HGN190N15S P-1

150V N-Ch Power MOSFET

V_{DS}	150	V
R	15	m :
R	19	m :
I	60	A
I	60	A

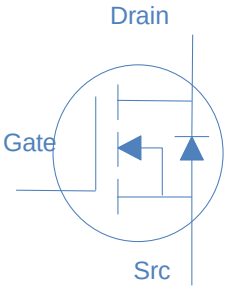
Feature

- Optimized for high speed smooth switching
- Enhanced Body diode dv/dt capability
- Enhanced Avalanche Ruggedness
- 100% UIS Tested, 100% Rg Tested
- Lead Free, Halogen Free

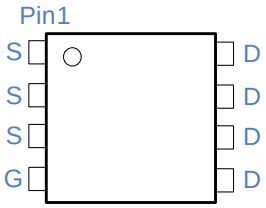
Application

- DC-DC Conversion
- Hard Switching and High Speed Circuit
- Power Tools
- UPS
- SSR

DFN5x6



Part Number		
HGN190N15S	DFN5x6	GN190N15S



Absolute Maximum Ratings at T_j

Parameter	Symbol	Conditions	Value	Unit
	I_D	T_C	60	A
		T_C	38	
		T_C	60	
Drain to Source Voltage	V_{DS}	-	150	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	120	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.3mH, T_C	184	mJ
Power Dissipation	P_D	T_C	125	
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to150	

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Case	R æC	1	
Thermal Resistance Junction-Ambient	R æA	50	

Electrical Characteristics at T_j

Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
	V	V_{GS}=0V, I_D=250 PA	150	-	-	V
Gate Threshold Voltage	V	V_{GS}=V_{DS}, I_D=250 PA	2	3	4	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=150V, T_j	-	-	1	PA
		V_{GS}=0V, V_{DS}=150V, T_j	-	-	100	
	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Drain to Source on Resistance	R	V_{GS}=10V, I_D=20A	-	15	19	m :
Transconductance	g	V_{DS}=5V, I_D=20A	-	50	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS}	-	3.5	-	:

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}	-	2275	-	pF
Output Capacitance	C_{oss}		-	165	-	
	C_{rss}		-	5.5	-	
Total Gate Charge	Q_g	V_{DD}=75V, I_D=20A, V_{GS}=10V	-	27	-	nC
Gate to Source Charge	Q_{gs}		-	9	-	
	Q_{gd}		-	2	-	
Turn on Delay Time	t	V_{DD}=75V, I_D=20A, V_{GS}=10V, R_G=10 : ,	-	12	-	ns
Rise time	t_r		-	4	-	
	t		-	24	-	
Fall Time	t		-	5	-	

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 R	-	90	-	ns
Reverse Recovery Charge	Q_{rr}		-	234	-	nC

