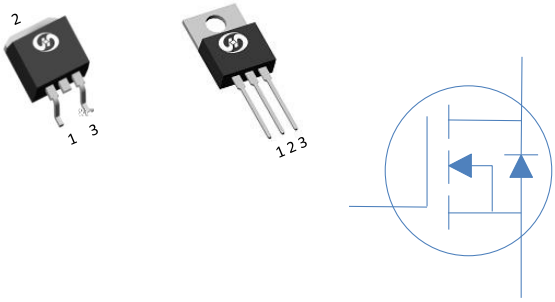
80V N-Ch Power MOSFET

V_{DS}		80	V
$R_{DS(on),typ}$	TO-263	2.6	m
$R_{DS(on),typ}$	TO-220	2.9	m
$I_{D\ (Sillicon\ Limited)}$		182	A
$I_{D\ (Package\ Limited)}$		120	A



Part Number	Package	Marking
HGB028N08A	TO-263	GB028N08A
HGP028N08A	TO-220	GP028N08A

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℃	182	A
		T_C=100℃	128	
Continuous Drain Current(Package Limited)		T_C=25℃	120	
Drain to Source Voltage	V_{DS}	-	80	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	520	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.4mH, T_C=25℃	720	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

				min		
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250 A				
	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250 A		2.0		
	$R_{DS(on)}$	V_{GS}=10V, I_D=20A	TO-263	-		
		V_{GS}=10V, I_D=20A	TO-220			
	g_{fs}	V_{DS}=5V, I_D=20A				
		V_{GS}=0V, V_{DS} Open, f=1MHz				
Reverse Transfer Capacitance	C_{rss}					
Total Gate Charge	Q_g(10V)			-		
Gate to Source Charge	Q_{gs}	V_{DD}=40V, I_D=20A, V_{GS}=10V			20	-
Gate to Drain (Miller) Charge	Q_{gd}					
Turn on Delay Time	$t_{d(on)}$			-	23	-
Rise time	t_r	V_{DD}=40V, I_D=20A, V_{GS}=10V,		-	19	-
Turn off Delay Time	$t_{d(off)}$	R_G=10 ,		-	38	-
Fall Time	t_f			-	12	-

