

100V Dual N-Channel SGT Power MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	20mΩ@10V	24A
	25mΩ@10V	

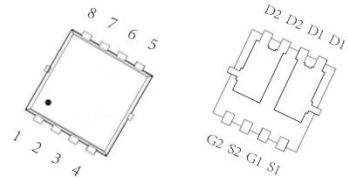
Features

- Low Gate Charge
- High Power and current handling capability
- Lead free product is acquired

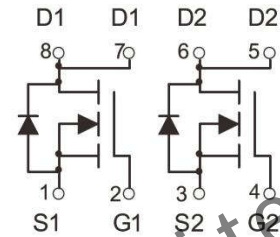
Applications

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

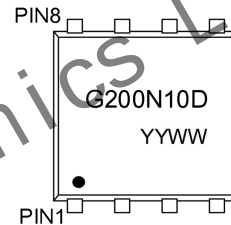
PDFNWB3.3*3.3-8L-B



Schematic diagram



Marking



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

Absolute Maximum rating ($T_A = 25^\circ\text{C}$ 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	24	A
Pulsed Drain Current	I_{DM}	96	A
Power Dissipation	P_D	25	W
Avalanche energy ¹	E_{AS}	27.6	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	5	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~ +150	$^\circ\text{C}$

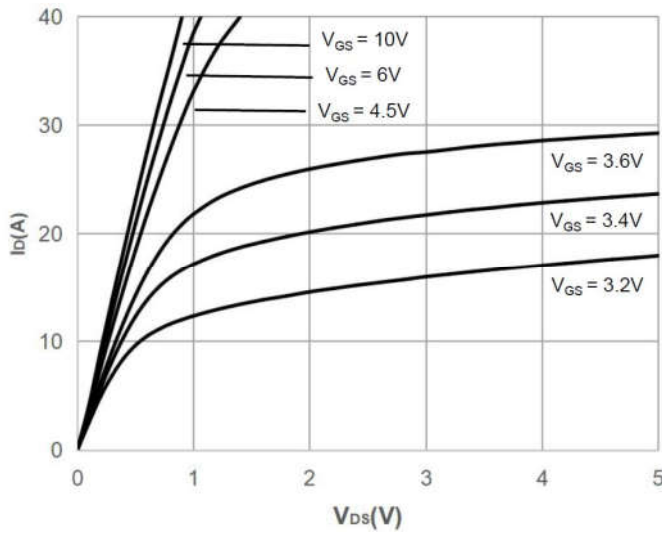
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}= 0V, I_D= 250\mu A$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}= 100V, V_{GS}= 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS}= \pm 20V, V_{DS}= 0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}= V_{GS}, I_D= 250\mu A$	1.2	1.8	2.5	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS}= 10V, I_D= 10A$		20	26	m Ω
		$V_{GS}= 4.5V, I_D= 8A$		25	33	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}= 50V, V_{GS}= 0V, f= 1MHz$		650		pF
Output Capacitance	C_{oss}			280		
Reverse Transfer Capacitance	C_{rss}			8		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS}= 50V, V_{GS}= 10V, I_D= 10A$		25		nC
Gate-source Charge	Q_{gs}			6		
Gate-drain Charge	Q_{gd}			5		
Turn-on Delay Time	$t_{d(on)}$	$V_{GS}= 10V, V_{DS}= 50V, R_L= 1\Omega, R_{GEN}= 3\Omega$		14		ns
Turn-on Rise Time	t_r			12		
Turn-off Delay Time	$t_{d(off)}$			23		
Turn-off Fall Time	t_f			6		
Source - Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}= 0V, I_S= 10A$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F= 10A, dI/dt= 100A/\mu s$		50		ns
Reverse Recovery Charge	Q_{rr}			90		nC

