

200V N-Ch Power MOSFET

V_{DS}		200	V
$R_{DS(on),typ}$	$V_{GS}=10V$	95	
$R_{DS(on),typ}$	$V_{GS}=4.5V$		m

GD1K2N20ML

Absolute Maximum Ratings at $T_j=25$ (unless otherwise specified)

Conditions	Value	Unit
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Electrical Characteristics at $T_j=25$ (unless otherwise specified)

Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250 A$	200	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250 A$	1	2.1	3	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0V, V_{DS}=200V, T_j=25$	-	-	1	A
		$V_{GS}=0V, V_{DS}=200V, T_j=100$	-	-	100	
Gate to Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Drain to Source on Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=5A$	-	95	120	m
	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=3A$	-	106	140	m
Transconductance	g_{fs}	$V_{DS}=5V, I_D=20A$	-	15	-	S
Gate Resistance	R_G	$V_{GS}=0V, V_{DS} \text{ Open}, f=1MHz$	-	5.5	-	

Dynamic Characteristics

Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=100V, f=1MHz$	-	491	-	pF
Output Capacitance	C_{oss}		-	22	-	
Reverse Transfer Capacitance	C_{rss}		-	5.5	-	
Total Gate Charge	$Q_g (10V)$	$V_{DD}=100V, I_D=5A, V_{GS}=10V$	-	9.8	-	nC
Total Gate Charge	$Q_g (4.5V)$		-	5.8	-	
Gate to Source Charge	Q_{gs}		-	1.6	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	3.2	-	
Turn on Delay Time	$t_{d(on)}$	$V_{DD}=100V, I_D=5A, V_{GS}=10V, R_G=10$	-	9	-	ns
Rise time	t_r		-	5	-	
Turn off Delay Time	$t_{d(off)}$		-	13	-	
Fall Time	t_f		-	4	-	

Reverse Diode Characteristics

Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_F=20A$	-	0.9	1.2	V
Reverse Recovery Time	t_{rr}	$V_R=100V, I_F=5A, di_F/dt=100A/s$	-	60	-	ns
Reverse Recovery Charge	Q_{rr}		-	126	-	nC



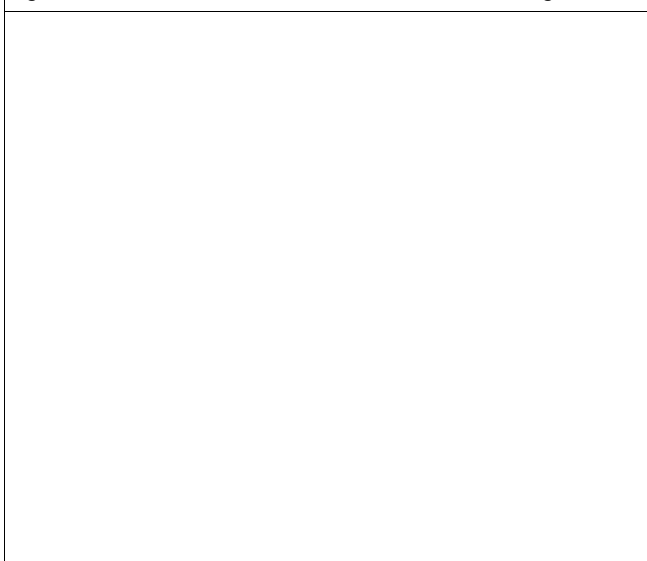
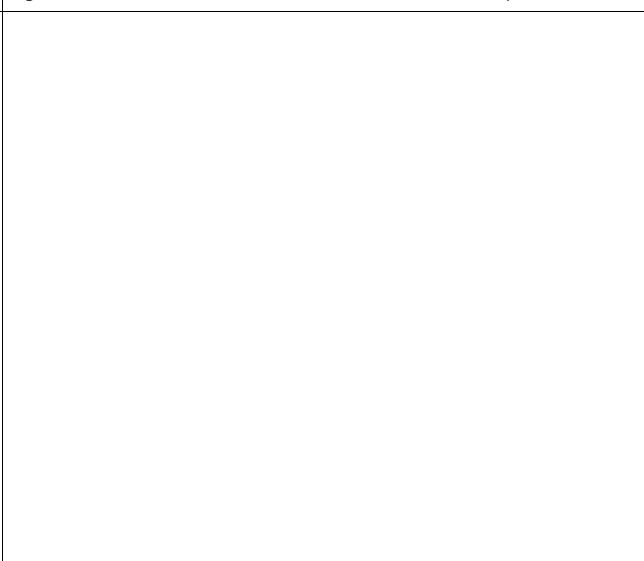


