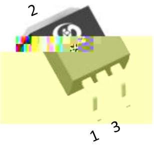
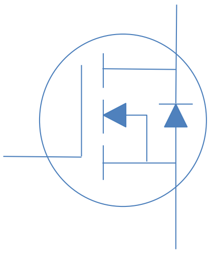
80V N-Ch Power MOSFET

V_{DS}		80	V
$R_{DS(on),typ}$	TO-263	3	m
$R_{DS(on),typ}$	TO-220	3.3	m
I_D		161	A





Part Number	Package	Marking
HGB035N08A	TO-263	GB035N08A
HGP035N08A	TO-220	GP035N08A

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

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current	I_D	T_C=25℃	161	A
		T_C=100℃	114	
Drain to Source Voltage	V_{DS}	-	80	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	400	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.1mH, T_C=25℃	80	mJ
Power Dissipation	P_D	T_C=25℃	172	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to175	℃

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	R_{JA}	60	℃/W
Thermal Resistance Junction-Case	R_{JC}	0.87	℃/W

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	80	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250 A	2.0	2.7	4.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=80V, T_j=25℃	-	-	1	A
		V_{GS}=0V, V_{DS}=80V, T_j=100℃	-	-	100	
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Drain to Source on Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=20A TO-263	-	3	3.5	m
Drain to Source on Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=20A TO-220	-	3.3	3.8	m
Transconductance	g_{fs}	V_{DS}=5V, I_D=20A	-	65	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS} Open, f=1MHz	-	1.20	-	

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=40V, f=1MHz	-	4347	-	pF
Output Capacitance	C_{oss}		-	703	-	
Reverse Transfer Capacitance	C_{rss}		-	28	-	
Total Gate Charge	Q_g(10V)	V_{DD}=40V, I_D=20A, V_{GS}=10V	-	68	-	nC
Gate to Source Charge	Q_{gs}		-	13	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	17	-	
Turn on Delay Time	$t_{d(on)}$	V_{DD}=40V, I_D=20A, V_{GS}=10V, R_G=10 ,	-	15	-	ns
Rise time	t_r		-	12	-	
Turn off Delay Time	$t_{d(off)}$		-	52	-	
Fall Time	t_f		-	19	-	

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=40V, I_F=20A, dI_F/dt=100A/ s	-	51	-	ns
Reverse Recovery Charge	Q_{rr}		-	61	-	nC

Fig 1. Typical Output Characteristics

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

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

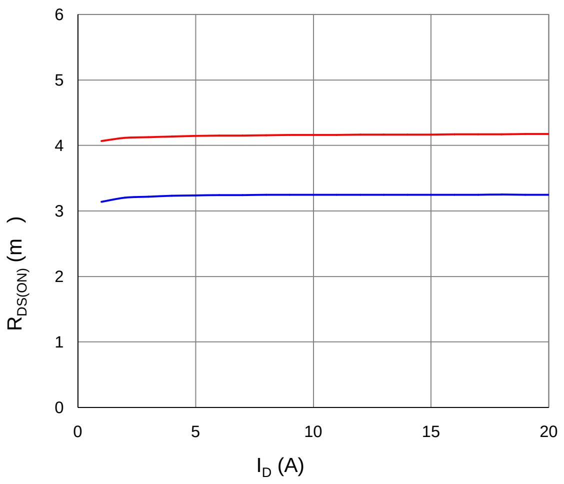


Figure 4. Normalized On-Resistance vs. Junction Temperature

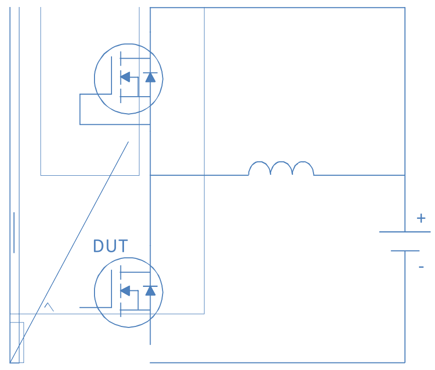
Figure 5. Typical Transfer Characteristics

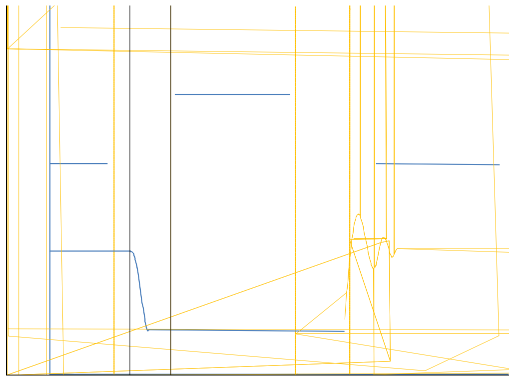
Figure 6. Typical Source-Drain Diode Forward Voltage