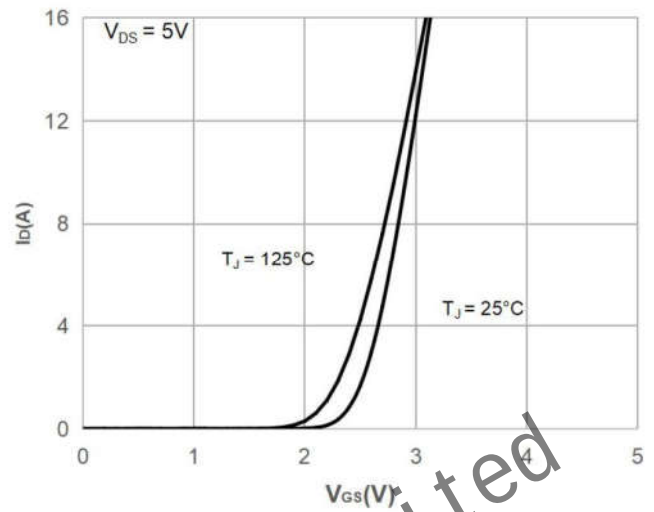
Notes :

1. EAS condition: $T_J = 25^\circ\text{C}, V_{DD} = 100V, V_G = 10V, R_g = 25\Omega, L = 0.5mH$

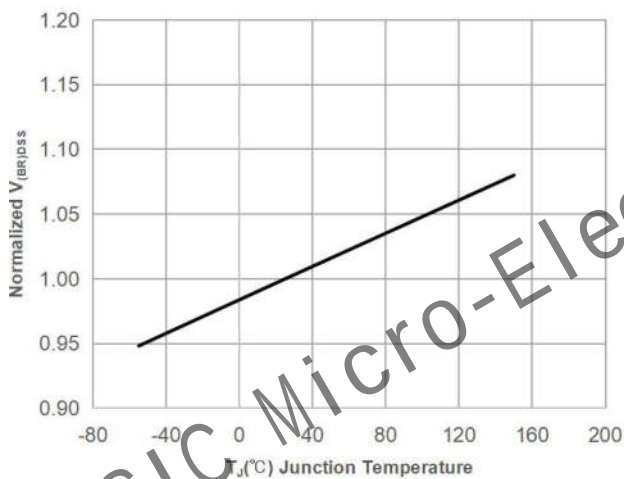
Typical Characteristic



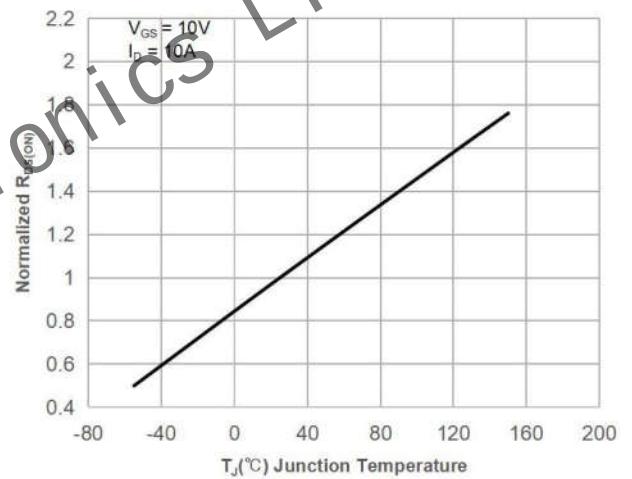
Output Characteristics



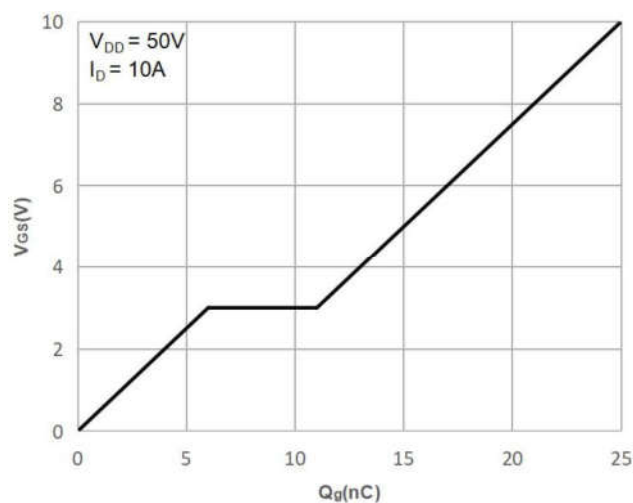
Transfer Characteristics



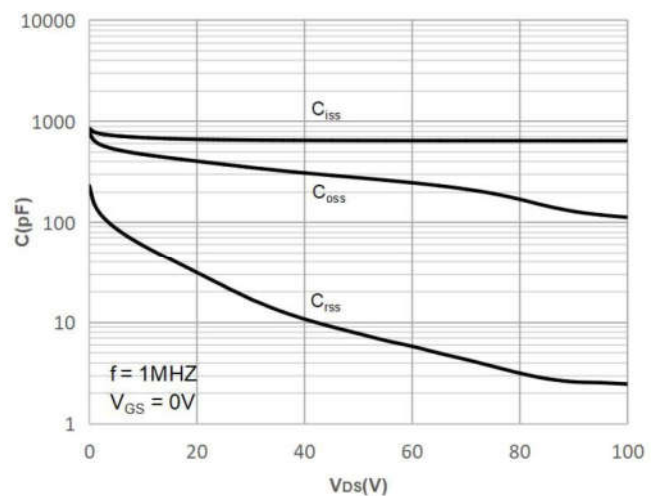
BV_{DSS} vs Junction Temperature



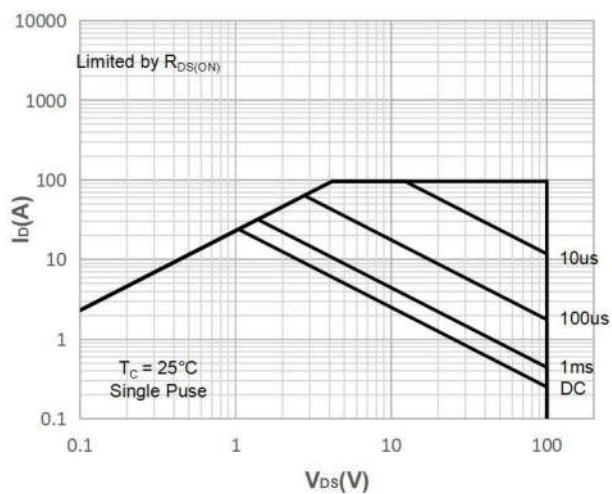
