

I_D (Silicon Limited)

67 A

Part Number	Package	Marking
HGD098N10A	TO-252	GD098N10A
HGI098N10A	TO-251	GI098N10A

Absolute Maximum Ratings at $T_J=25^\circ\text{C}$ (unless otherwise specified)

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	$T_C=25^\circ\text{C}$	67	A
		$T_C=100^\circ\text{C}$	48	
Drain to Source Voltage	-	-	100	V
	-	-	± 20	V
	-	-	190	A
Avalanche Energy, Single Pulse	E_{AS}	$L=0.1\text{mH}$, $T_C=25^\circ\text{C}$	31	mJ
Power Dissipation (MCID 52/Lang (x-none) BDC BT/F)	-	$T_C=25^\circ\text{C}$	94	W
-	-	-	-55 to 175	$^\circ\text{C}$

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	R_{JA}	50	$^\circ\text{C/W}$
Thermal Resistance Junction-Case	R_{JC}	1.6	$^\circ\text{C/W}$

Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\text{ A}$				
	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\text{ A}$	2.0			
			-	9.8	m	
			-			
			-			
Dynamic Characteristics						
Input Capacitance	C_{iss}			-		
		$V_{GS}=0V, V_{DS}=50V, f=1MHz$	262			
			-			
	$Q_g(10V)$		-	23		
Gate to Source Charge	Q_{gs}	$V_{DD}=50V, I_D=20A, V_{GS}=10V$	-	5.5	-	nC
Gate to Drain (Miller) Charge	Q_{gd}		-	6.5	-	
Turn on Delay Time	$t_{d(on)}$		-	6	-	
Rise time	t_r	$V_{DD}=50V, I_D=20A, V_{GS}=10V,$	-	3	-	
Turn off Delay Time	$t_{d(off)}$	$R_G=10\ \Omega$	-	17	-	ns
Fall Time	t_f		-	4	-	
Reverse Diode Characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_F=20A$	-	0.9	1.2	V
			-			

