20V P-Ch Power MOSFET

V_{DS}		-20	V
$R_{DS(on),typ}$	V_{GS}=4.5V	37	m
$R_{DS(on),typ}$	V_{GS}=2.5V	55	m
$R_{DS(on),typ}$	V_{GS}=1.8V	65	m
$I_{D\ (Sillicon\ Limited)}$		-4	A
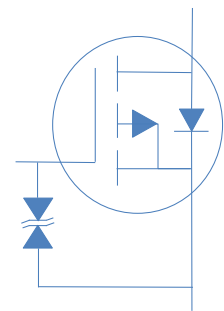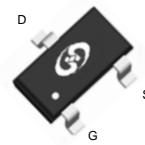
Part Number	Package	Marking
HTJ440P02E	SOT-23	2E

Absolute Maximum Ratings at T_J 0   0   0

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_A	-4	A
		T_A	-3.5	
Drain to Source Voltage	V_{DS}	-	-20	V
Gate to Source Voltage	V_{GS}	-	±8	V
Pulsed Drain Current	I_{DM}	-	-16	A
Power Dissipation	P_D	T_A	1.25	
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to150	

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	R_{JA}	100	
Thermal Resistance Junction-Lead	R_{JL}	55	

Electrical Characteristics at T_j 0   0   0

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	-20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=-250 A	-0.3	-0.65	-1.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=-16V, T_j	-	-	-1	A
		V_{GS}=0V, V_{DS}=-16V, T_j	-	-	-10	
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V	-	-	±10	A
Drain to Source on Resistance	$R_{DS(on)}$	V_{GS}=-4.5V, I_D=-4A	-	37	44	m
		V_{GS}=-2.5V, I_D=-3A		55	70	
		V_{GS}=-1.8V, I_D=-1A	-	65	90	
Transconductance	g	V_{DS}=-5V, I_D=-4A	-	14	-	S

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS} 0	-	1059	-	pF
Output Capacitance	C_{oss}		-	132	-	
0 0	C_{rss}		-	127	-	
Total Gate Charge	Q_g	V_{DD}=-10V, I_D=-4A, V_{GS}=-4.5V	-	12.9	-	nC
Gate to Source Charge	Q_{gs}		-	1.8	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	3.2	-	
Turn on Delay Time	$t_{d(on)}$	V_{DD}=-10V, I_D=-1A, V_{GS}=-4.5V, R_G=6 ,	-	15	-	ns
Rise time	t_r		-	30	-	
0 0 0	t		-	35	-	
Fall Time	t		-	35	-	

Reverse Diode Characteristics

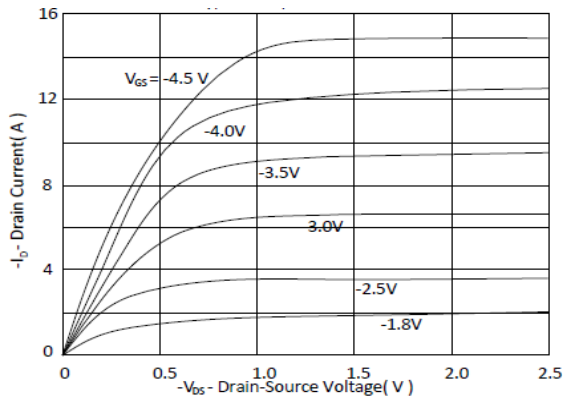| Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_F=-3A	-		-1.2	V

