Electrical Characteristics at T_j

Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250mA	200	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250mA	2	3	4	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=160V, T_j	-	-	1	mA
		V_{GS}=0V, V_{DS}=160V, T_j	-	-	100	
Gate to Source Leakage Current	I_{GSS}	V_{GS} $_{DS}$=0V	-	-	100	nA
Drain to Source on Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=20A	-	4.7	5.6	mW
Transconductance	g_{fs}	V_{DS}=5V, I_D=20A	-	90	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS} Open, f=1MHz	-	2.0	-	W

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=100V, f=1MHz	-	9940	-	pF
Output Capacitance	C_{oss}		-	840	-	
Reverse Transfer Capacitance	C_{rss}		-	15	-	
Total Gate Charge	Q_g	V_{DD}=100V, I_D=20A, V_{GS}=10V	-	112	-	nC
Gate to Source Charge	Q_{gs}		-	36	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	10	-	
Turn on Delay Time	$t_{d(on)}$	V_{DD}=100V, I_D=20A, V_{GS}=10V, R_G=10W,	-	32	-	ns
Rise time	t_r		-	44	-	
Turn off Delay Time	$t_{d(off)}$		-	76	-	
Fall Time	t_f		-	20	-	

Reverse Diode Characteristics

Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_F=20A	-	0.9	-	V
Reverse Recovery Time	t_{rr}	V_R=100V, I_F=20A, dI_F/dt=100A/ms	-	280	-	ns
Reverse Recovery Charge	Q_{rr}		-	1260	-	nC

Fig 1. Typical Output Characteristics	Figure 2. On-Resistance vs. Gate-Source Voltage

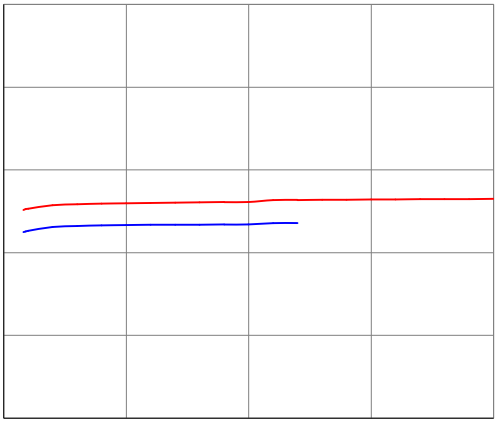
Figure 3. On-Resistance vs. Drain Current and Gate Voltage	Figure 4. Normalized On-Resistance vs. Junction Temperature
	

Figure 5. Typical Transfer Characteristics	Figure 6. Typical Source-Drain Diode Forward Voltage