Fig 1. Typical Output Characteristics

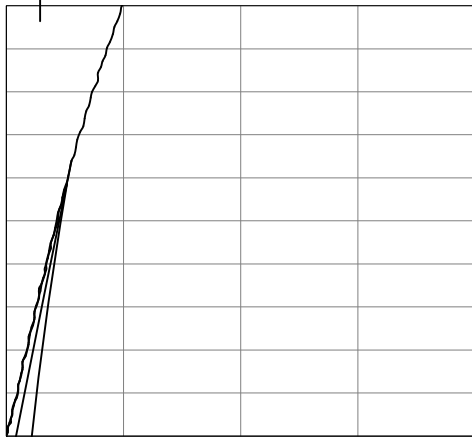


Figure 2. On-Resistance vs. Gate-Source Voltage

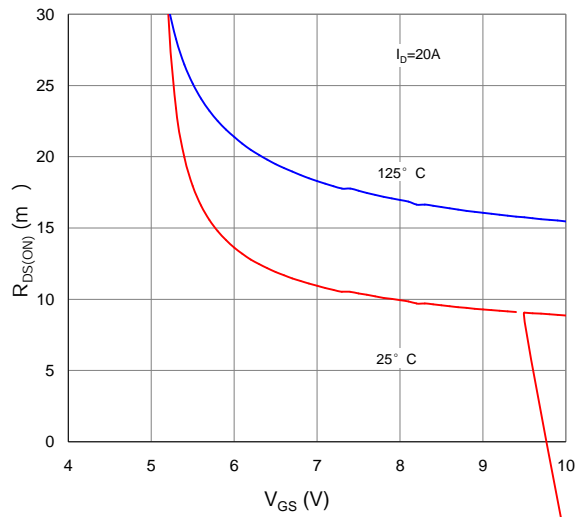


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

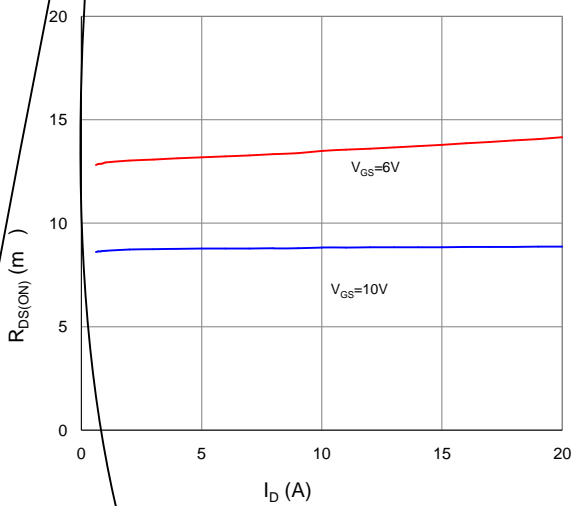


Figure 4. Normalized On-Resistance vs. Junction Temperature

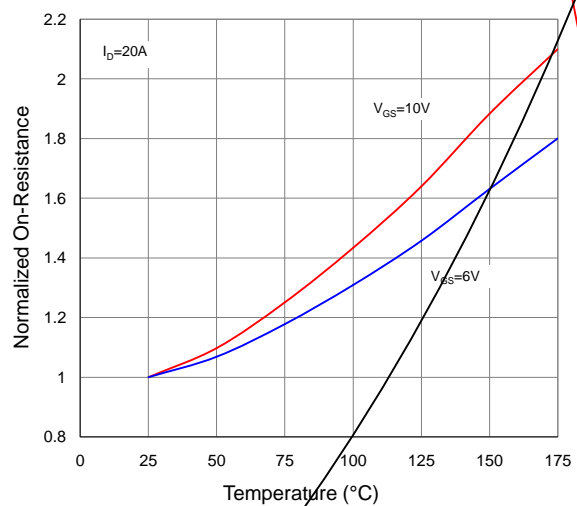


Figure 5. Typical Transfer Characteristics

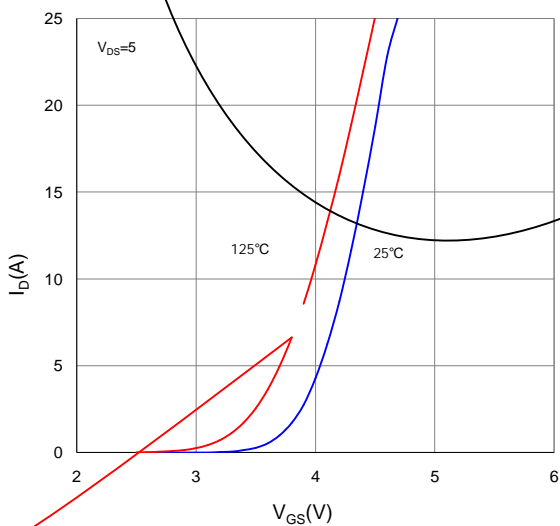


