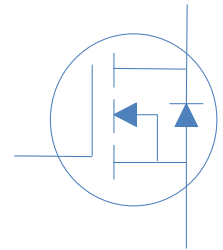
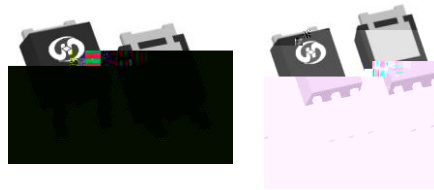


**65V N-Ch Power MOSFET**

$V_{DS}$	65	V
$R_{DS(on),typ}$	7.8	m
$I_D$ (Silicon Limited)	57	A



Part Number	Package	Marking
HGD090NE6A	TO-252	GD090NE6A
HGI090NE6A	TO-251	GI090NE6A

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

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	$I_D$	$T_C=25^{\circ}\text{C}$	57	A
		$T_C=100^{\circ}\text{C}$	41	
Drain to Source Voltage	$V_{DS}$	-	65	V
Gate to Source Voltage	$V_{GS}$	-	$\pm 20$	V
Pulsed Drain Current	$I_{DM}$	-	270	A
Avalanche Energy, Single Pulse	$E_{AS}$	$L=0.4\text{mH}, T_C=25^{\circ}\text{C}$	45	mJ
Power Dissipation	$P_D$	$T_C=25^{\circ}\text{C}$	63	W
Operating and Storage Temperature	$T_J, T_{stg}$	-	-55 to 175	$^{\circ}\text{C}$

**Absolute Maximum Ratings**

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	$R_{JA}$	50	$^{\circ}\text{C/W}$
Thermal Resistance Junction-Case	$R_{JC}$	2.4	$^{\circ}\text{C/W}$

Electrical Characteristics at  $T_j=25^\circ\text{C}$  (unless otherwise specified)

## Static Characteristics

Parameter	Symbol		typ	Unit
		65		V
			4.0	V
Zero Gate Voltage Drain Current		-	1	A
	$V_{GS}=0V, V_{DS}=60V, T_j=100^\circ\text{C}$	-	100	A

