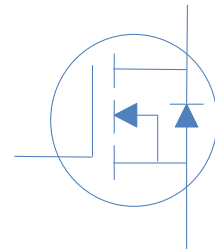


60V N-Ch Power MOSFET



V_{DS}		60	V
$R_{DS(on),typ}$	$V_{GS}=10V$	30	m
$R_{DS(on),typ}$	$V_{GS}=4.5V$	33	m
I_D (Silicon Limited)		16	A



Part Number	Package	Marking
HTD480N06P	TO-252	TD480N06P

Absolute Maximum Ratings at $T_J=25^{\circ}\text{C}$ (unless otherwise specified)

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	$T_C=25^{\circ}\text{C}$	16	A
		$T_C=100^{\circ}\text{C}$	10	
Drain to Source Voltage	V_{DS}	-	60	V
Gate to Source Voltage	V_{GS}	-	± 20	V
Pulsed Drain Current	I_{DM}	-	30	A
Avalanche Energy, Single Pulse	E_{AS}	$L=0.1\text{mH}, T_C=25^{\circ}\text{C}$	12.80	mJ
Power Dissipation	P_D	$T_C=25^{\circ}\text{C}$	20	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to 150	$^{\circ}\text{C}$

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Case	R_{JC}	6.25	$^{\circ}\text{C/W}$
Thermal Resistance Junction-Ambient	R_{JA}	110	$^{\circ}\text{C/W}$

						max	
							-
							2
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=V_{DS}, I_D=250\text{ A}$	-	-	1		A
Gate to Source Leakage Current	I_{GSS}	$V_{GS}=0V, V_{DS}=48V, T_J=25^\circ\text{C}$	-	-	± 100		nA
		$V_{GS}=\pm 20V, V_{DS}=0V$					
Drain to Source on Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=10A$	-	30	50		m
		$V_{GS}=4.5V, I_D=8A$	-	33	55		m
Transconductance	g_{fs}	$V_{DS}=5V, I_D=10A$	-	10	-		S
Gate Resistance	R_G	$V_{GS}=0V, V_{DS}\text{ Open}, f=1\text{MHz}$	-	3.40	-		
Dynamic Characteristics							
Input Capacitance	C_{iss}		-	776	-		
Output Capacitance	C_{oss}	$V_{GS}=0V, V_{DS}=20V, f=1\text{MHz}$	-	51	-		pF
Reverse Transfer Capacitance	C_{rss}		-	44	-		
Total Gate Charge (10V)	$Q_g (10V)$		-	17.5	-		
Gate to Source Charge	Q_{gs}	$V_{DD}=20V, I_D=10A, V_{GS}=10V$	-	2.6	-		nC
Gate to Drain (Miller) Charge	Q_{gd}		-	3.6	-		
Turn on Delay Time	$t_{d(on)}$		-	7.6	-		
Rise time	t_r	$V_{DD}=20V, I_D=1A, V_{GS}=10V,$	-	16.2	-		ns
Turn off Delay Time	$t_{d(off)}$	$R_G=6\ \Omega$	-	40.6	-		
Fall Time	t_f		-	7.0	-		
Reverse Diode Characteristics							
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_F=15A$	-	0.87	1.3		V
Reverse Recovery Time	t_{rr}		-	12.1	-		ns
Reverse Recovery Charge	Q_{rr}	$I_F=5A, dI_F/dt=100A/\mu\text{s}$	-	8.8	-		nC

