Product Summary

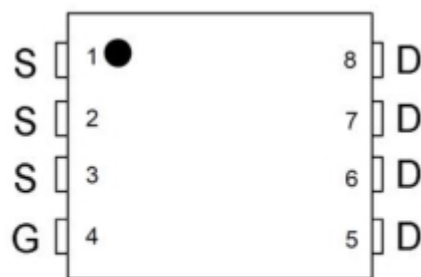| $V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	2.2mΩ@10V	80A
	2.5mΩ@4.5V	

Feature

- V_{DS} =20V,I_D=80A
- $R_{DS(ON)}$ <4.5mΩ @ V_{GS}=10V
- High density cell design for ultra low Rdson
- Excellent package for good heat dissipation
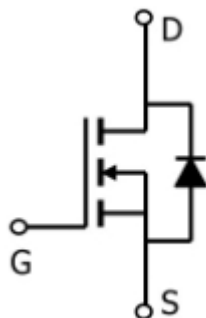
Applications

- Power switching application
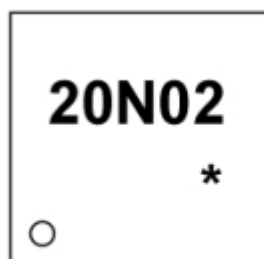- Hard switched and high frequency circuits
- Uninterruptible power supply

Package

PDFNWB3.3×3.3-8L

Circuit diagram

Marking

20N02 =Device Code
*   =Month Code

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Drain Current-Continuous(T_C = 25℃)		I_D	80	W
Pulsed Drain Current		I_{DM}	320	A
Avalanche Current		I_{AS}	24	A
Single Pulse Avalanche Energy		E_{AS}	144	mJ
Power Dissipation	T_C = 25℃	P_D	85	W
Thermal Resistance Junction- Case		$R_{\theta JC}$	1.47	℃/ W
Operating and Storage Temperature Range		T_J, $T_{STG,}$	-55~ +150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

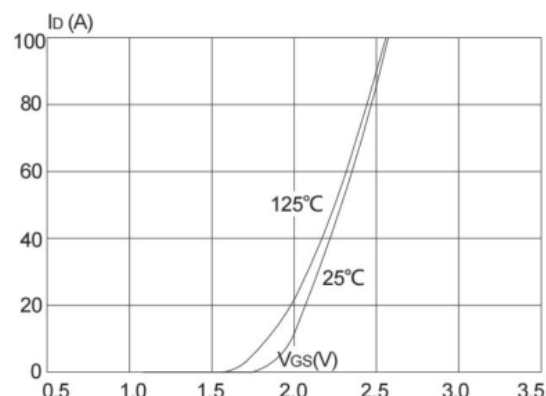| Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS} = 0V, I_D =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =20V,V_{GS} = 0V			1	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V , V_{DS}=0V			±100	uA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	0.7	1.1	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =30A		2.2	3	mΩ
		V_{GS} =4.5V, I_D =20A		2.5	4	
Dynamic characteristics[4]						
Input Capacitance	C_{iss}	V_{DS}=10V, V_{GS}=0V, f=1MHz		5238		pF
Output Capacitance	C_{oss}			932		
Reverse Transfer Capacitance	C_{rss}			833		
Switching Characteristics						
Total Gate Charge(4.5V)	Q_g	V_{GS}=4.5V, V_{DS}=10V, I_D=40A		55		nC
Gate-Source Charge	Q_{gS}			6.5		
Gate-Drain Charge	Q_{gd}			28		
Turn-On Delay Time	$T_{d(on)}$	V_{GS}=4.5V, V_{DD}=10V, I_D=40A, R_L=1Ω, R_{GEN}=3Ω		8		nS
Rise Time	T_r			26		
Turn-Off Delay Time	$T_{d(off)}$			55		
Fall Time	T_f			35		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	I_S=1A, V_{GS} = 0V			1.2	V

Note :

