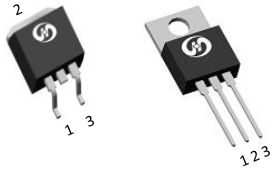
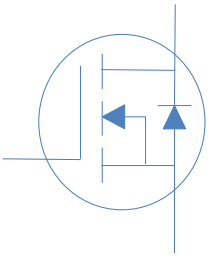
150V N-Ch Power MOSFET

V_{DS}		150	V
$R_{DS(on),typ}$	TO-263	16.0	m
$R_{DS(on),typ}$	TO-220	16.3	m
$I_{D\ (Sillicon\ Limited)}$		59	A





Part Number	Package	Marking
HGB195N15S	TO-263	GB195N15S
HGP195N15S	TO-220	GP195N15S

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℃	59	A
		T_C=100℃	42	
Drain to Source Voltage	V_{DS}	-	150	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	180	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.4mH, T_C=25℃	80	mJ
Power Dissipation	P_D	T_C=25℃	150	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to 175	℃

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	R_{JA}	46	℃/W
Thermal Resistance Junction-Case	R_{JC}	1	℃/W

Electrical Characteristics at T_j=25℃ (unless otherwise specified)

Static Characteristics

Par						
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250 A				
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250 A	2	3		
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=150V, T_j=25℃	-	-	1	
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	
Drain to Source on Resistance	$R_{DS(on)}$		-	16	19.2	m
Transconductance	g_{fs}	V_{DS}=5V, I_D=20A	-	55	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS} Open, f=1MHz	-	2.2	-	

Dynamic Characteristics

Input Capacitance	C_{iss}		-	1960	-	
Output Capacitance	C_{oss}	V_{GS}=0V, V_{DS}=75V, f=1MHz	-	130		
Reverse Transfer Capacitance	C_{rss}		-	8	-	
Total Gate Charge	Q_g(10V)		-	25	-	
Gate to Source Charge	Q_{gs}	V_{DD}=75V, I_D=20A, V_{GS}=10V	-	9	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	3	-	
Turn on Delay Time	$t_{d(on)}$		-	9	-	
Rise time	t_r	V_{DD}=75V, I_D=20A, V_{GS}=10V,	-	8	-	ns
Turn off Delay Time	$t_{d(off)}$	R_G=10 ,	-	15	-	
Fall Time	t_f		-	9	-	

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=75V, I_F=20A, dI_F/dt=100A/ s	-	60	-	ns
Reverse Recovery Charge	Q_{rr}		-	120	-	nC

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

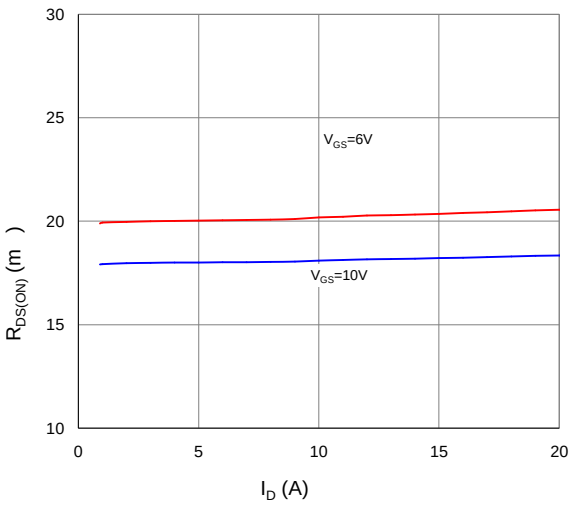
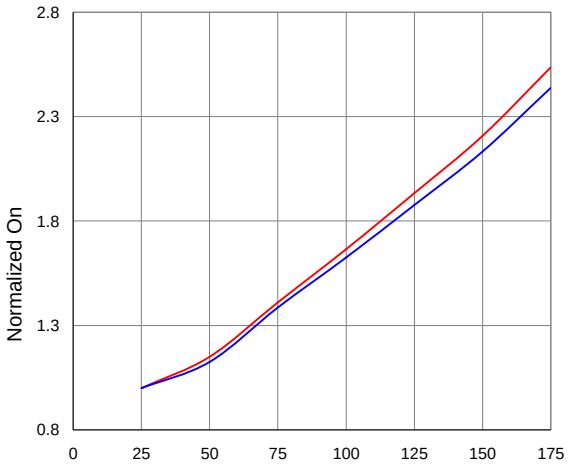
Figure 3. On-Resistance vs. Drain Current and Gate Voltage	Figure 4. Normalized On-Resistance vs. Junction Temperature
	

