65V N-Ch Power MOSFET

V_{DS}		65	V
$R_{DS(on),typ}$	TO-263	2.2	m
$R_{DS(on),typ}$	TO-220	2.5	m
$I_{D\ (Sillicon\ Limited)}$		190	A
$I_{D\ (Package\ Limited)}$		120	A

Part Number	Package	Marking
HGB023NE6A	TO-263	GB023NE6A
HGP023NE6A	TO-220	

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	190	A
		T_C=100	134	
Continuous Drain Current(Package Limited)		T_C=25	120	
Drain to Source Voltage	V_{DS}	-	65	V
Gate to Source Voltage	V_{GS}	-	20	V
Pulsed Drain Current	I_{DM}	-	650	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.1mH, T_C=25	180	mJ
Power Dissipation	P_D	T_C=25	200	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to175	

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	R_{JA}	50	/W
Thermal Resistance Junction-Case	R_{JC}	0.75	/W

Electrical Characteristics at T_j=25 (unless otherwise specified)

Static Characteristics

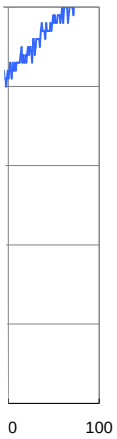
Parameter	Symbol	Conditions	Value			Unit
				typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$		65	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250 A	2.0	2.5	4.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=60V, T_j=25	-	-	1	A
		V_{GS}=0V, V_{DS}=60V, T_j=100	-	-	100	
Gate to Source Leakage Current	I_{GSS}	V_{GS}= 20V, V_{DS}=0V	-	-	100	nA
Drain to Source on Resistance			-	2.2	2.7	m
Drain to Source on Resistance			-	2.5	3	m
Transconductance	g_{fs}	V_{DS}=5V, I_D=20A	-	70	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS} Open, f=1MHz	-	0.5	-	

Dynamic Characteristics

Input Capacitance	C_{iss}		-	5297	-	
Output Capacitance	C_{oss}	V_{GS}=0V, V_{DS}=30V, f=1MHz	-	1849	-	pF
Reverse Transfer Capacitance	C_{rss}		-	125	-	
	Q_g(10V)			92	-	
			-			nC
	Q_{gd}		-	22	-	

Reverse Recovery Time	t_{rr}	V_R=30V, I_F=20A, dI_F/dt=100A/ s	-	56	-	ns
Reverse Recovery Charge	Q_{rr}		-	67	-	nC

oltage	Figure 8. Typical Capacitance vs. Drain-to-Sou



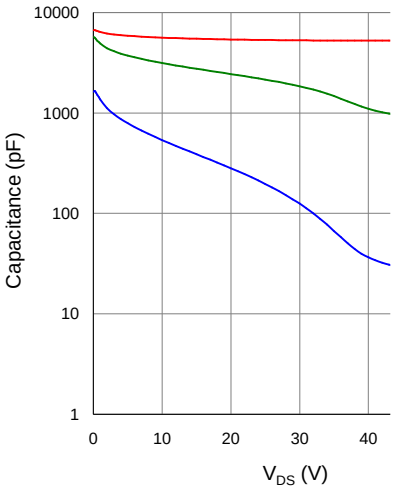
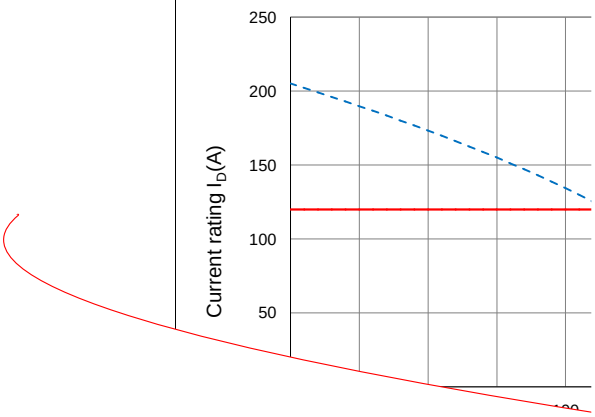
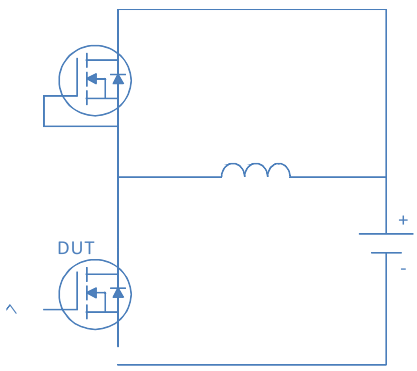
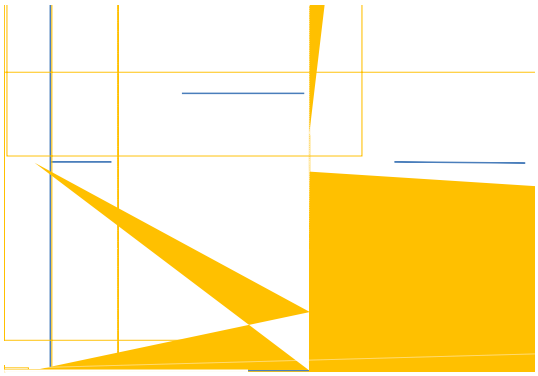