Fig 1. Typical Output Characteristics

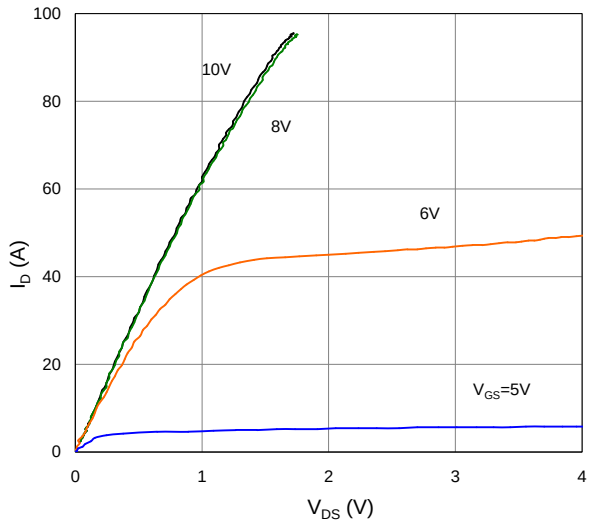


Figure 2. On-Resistance vs. Gate-Source Voltage

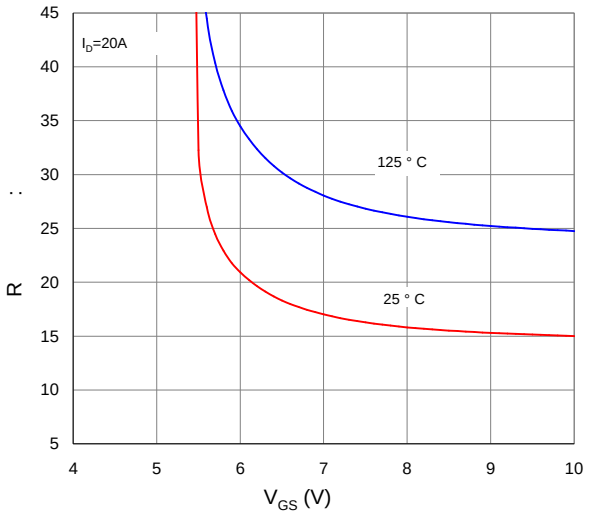
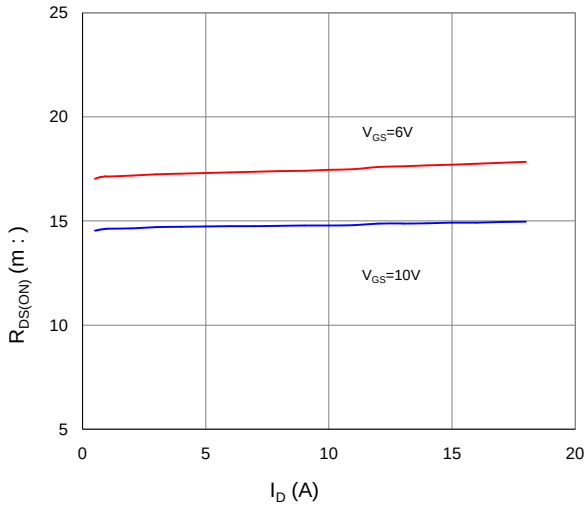


Figure 3. On-Resistance vs. Drain Current and Gate Voltage



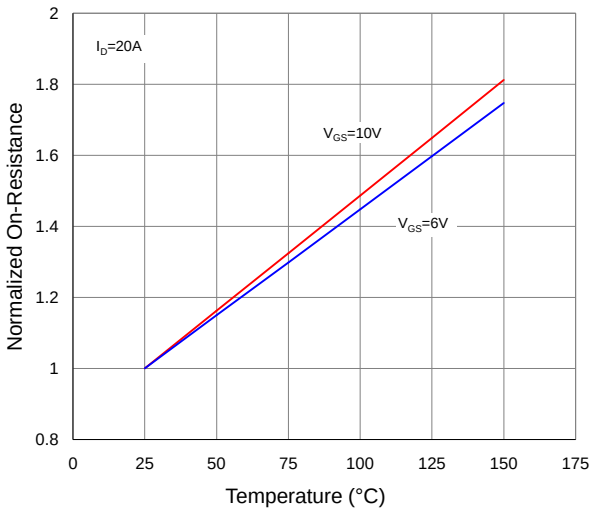
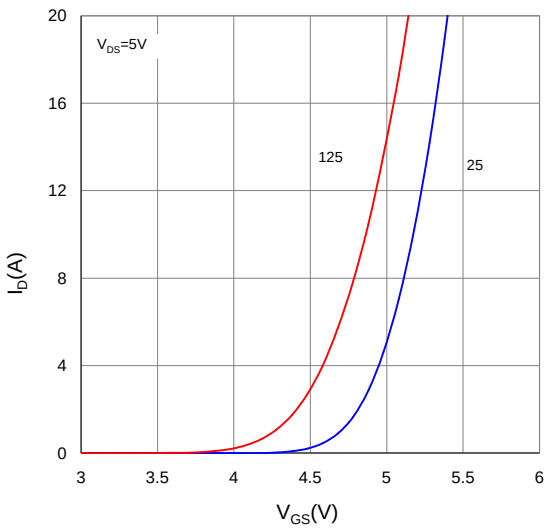


