60V N-Ch Power MOSFET

Feature

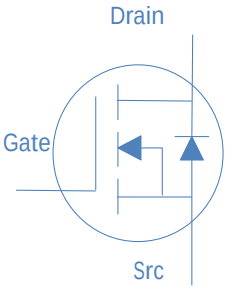
- High Speed Power Switching
- Enhanced Body diode dv/dt capability
- Enhanced Avalanche Ruggedness
- 100% UIS Tested, 100% Rg Tested
- Lead Free, Halogen Free

$I_{D\ (Sillicon\ Limited)}$	152	A
$I_{D\ (Package\ Limited)}$	60	A

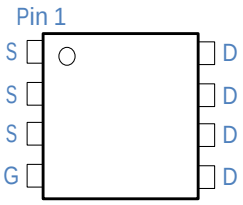
Application

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

DFN5x6



Part Number	Package	Marking
HGN027N06S	DFN5*6	GN027N06S



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	152	A
		T_C=100	96	
Continuous Drain Current (Package Limited)		T_C=25	60	
Drain to Source Voltage	V_{DS}	-	60	V
			±20	V
Pulsed Drain Current	I_{DM}	-	400	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.4mH, T_C=25	320	mJ
Power Dissipation	P_D	T_C=25	114	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to150	

Absolute Maximum Ratings

	Symbol	Max	Unit
	$R_{\theta JA}$		/W
	$R_{\theta JC}$	1.1	/W

Electrical Characteristics at T_j=25 (unless otherwise specified)

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	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250μA	2.0	2.8	4.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=60V, T_j=25	-	-	1	μA
		V_{GS}=0V, V_{DS}=60V, T_j=100	-	-	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	-	2.2	2.7	mΩ
Transconductance	g_{fs}	V_{DS}=5V, I_D=20A	-	60	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS} Open, f=1MHz	-	2.0	-	Ω

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=30V, f=1MHz			-	pF
Reverse Transfer Capacia k	C_{rss}					

