[redacted]

0V N-Ch Power M

V_{DS}	
$R_{DS(on),typ}$	V
$I_{D\ (Sillicon\ Li}$	

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	150	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250 A	2	3	4	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=150V, T_j=25℃	-	-	1	A
		V_{GS}=0V, V_{DS}=150V, 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	-	7.9	8.8	m
Drain to Source on Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=20A TO-220		7.9	8.8	m
Transconductance	g_{fs}	V_{DS}=5V, I_D=20A	-	70	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS} Open, f=1MHz	-	0.95	-	

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=75V, f=1MHz	-	4362	-	pF
Output Capacitance	C_{oss}		-	333	-	
Reverse Transfer Capacitance	C_{rss}		-	11.5	-	
Total Gate Charge	Q_g(10V)	V_{DD}=75V, I_D=20A, V_{GS}=10V	-	52	-	nC
Gate to Source Charge	Q_{gs}		-	19	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	5	-	
Turn on Delay Time	$t_{d(on)}$	V_{DD}=75V, I_D=20A, V_{GS}=10V, R_G=10 ,	-	19	-	ns
Rise time	t_r		-	10	-	
Turn off Delay Time	$t_{d(off)}$		-	29	-	
Fall Time	t_f		-	12	-	

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=75V, I_F=20A, dI_F/dt=100A/ s	-	80	-	ns
Reverse Recovery Charge	Q_{rr}		-	160	-	nC