<p>Fig 1. Typical Output Characteristics</p> 	<p>Figure 2. On-Resistance vs. Gate-Source Voltage</p> 
<p>Figure 3. On-Resistance vs. Drain Current and Gate Voltage</p> 	<p>Figure 4. Normalized On-Resistance vs. Junction Temperature</p> 
<p>Figure 5. Typical Transfer Characteristics</p> 	<p>Figure 6. Typical Source-Drain Diode Forward Voltage</p> 

Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

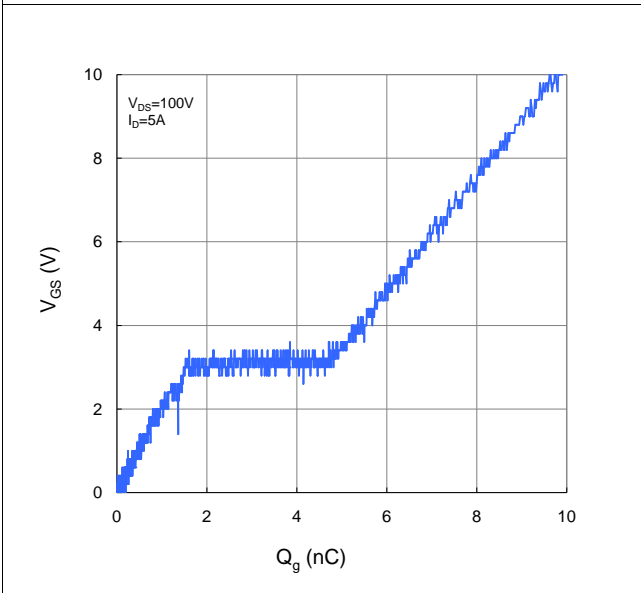


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

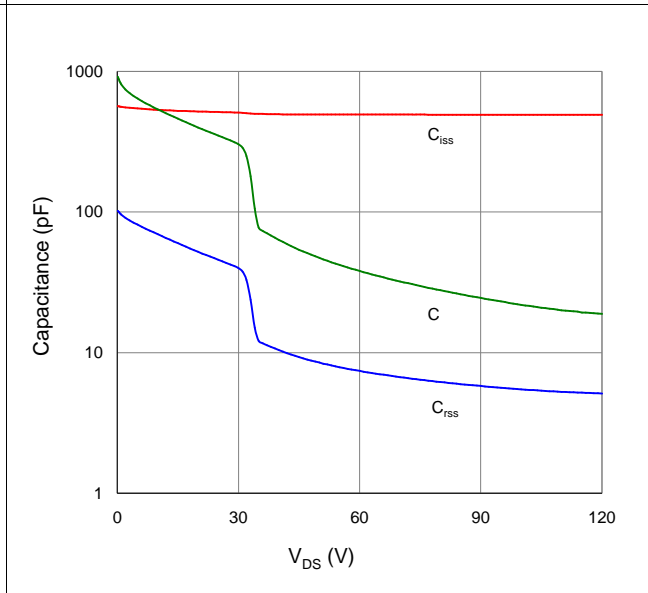


Figure 9. Maximum Safe Operating Area

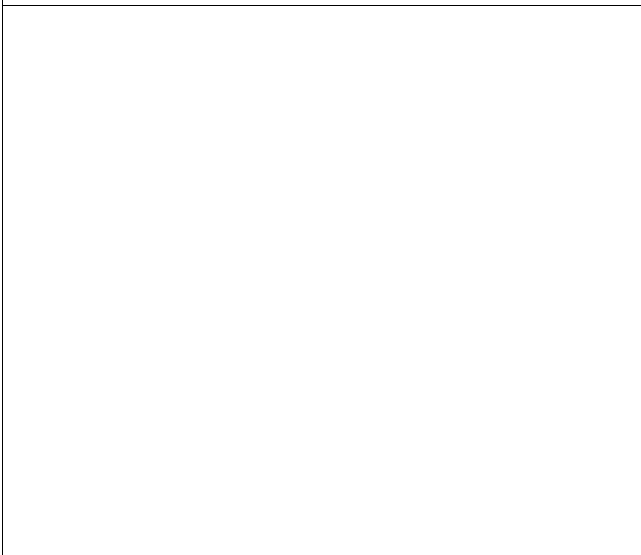


Figure 10. Maximun Drain Current vs. Case Temperature

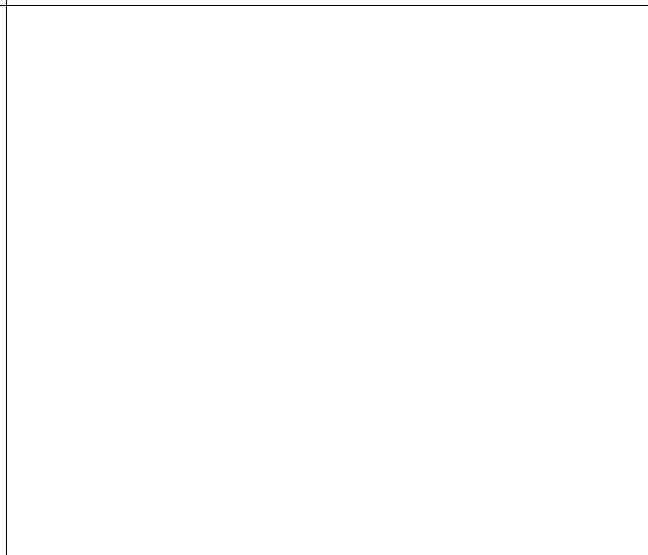
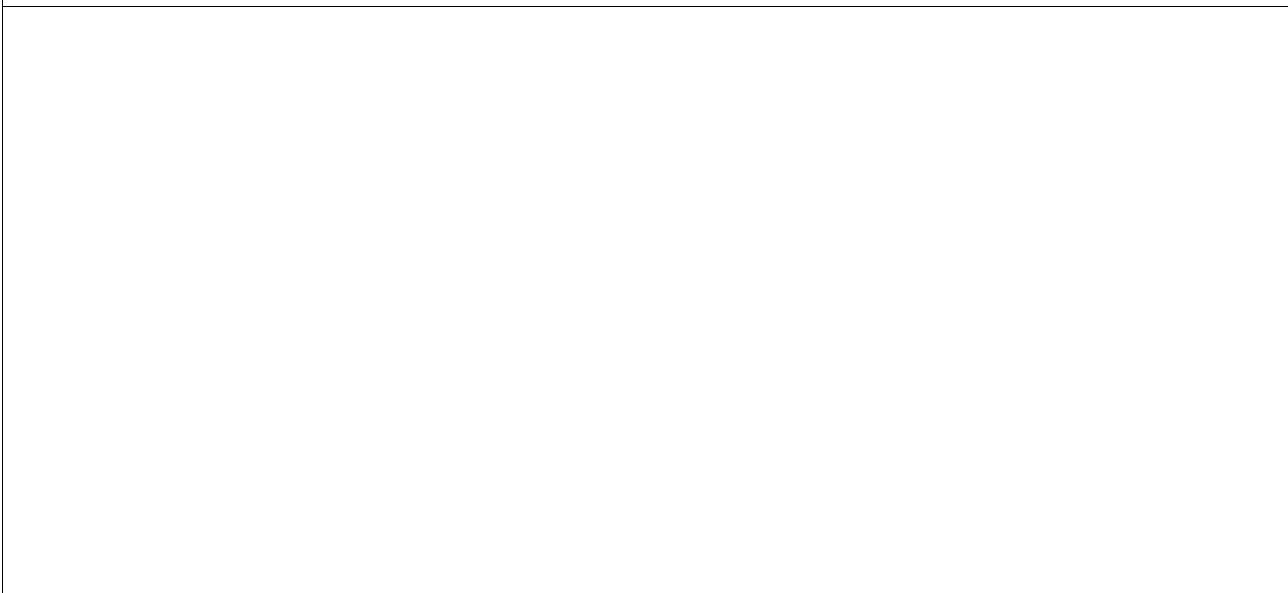


Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Case



Diode Recovery Test