$R_{DS(ON)}$ vs Junction Temperature



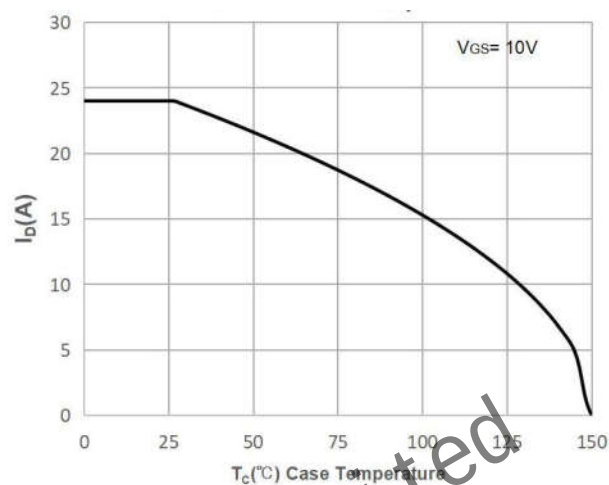
Gate Charge Characteristics



Capacitance Characteristics



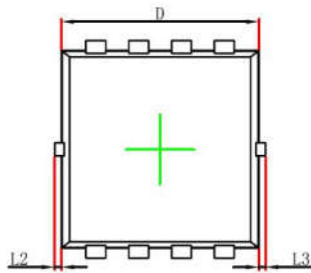
Maximum Safe Operating Area



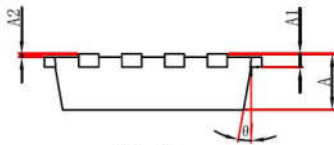
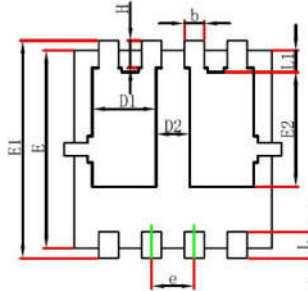
Drain Current

Dimension

PDFNWB3.3x3.3-8L



Top View
[顶视图]



Side View
[侧视图]

Symbol	Dimensions		Dimensions	
	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°