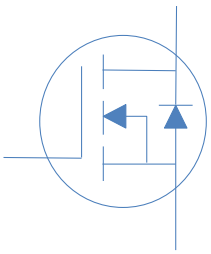
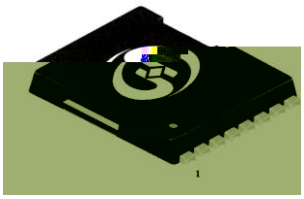
65V N-Ch Power MOSFET

V_{DS}	65	V
$R_{DS(on),typ}$	1.3	m
$I_{D\ (Sillicon\ Limited)}$	355	A
$I_{D\ (Package\ Limited)}$	240	A



Part Number	Package	Marking
HGT016NE6A	TOLL	GT016NE6A



Absolute Maximum Ratings at T_j=25℃ (unless otherwise specified)

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_C=25℃	355	A
		T_C=100℃	251	
Continuous Drain Current (Package Limited)		T_C=25℃	240	
Drain to Source Voltage	V_{DS}	-	65	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	900	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.1mH, T_C=25℃	180	mJ
Power Dissipation	P_D	T_C=25℃	319	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to175	℃

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	R_{JA}	60	℃/W
Thermal Resistance Junction-Case	R_{JC}	0.47	℃/W

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	65	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250 A	2.0	2.5	4.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=60V, T_j=25℃	-	-	1	A
		V_{GS}=0V, V_{DS}=60V, 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	-	1.3	1.6	m
Transconductance	g_{fs}	V_{DS}=5V, I_D=20A	-	80	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS} Open, f=1MHz	-	0.63	-	

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=30V, f=1MHz	-	8671	-	pF
Output Capacitance	C_{oss}		-	3042	-	
Reverse Transfer Capacitance	C_{rss}		-	161	-	
Total Gate Charge	Q_g(10V)	V_{DD}=30V, I_D=20A, V_{GS}=10V	-	130	-	nC
Gate to Source Charge	Q_{gs}		-	24	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	34	-	
Turn on Delay Time	$t_{d(on)}$	V_{DD}=30V, I_D=20A, V_{GS}=10V, R_G=10 ,	-	30	-	ns
Rise time	t_r		-	28	-	
Turn off Delay Time	$t_{d(off)}$		-	70	-	
Fall Time	t_f		-	32	-	

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=30V, I_F=20A, dI_F/dt=100A/ s	-	72	-	ns
Reverse Recovery Charge	Q_{rr}		-	100	-	nC

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

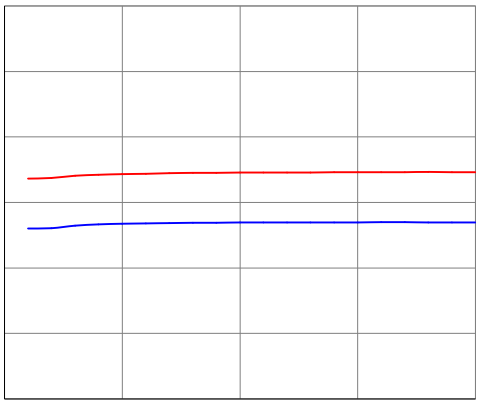
Figure 3. On-Resistance vs. Drain Current and Gate Voltage	Figure 4. Normalized On-Resistance vs. Junction Temperature
	

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

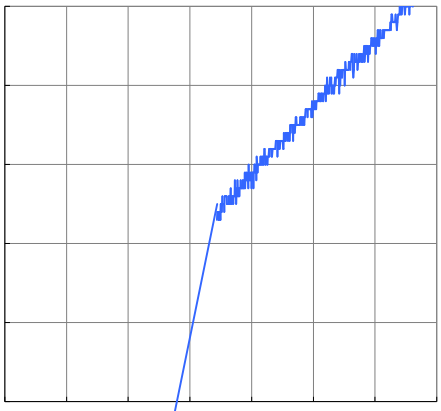
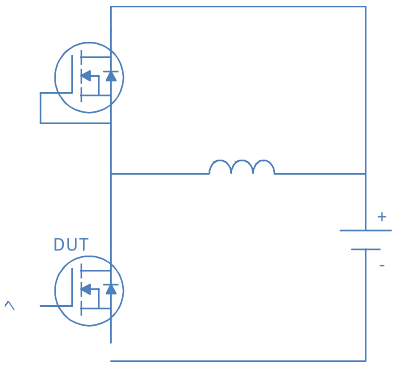
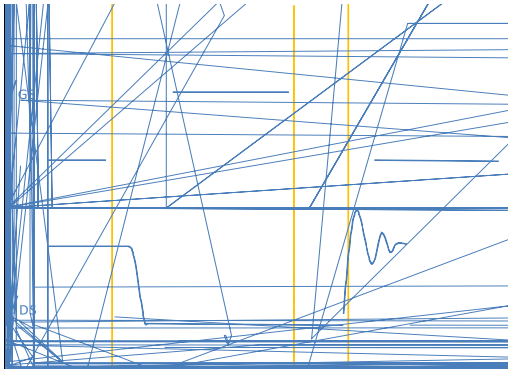
Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage	Figure 8. Typical Capacitance vs. Drain-to-Source Voltage
	