Fig 1. Typical Output Characteristics

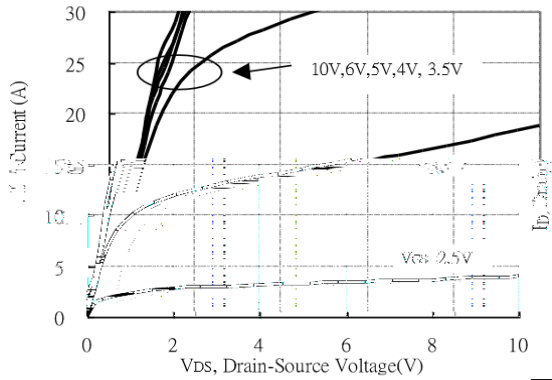


Figure 2. On-Resistance vs. Gate-Source Voltage

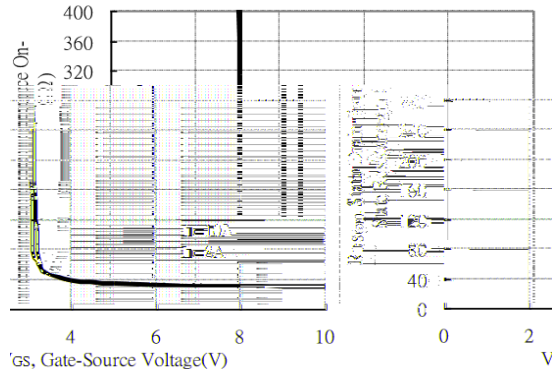


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

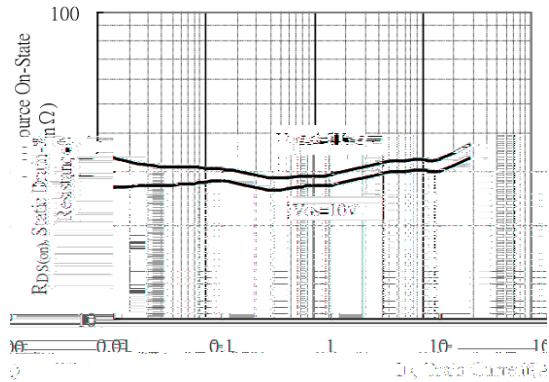


Figure 4. Normalized On-Resistance vs. Junction Temperature

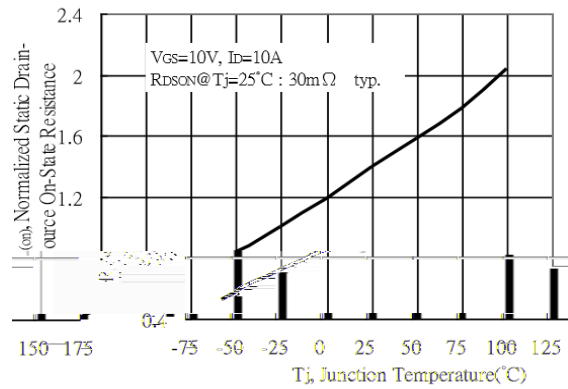


