100V N-Ch Power MOSFET

V_{DS}		100	V
$R_{DS(on),typ}$	V_{GS}=10V	7.0	m
$R_{DS(on),typ}$	V_{GS}=4.5V	9.1	m
$I_{D\ (Sillicon\ Limited)}$		83	A
$I_{D\ (Package\ Limited)}$		70	A

Part Number	Package	Marking
HGD080N10AL	TO-252	GD080N10AL
HGI080N10AL	TO-251	GI080N10AL

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

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_C=25℃	83	A
		T_C=100℃	53	
Continuous Drain Current (Package Limited		TC=25℃	70	
Drain to Source Voltage	V_{DS}	-	100	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	260	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.4mH, T_C=25℃	245	mJ
Power Dissipation	P_D	T_C=25℃	125	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to150	℃

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	R_{JA}	50	℃/W
Thermal Resistance Junction-Case	R_{JC}	1.2	℃/W

				348		
Total Gate Charge	Q_g(10V)			32	-	
Gate to Source Charge	Q_{gs}	V_{DS}=50V, I_D=20A, V_{GS}=10V	-	6	-	nC
			-	4	-	
Turn on Delay Time	$t_{d(on)}$		-	7	-	
Rise time	t_r	V_{DD}=50V, I_D=20A, V_{GS}=10V,	-	4	-	ns
Turn off Delay Time	$t_{d(off)}$	R_G=10 ,	-	20	-	
Fall Time	t_f		-	3	-	

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=50V, I_F=20A, dI_F/dt=500A/ s	-	40	-	ns
Reverse Recovery Charge	Q_{rr}		-	160	-	nC

Fig 1. Typical Output Characteristics	Figure 2. On-Resistance vs. Gate-Source Voltage

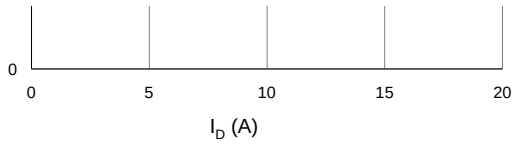
Fig	Figure 4. Normalized On-Resistance vs. Junction Temperature
	

Figure 5. Typical Transfer Characteristics	Figure 6. Typical Source-Drain Diode Forward Voltage