Figure 9. Maximum Safe Operating Area	Figure 10. Maximun Drain Current vs. Case Temperature

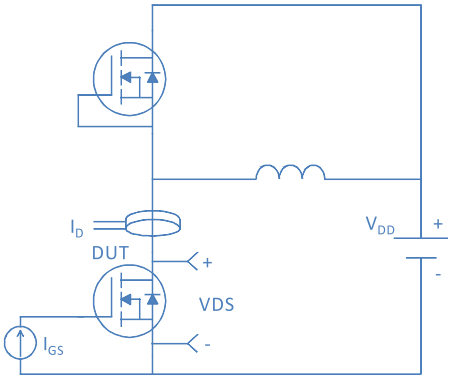
Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient

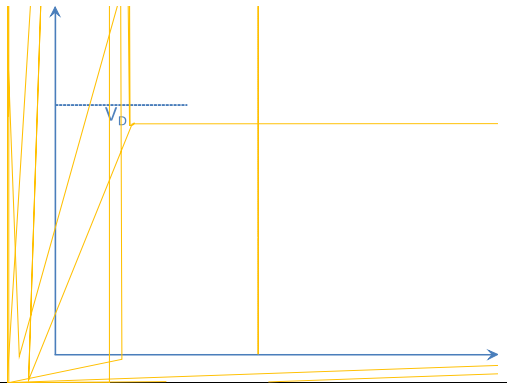
Inductive switching Test



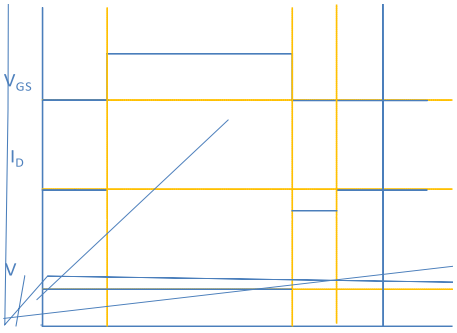


Gate Charge Test

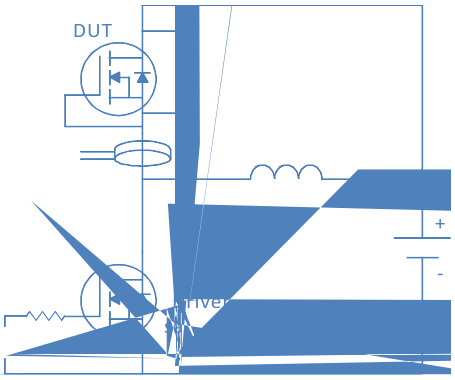




Uclamped Inductive Switching (UIS) Test

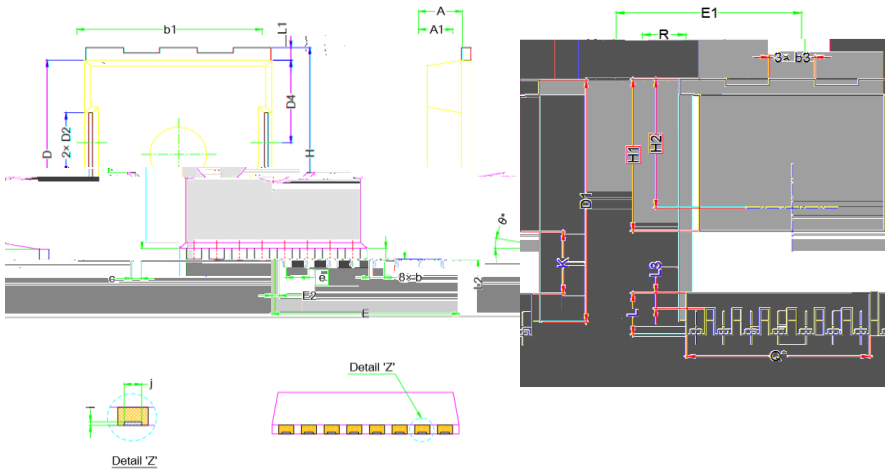


Diode Recovery Test



Package Outline

TOLL, 8 leads



SYMBOL	DIMENSIONS		
	MIN.	NOM.	MAX.
A	2.20	2.30	2.40
A1	1.70	1.80	1.90
b	0.70	0.80	0.90
b1	9.70	9.80	9.90
b3	1.90	2.00	2.10
c	0.40	0.50	0.60
D	10.28	10.38	10.48
D1	10.98	11.08	11.18
D2	3.20	3.30	3.40
D4	4.45	4.55	4.65
E	9.80	9.90	10.00
E1	8.00	8.10	8.20
E2	0.30	0.40	0.50
e	1.20 BSC		
H	11.58	11.68	11.78
H1	6.95 BSC		
H2	5.89 BSC		
i	0.10 REF.		
j	0.46 REF.		
K	2.80 REF.		
L	1.60	1.90	2.10
L1	0.60	0.70	0.80
L2	0.50	0.60	0.70
L3	0.60	0.70	0.80
N	8		
Q	6.80 REF.		
R	1.80	1.90	2.00
θ	10° REF.		