Figure 6. Typical Source-Drain Diode Forward Voltage



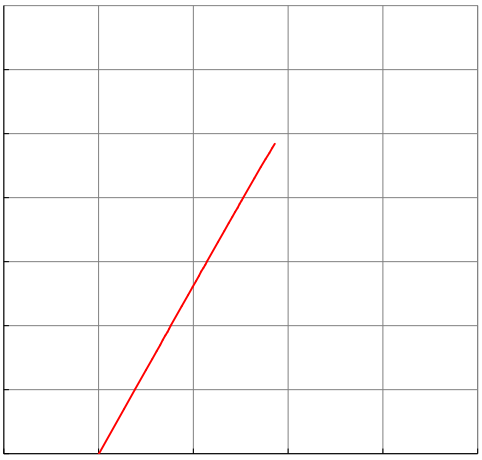


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

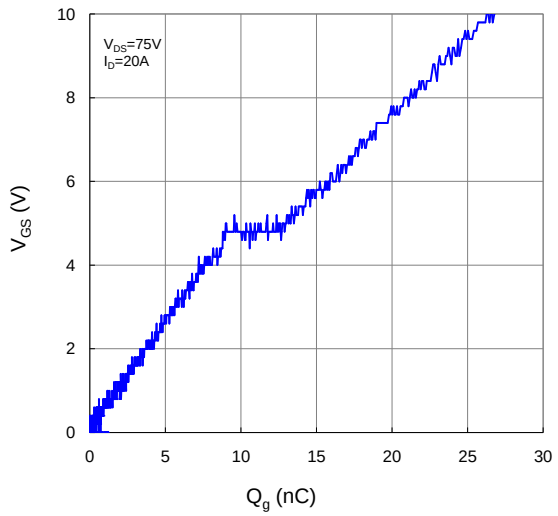
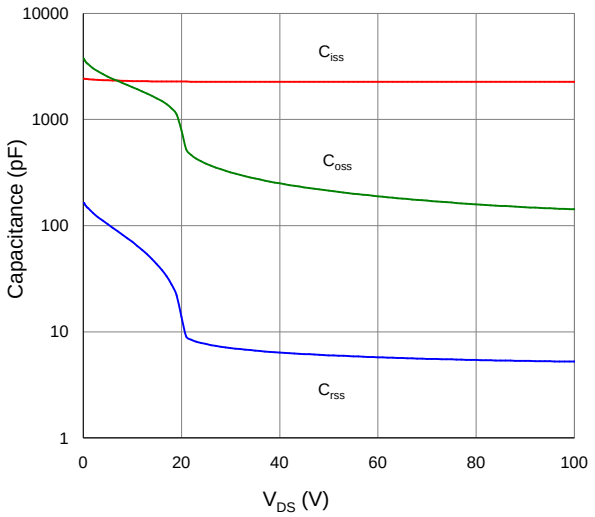