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

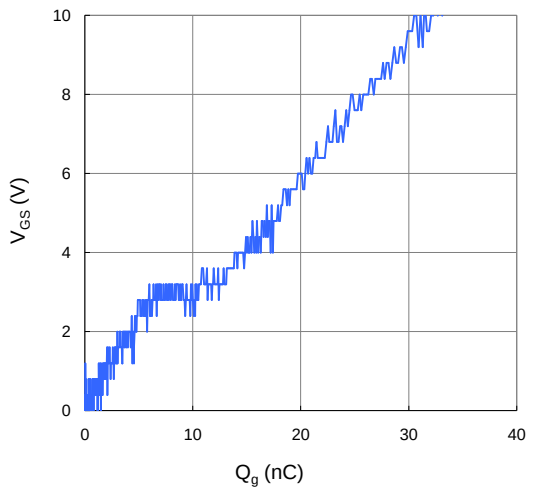


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

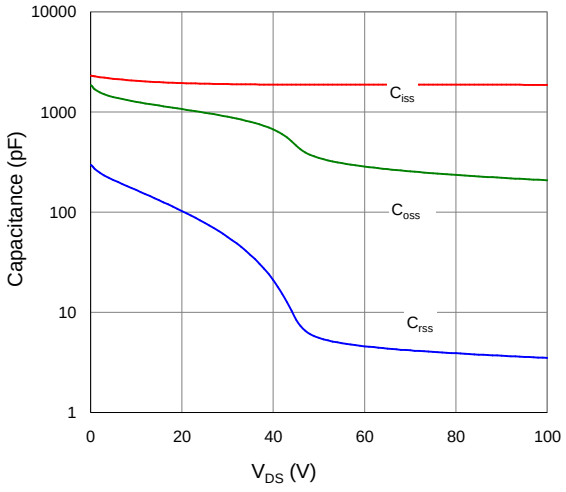


Figure 9. Maximum Safe Operating Area

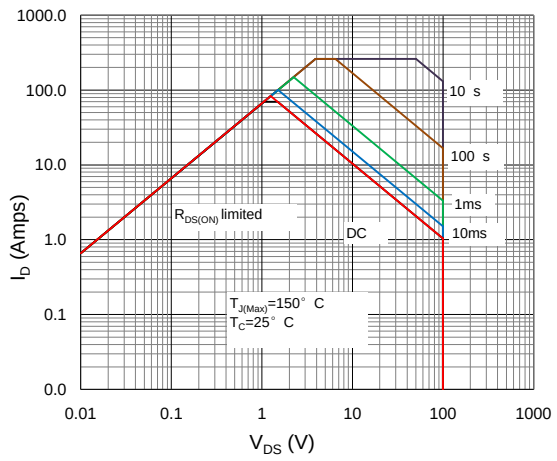


Figure 10. Maximun Drain Current vs. Case Temperature

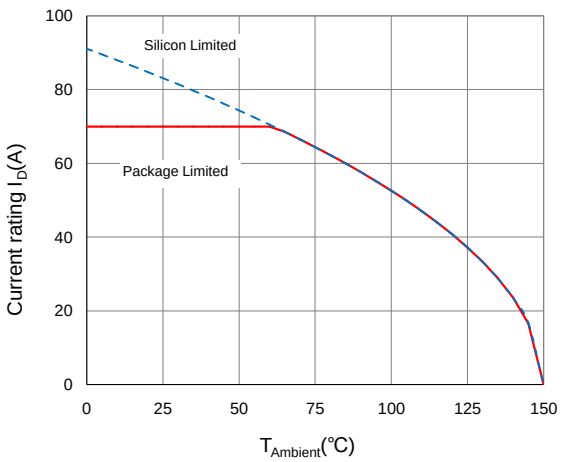
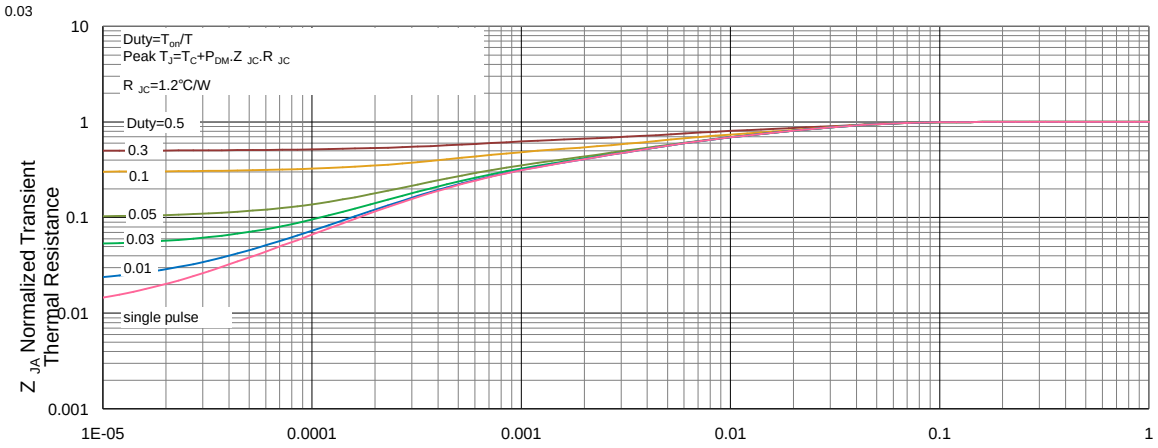
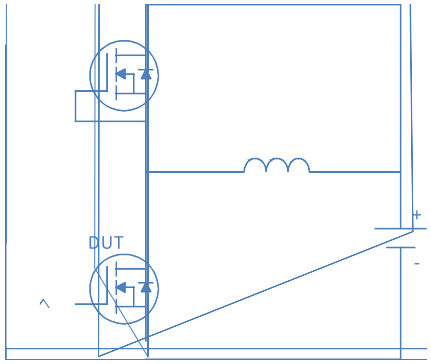
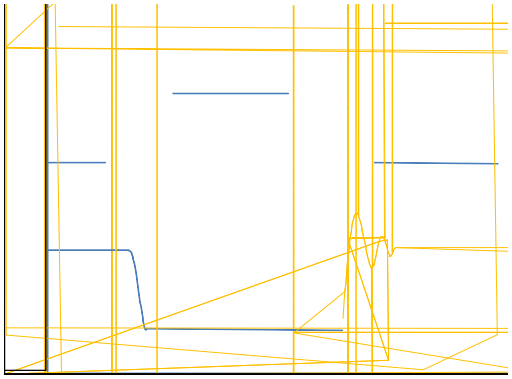


Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient

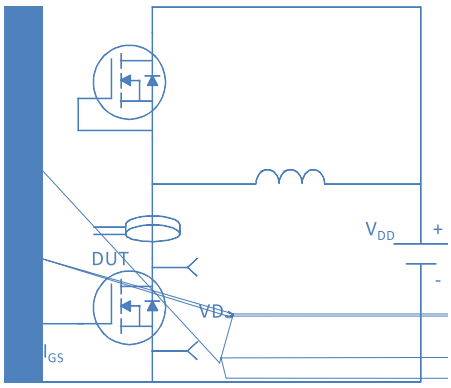


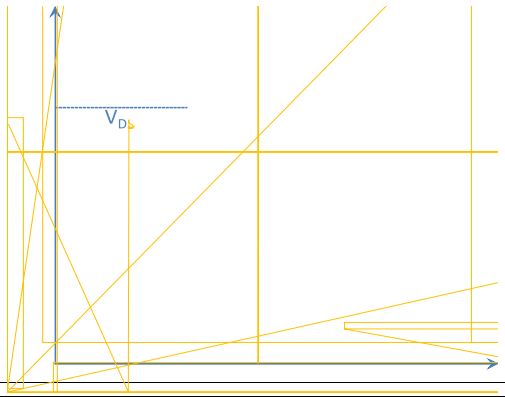
Inductive switching Test



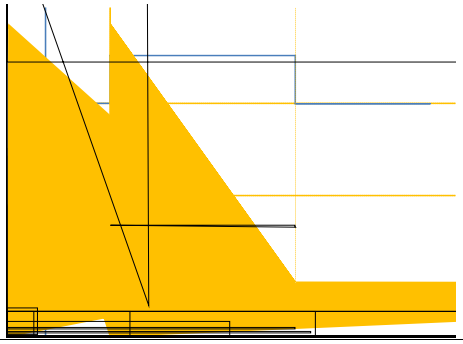


Gate Charge Test

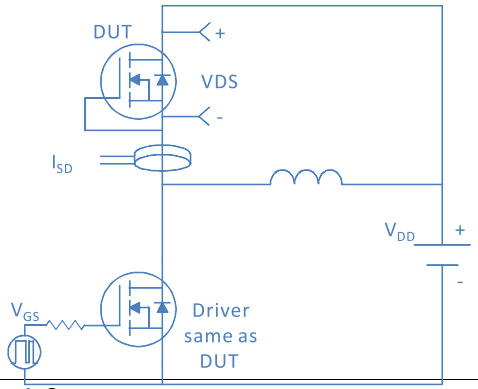


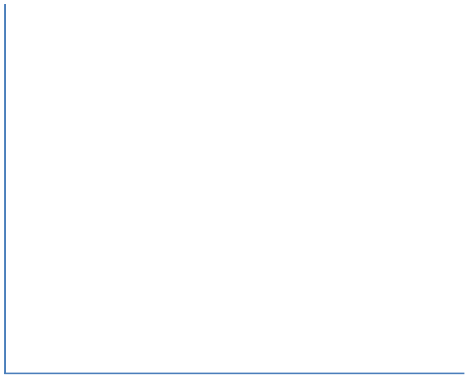


Uclamped Inductive Switching (UIS) Test



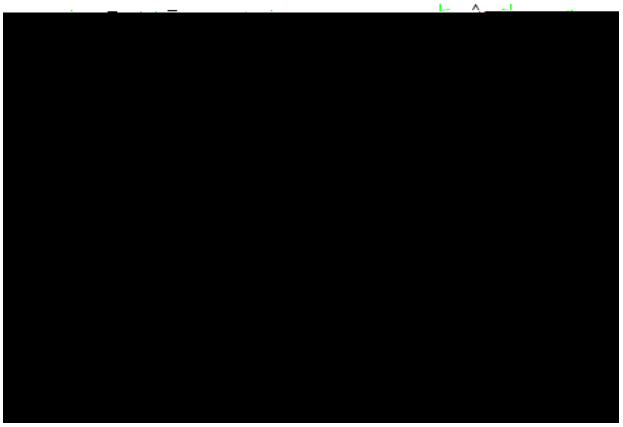
Diode Recovery Test





Package Outline

TO-252, 3 leads



SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
E	6.40	6.60	6.731
L	1.40	1.52	1.77
L1		2.743 REF	
L2		0.508 BSC	
L3	0.89	--	1.27
L4	0.64	--	1.01
L5	--	--	--
D	6.00	6.10	6.223