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

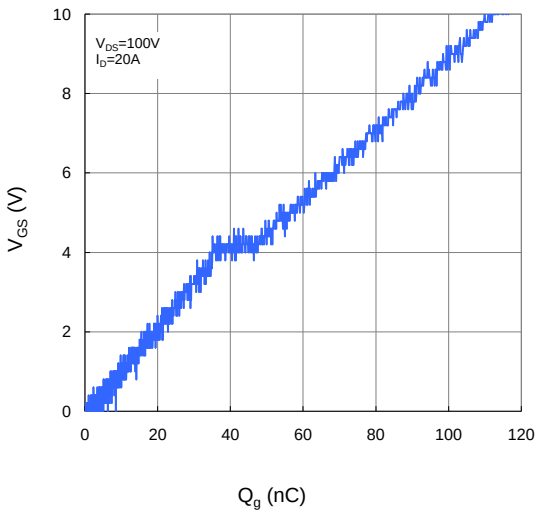


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

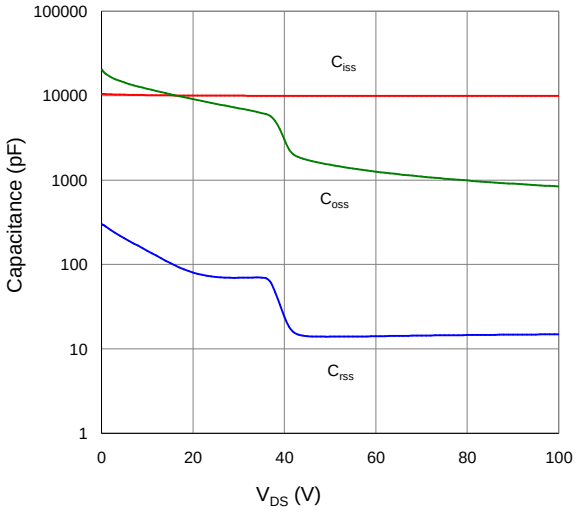


Figure 9. Maximum Safe Operating Area

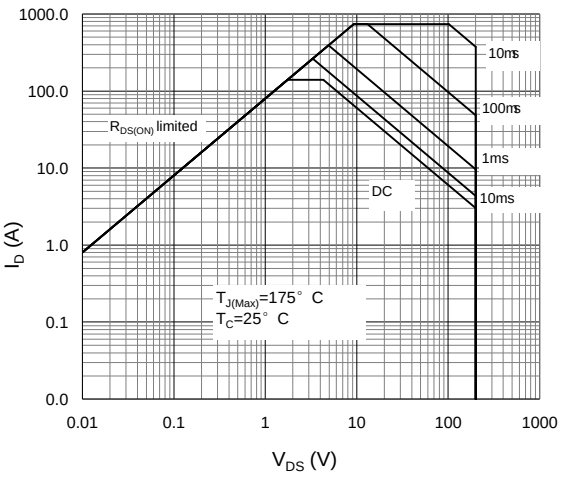


Figure 10. Maximun Drain Current vs. Case Temperature

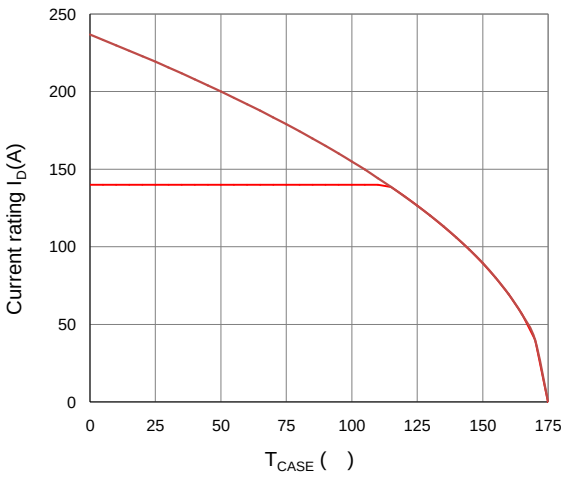
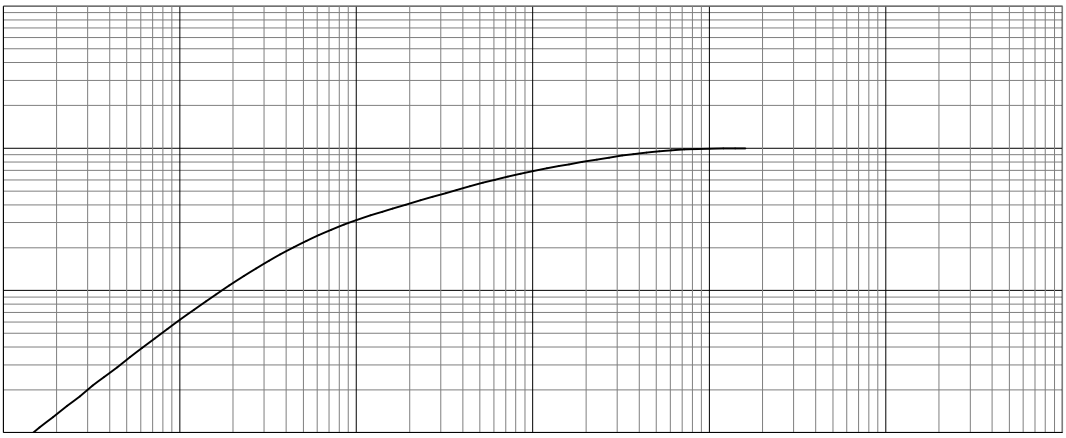
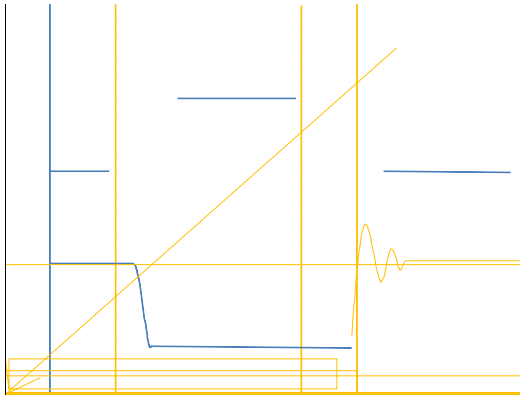


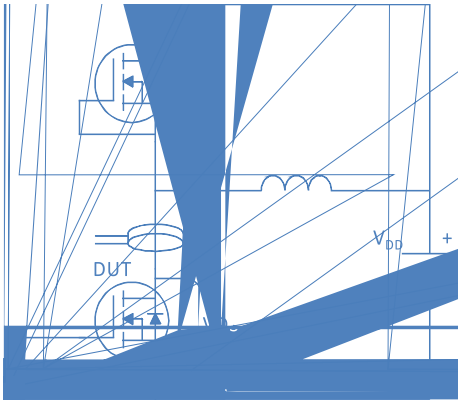
Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Case