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

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

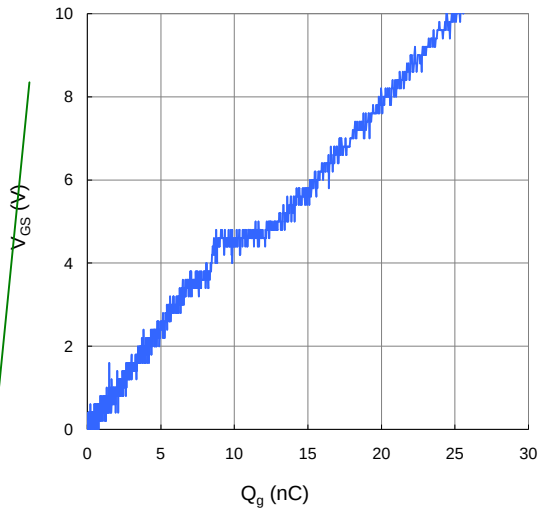


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

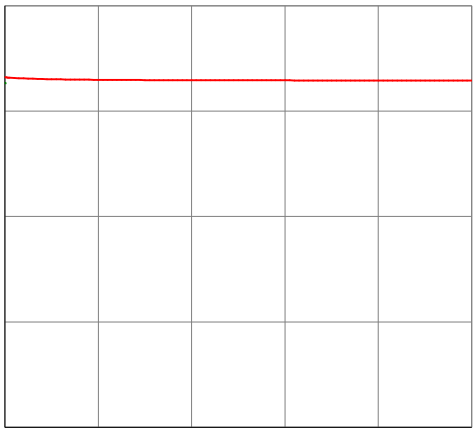
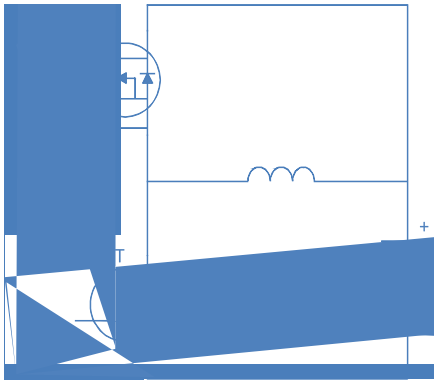


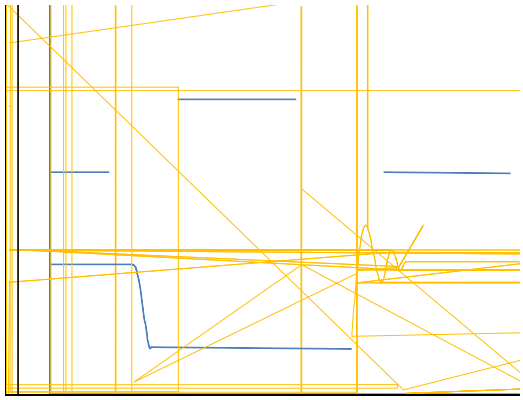
Figure 9. Maximum Safe Operating Area

Figure 10. Maximun Drain Current vs. Case Temperature

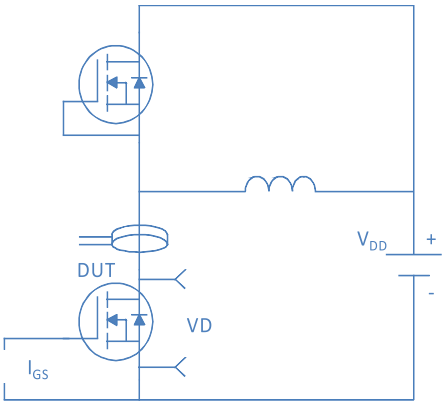
Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient

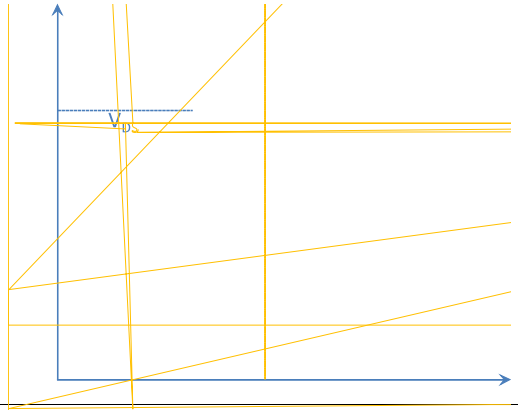
Inductive switching Test



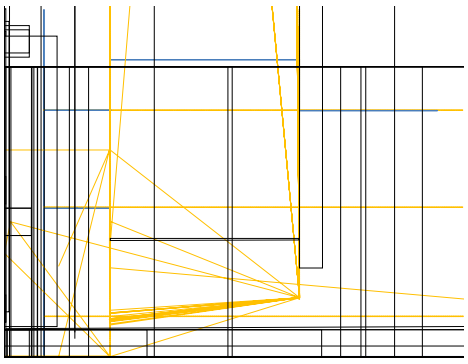


Gate Charge Test

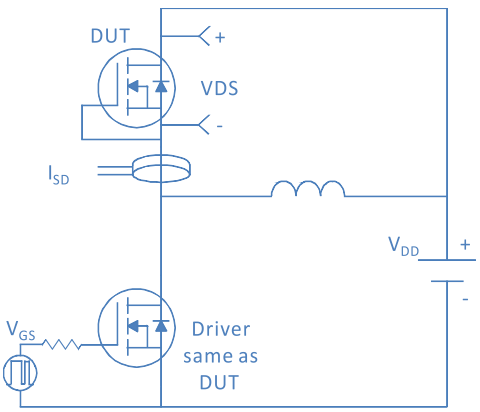


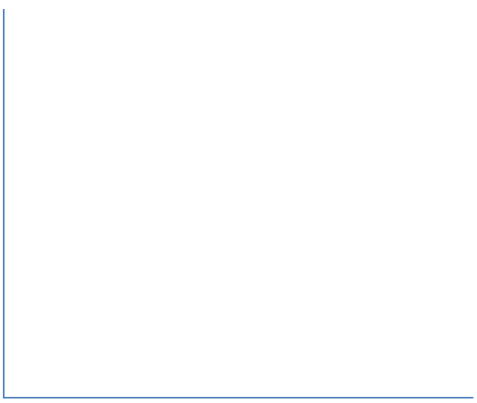


Uclamped Inductive Switching (UIS) Test



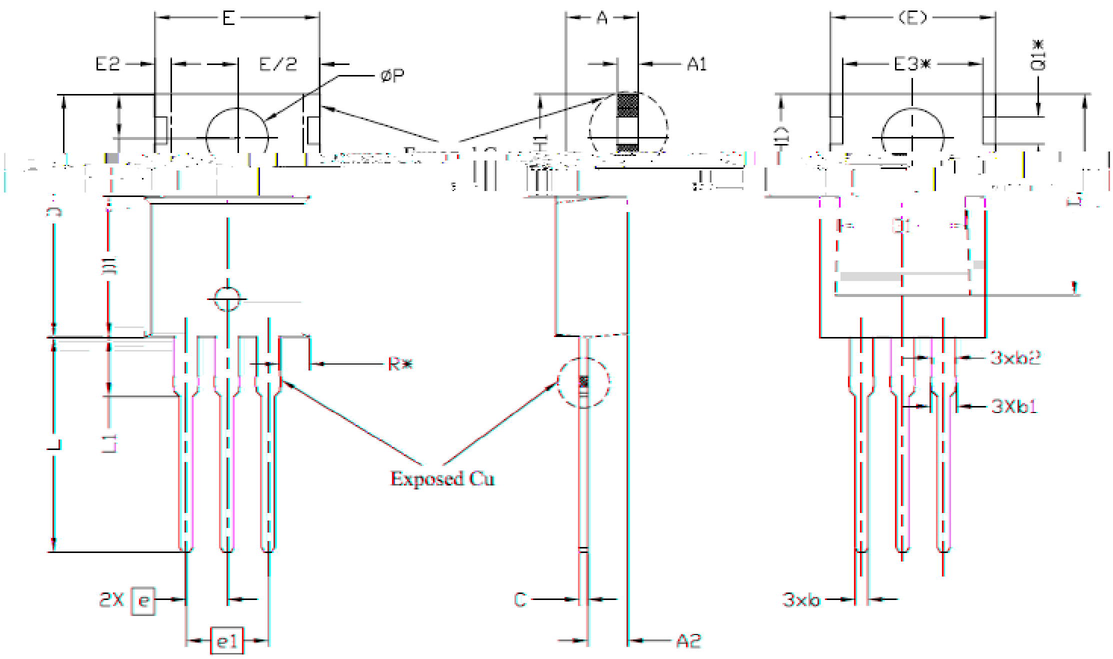
Diode Recovery Test





Package Outline