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

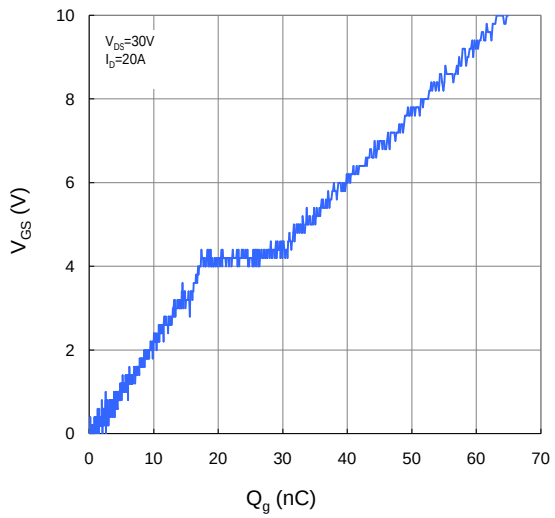


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

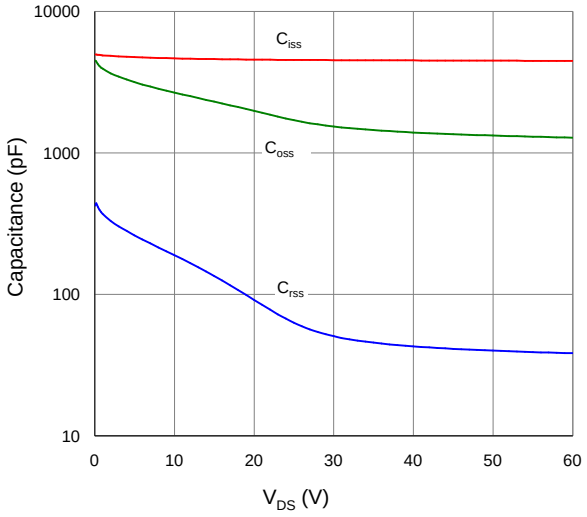


Figure 9. Maximum Safe Operating Area

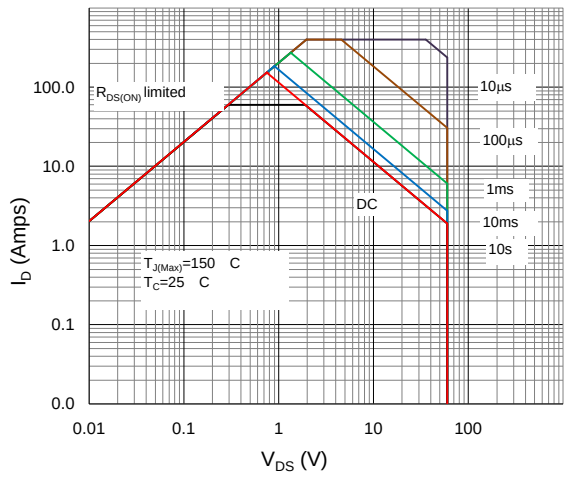


Figure 10. Maximun Drain Current vs. Case Temperature

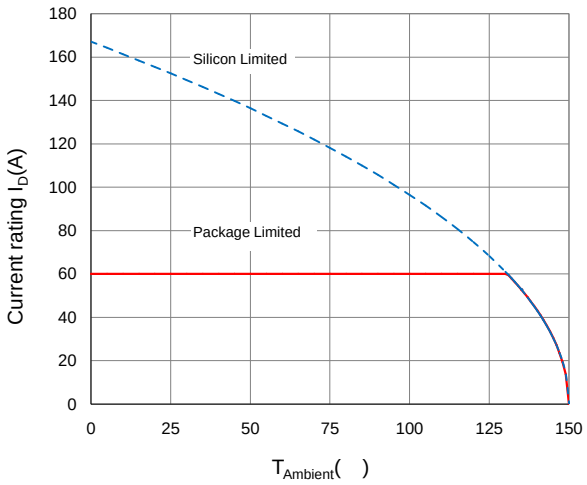
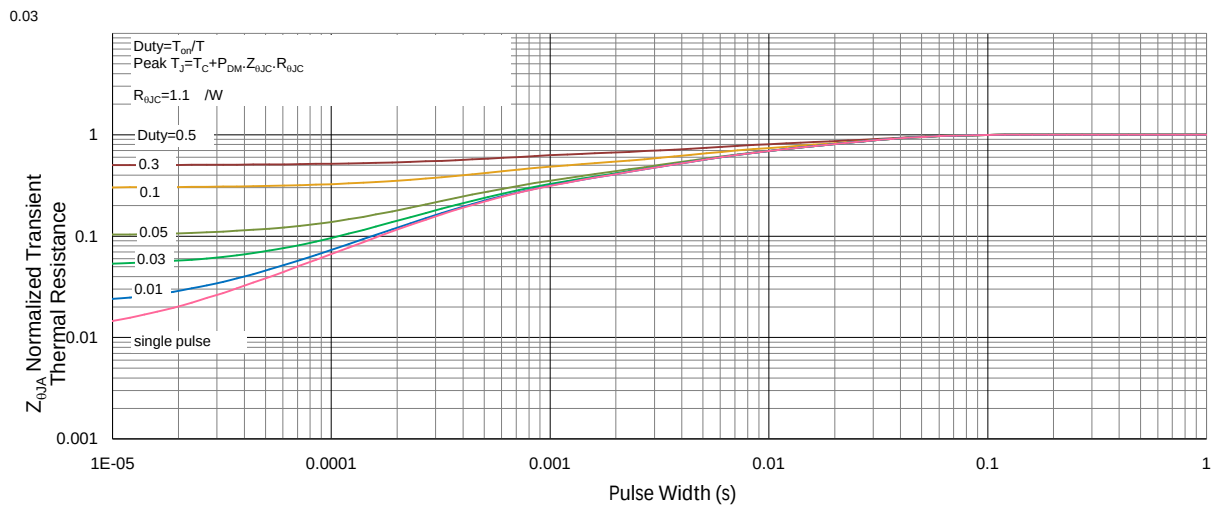
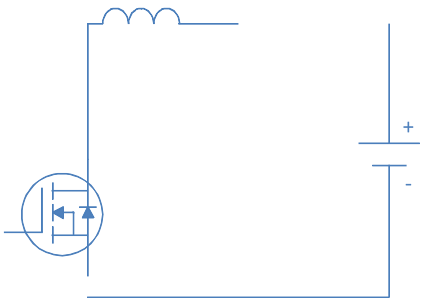


Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient



Inductive switching Test	

Gate Charge Test	

Uclamped Inductive Switching (UIS) Test	
	

Diode Recovery Test	

DFN5x6_P, 8 Leads