AG200SN100MTB

N-Channel Enhancement Mode MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
100V	2.3mΩ@10V	200A

Feature

- Fast switching
- Low gate charge and $R_{DS(ON)}$
- Advanced Split Gate Trench technology

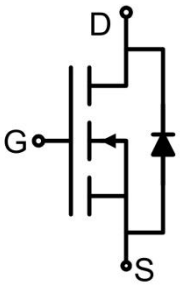
Application

- PWM application
- Hard switched and high frequency circuits
- Power management

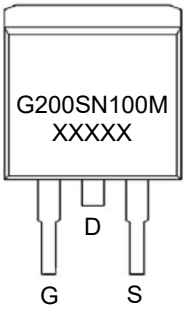
Package

TO-263AB

Circuit diagram



Marking



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N-Channel Enhancement Mode MOSFET

Absolute Maximum Ratings (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (T_C =25℃, Package Limit)	I_D	200	A
Continuous Drain Current (T_C =100℃)	I_D(100℃)	133	A
Pulsed Drain Current	I_{DM}	800	A
Single Pulse Avalanche Energy[1)]	E_{AS}	2025	mJ
Power Dissipation (T_C =25℃)	P_D	275	W
Thermal Resistance Junction to Case	$R_{\theta JC}$	0.45	℃/W
Operating Junction Temperature	T_J	-55 ~ +150	℃
Storage Temperature	T_{STG}	-55 ~ +150	℃

Electrical characteristics (T_A=25℃ unless otherwise noted)

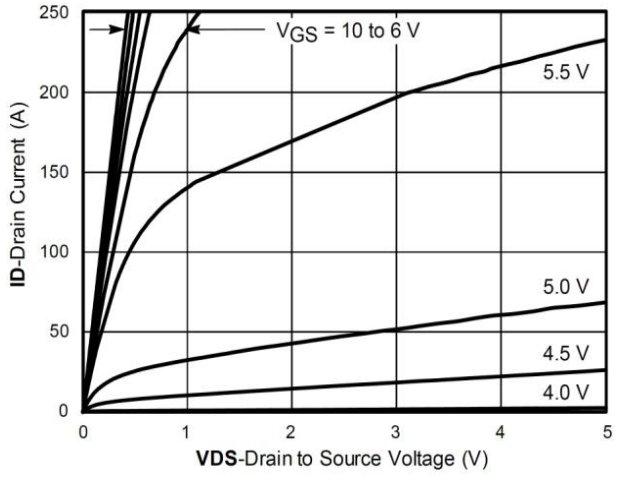
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} =0V, I_D =250μA	100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =80V, V_{GS} =0V, T_J =25℃			1	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2	3	4	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =20A		1.85	2.3	mΩ
Dynamic characteristics[2)]						
Input Capacitance	C_{iss}	V_{DS} =50V, V_{GS} =0V, f =1MHz		9499		pF
Output Capacitance	C_{oss}			1465		
Reverse Transfer Capacitance	C_{rss}			52		
Total Gate Charge	Q_g	V_{DS} =50V, V_{GS} =10V, I_D =100A		139		nC
Gate-Source Charge	Q_{gs}			36		
Gate-Drain Charge	Q_{gd}			25		
Turn-on delay time	$t_{d(on)}$	V_{DS} =50V, V_{GS} =10V, I_D =100A R_G =4Ω		20		nS
Turn-on rise time	t_r			60		
Turn-off delay time	$t_{d(off)}$			70		
Turn-off fall time	t_f			23		
Source-Drain Diode characteristics						
Diode Forward Current	I_S				200	A
Diode Forward voltage	V_{SD}	V_{GS} =0V, I_S =1A			1.2	V
Reverse Recovery Time	T_{rr}	I_F =50A, di/dt =-100A/μs T_J =25℃		96		nS
Reverse Recovery Charge	Q_{rr}			196		nC

Notes:

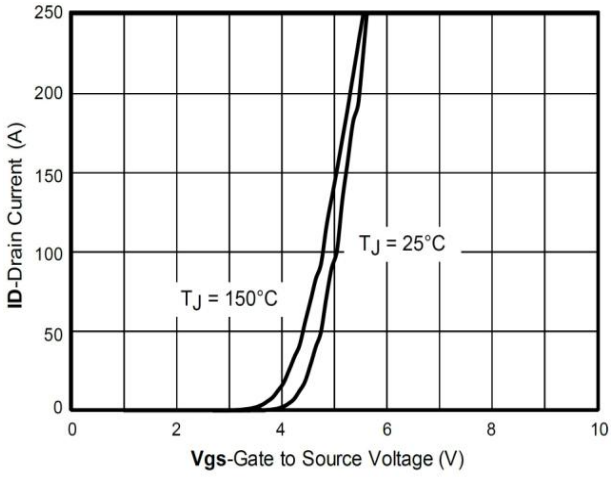
1) The test condition is V_{DD} =50V, V_{GS} =10V, L =0.5mH, R_G =25Ω.