Fig 1. Typical Output Characteristics

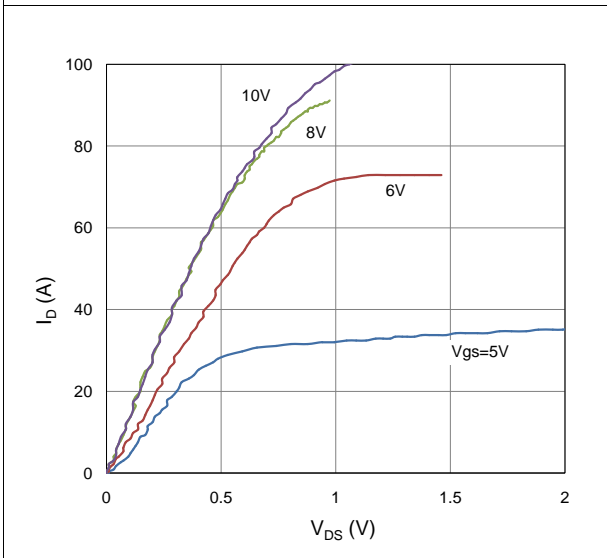


Figure 2. On-Resistance vs. Gate-Source Voltage

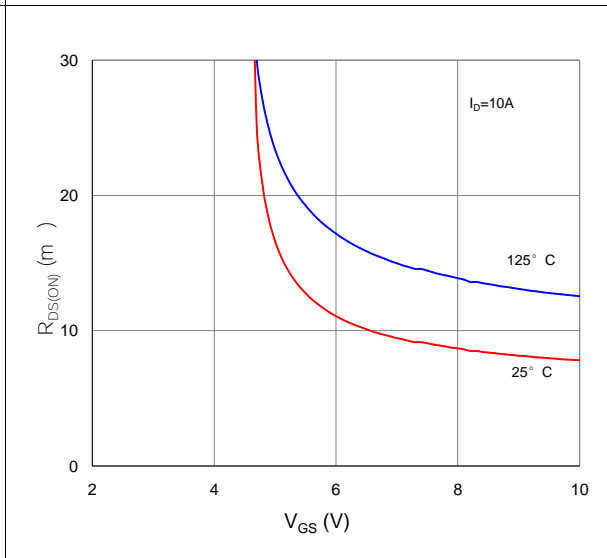


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

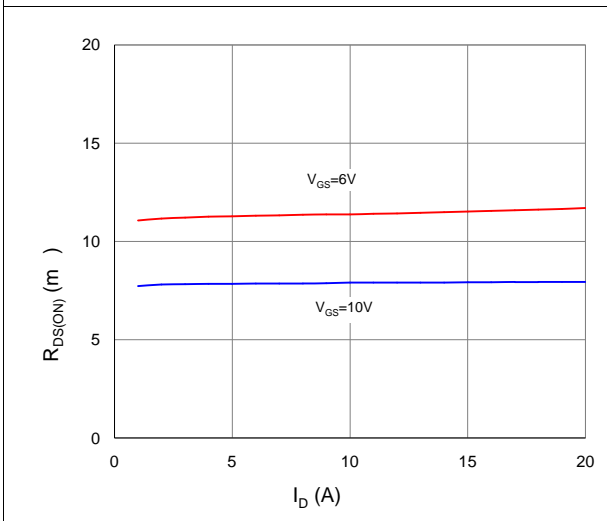


Figure 4. Normalized On-Resistance vs. Junction Temperature

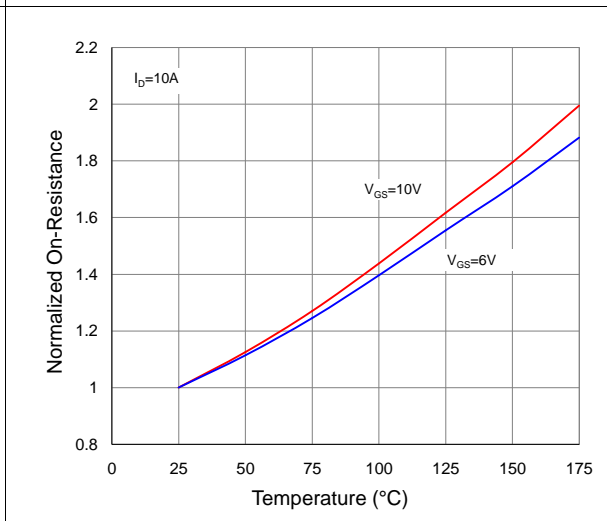


Figure 5. Typical Transfer Characteristics

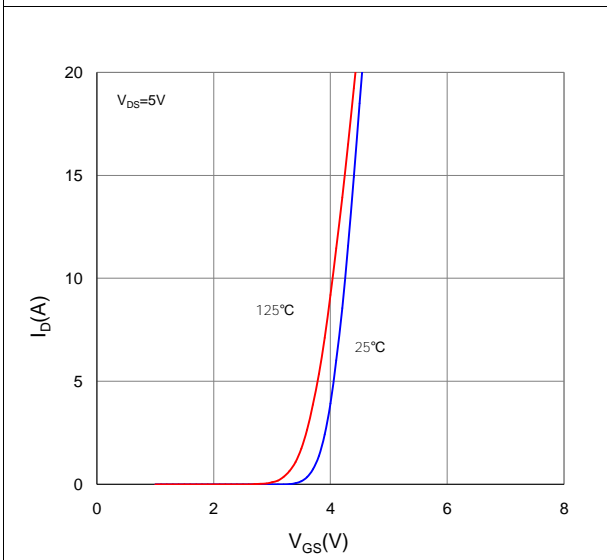


