



$R_{DS(on),typ}$	$V_{GS}=4.5V$	11	m
I_D		13.5	A

	Symbol		Unit
			A
Drain to Source Voltage	-	45	V
Gate to Source Voltage	V_{GS}	20	V
	-		A
Avalanche Energy, Single Pulse	E_{AS}	L=0.4mH, T_C	20 mJ
			W
		-55 to 150	

Unit

75

Electrical Characteristics at T_j

Static Characteristics

Parameter	Symbol	Condi-				
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250 A$				
	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250 A$	1.0	1.55		
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0V, V_{DS}=45V, T_j$	-	-	1	A
		$V_{GS}=0V, V_{DS}=45V, T_j$	-	-	100	
Gate to Source Leakage Current	I_{GSS}	$V_{GS} \quad V_{DS}=0V$	-	-	100	nA
Drain to Source on Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=15A$	-	7.9	9.5	m
		$V_{GS}=4.5V, I_D=8A$	-	11	14	
Transconductance	g_{fs}	$V_{DS}=5V, I_D=10A$	-	8	-	S
Gate Resistance	R_G	$V_{GS}=0V, V_{DS} \text{ Open}, f=1MHz$	-	1.5	-	

Dynamic Characteristics

Input Capacitance	C_{iss}		-	942	-	
Output Capacitance	C_{oss}	$V_{GS}=0V, V_{DS}=20V, f=1MHz$	-	309	-	pF
Reverse Transfer Capacitance	C_{rss}		-	29	-	
Total Gate Charge	$Q_g(10V)$		-	14.5	-	
Total Gate Charge	$Q_g(4.5V)$	$V_{DD}=20V, I_D=10A, V_{GS}=10V$	-	7	-	nC
Gate to Source Charge	Q_{gs}		-	2	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	2.5	-	
Turn on Delay Time	$t_{d(on)}$		-	6	-	
Rise time	t_r	$V_{DD}=20V, I_D=10A, V_{GS}=10V,$	-	5	-	ns
Turn off Delay Time	$t_{d(off)}$	$R_G=10 \quad ,$	-	21	-	
Fall Time	t_f		-	5	-	

Reverse Diode Characteristics

Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_F=20A$	-	0.9	1.2	V
Reverse Recovery Time	t_{rr}		-	24	-	ns
Reverse Recovery Charge	Q_{rr}	$V_R=20V, I_F=10A, di_F/dt=200A/ s$	-	19	-	nC