Figure 6. Typical Source-Drain Diode Forward Voltage

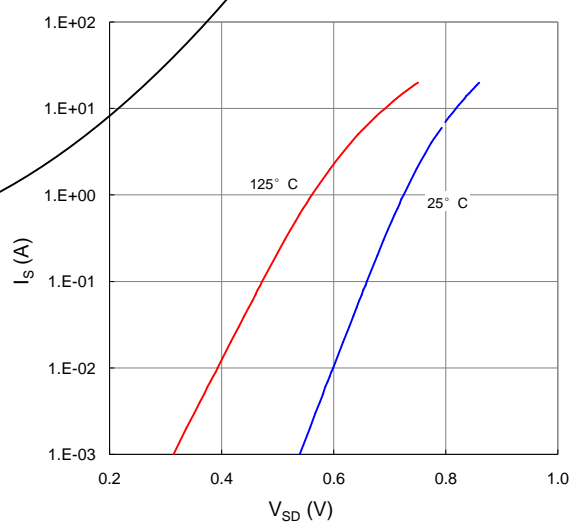


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

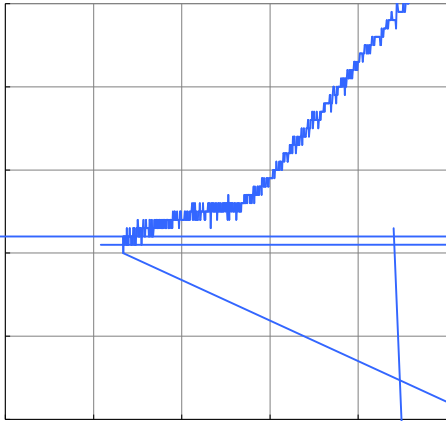


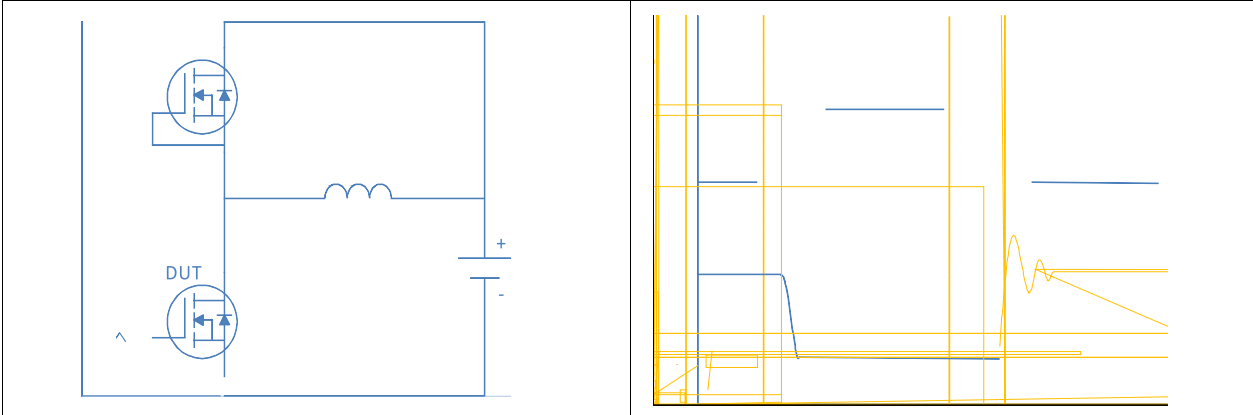
Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

Figure 9. Maximum Safe Operating Area

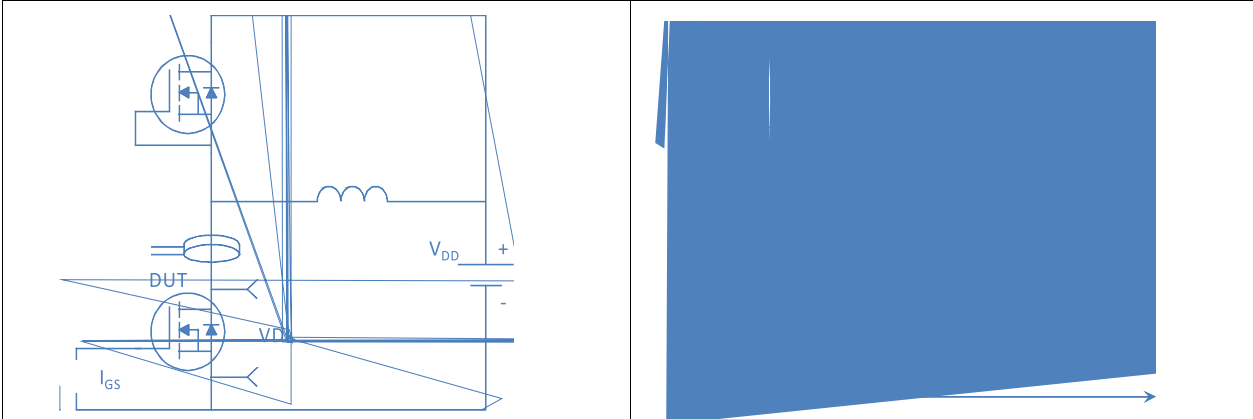
Figure 10. Maximun Drain Current vs. Case Temperature