Figure 6. Typical Source-Drain Diode Forward Voltage

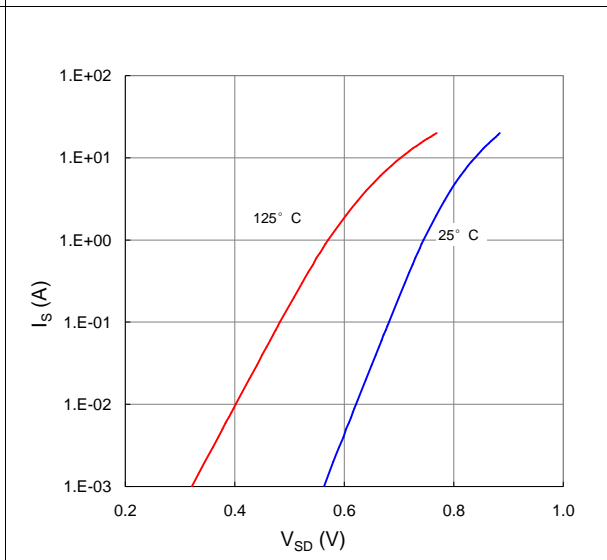


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

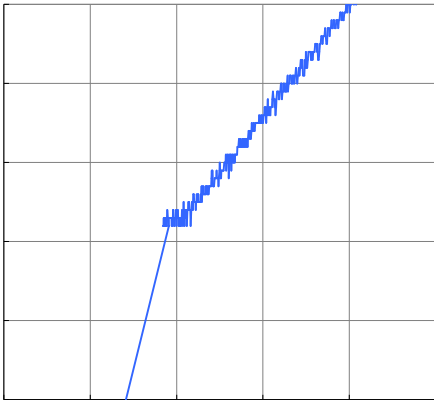


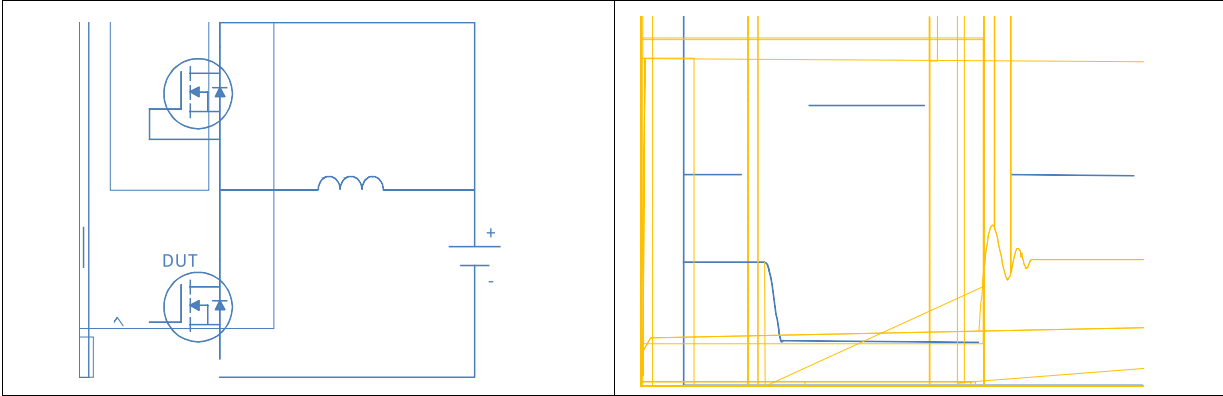
Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

Figure 9. Maximum Safe Operating Area

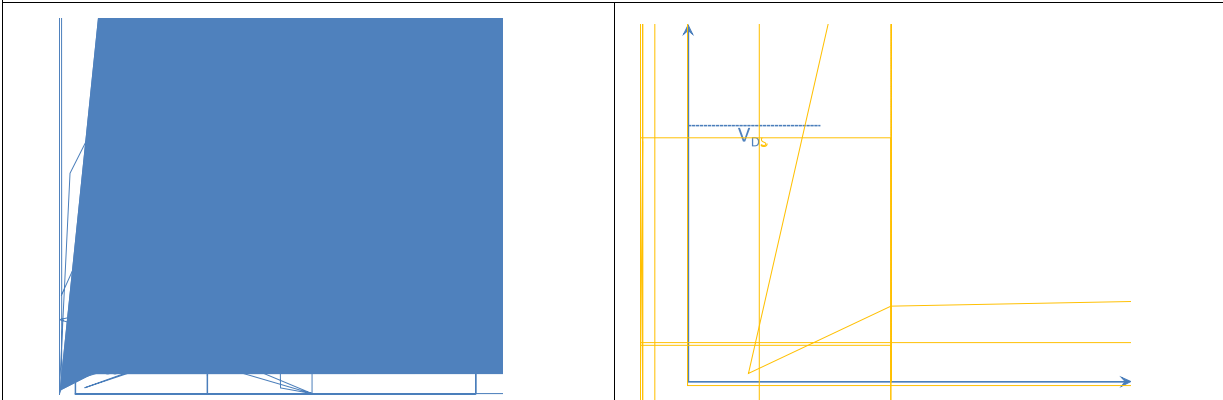
Figure 10. Maximum Drain Current vs. Case Temperature