Fig 1. Typical Output Characteristics	Figure 2. On-Resistance vs. Gate-Source Voltage
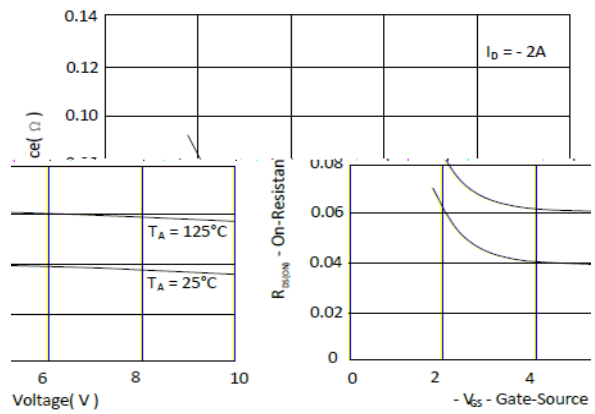
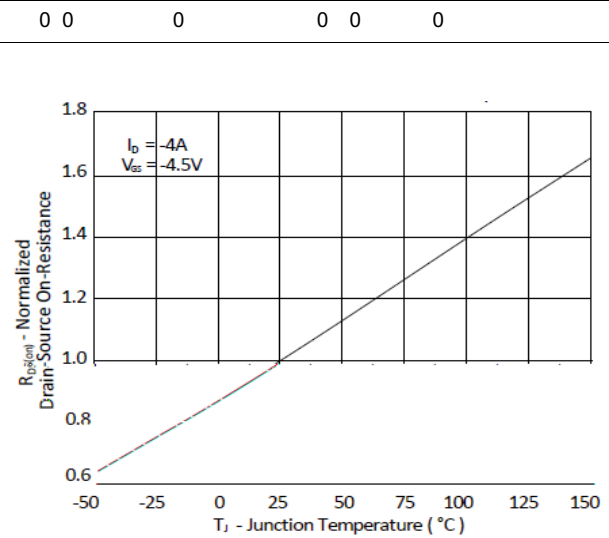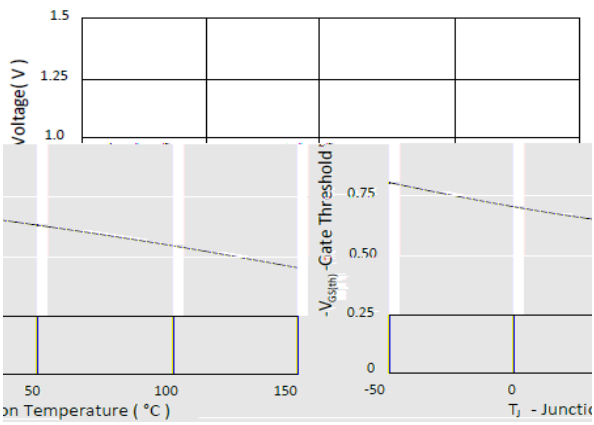| Figure 3. Gate Threshold Voltage v.s. Junction Temperature	0 0 0 0 0 0

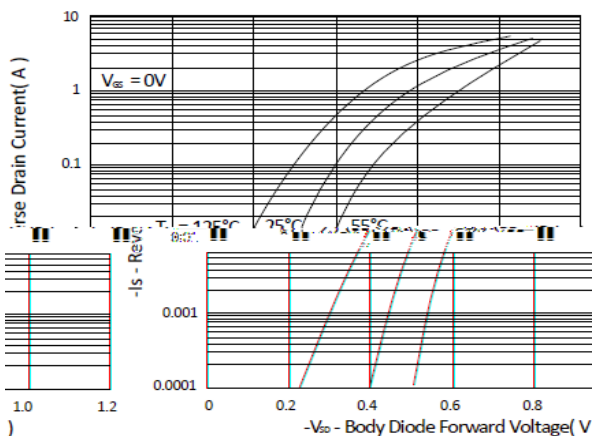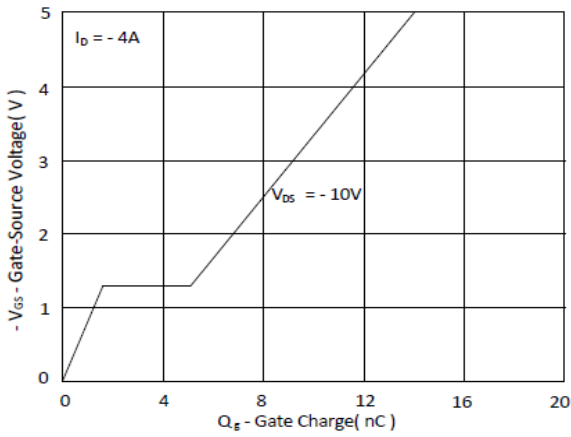Figure 5.Typical Source-Drain Diode Forward Voltage

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Figure 6.Typical Gate-Charge vs. Gate-to-Source Voltage

