150V N-Ch Power MOSFET

V_{DS}		150	V
$R_{DS(on),typ}$	TO-263	3.2	m
$R_{DS(on),typ}$	TO-220	3.6	m
$I_{D\ (Sillicon\ Limited)}$		206	A
$I_{D\ (Package\ Limited)}$		180	A

Part Number	Package	Marking
HGB039N15M	TO-263	GB039N15M
HGP039N15M	TO-220	GP039N15M

Absolute Maximum Ratings at T_j

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_C	206	A
		T_C	146	
Continuous Drain Current (Package Limited)		T_C	180	
Drain to Source Voltage	V_{DS}	-	150	V
Gate to Source Voltage	V_{GS}	-	20	V
Pulsed Drain Current	I_{DM}	-	750	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.4mH, T_C	720	mJ
Power Dissipation	P_D	T_C	429	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to175	

Electrical Characteristics at T_j

Static Characteristics

Parameter	Symbol	Conditions		Value			Unit
	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250 A		150		-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I					
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=150V, T_j		-	-	1	A
		V_{GS}=0V, V_{DS}=150V, T_j		-	-	100	
Gate to Source Leakage Current	I_{GSS}				-		nA
Drain to Source on Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=20A	TO-263	-		3.9	m
			TO-220		3.6	4.2	
							S
				-			
	C_{oss}						pF
				-			
		V_{DD}=75V, I_D=20A, V_{GS}=10V					

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

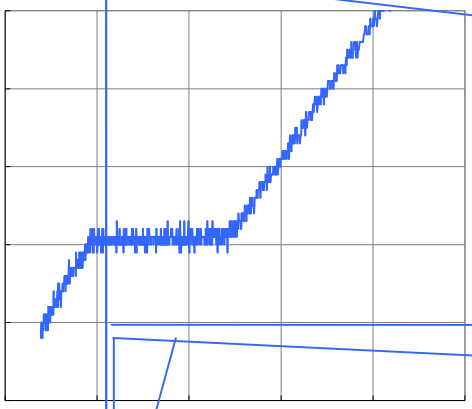


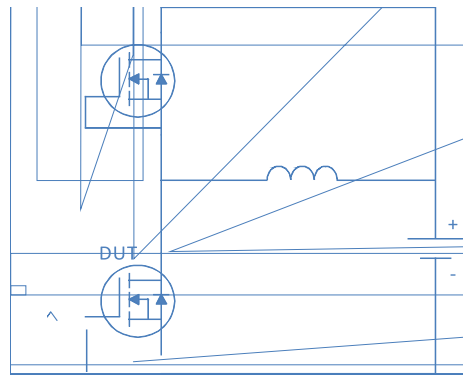
Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

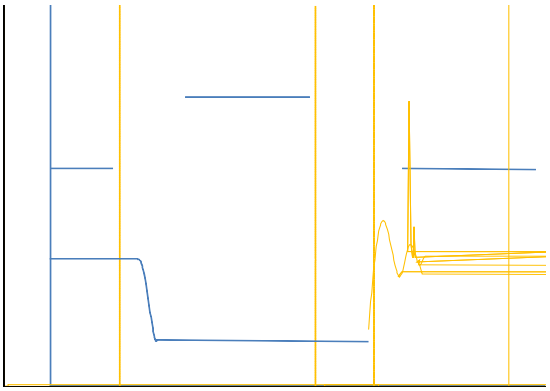
Figure 9. Maximum Safe Operating Area

Figure 10. Maximun Drain Current vs. Case Temperature

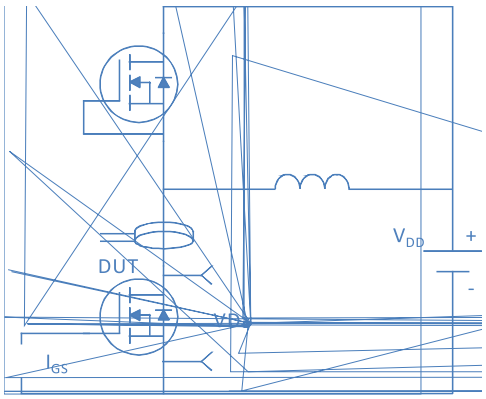
Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Case