	Figure 10. Maximun Drain Current vs. Case Te

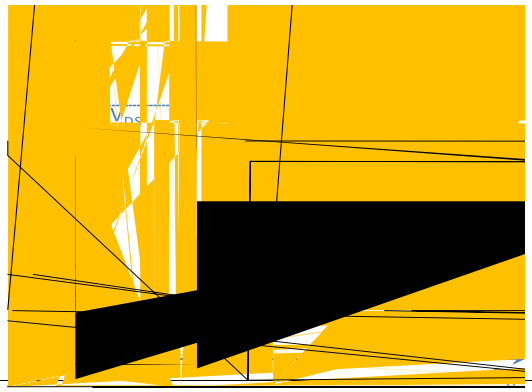


Inductive switching Test

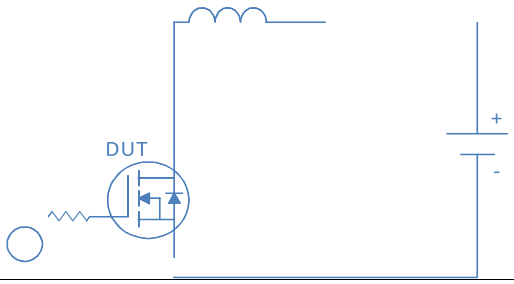


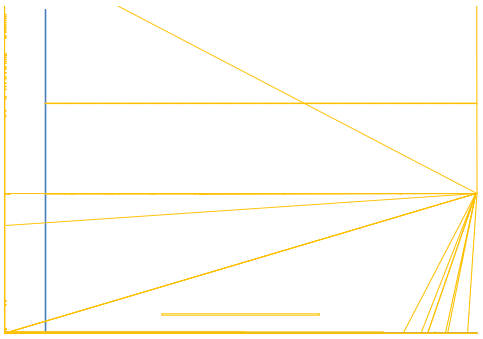


Gate Charge Test

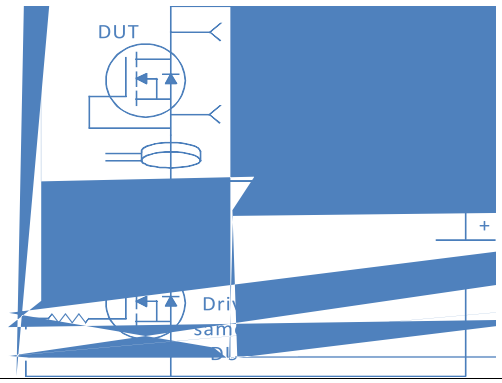


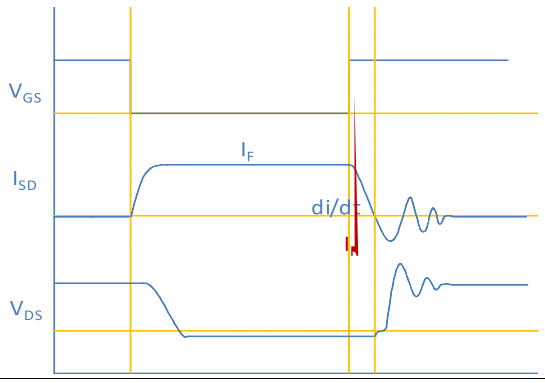
Uclamped Inductive Switching (UIS) Test





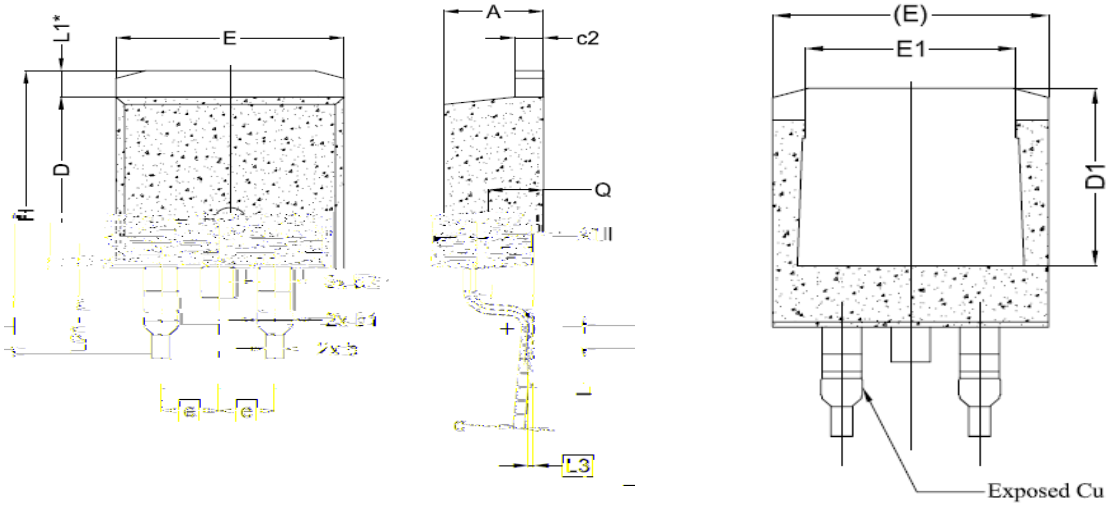
Diode Recovery Test





Package Outline