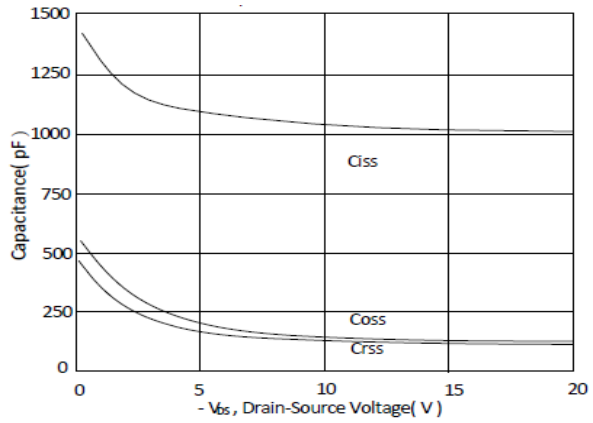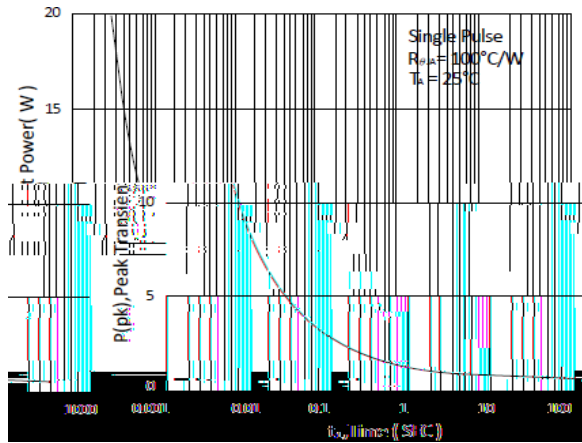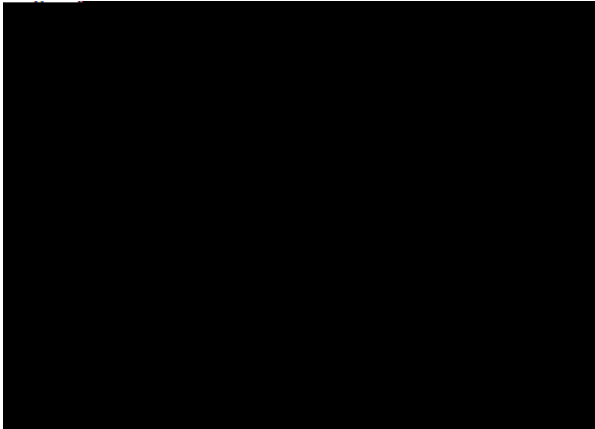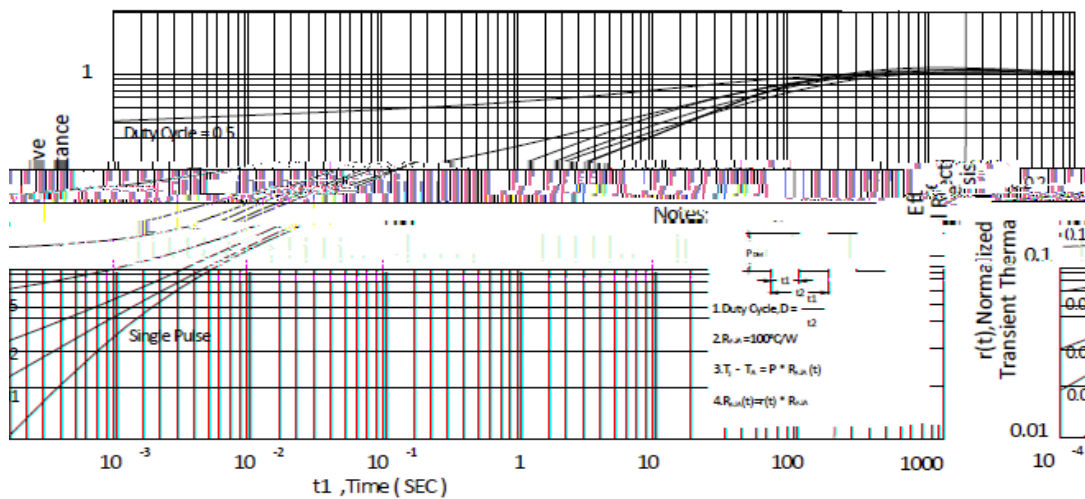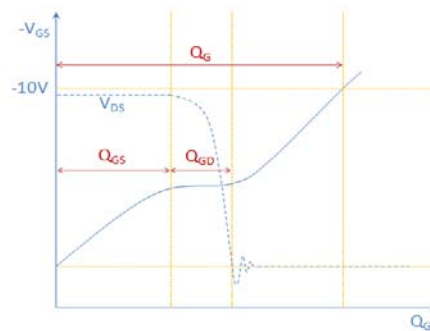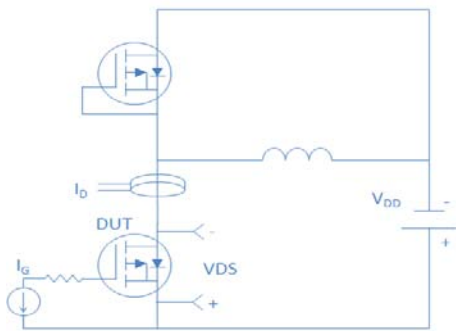Figure 7. Typical Capacitance vs. Drain-to-Source Voltage
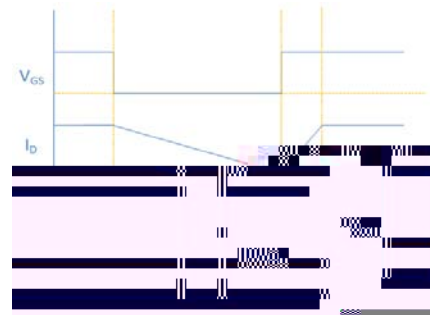