2) Guaranteed by design, not subject to production testing.

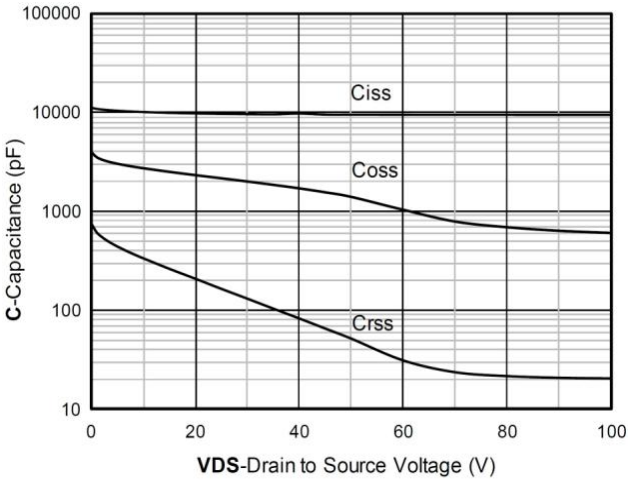
Typical Characteristics



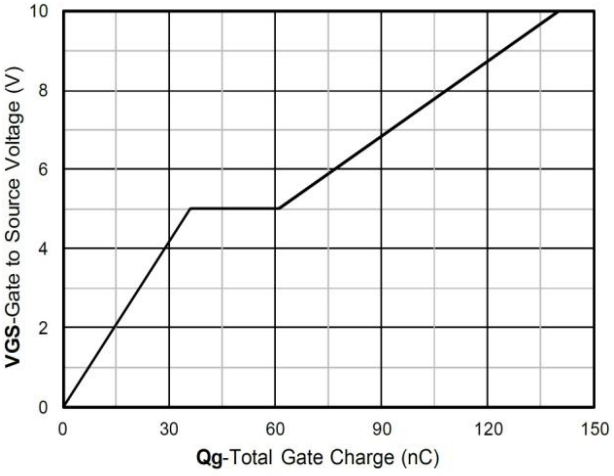
Output Characteristics



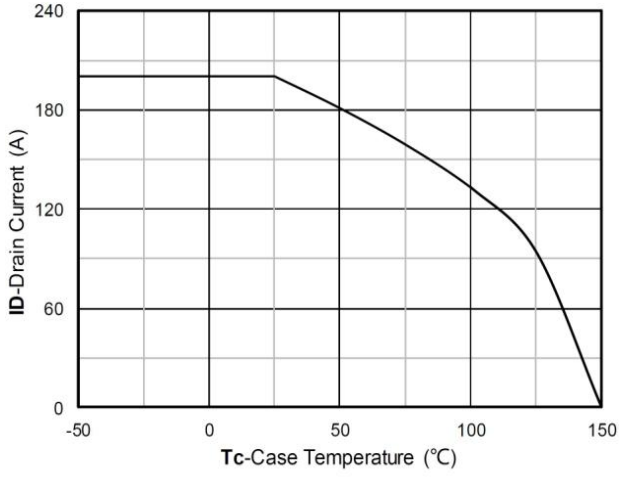
Transfer Characteristics



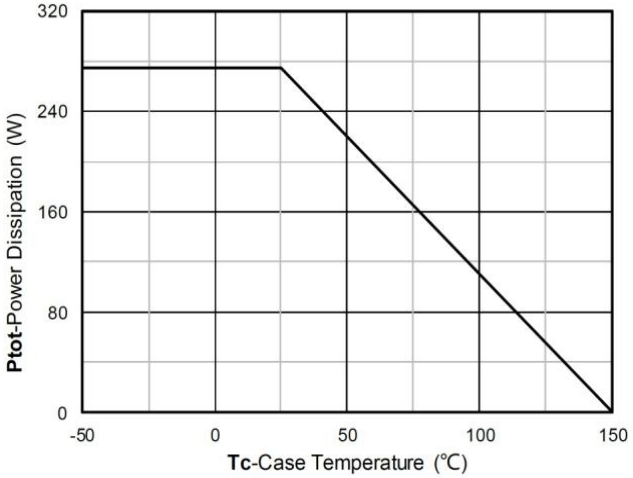
Capacitance Characteristics



Gate Charge

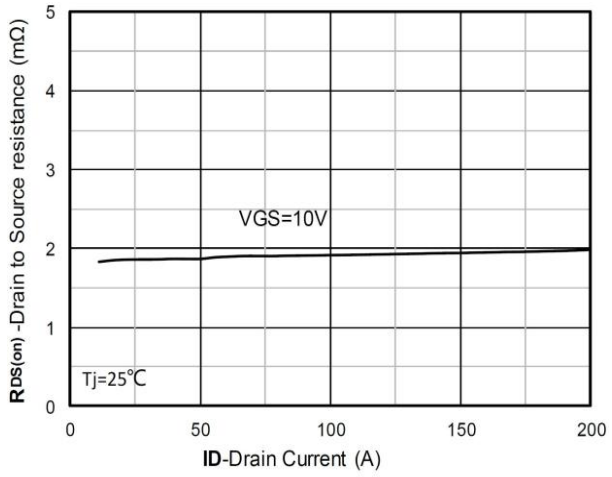