ns

Reverse Diode Characteristics

Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_F=20A	-	0.9	1.2	V

Fig 1. Typical Output Characteristics

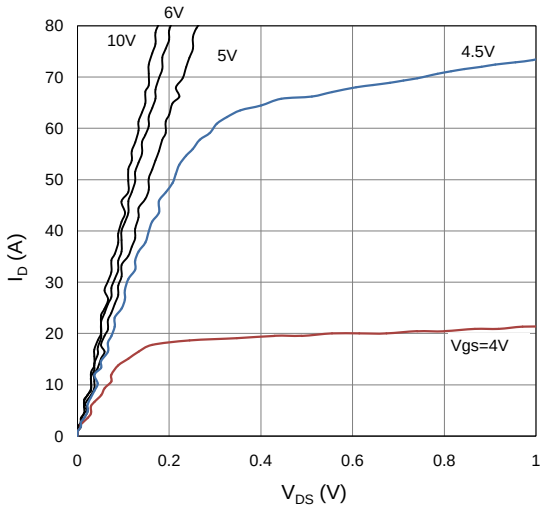


Figure 2. On-Resistance vs. Gate-Source Voltage

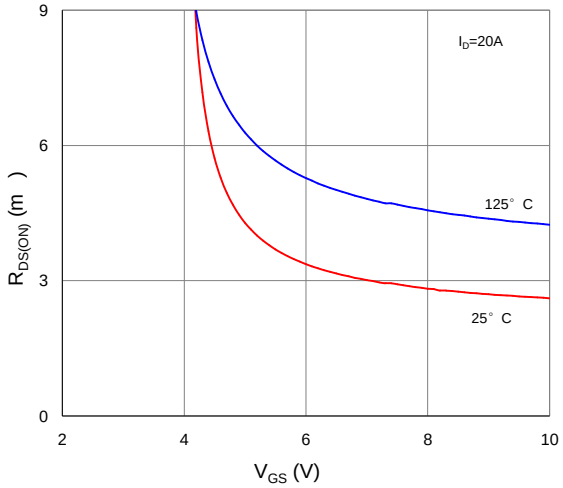


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

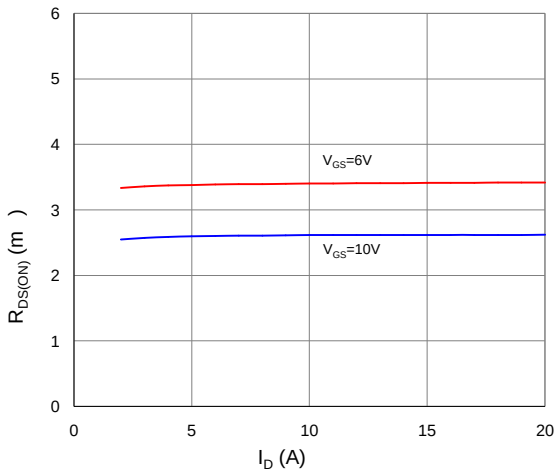


Figure 4. Normalized On-Resistance vs. Junction Temperature

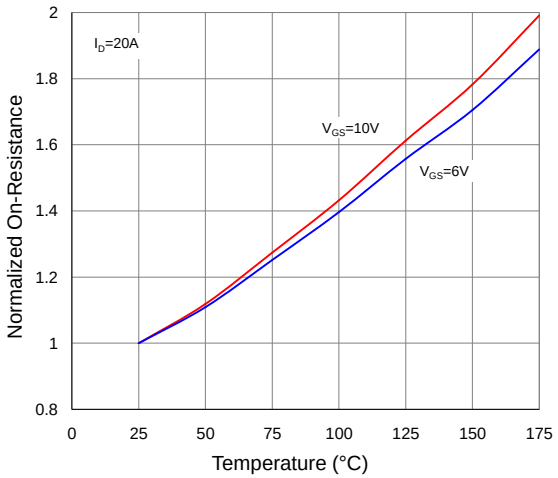


Figure 5. Typical Transfer Characteristics

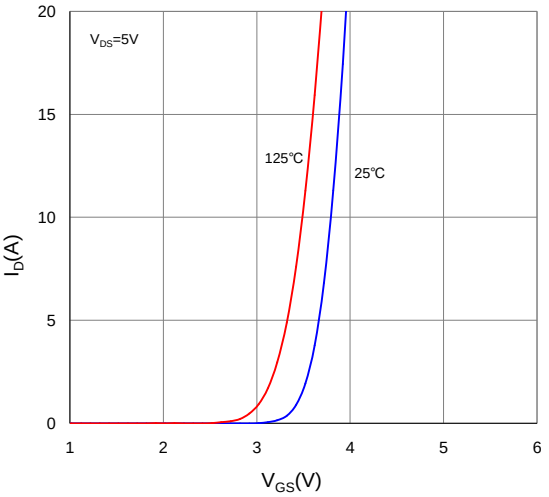
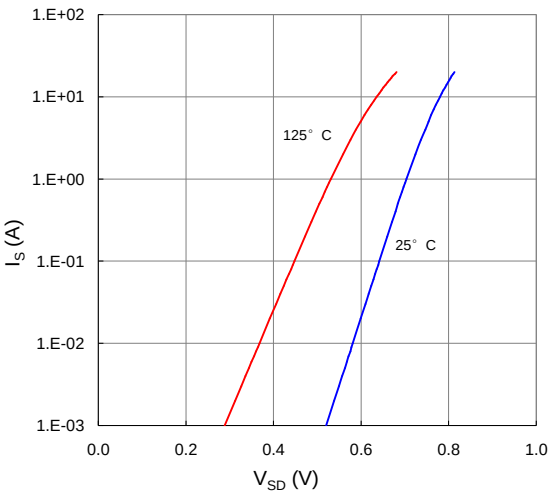
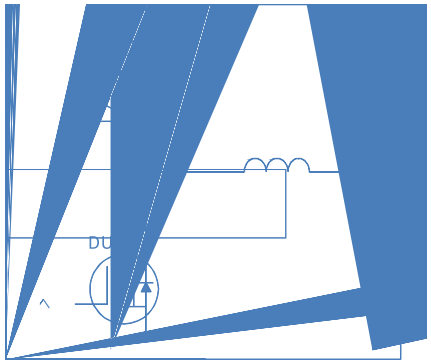
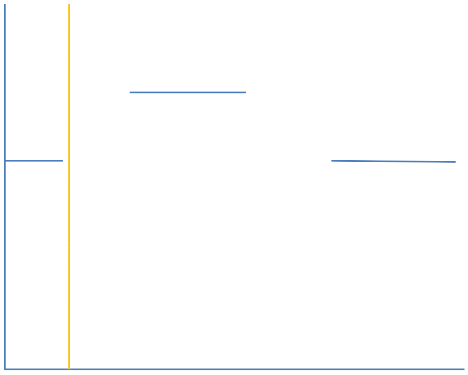


