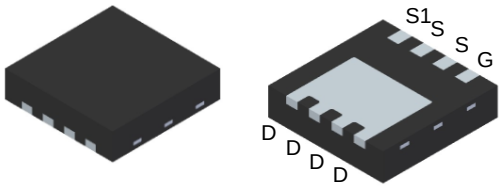
Description：

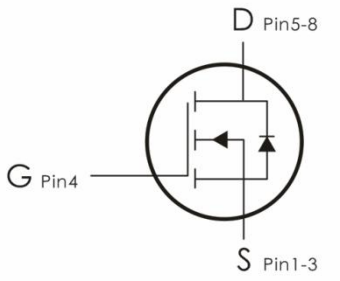
This N-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.



Features：

1) V_{DS}=20V,I_D=320A,$R_{DS(ON)}$<1mΩ @V_{GS}=4.5V（Typ：0.8mΩ）
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra low $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.
6) MSL3



Package Marking and Ordering Information：

Part NO.	Marking	Package	Packing
YB001NG-PL	B001N-PL	TDFN3333-8	5000 pcs/Reel

Absolute Maximum Ratings： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	±12	V
I_D	Continuous Drain Current	320	A
	Continuous Drain Current-T_C=100℃	224	
I_{DM}	Pulsed Drain Current[1]	1280	
P_D	Power Dissipation	250	W
E_{AS}	Single pulse avalanche energy[2]	248	mJ
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	0.5	℃/W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	55.7	℃/W

Electrical Characteristics: (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	20	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=4.5V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	0.5	0.7	1	V
$R_{DS(ON)}$	Drain-Source On Resistance[3]	V_{GS}=4.5V,I_D=20A	---	0.8	1	mΩ
		V_{GS}=2.5V,I_D=10A	---	1	1.3	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=10V, V_{GS}=0V, f=1MHz	---	4800	---	pF
C_{oss}	Output Capacitance		---	830	---	
C_{rss}	Reverse Transfer Capacitance		---	780	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=16V, I_D=75A, R_G=5Ω,V_{GS}=410V	---	9.6	---	ns
t_r	Rise Time		---	197.8	---	ns
$t_{d(off)}$	Turn-Off Delay Tim		---	177.3	---	ns
t_f	Fall Time		---	41.6	---	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=16V, I_D=75A	---	155	---	nC
Q_{gs}	Gate-Source Charge		---	19	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	42	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_{SD}=3A	---	---	1.0	V
I_S	Continuous Drain Curren	V_D=V_G=0V	---	---	320	A
I_{SM}	Pulsed Drain Current		---	---	1280	A
Trr	Reverse Recovery Time[3]	I_F=40A,T_J=25℃ dI/dt=100A/us	---	24	---	ns
Qrr	Reverse Recovery Charge		---	18	---	nC

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. EAS condition : TJ=25℃,VDD=10V,VG=10V,L=0.5mH
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Characteristics：

(T_A=25℃ unless otherwise noted)

