HGN070N12S P-1

120V N-Ch Power MOSFET

Feature

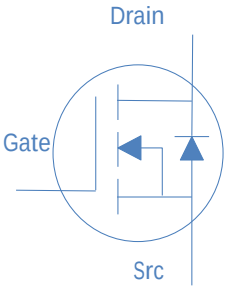
- High Speed Power Switching
- Enhanced Body diode dv/dt capability
- Enhanced Avalanche Ruggedness
- 100% UIS Tested, 100% Rg Tested
- Lead Free, Halogen Free

V_{DS}		120	V
$R_{DS(on),typ}$	V_{GS}=10V	6	mΩ
$I_{D\ (Sillicon\ Limited)}$		99.3	A
$I_{D\ (Package\ Limited)}$		60	A

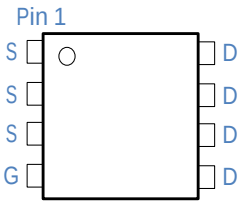
Application

- Synchronous Rectification in SMPS
- Hard Switching and High Speed Circuit
- DC/DC in Telecoms and Inductrial

DFN5x6



Part Number	Package	Marking
HGN070N12S	DFN5*6	GN070N12S



Absolute Maximum Ratings at T_j

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_C	99	A
		T_C	63	
Continuous Drain Current (Package Limited)		T_C	60	
Drain to Source Voltage	V_{DS}	-	120	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	320	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.4mH, T_C	500	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-Ambient	$R_{\theta JA}$	50	
Thermal Resistance Junction-Case	$R_{\theta JC}$	1	

Electrical Characteristics at T_j

Static Characteristics

Parameter	Symbol	Conditions	Value min	Value typ	Value max	Unit
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250µA	120	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250µA	2.0	3	4.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=120V, T_j	-	-	1	µA
		V_{GS}=0V, V_{DS}=120V, T_j	-	-	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	-	6	7	mΩ
Transconductance	g	V_{DS}=5V, I_D=20A	-	80	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS}	-	2.5	-	Ω

Dynamic Characteristics

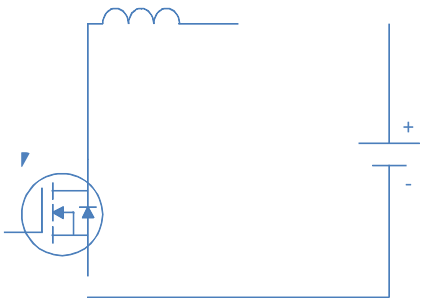
Input Capacitance	C_{iss}					
		V_{GS}=0V, V_{DS}			-	pF
	C_{rss}					

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	

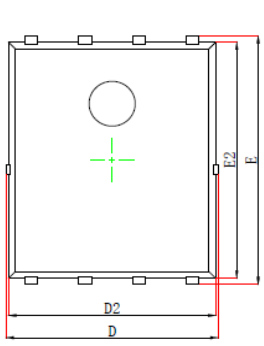
Gate Charge Test	

Uclamped Inductive Switching (UIS) Test	
	

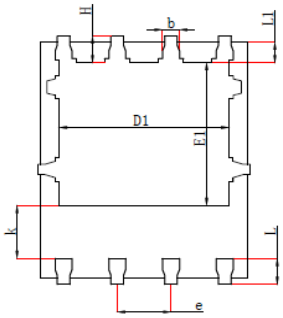
Diode Recovery Test	

Package Outline

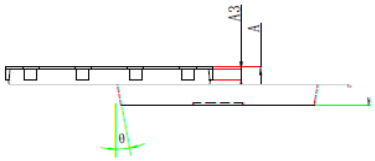
DFN5x6_P, 8 Leads



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

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	5.990	6.130	0.236	0.244
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	5.640	5.840	0.222	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	0.023	0.424	0.576	0.017
H	0.016	0.029	0.410	0.[illegible]
θ	0°	12°	0°	12°