Current dissipation

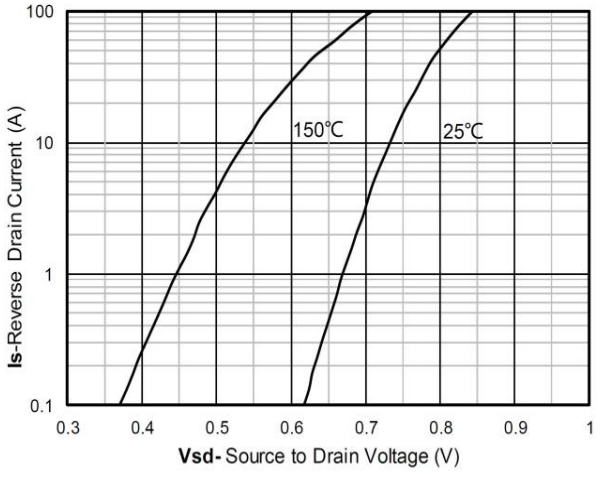


Power dissipation

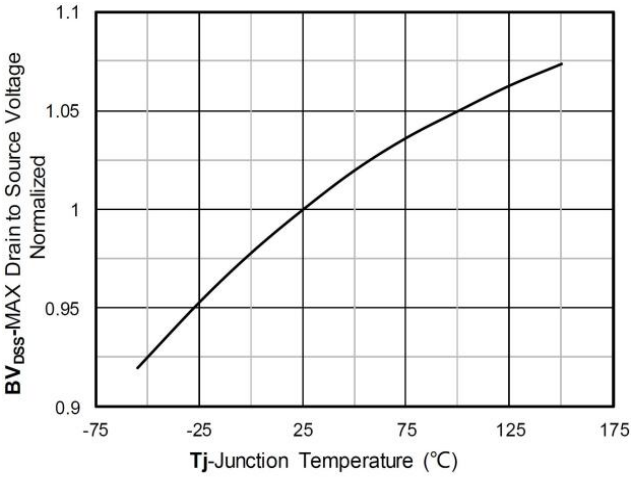
Typical Characteristics



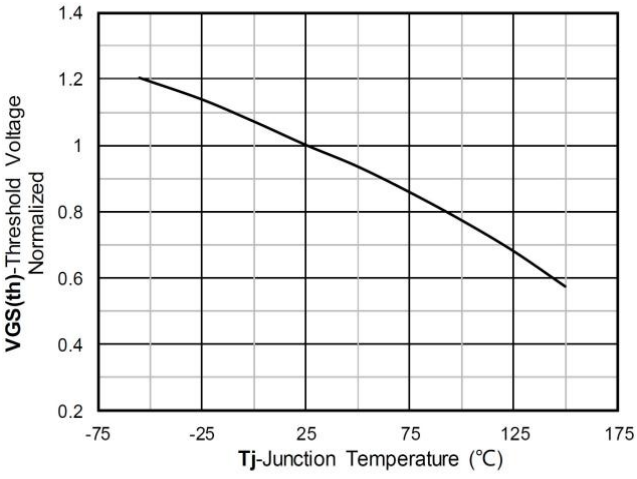
RDS(on) VS Drain Current



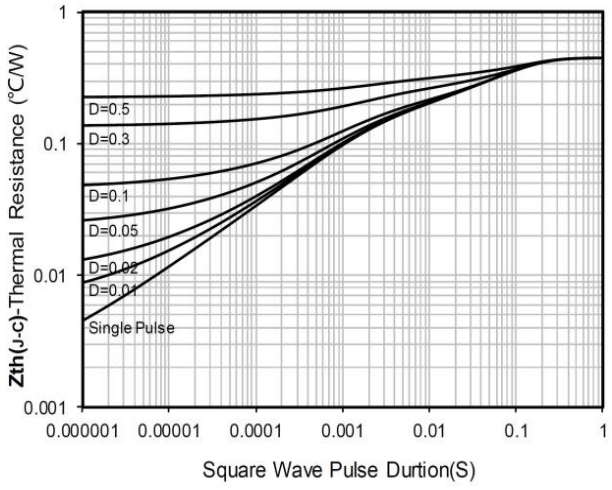
Forward characteristics of reverse diode



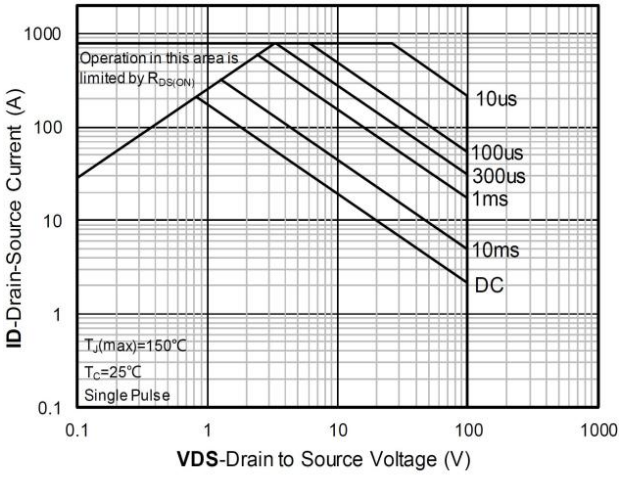
Normalized breakdown voltage



Normalized Threshold voltage