Figure 9. Maximum Safe Operating Area

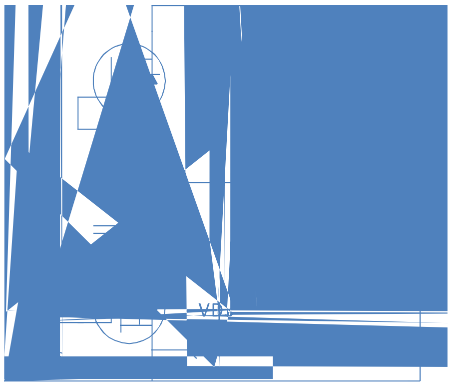
Figure 10. Maximun Drain Current vs. Case Temperature

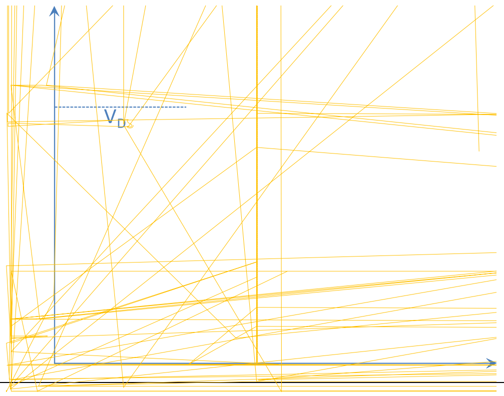
Inductive switching Test



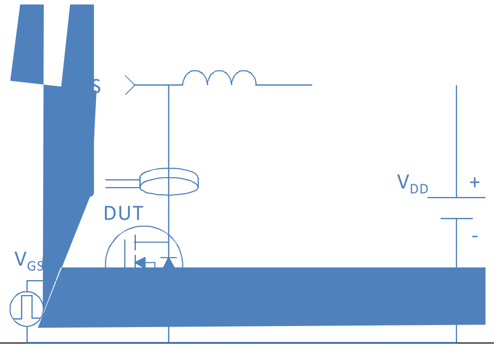


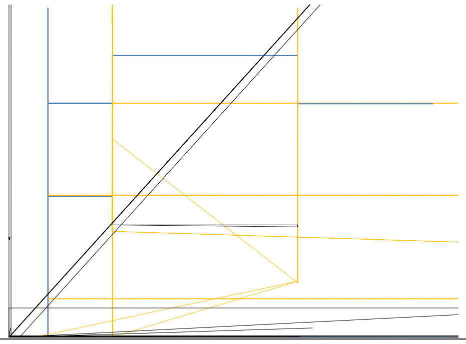
Gate Charge Test



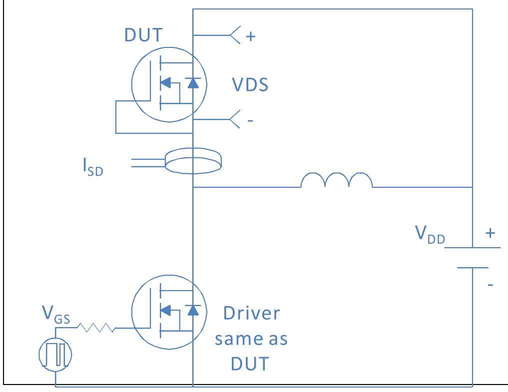


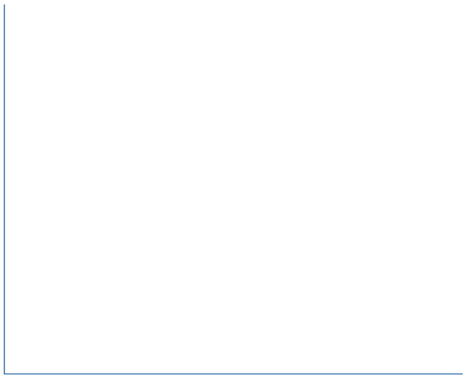
Uclamped Inductive Switching (UIS) Test





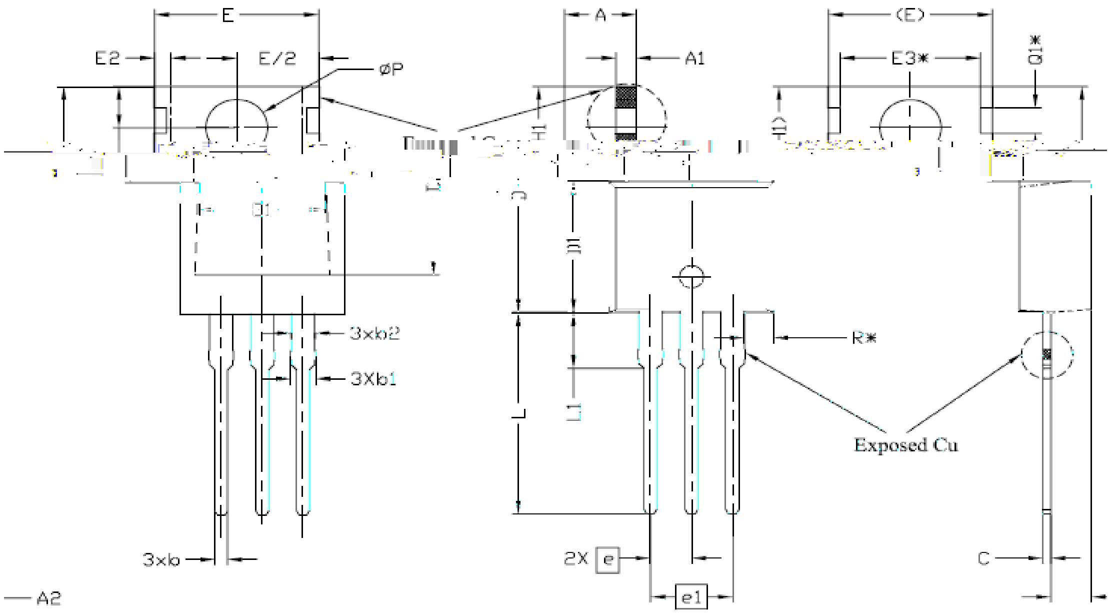
Diode Recovery Test





Package Outline

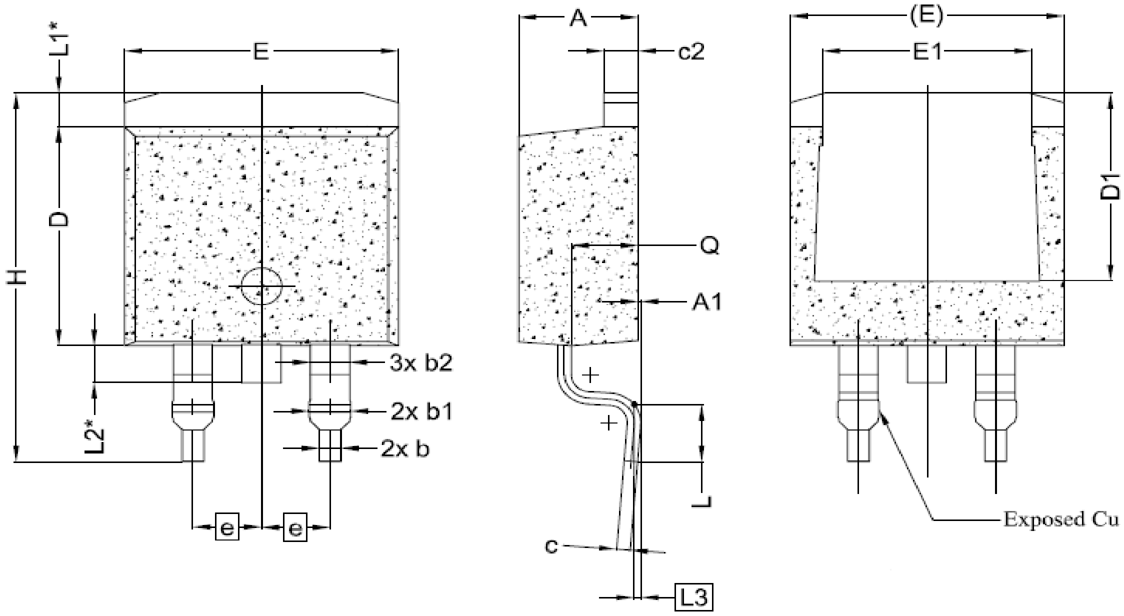
TO-220, 3 leads



SYMBOL	DIMENSIONS			NOTES
	MIN.	NOM.	MAX.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10.36	[illegible]	[illegible]	9.98	10.18
[illegible]	[illegible]	[illegible]	8.38	[illegible]
[illegible]	[illegible]	[illegible]		
		[illegible]		[illegible]
		e		2.54BSC
		e1		5.08BSC
[illegible]	[illegible]	H1	6.30	[illegible]
13.97		[illegible]	13.47	13.72
[illegible]		[illegible]	3.60	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
[illegible]		Q	2.65	[illegible]
		[illegible]		[illegible]
		[illegible]		[illegible]

Package Outline

TO-263, 3 leads



[illegible]			
MIN.	NOM.	MAX.	SYMBOL
[illegible]	[illegible]	[illegible]	A
[illegible]	[illegible]	0.25	A1
[illegible]	[illegible]	[illegible]	b
.20	1.5[illegible]	1.75	b1
.20	1.45	1.70	b2
.40	[illegible]	[illegible]	c
.15	1.27	1.40	c2
[illegible]	[illegible]	[illegible]	D
[illegible]	[illegible]	—	D1
[illegible]	[illegible]	[illegible]	E
.89	[illegible]	[illegible]	E1
2.54 BSC			e
4.61	15.00	15.88	H
.78	2.32	2.79	L
1.36 REF.			L1
1.50 REF.			L2
0.25 BSC			L3
2.30	2.48	2.70	Q