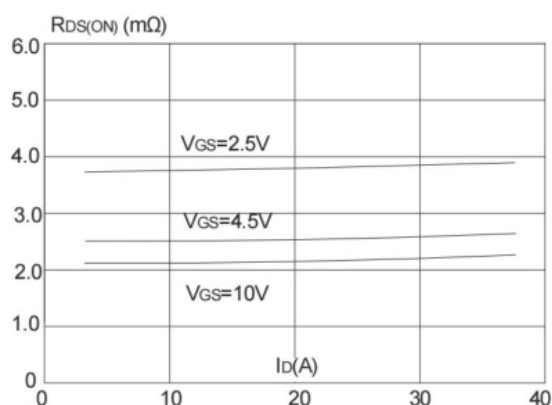1. The test condition is V_{DD}=20V,V_{GS}=10V,L=0.5mH,R_G=25Ω
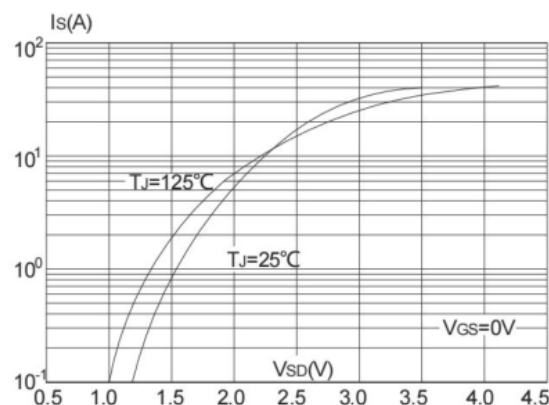
Typical Characteristics
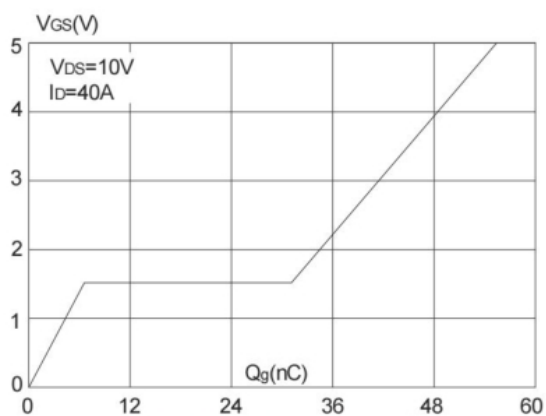

Output Characteristics
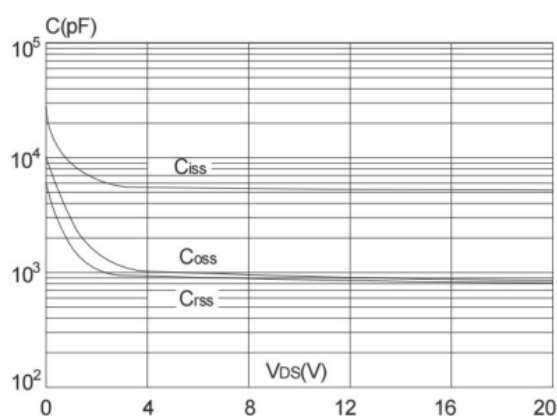

Typical Transfer Characteristics
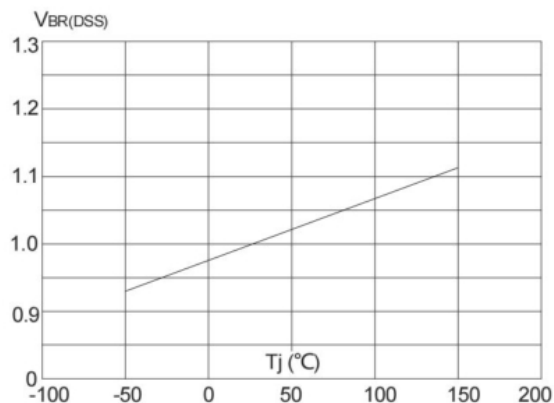

On-resistance vs. Drain Current

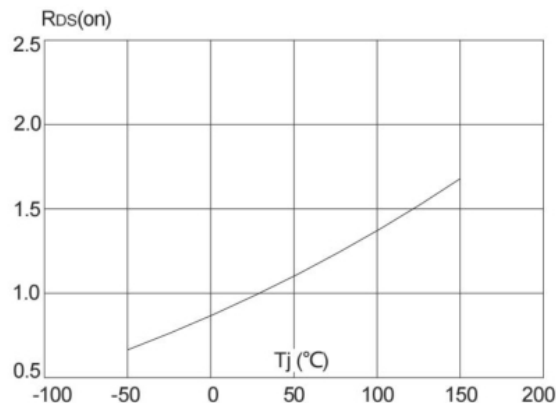**Body Diode Characteristics**

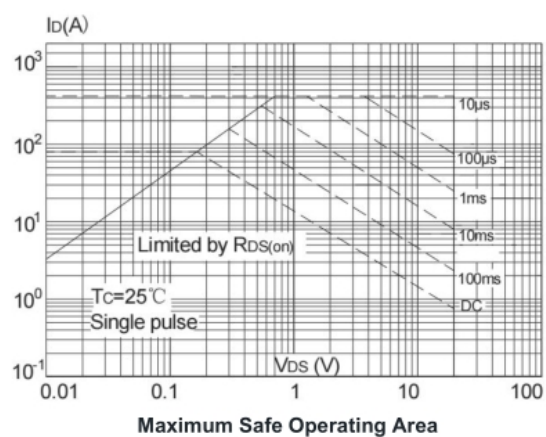
Gate Charge Characteristics
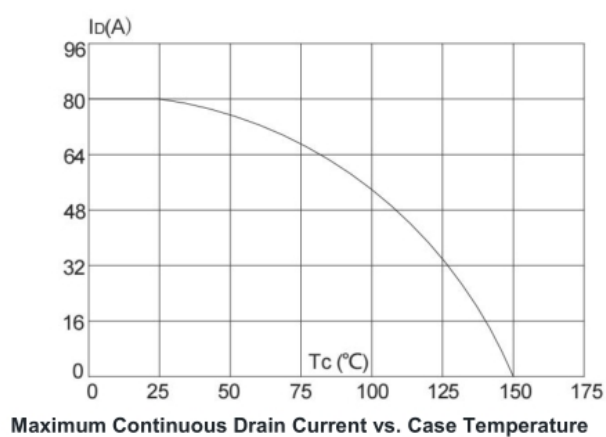