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

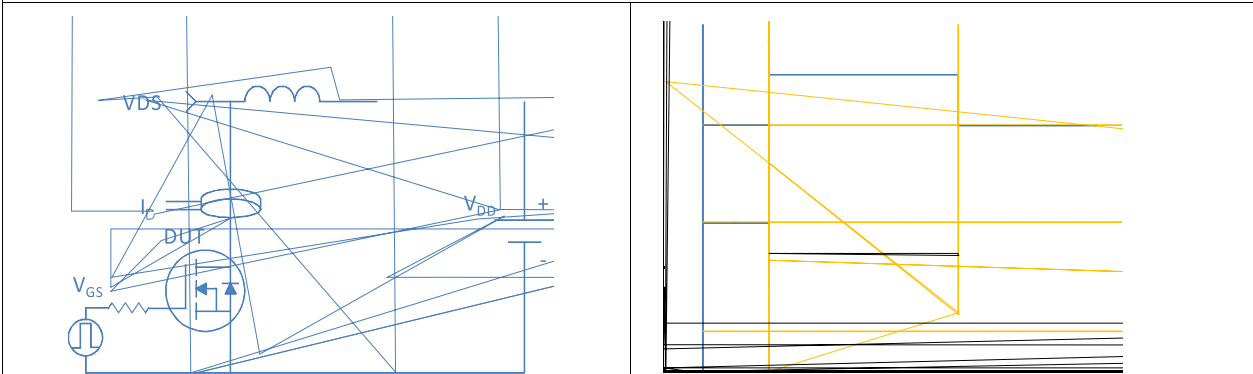
Inductive switching Test



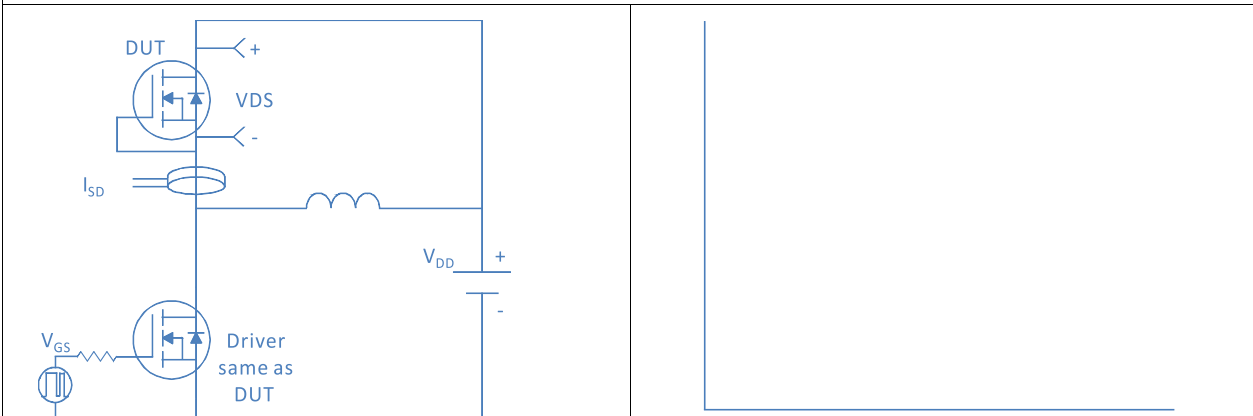
Gate Charge Test



Uclamped Inductive Switching (UIS) Test

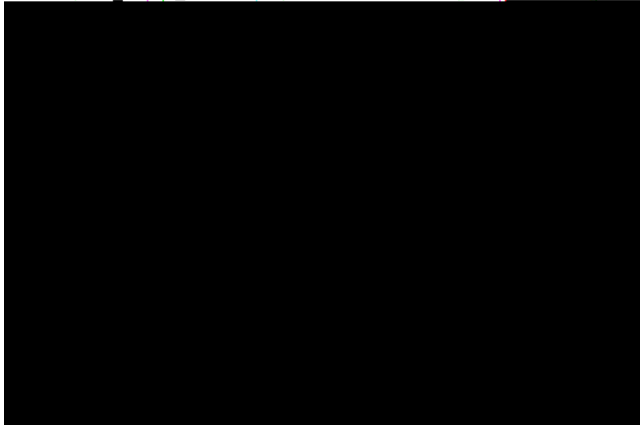


Diode Recovery Test

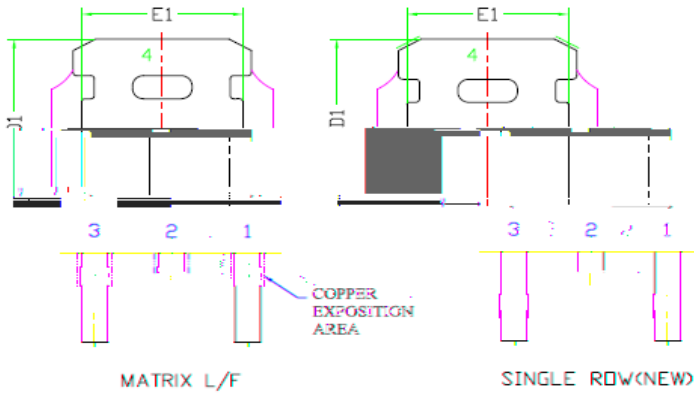


Package Outline

TO-252, 2 leads

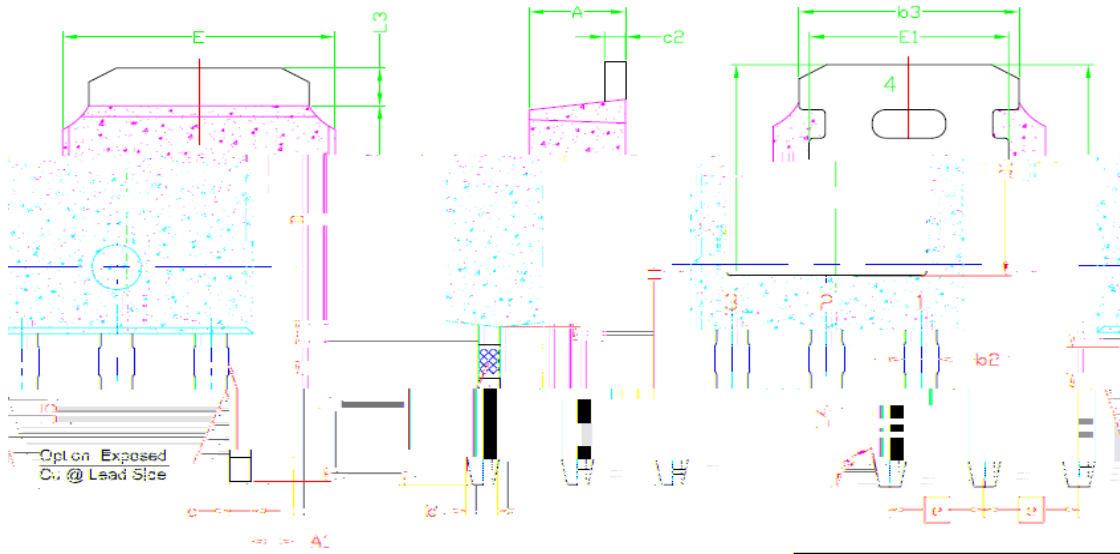


SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
E	6.40	6.60	6.731
L	1.40	1.52	1.77
L1	2.743 REF		
L2	0.508 BSC		
L3	0.89	--	1.27
L4	0.64	--	1.01
L5	--	--	--
D	6.00	6.10	6.223
-II	1.812	1.930	1.980
0.0	0.000	0.000	0.000
0.7	0.700	0.700	0.700
0.25	0.250	0.250	0.250
0.5	0.500	0.500	0.500
0.75	0.750	0.750	0.750
1.0	1.000	1.000	1.000
1.25	1.250	1.250	1.250
1.5	1.500	1.500	1.500
1.75	1.750	1.750	1.750
2.0	2.000	2.000	2.000
2.25	2.250	2.250	2.250
2.5	2.500	2.500	2.500
2.75	2.750	2.750	2.750
3.0	3.000	3.000	3.000
3.25	3.250	3.250	3.250
3.5	3.500	3.500	3.500