Fig 1. Typical Output Characteristics



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

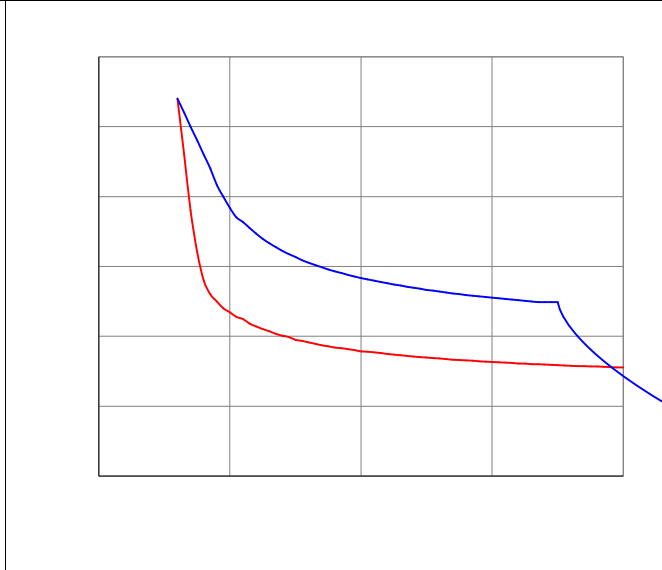


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

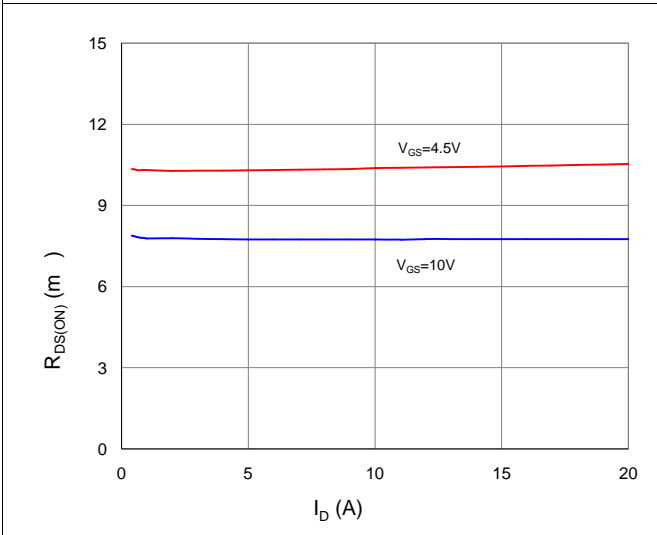


Figure 4. Normalized On-Resistance vs. Junction Temperature

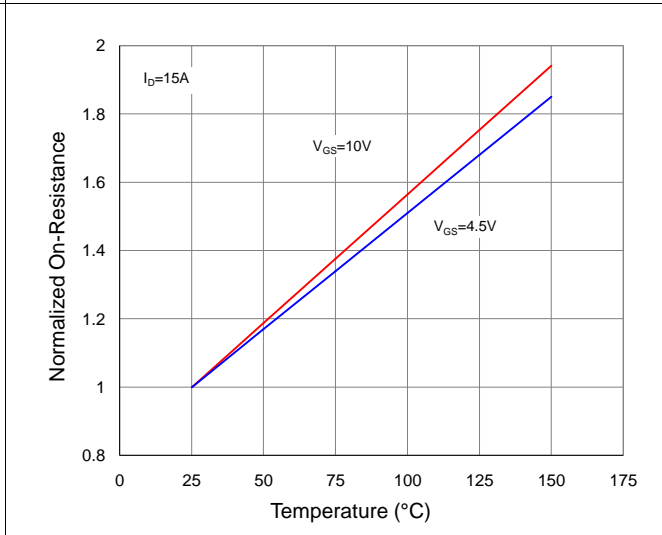


Figure 5. Typical Transfer Characteristics

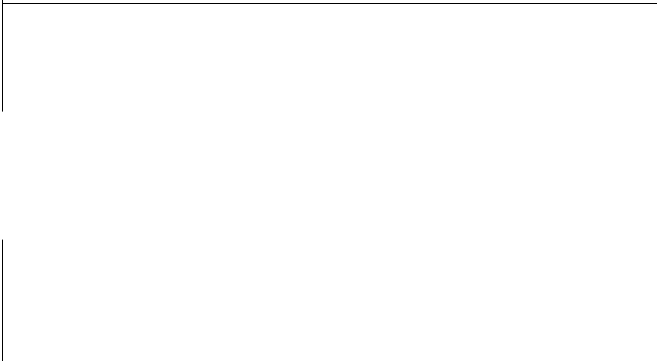


