.3*3.3-8L Tape and Reel

PDFNWB3.3×3.3-8L Embossed Carrier Tape

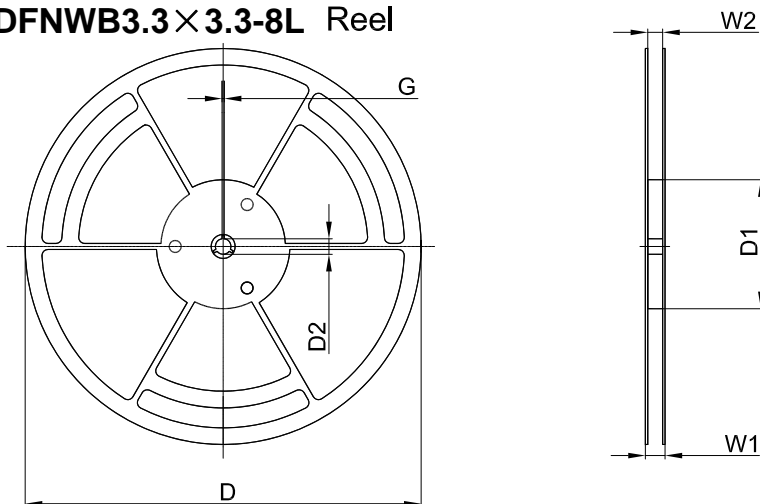


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
PDFNWB3.3×3.3-8L	3.55	3.55	1.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

PDFNWB3.3×3.3-8L Tape Leader and Trailer



PDFNWB3.3×3.3-8L 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