Figure 6. Typical Source-Drain Diode Forward Voltage

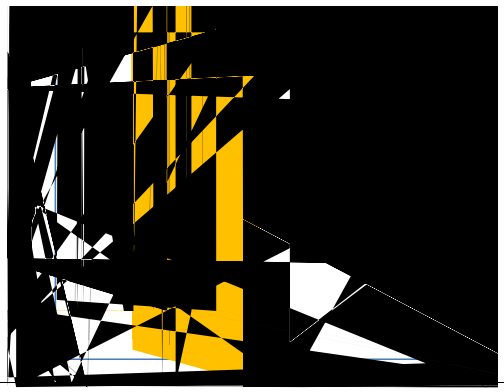


Inductive switching Test

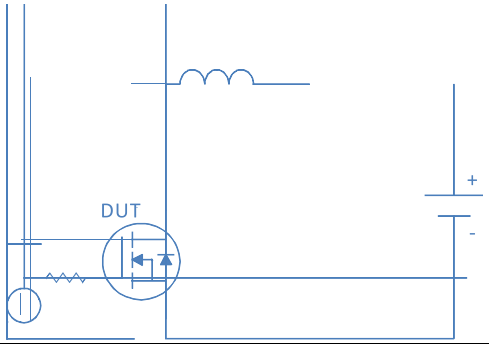


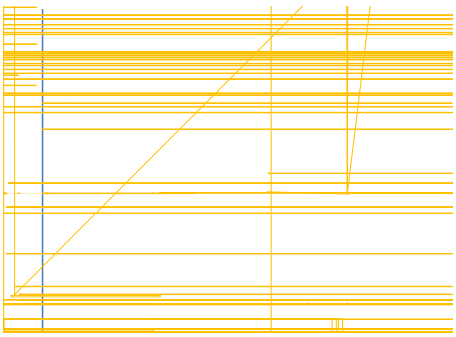


Gate Charge Test

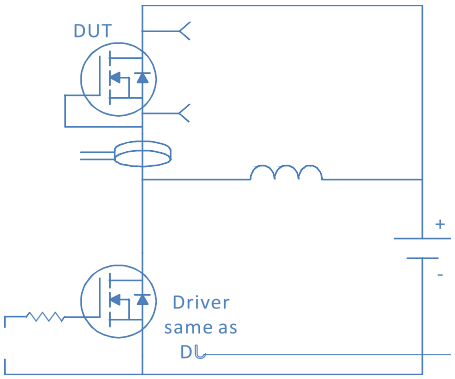


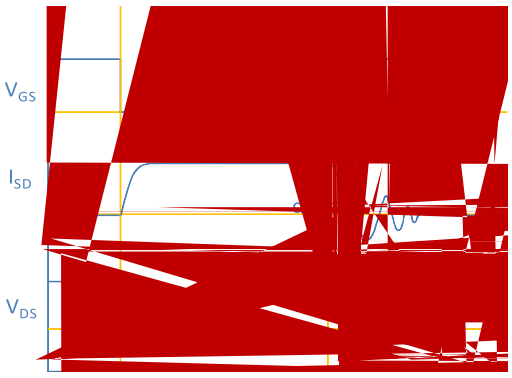
Uclamped Inductive Switching (UIS) Test





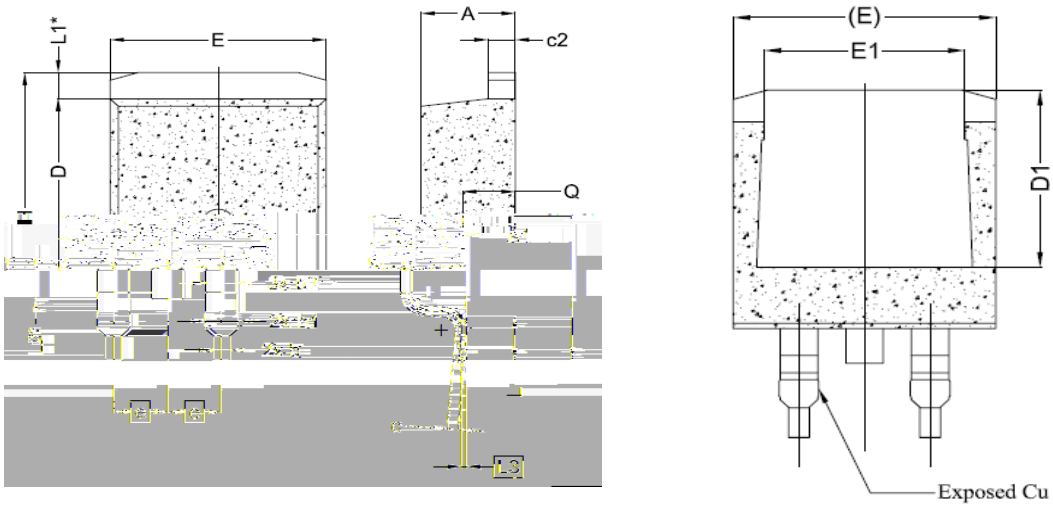