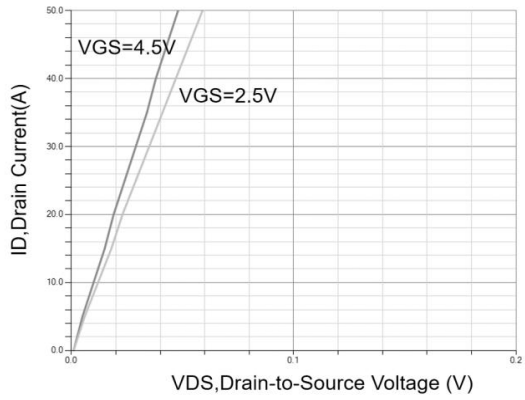


Figure 1. Output Characteristics

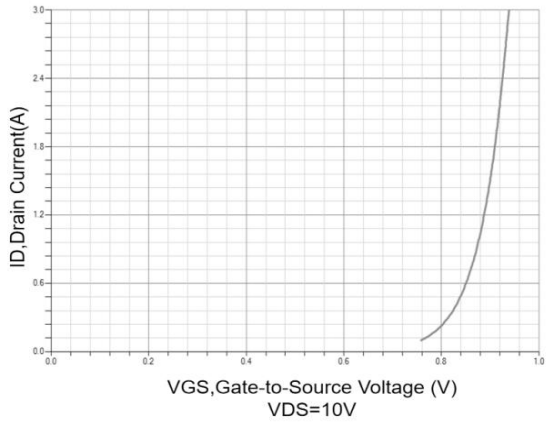


Figure 2. Transfer Characteristics

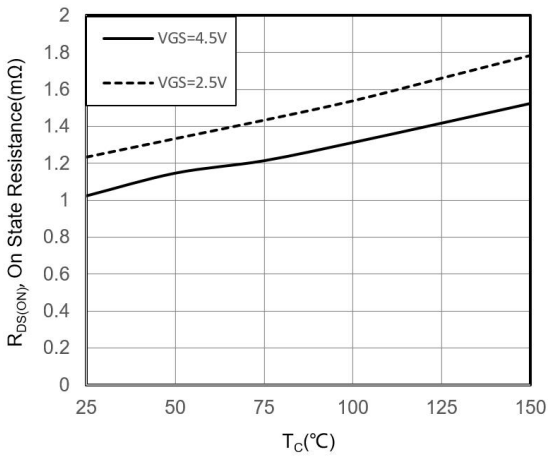


Figure 3. On-Resistance

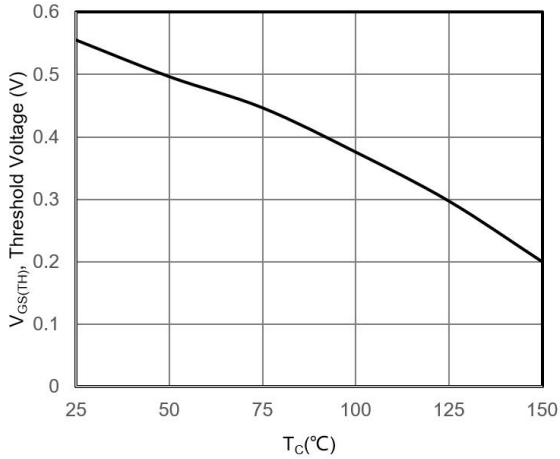


Figure 4. Gate Threshold Voltages

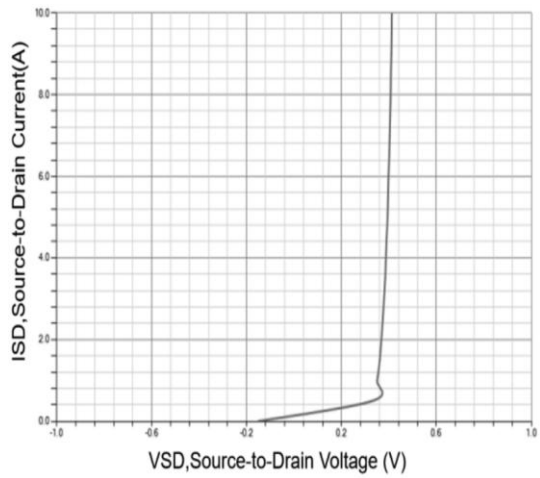


Figure 5. Typical Diode Forward Voltage

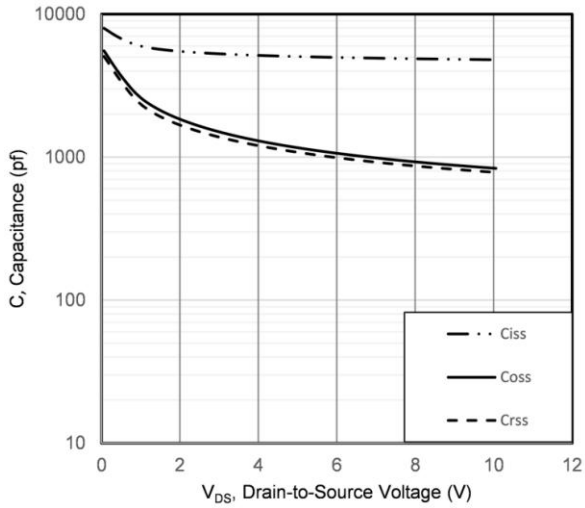


Figure 6. Capacitance Characteristics

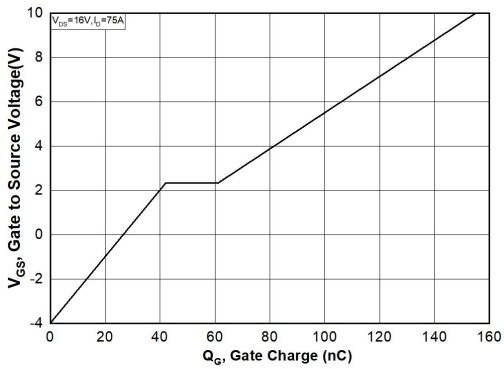


Figure 7. Gate charge characteristics

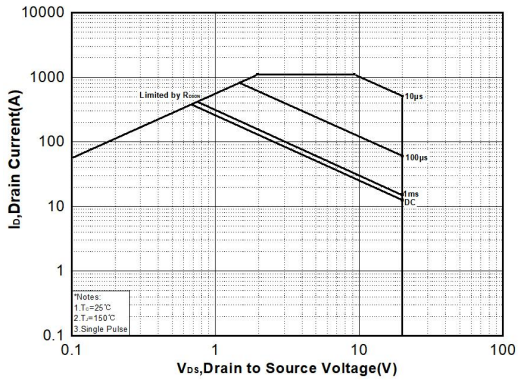


Figure 8. Maximum Safe Operating Area

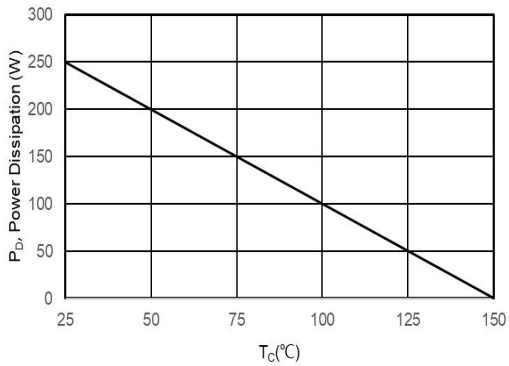


Figure 9. Power Dissipation