Figure 6. Typical Source-Drain Diode Forward Voltage

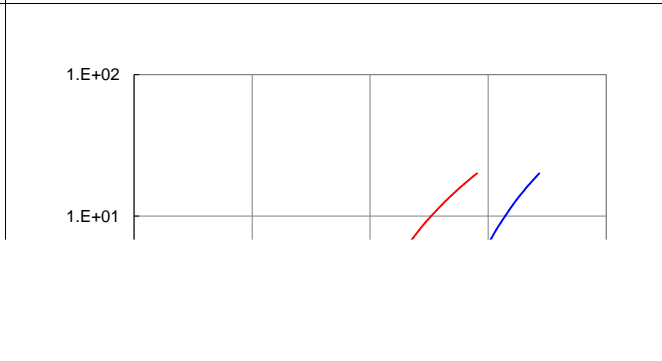


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

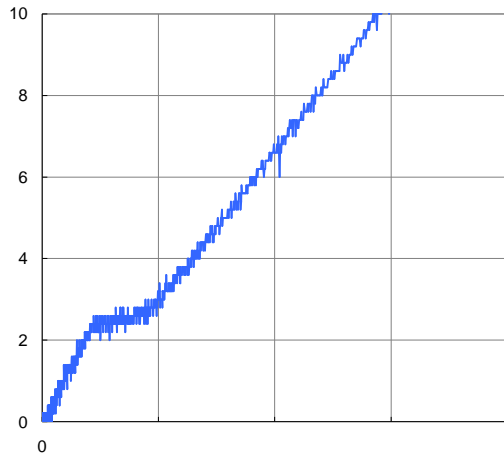


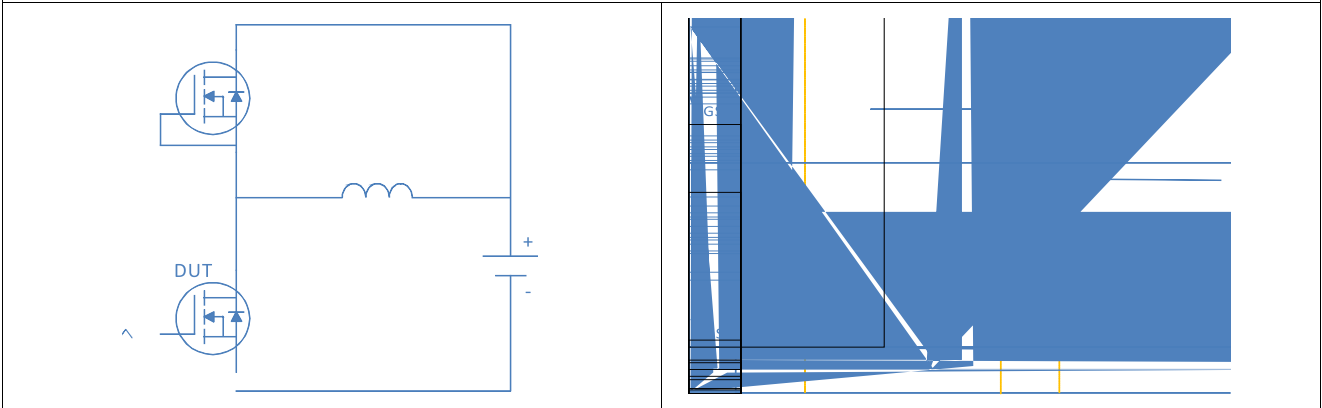
Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

Figure 9. Maximum Safe Operating Area

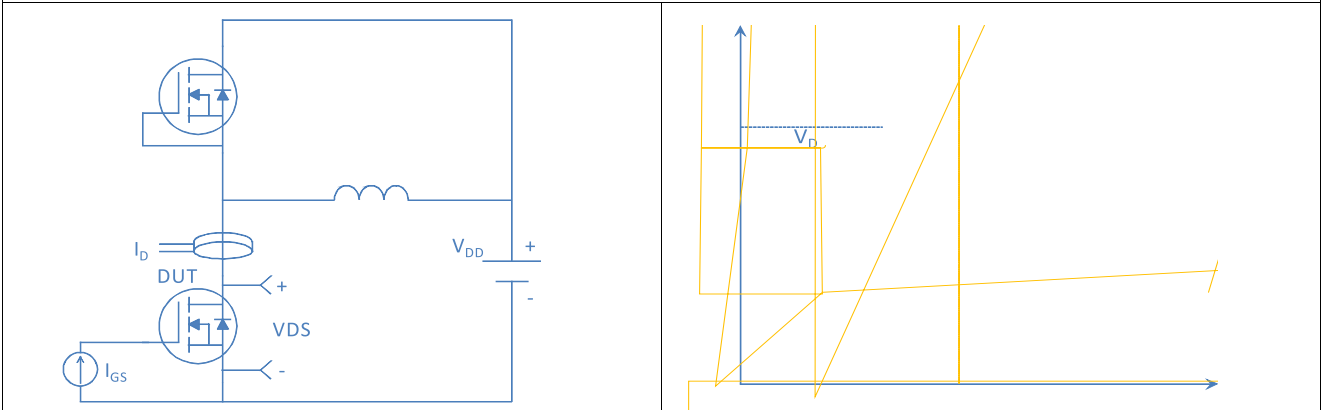
Figure 10. Maximum Drain Current vs. Case Temperature