Figure 5. Normalized Threshold Voltage vs. Junction Temperature

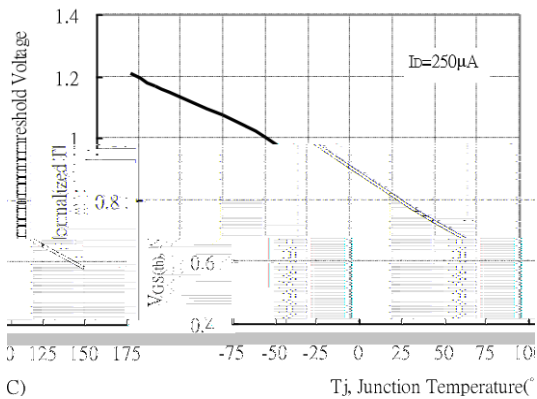


Figure 6. Typical Source-Drain Diode Forward Voltage

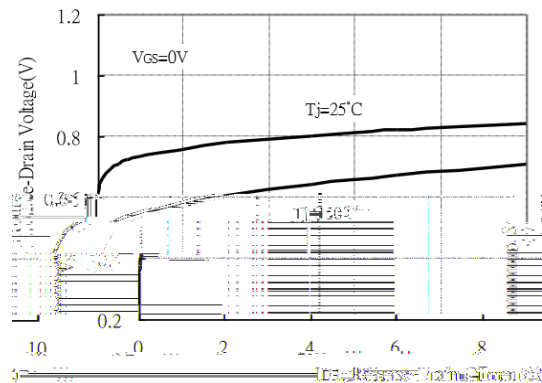


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

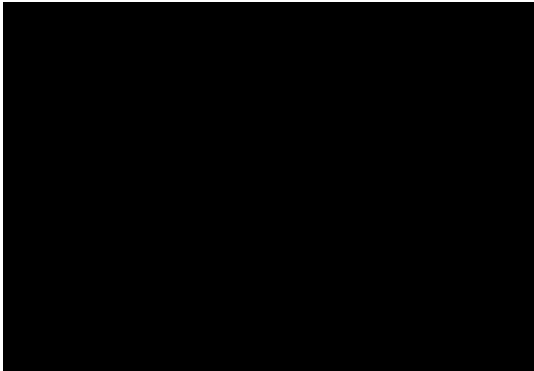


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

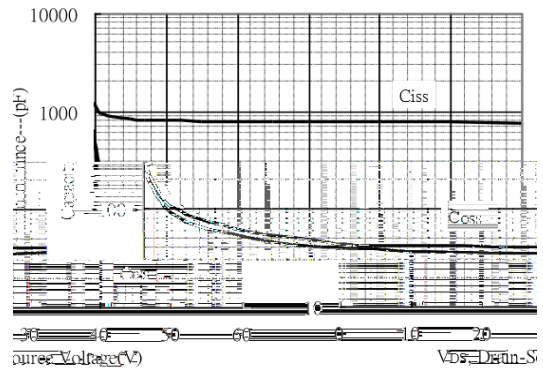


Figure 9. Maximum Safe Operating Area