Fig 1. Typical Output Characteristics

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

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

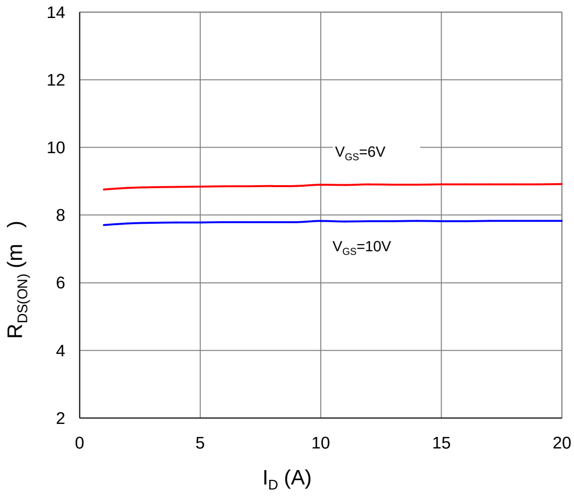


Figure 4. Normalized On-Resistance vs. Junction Temperature

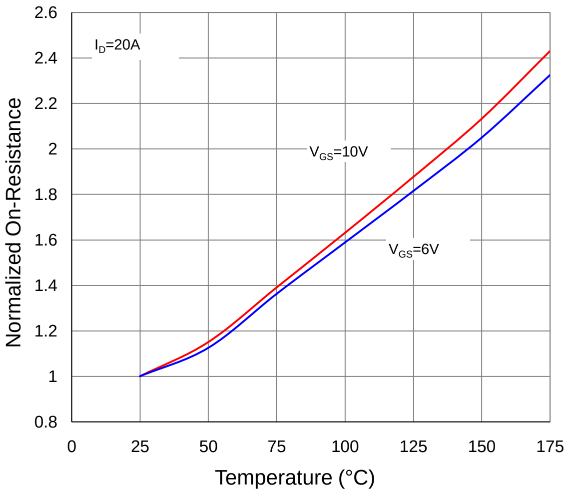


Figure 5. Typical Transfer Characteristics

Figure 6. Typical Source-Drain Diode Forward Voltage

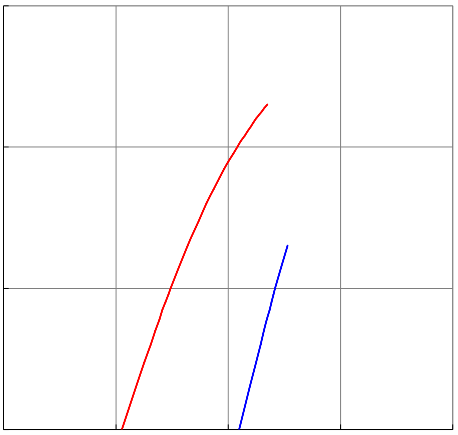


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

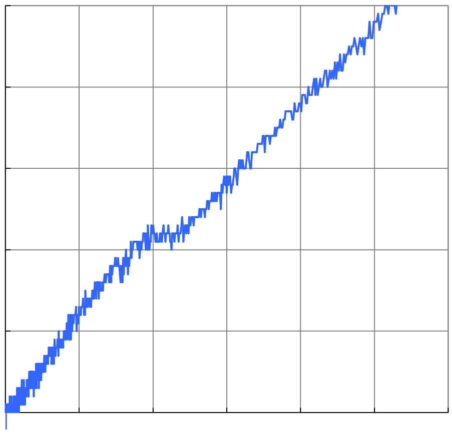


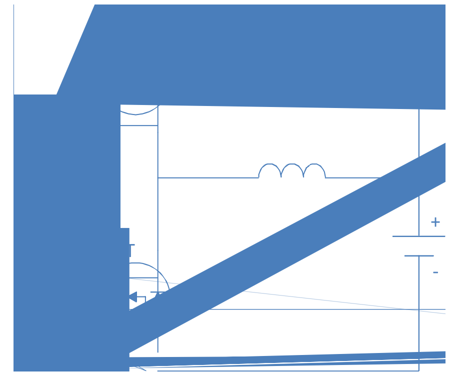
Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

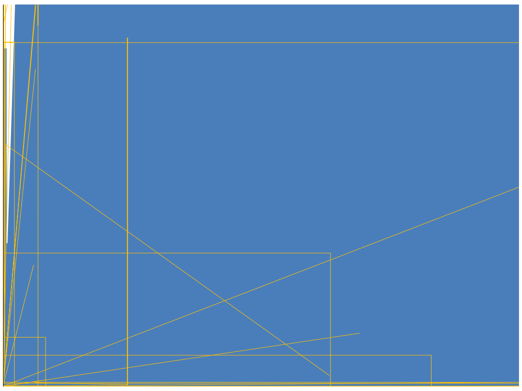
Figure 9. Maximum Safe Operating Area

Figure 10. Maximun Drain Current vs. Case Temperature

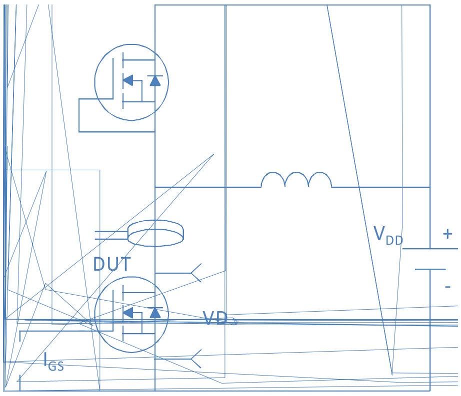
Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient

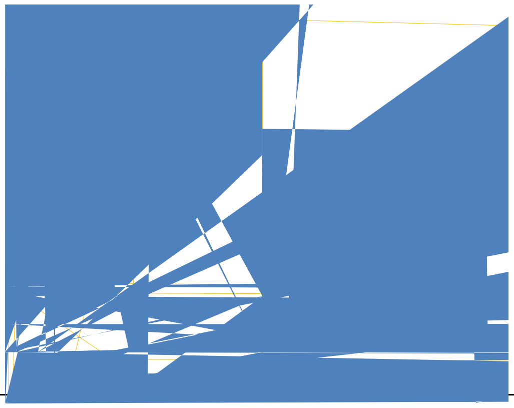
Inductive switching Test



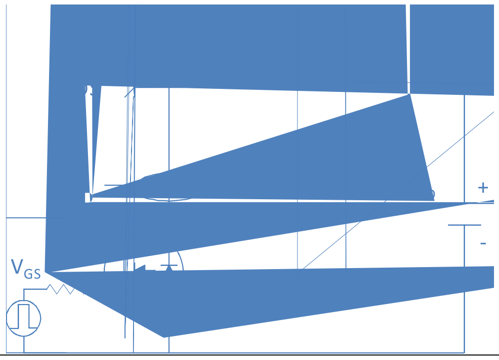


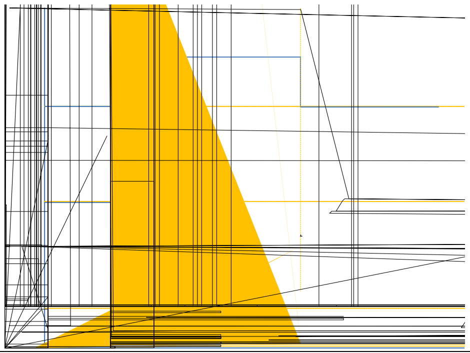
Gate Charge Test



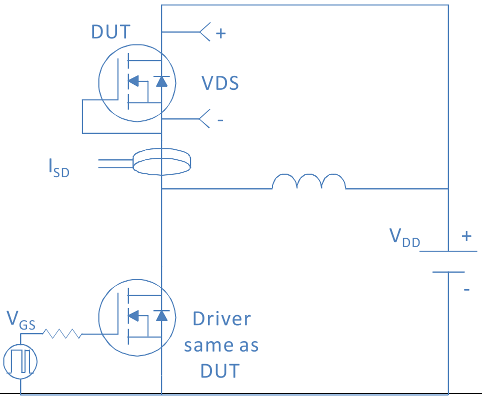


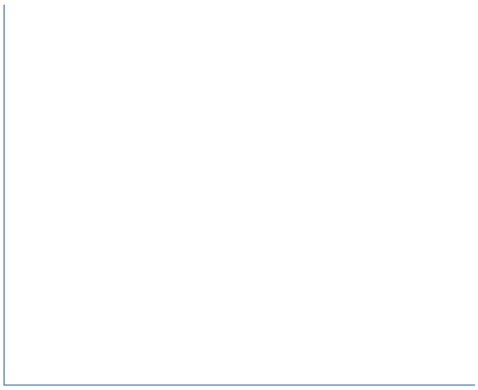
Uclamped Inductive Switching (UIS) Test





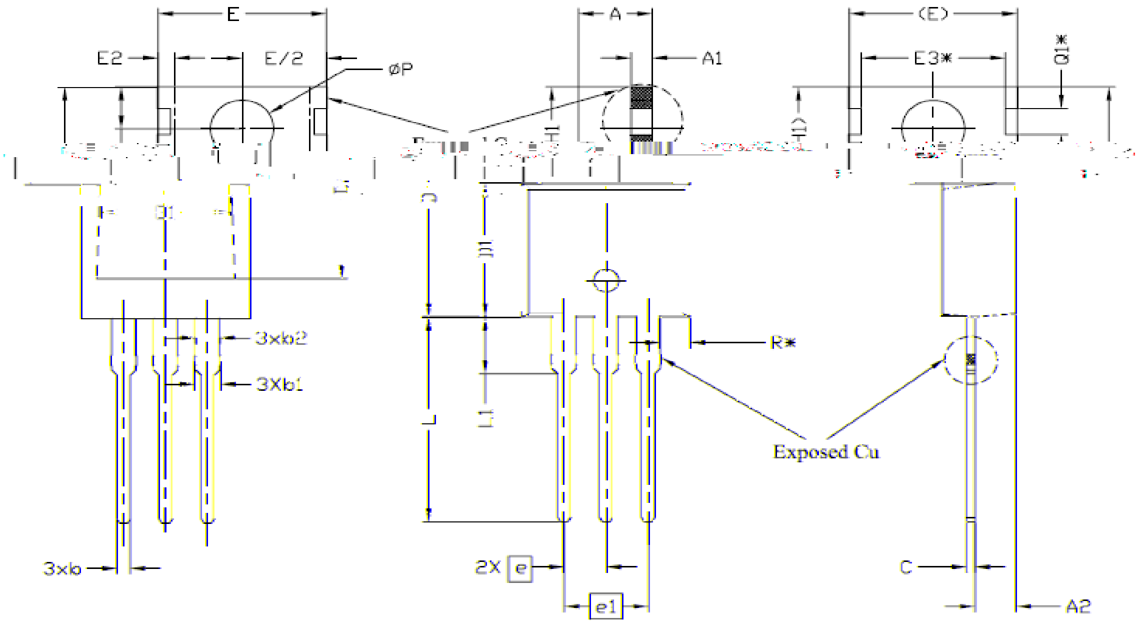
Diode Recovery Test





Package Outline

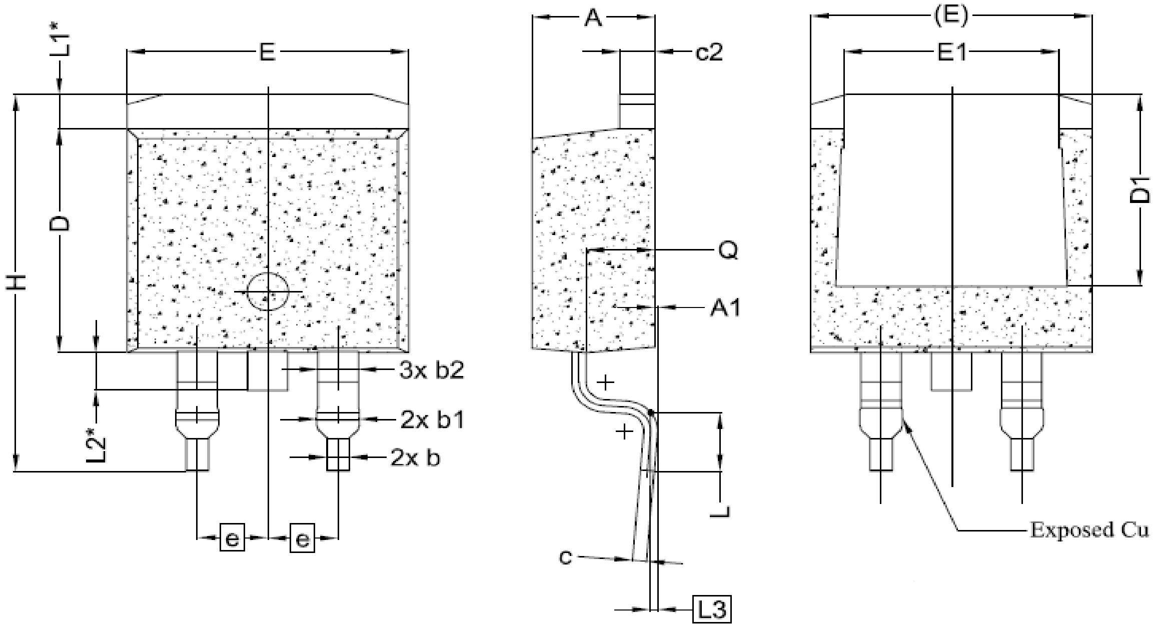
TO-220, 3 leads



SYMBOL	DIMENSIONS			NOTES
	MIN.	NOM.	MAX.	
A	[illegible]	[illegible]	[illegible]	
A1	[illegible]	[illegible]	[illegible]	
A2	2.37	[illegible]	[illegible]	
b	[illegible]	[illegible]	[illegible]	
b1	1.20	[illegible]	[illegible]	
b2	1.30	1.45	[illegible]	
c	0.46	0.52	[illegible]	
D	14.70	[illegible]	15.60	4