TO-220, 3 leads



SYMBOL	DIMENSIONS			NOTES
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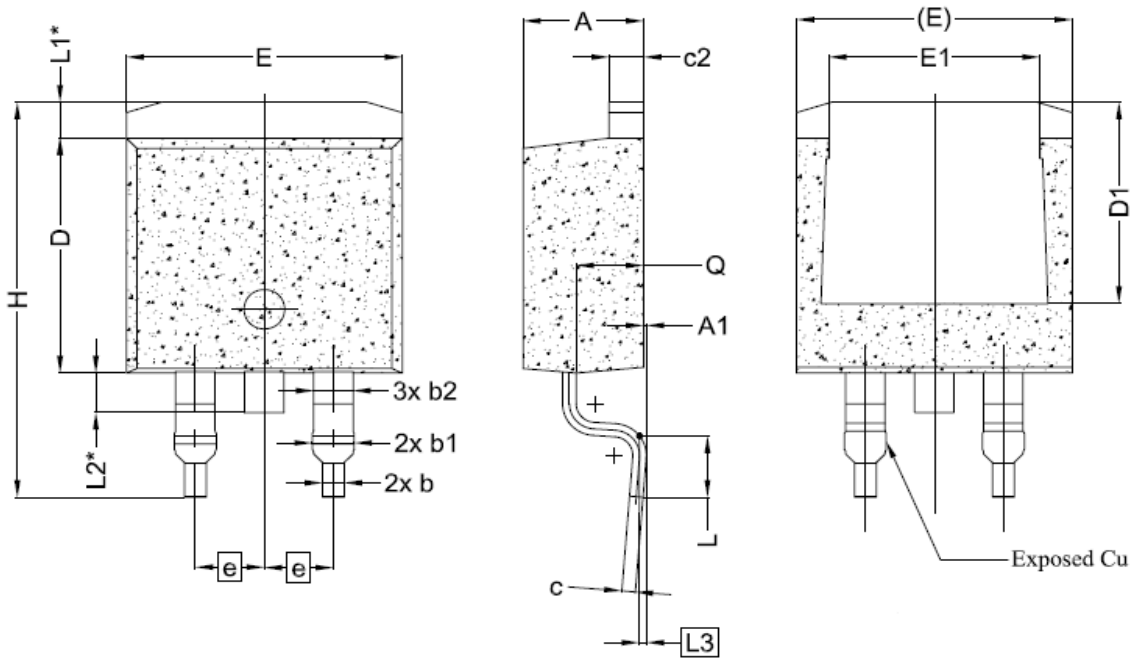
Package Outline

TO-263, 3 leads



			A
			b
		1,70	b2
			c
			c2
			D
			D1
			E
			E1
	2,54 BSC		e
4,61	15,00	15,88	H
1,78	2,32	2,79	L
	1,35 REF.		L1
	1,50 REF.		L2
	0,25 BSC		L3
2,30	2,48	2,70	Q