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

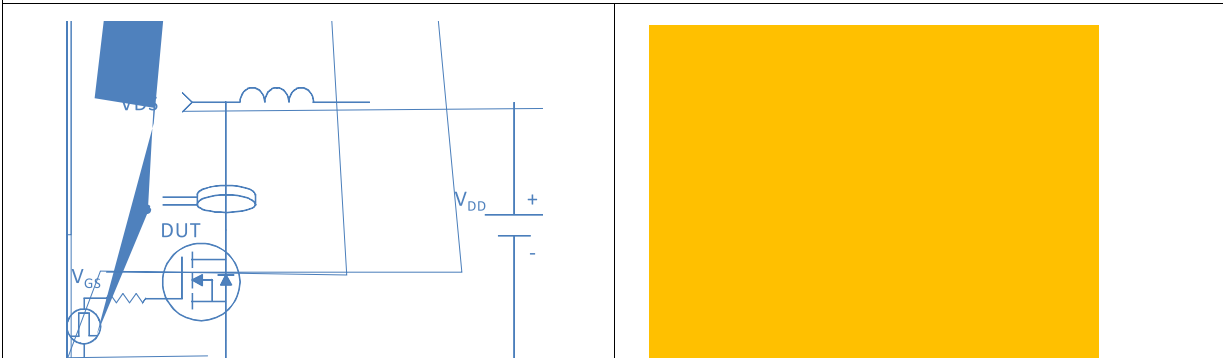
Inductive switching Test



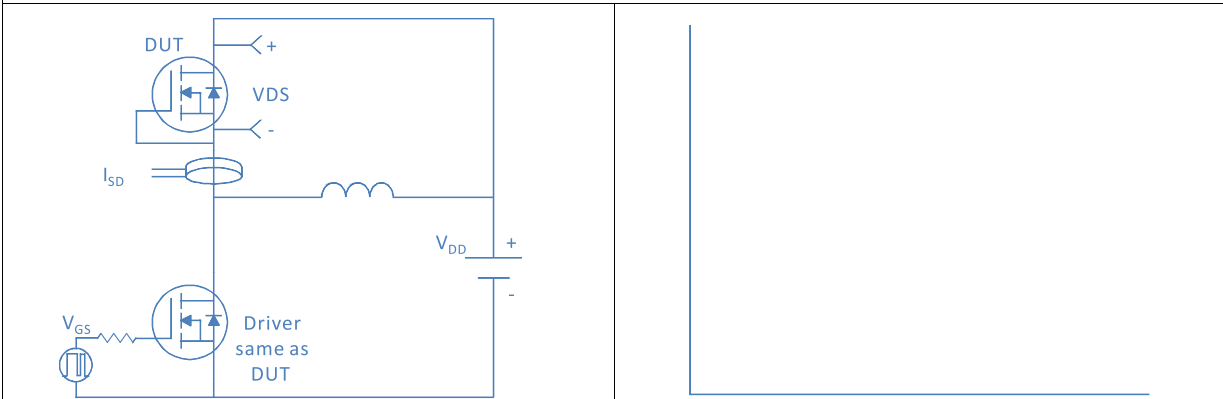
Gate Charge Test



Uclamped Inductive Switching (UIS) Test

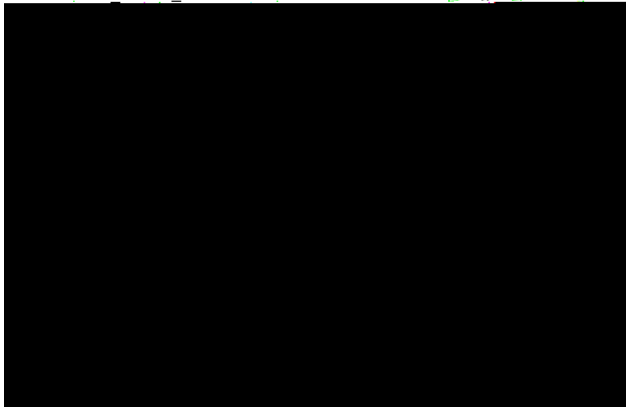


Diode Recovery Test

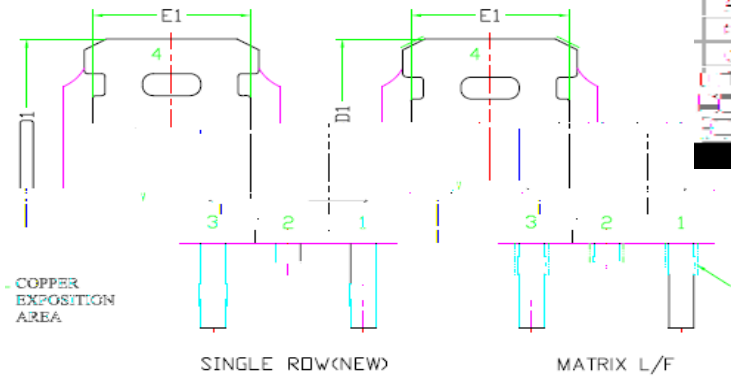


Package Outline

TO-252, 2 leads

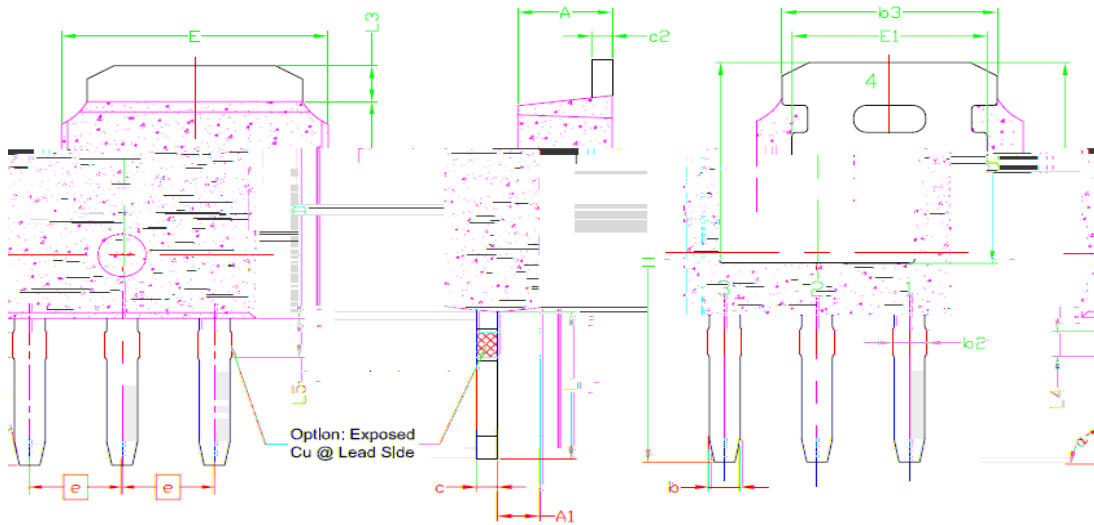


SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
E	6.40	6.60	6.731
L	1.40	1.52	1.77
L1	2.743 REF		
L2	0.508 BSC		
L3	0.89	--	1.27
L4	0.64	--	1.01
L5	--	--	--
D	6.00	6.10	6.223
H1	0.40	0.50	0.635
H2	0.40	0.50	0.635
H3	0.40	0.50	0.635
H4	0.40	0.50	0.635
H5	0.40	0.50	0.635
H6	0.40	0.50	0.635
H7	0.40	0.50	0.635
H8	0.40	0.50	0.635
H9	0.40	0.50	0.635
H10	0.40	0.50	0.635
H11	0.40	0.50	0.635
H12	0.40	0.50	0.635
H13	0.40	0.50	0.635
H14	0.40	0.50	0.635
H15	0.40	0.50	0.635
H16	0.40	0.50	0.635
H17	0.40	0.50	0.635
H18	0.40	0.50	0.635
H19	0.40	0.50	0.635
H20	0.40	0.50	0.635