3.75	3.750	3.750	3.750
4.0	4.000	4.000	4.000
4.25	4.250	4.250	4.250
4.5	4.500	4.500	4.500
4.75	4.750	4.750	4.750
5.0	5.000	5.000	5.000
5.25	5.250	5.250	5.250
5.5	5.500	5.500	5.500
5.75	5.750	5.750	5.750
6.0	6.000	6.000	6.000
6.25	6.250	6.250	6.250
6.5	6.500	6.500	6.500
6.75	6.750	6.750	6.750
7.0	7.000	7.000	7.000
7.25	7.250	7.250	7.250
7.5	7.500	7.500	7.500
7.75	7.750	7.750	7.750
8.0	8.000	8.000	8.000
8.25	8.250	8.250	8.250
8.5	8.500	8.500	8.500
8.75	8.750	8.750	8.750
9.0	9.000	9.000	9.000
9.25	9.250	9.250	9.250
9.5	9.500	9.500	9.500
9.75	9.750	9.750	9.750
10.0	10.000	10.000	10.000



Package Outline

TO-251, 3leads



SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
E	6.40	6.60	6.731
L	3.98	4.13	4.28
L3	0.89	--	1.27
L4	0.698 REF		
L5	0.972	1.099	1.226
D	6.00	6.10	6.223
H	11.05	11.25	11.45
b	0.64	0.76	0.88
b2	0.77	0.84	1.14
b3	5.21	5.34	5.46
e	2.286 BSC		
A	2.20	2.30	2.38
A1	0.89	1.04	1.15
c	0.46	0.50	0.60
c2	0.46	0.50	0.60
D1	5.10	--	--
E1	4.40	--	--
a	79° REF		