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage



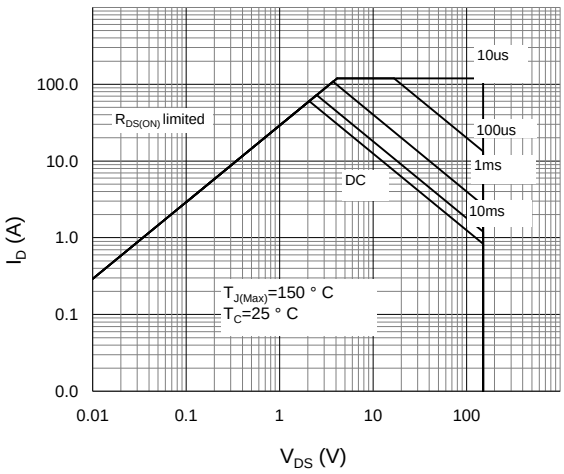
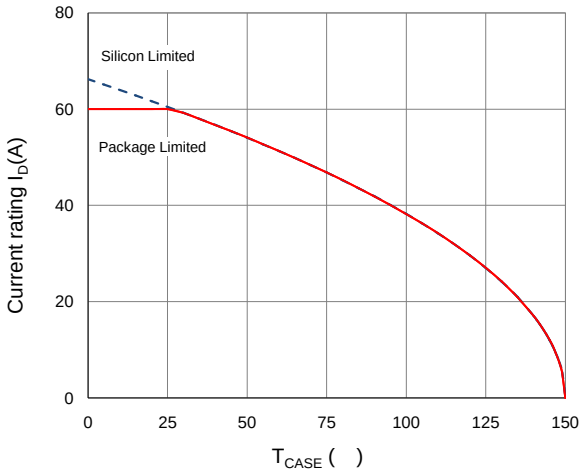
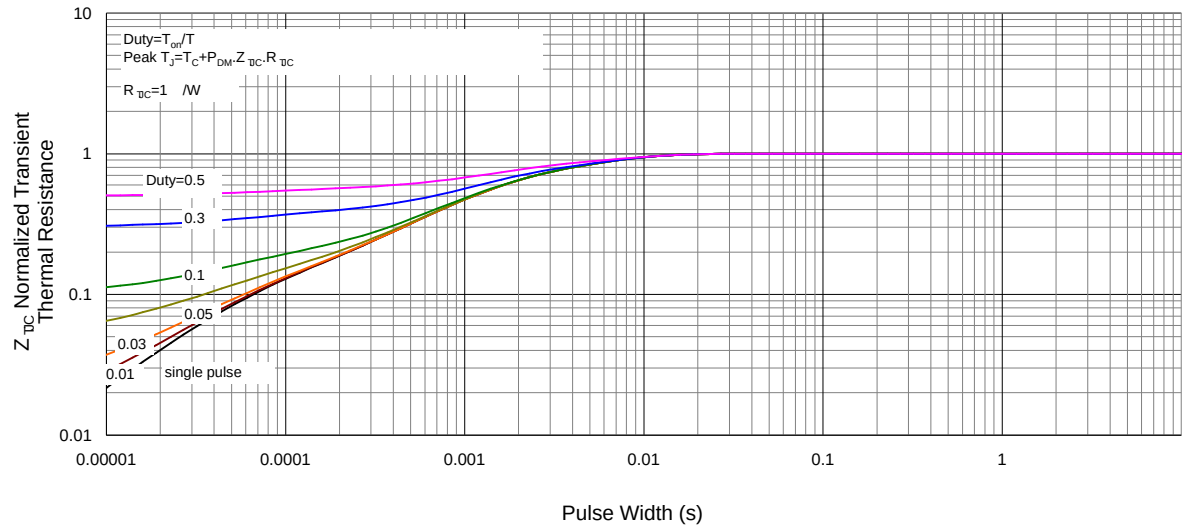


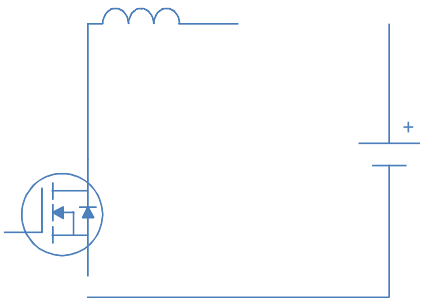
Figure 10. Maximun Drain Current vs. Case Temperature





Inductive switching Test	

Gate Charge Test	

Diode Recovery Test	

DFN5x6_P, 8 Leads

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A3	0.254 REF		0.010REF	
D	4.680	5.120	0.184	0.202
E	5.900	6.126	0.232	0.241
D1	3.610	4.110	0.142	0.162
E1	3.380	3.780	0.133	0.149
D2	4.800	5.000	0.189	0.197
E2	5.674	5.826	0.223	0.229
k	1.100	1.390	0.043	0.055
b	0.330	0.510	0.013	0.020
e	1.270TYP		1.270TYP	
L	0.510	0.711	0.020	0.028
L1	0.424	0.576	0.017	0.023
H	0.410	0.726	0.016	0.029
θ	0^{o}	12^{o}	0^{o}	12^{o}