H21	0.40	0.50	0.635
H22	0.40	0.50	0.635
H23	0.40	0.50	0.635
H24	0.40	0.50	0.635
H25	0.40	0.50	0.635
H26	0.40	0.50	0.635
H27	0.40	0.50	0.635
H28	0.40	0.50	0.635
H29	0.40	0.50	0.635
H30	0.40	0.50	0.635
H31	0.40	0.50	0.635
H32	0.40	0.50	0.635
H33	0.40	0.50	0.635
H34	0.40	0.50	0.635
H35	0.40	0.50	0.635
H36	0.40	0.50	0.635
H37	0.40	0.50	0.635
H38	0.40	0.50	0.635
H39	0.40	0.50	0.635
H40	0.40	0.50	0.635
H41	0.40	0.50	0.635
H42	0.40	0.50	0.635
H43	0.40	0.50	0.635
H44	0.40	0.50	0.635
H45	0.40	0.50	0.635
H46	0.40	0.50	0.635
H47	0.40	0.50	0.635
H48	0.40	0.50	0.635
H49	0.40	0.50	0.635
H50	0.40	0.50	0.635



Package Outline

TO-251, 3leads



SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
E	6.40	6.60	6.731
L	3.98	4.13	4.28
L3	0.89	--	1.27
L4	0.698 REF		
L5	0.972	1.099	1.226
D	6.00	6.10	6.223
H	11.05	11.25	11.45
b	0.64	0.76	0.88
b2	0.77	0.84	1.14
b3	5.21	5.34	5.46
e	2.286 BSC		
A	2.20	2.30	2.38
A1	0.89	1.04	1.15
c	0.46	0.50	0.60
c2	0.46	0.50	0.60
D1	5.10	--	--
E1	4.40	--	--
a	79° REF		