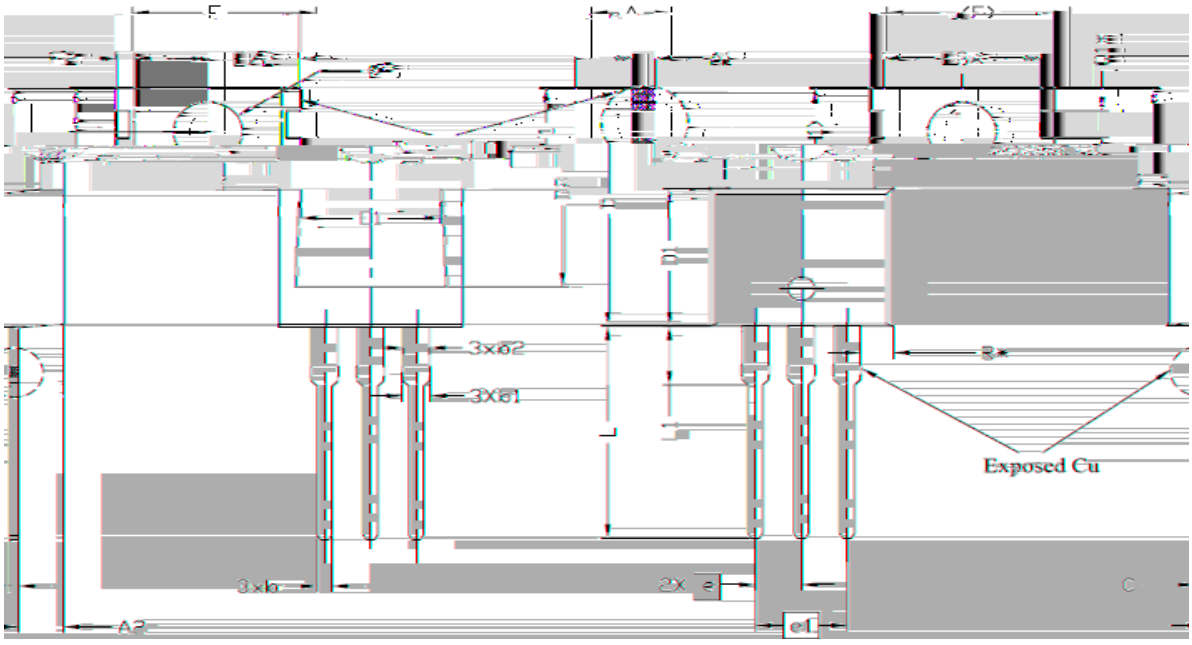
TO-263, 2 leads



SYMBOL	DIMENSIONS		
	MIN.	NOM.	MAX.
A	4.24	4.44	4.64
A1	0.00	0.10	0.25
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
c2	1.15	1.27	1.40
D	8.82	8.92	9.02
D1	6.86	7.65	—
E	9.96	10.16	10.36
E1	8.59	8.77	8.89
e		2.54 BSC	
H	14.87	15.24	15.55
L	1.78	2.03	2.28
L1		1.30 REF.	
L2		1.50 REF.	
L3		0.25 BSC	
θ	2.30	2.45	2.70

Package Outline

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.			