Diode Recovery Test





Package Outline

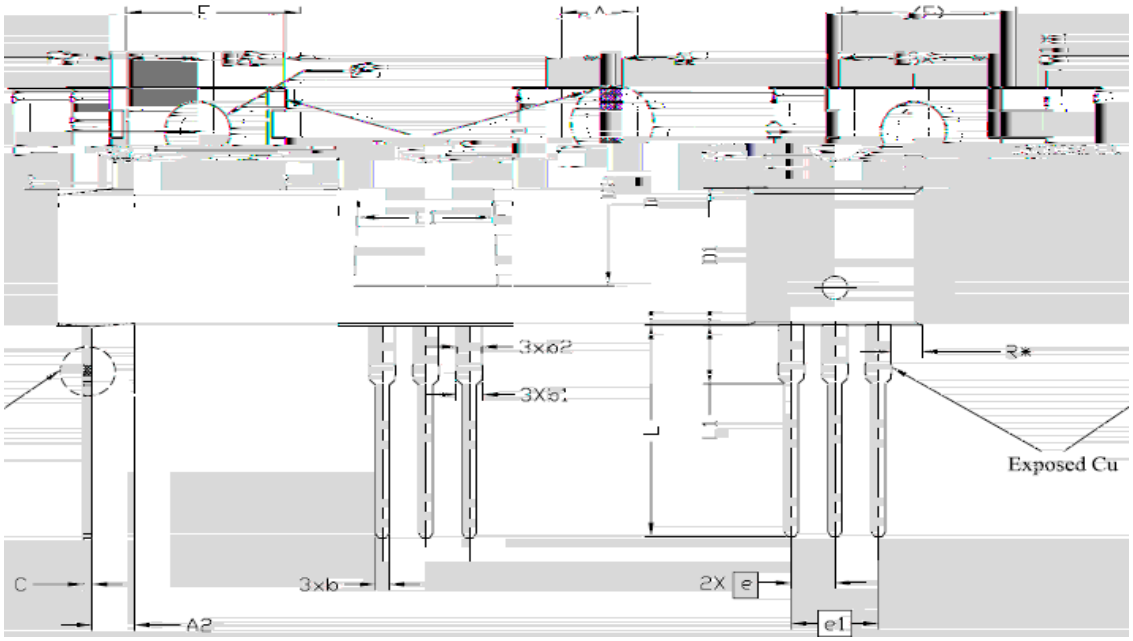
TO-263, 2 leads



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	[illegible]	[illegible]	[illegible]
E1	[illegible]	[illegible]	[illegible]
e	—	2.54 BSC	
H	14.61	15.00	15.88
L	1.78	2.32	2.79
L1	1.36 REF.		
L2	1.50 REF.		
L3	0.25 BSC		
Q	2.30	2.48	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.			