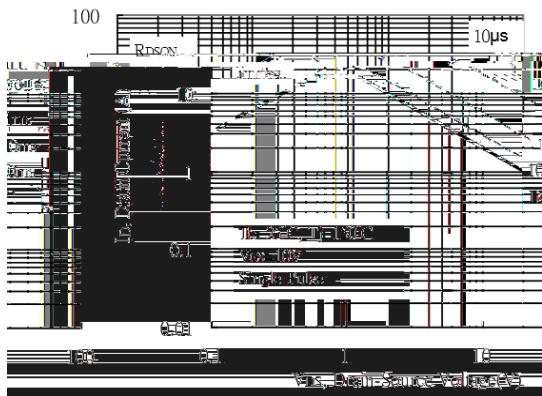


Figure 10. Maximum Drain Current vs. Case Temperature

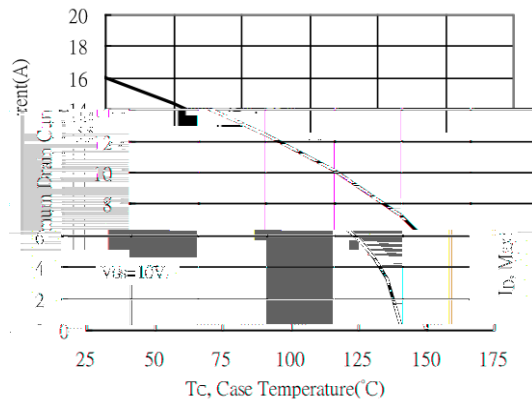
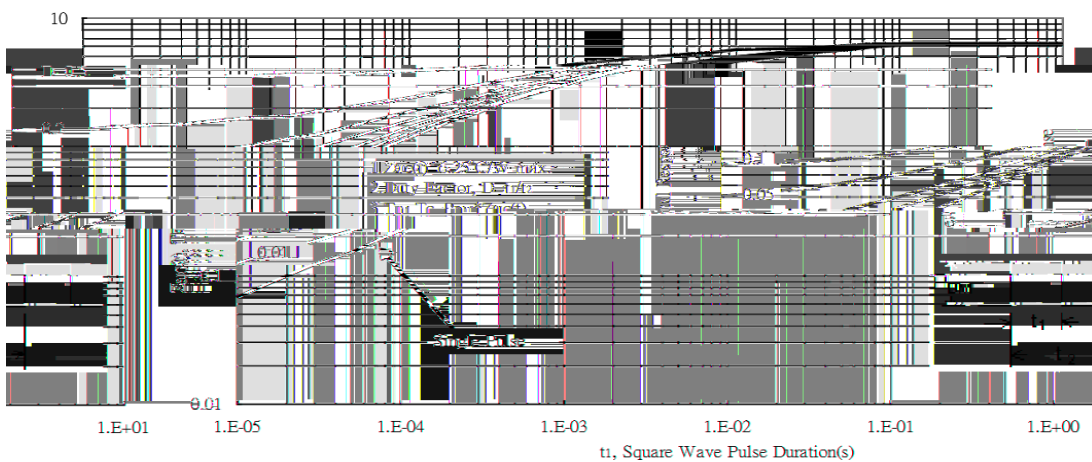
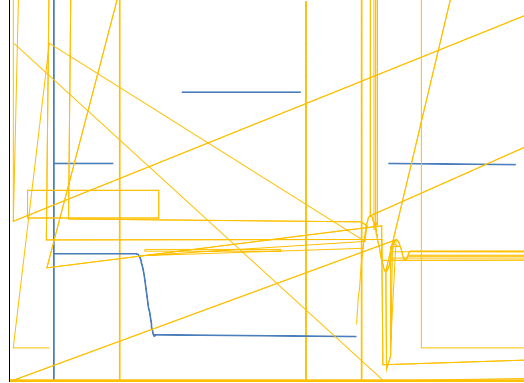
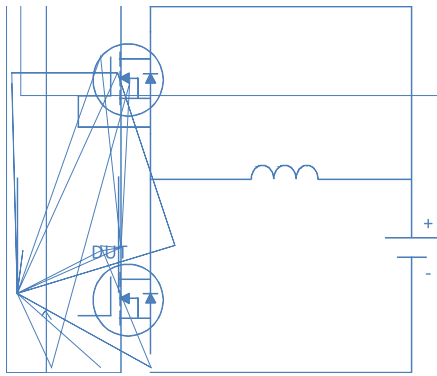


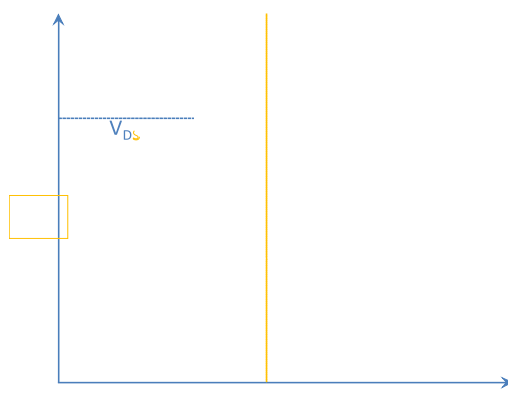
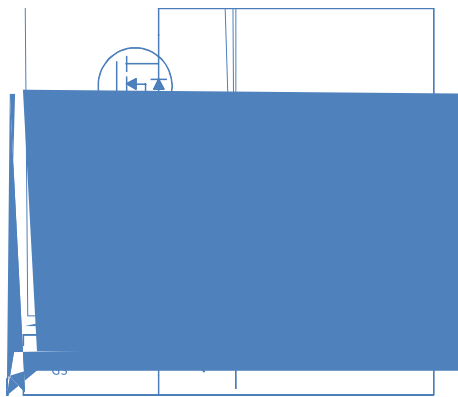
Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Case



