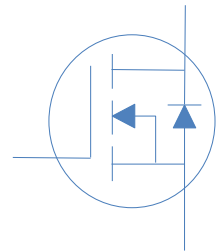


80V N-Ch Power MOSFET

V_{DS}		80	V
R	$V_{GS}=10V$	4.3	m Ω
R	$V_{GS}=4.5V$	5.9	m Ω
I_D (Silicon Limited)		63	A



Part Number	Package	Marking
HGA058N08SL	TO-220F	GA058N08SL

Absolute Maximum Ratings at T_J

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_C	63	A
		T_C	45	
Drain to Source Voltage	V_{DS}	-	80	V
Gate to Source Voltage	V_{GS}	-	± 20	V
Pulsed Drain Current	I_{DM}	-	380	A
Avalanche Energy, Single Pulse	E_{AS}	$L=0.3mH, T_C$	240	mJ
	P_D	T_C	41.7	W
	T_J, T_{stg}	-	-55 to 175	

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Case	R	3.6	
Thermal Resistance Junction-Ambient	R	65	

Electrical Characteristics at T_j
Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min		max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	80	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	1	1.7	2.4	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0V, V_{DS}=80V, T_j$	-	-	1	μA
		$V_{GS}=0V, V_{DS}=80V, T_j$	-	-	100	
Gate to Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Drain to Source on Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$ TO-220F	-	4.3	5.8	$m\Omega$
		$V_{GS}=4.5V, I_D=20A$ TO-220F	-	5.9	8.0	$m\Omega$
Transconductance	g	$V_{DS}=5V, I_D=20A$	-	65	-	S
Gate Resistance	R_G	$V_{GS}=0V, V_{DS}$	-	1.5	-	Ω

Dynamic Characteristics

	C_{iss}	$V_{GS}=0V, V_{DS}$	-	3130	-	
	C_{oss}		-	385	-	
	C_{rss}		-	18	-	
Total Gate Charge (10V)	$Q_g(10V)$	$V_{DD}=40V, I_D=20A, V_{GS}=10V$	-	46	-	nC
Total Gate Charge (4.5V)	$Q_g(4.5V)$		-	22	-	
Gate to Source Charge	Q_{gs}		-	9	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	8	-	
Turn on Delay Time	$t_{d(on)}$	$V_{DD}=40V, I_D=20A, V_{GS}=10V, R_G=10\Omega,$	-	11	-	ns
Rise time	t_r		-	7	-	
	t		-	38	-	
Fall Time	t		-	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}	$V_R=40V, I_F=20A, dl_F$ μs	-	48	-	ns
Reverse Recovery Charge	Q_{rr}		-	190	-	nC