D1	[illegible]	[illegible]	[illegible]	
D2	[illegible]	[illegible]	[illegible]	3
E	9.96	10.16	10.36	4,5
E1	[illegible]	[illegible]	[illegible]	3
E2			0.76	6
E3*	[illegible]			
e	2.54BSC			
e1	5.08BSC			
H1	6.30	6.45	[illegible]	5,6
L	13.47	13.72	13.97	
L1	[illegible]	3.80	[illegible]	
ØP	[illegible]	3.84	[illegible]	
Q	[illegible]	2.80	[illegible]	
Q1*	[illegible]			
R*	[illegible]			

Package Outline

TO-263, 3 leads



DIMENSIONS			SYMBOL
MIN.	NOM.	MAX.	
.24	4.44	4.70	A
.00	0.10	0.25	A1
.35	0.80	0.99	b
.20	1.37	1.75	b1
.20	1.45	1.70	b2
.40	0.50	0.63	c
.15	1.27	1.40	c2
.82	8.92	9.02	D
.86	[illegible]	—	D1
.96	10.16	10.36	E
.89	[illegible]	7.26	E1
2.54 BSC			e
4.61	15.00	15.88	H
.78	2.32	2.79	L
1.35 REF.			L1
1.50 REF.			L2
0.25 BSC			L3
2.30	2.48	2.70	Q