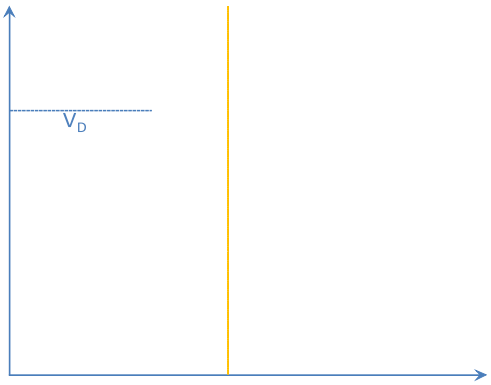
Inductive switching Test



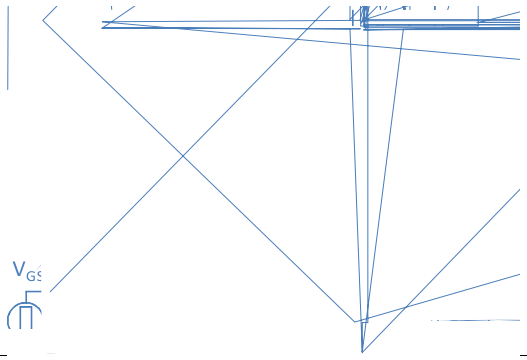


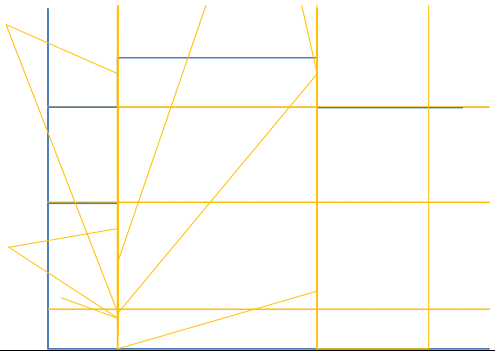
Gate Charge Test



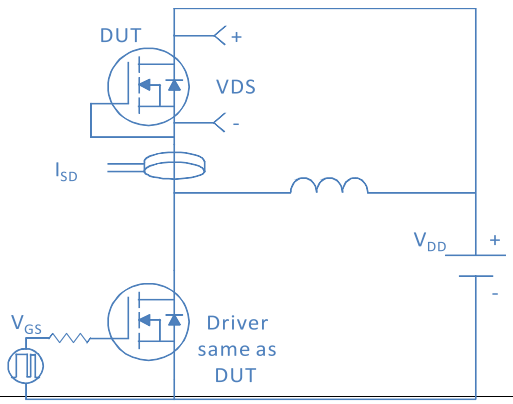


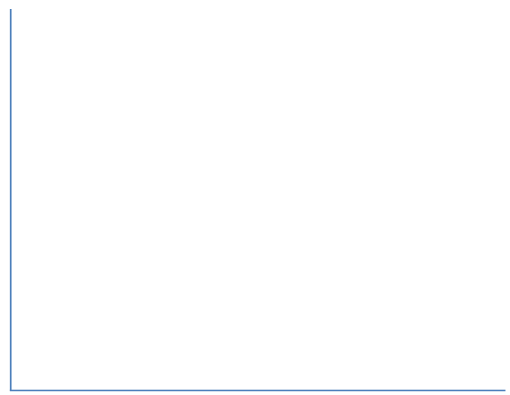
Uclamped Inductive Switching (UIS) Test



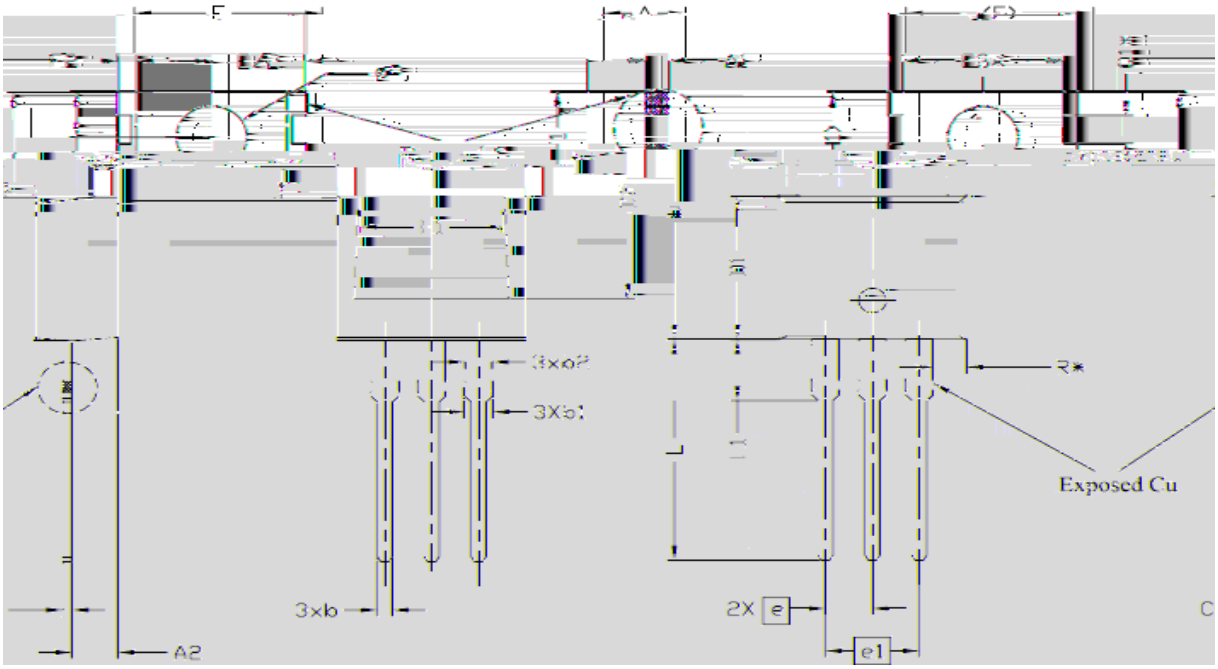


Diode Recovery Test





TO-220, 3 leads



SYMBOL	DIMENSIONS			NOTES
	MIN.	NOM.	MAX.	
A	4.24	4.44	4.64	
A1	1.15	1.27	1.40	
A2	2.30	2.48	2.70	
b	0.70	0.80	0.90	
b1	1.20	1.55	1.75	
b2	1.20	1.45	1.70	
c	0.40	0.50	0.60	
D	14.70	15.37	16.00	4
D1	8.82	8.92	9.02	
D2	12.63	12.73	12.83	5
E	9.96	10.16	10.36	4,5
E1	6.86	7.77	8.89	5
E2	-	-	0.76	6
E3*	8.70REF.			
e	2.54BSC			
e1	5.08BSC			
H1	6.30	6.45	6.60	5,6
L	13.47	13.72	13.97	
L1	3.60	3.80	4.00	
ØP	3.75	3.84	3.93	
Q	2.60	2.80	3.00	
Q1*	1.73REF.			
R*	1.82REF.			

TO-263, 2 leads