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

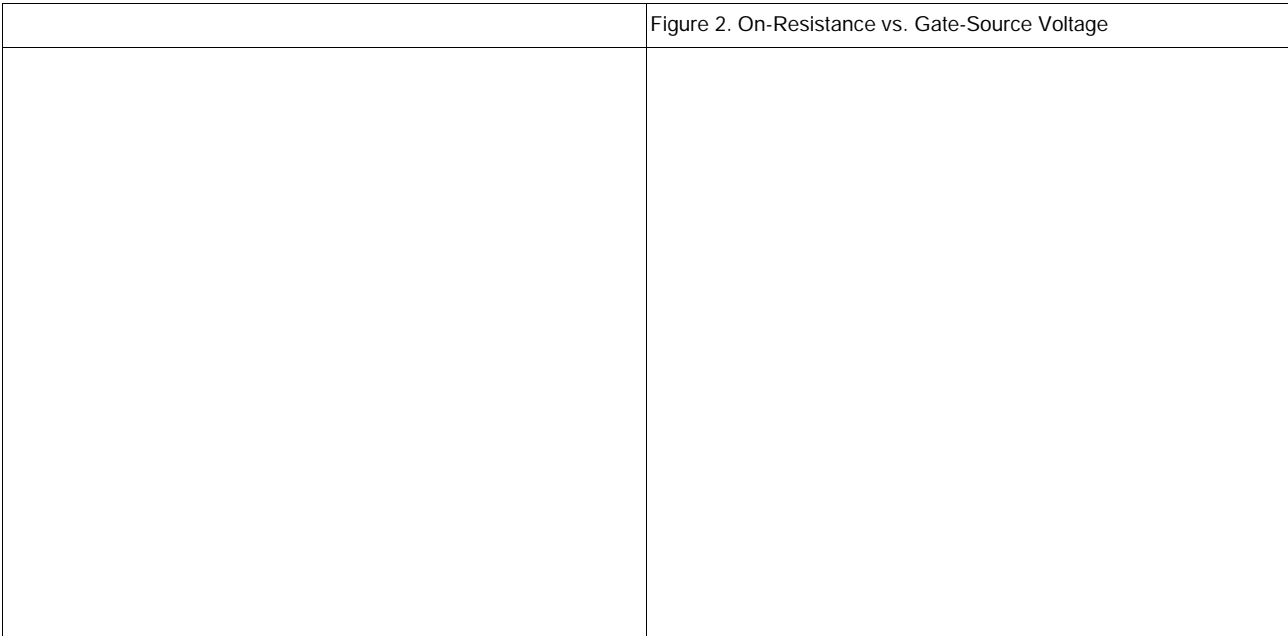
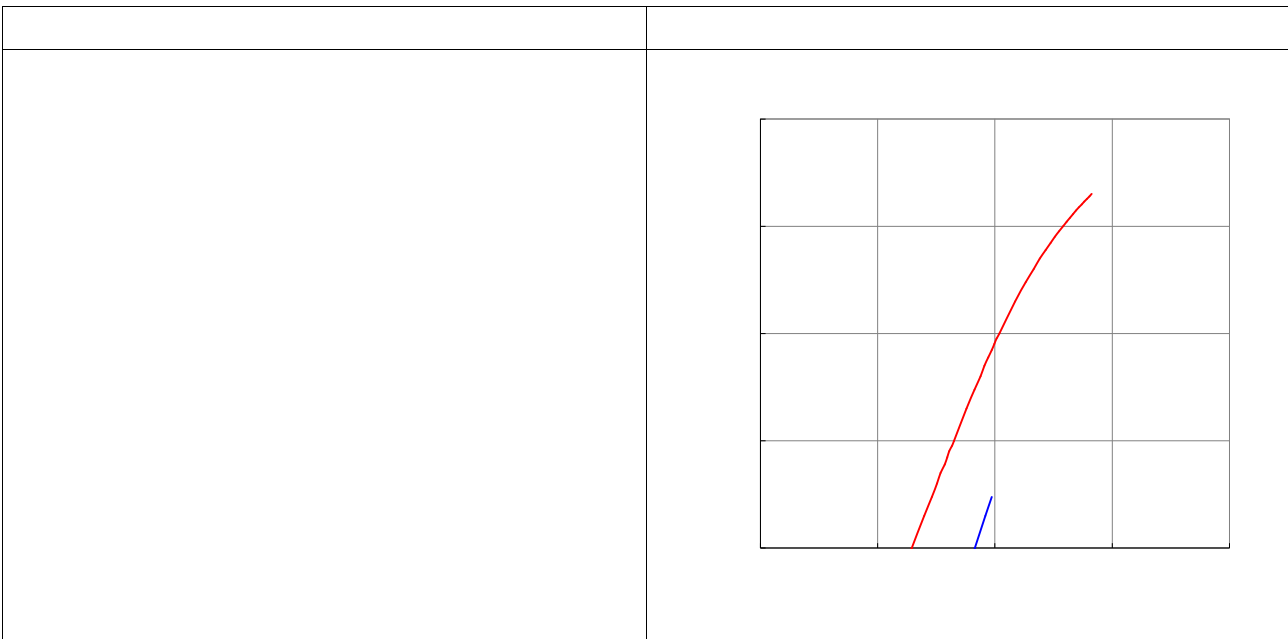
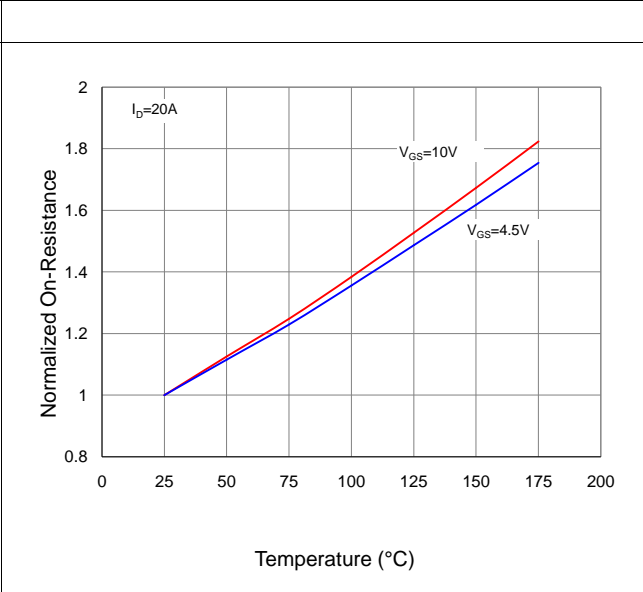
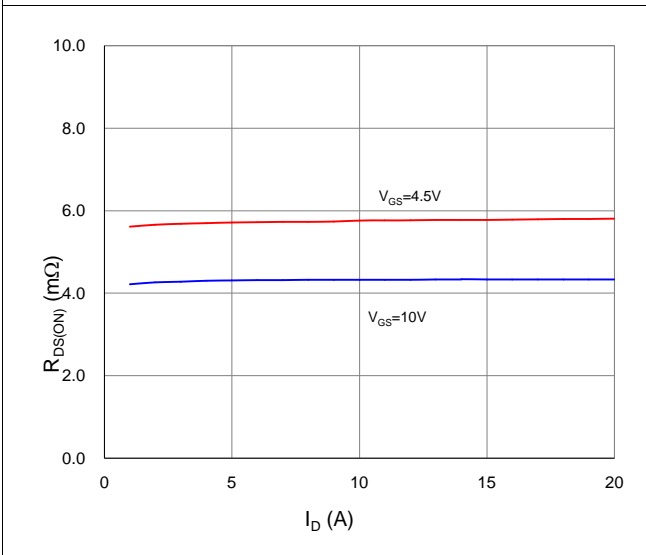
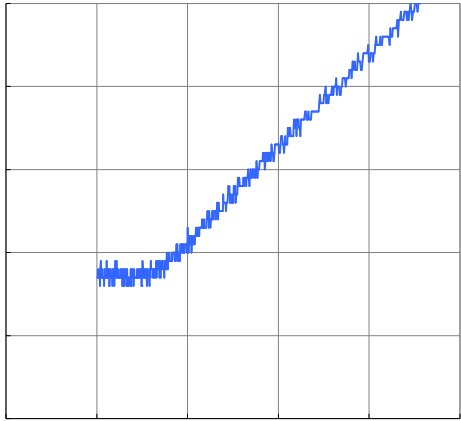