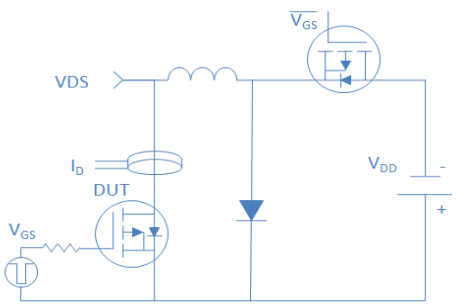
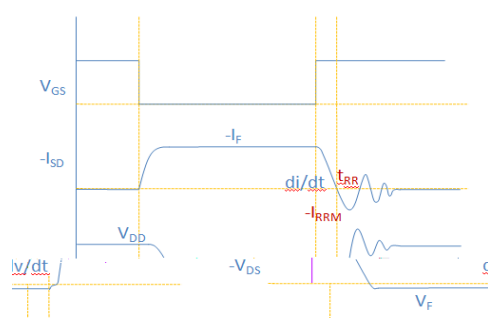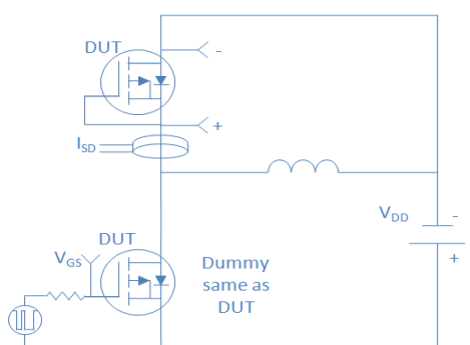Figure 9. Single Pulse Maximum Power Dissipation

Inductive switching Test
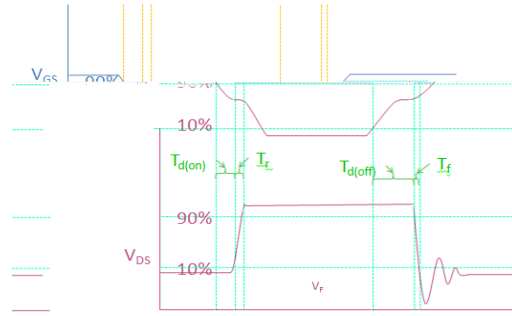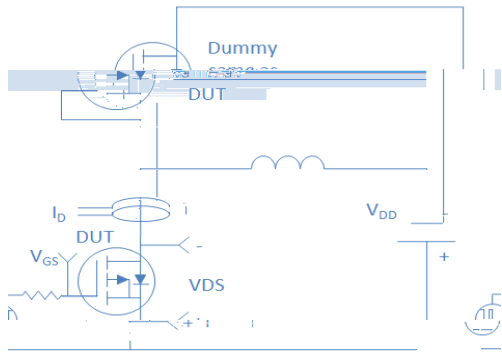
Gate Charge Test

Uclamped Inductive Switching (UIS) Test

Diode Recovery Test

SOT-23, 3leads