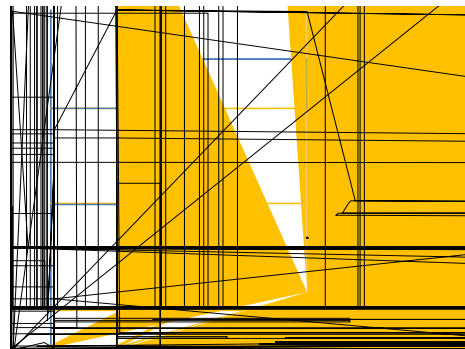
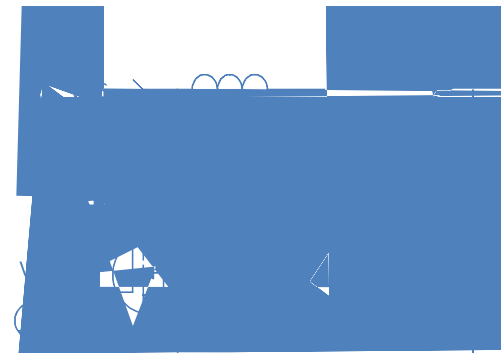
Inductive switching Test



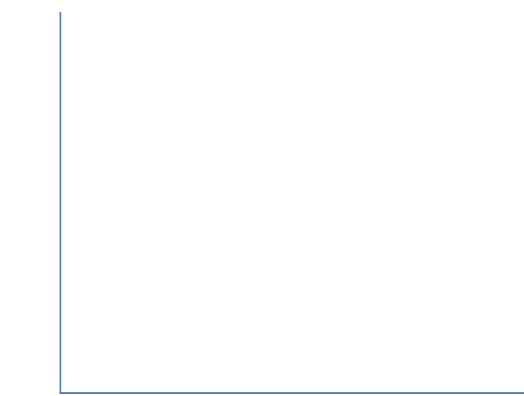
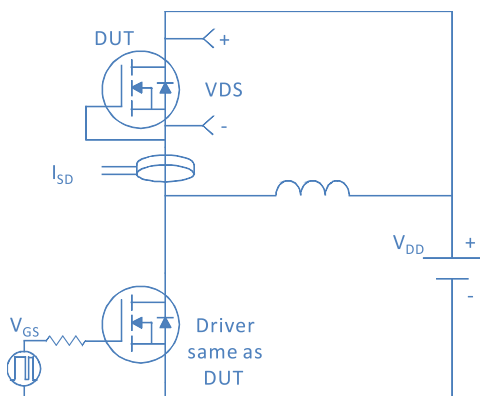
Gate Charge Test



Uclamped Inductive Switching (UIS) Test

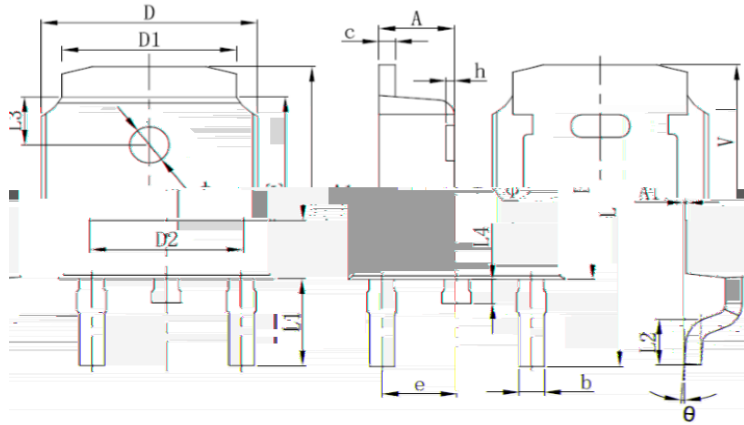


Diode Recovery Test



Package Outline

TO-252, 2 Leads



DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.087	0.094	2.200	2.400	L	0.382	0.406	9.712	10.312
A1	0.000	0.005	0.000	0.127	L1	0.114	REF	2.900	REF
1.600	REF	c	0.018	0.023	0.460	0.580	L3	0.063	REF
0.600	0.000	D	0.256	0.264	6.500	6.700	L4	0.024	0.039
0.012	0.000	E	0.236	0.244	6.000	6.200	h	0.000	
REF	5.250	REF	c	0.086	0.091	2.186	2.366	v	0.207