Figure 3. On-Resistance vs. Drain Current and Gate Voltage



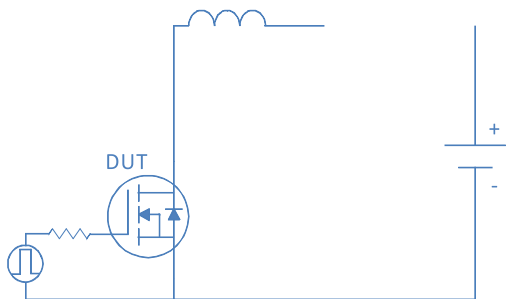


Inductive switching Test

--	--

Gate Charge Test

--	--



Diode Recovery Test

--	--

TO-220F, 3 leads

Symbol	Min	Nom	Max
A	9.96	10.16	10.36
A1		7	
A2	3.08	3.18	3.28
A3	9.26	9.46	9.66
B1	15.67	15.87	16.07
B2	4.50	4.70	4.90
B3	6.48	6.68	6.88
C	3.20	3.30	3.40
C1	15.60	15.80	16.00
C2	9.55	9.75	9.95
D		2.54	
D1			1.47
D2	0.70	0.80	0.90
D3	0.25	0.35	0.45
E	2.34	2.54	2.74
E1		0.70	
E2		1.0x45°	
E3	0.45	0.50	0.60
E4	2.56	2.76	2.96
α (degree)		30°	