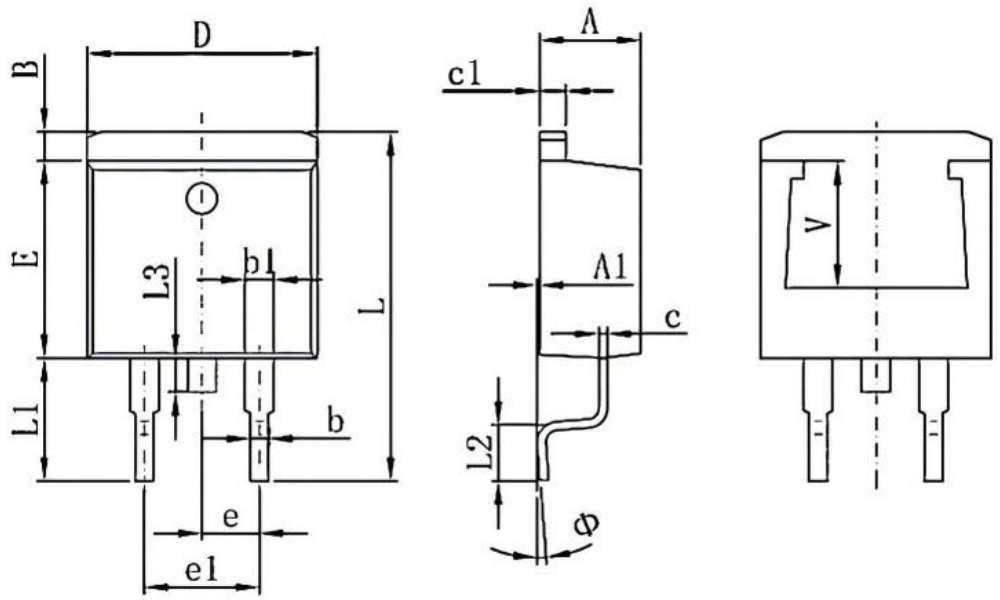


Maximum Transient Thermal Impedance



Safe Operation Area

TO-263AB Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.120	1.420	0.044	0.056
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
L	14.940	15.500	0.588	0.610
L1	4.950	5.450	0.195	0.215
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
Φ	0°	8°	0°	8°
V	5.600 REF.		0.220 REF.	