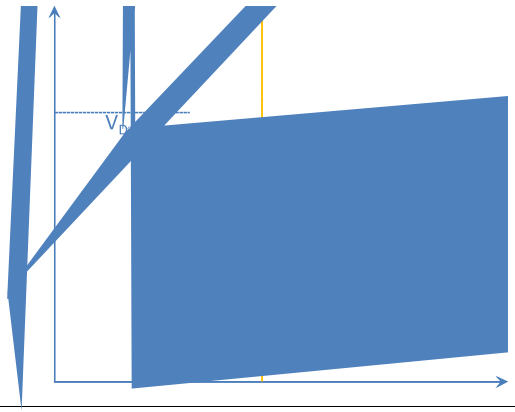


Inductive switching Test

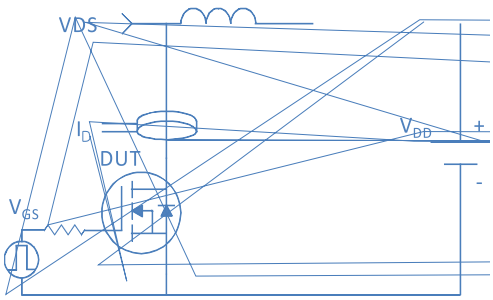


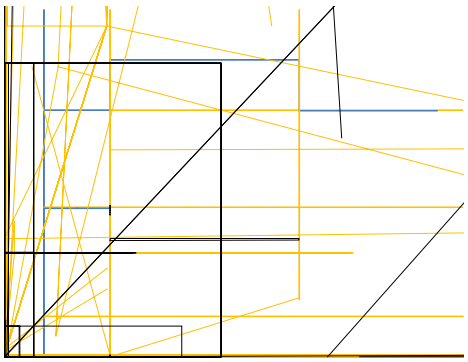
Gate Charge Test



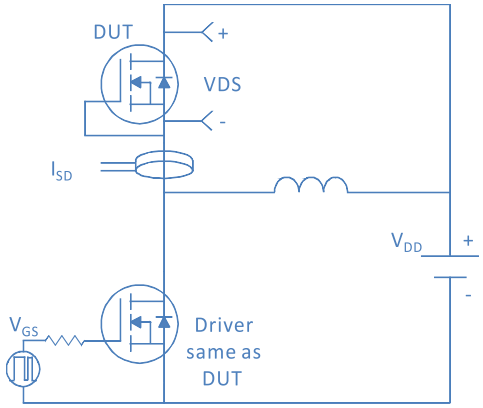


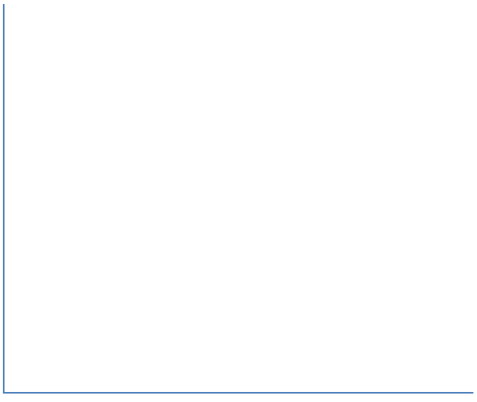
Uclamped Inductive Switching (UIS) Test



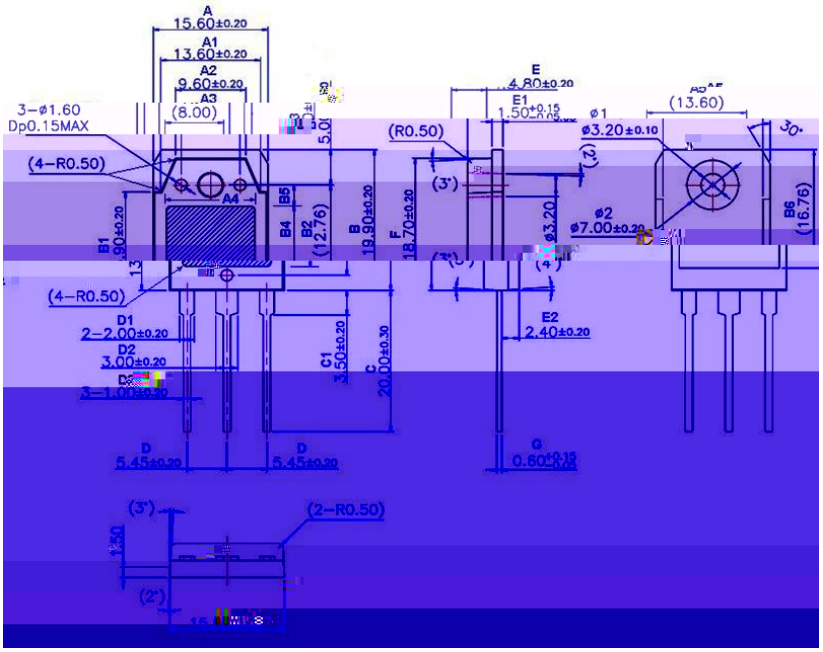


Diode Recovery Test





TO-3P, 3 leads



（单位：mm）

符号	尺寸	符号	尺寸	符号	尺寸	符号	尺寸
A	15.40	15.80	B1	13.70	14.10	C1	3.30	3.70	E2	2.20	2.6
0.75	A2	9.40	9.80	B3	4.80	5.20	D1	1.80	2.20	G	0.5
1.20	Φ2	6.80	7.20	A4	（12.00）	B5	（3.00）	D3	0.80		
4.60	5.00			A5	（13.60）	B6	（16.76）	E			
1.45	1.65			B	19.70	20.10	C	19.70	20.30	F1	