Capacitance Characteristics

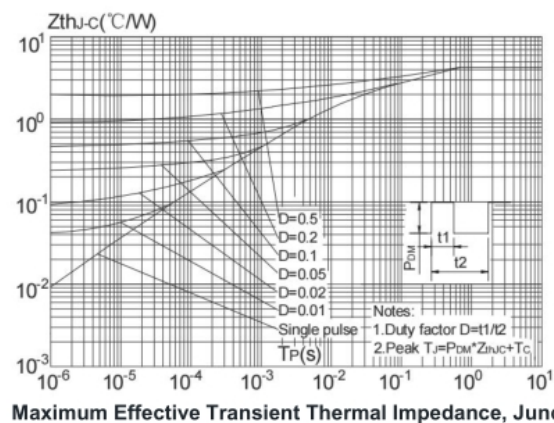Normalized Breakdown Voltage vs. Junction Temperature

Normalized on Resistance vs. Junction Temperature
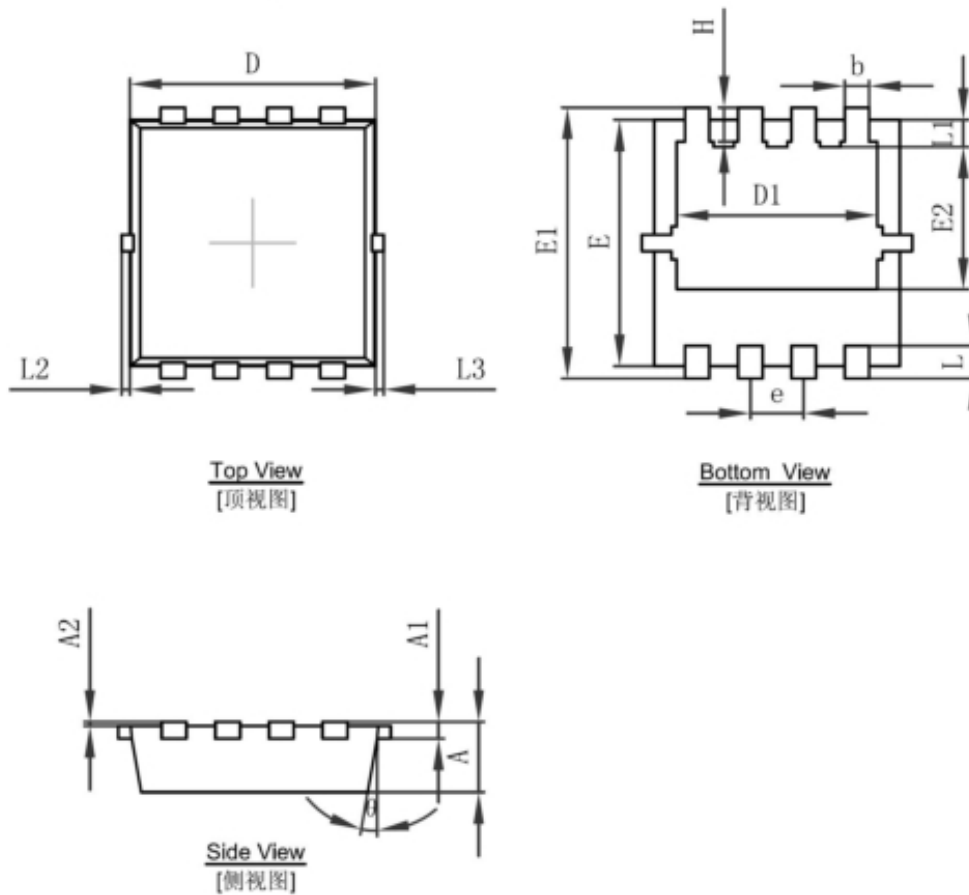

Maximum Safe Operating Area

Maximum Continuous Drain Current vs. Case Temperature

Maximum Effective Transient Thermal Impedance, Junction-to-Case

PDFNWB3.3×3.3-8L 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°