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

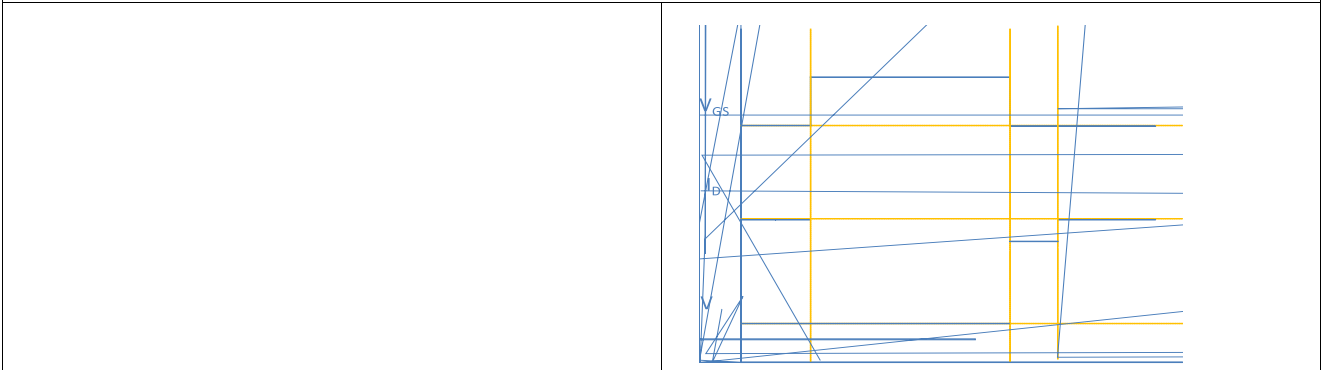
Inductive switching Test



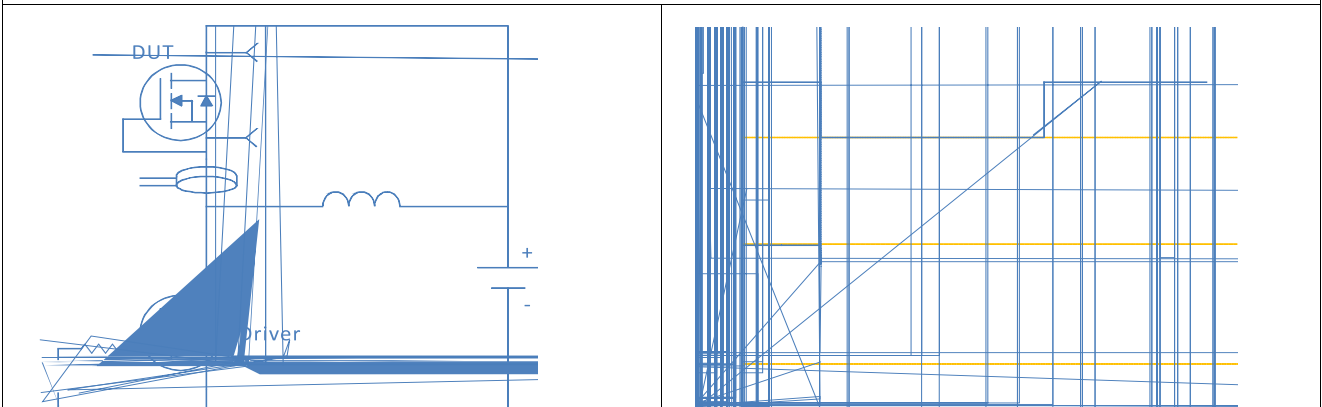
Gate Charge Test



Uclamped Inductive Switching (UIS) Test

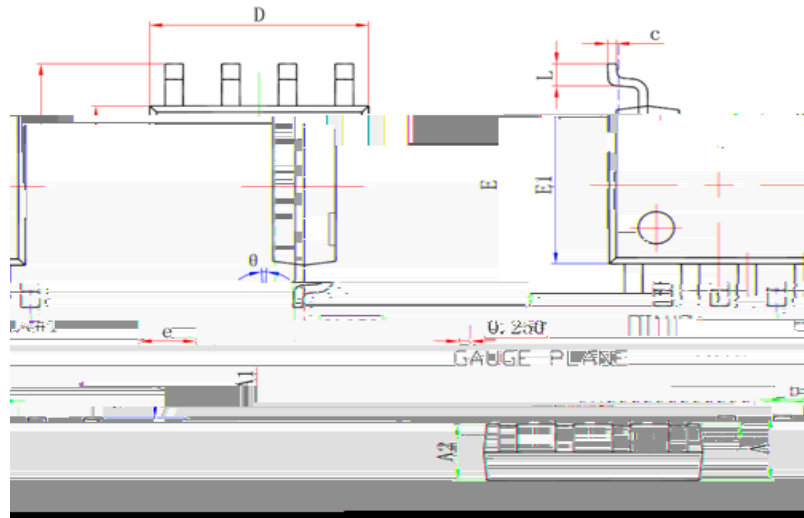


Diode Recovery Test



Package Outline

SOIC-8, 8 leads



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.250	1.650	0.049	0.065
b	0.310	0.510	0.012	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		0.050 (SBC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.031
theta	0°	8°	0°	8°