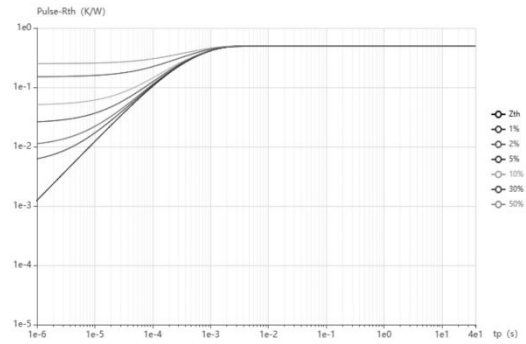
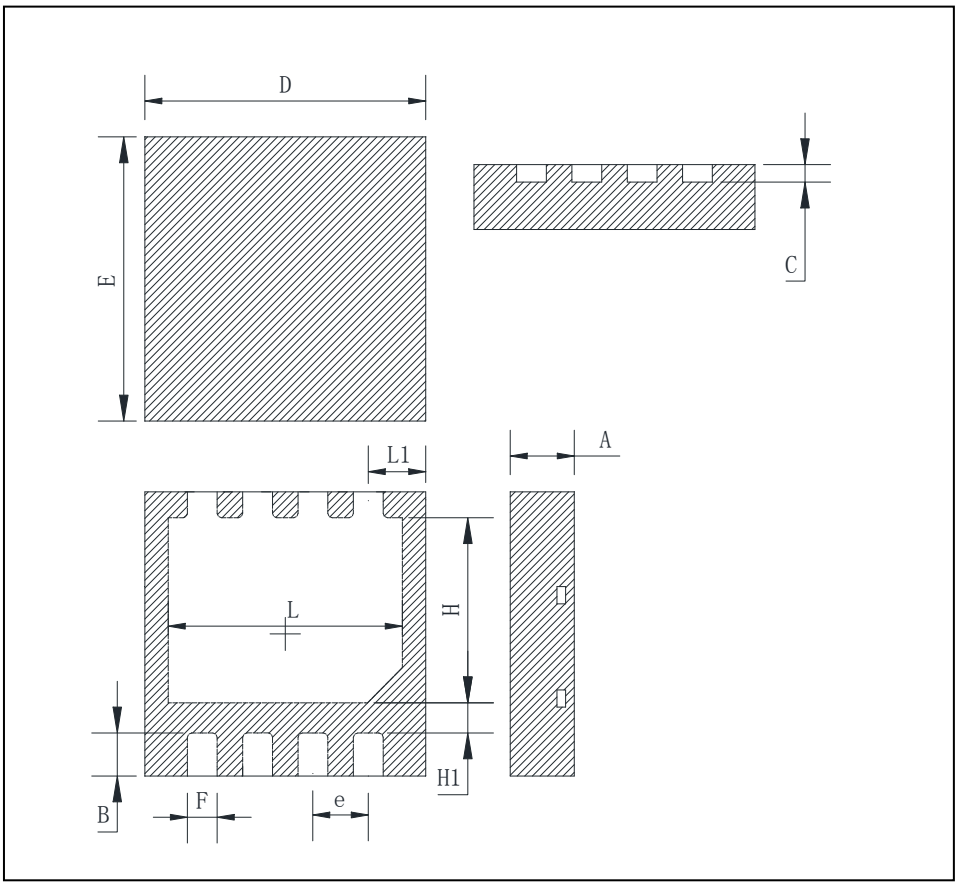


Figure 10. Transient Thermal Impedance

TDFN3333-8 Package Information：



Symbol	Min	Typ	Max
A	0.70	0.75	0.80
B	0.40	0.50	0.60
C	0.153	0.203	0.253
D	3.20	3.30	3.40
E	3.20	3.30	3.40
e	0.60	0.65	0.70
F	0.30	0.35	0.40
H	2.05	2.15	2.25
H1	0.25	0.35	0.45
L	2.65	2.75	2.85
L1	0.575	0.675	0.775

Marking Information：

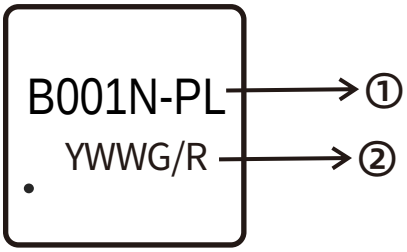
①. Part NO.

②. Date Code(YWWG / R)

Y : Year Code , last digit of the year

WW : Week Code(01-53)

G/R : G(Green) /R(Lead Free)



Previous Version

Version	Date	Subjects (major changes since last revision)
1.1	2026-06-19	Release of final version

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