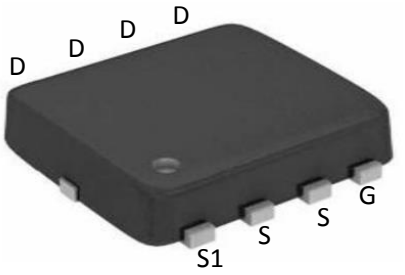
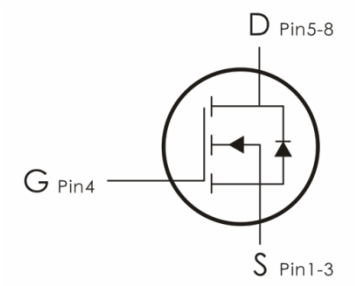
Description：

This N-Channel MOSFET uses advanced trench technology to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency fast switching applications.





Features：

1) V_{DS}=100V,I_D=4.1A,$R_{DS(ON)}$=140mΩ @V_{GS}=10V
2) Improved dv/dt capability
3) Fast switching
4) 100% EAS Guaranteed
5) Green Device Available.

Absolute Maximum Ratings： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current-Continuous (TC=25℃)	4.1	A
	Continuous Drain Current-TC=100℃	3.1	
I_{DM}	Drain Current – Pulsed[1]	20	A
E_{AS}	Single Pulse Avalanche Energy[2]	---	mJ
P_D	Power Dissipation (TC=25℃)	3.5	W
	Power Dissipation – Derate above 25℃	2	W/℃
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	---	℃/W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	81	

Package Marking and Ordering Information：

Part NO.	Marking	Package
ZH130NG	**H130N**	DNF3*3-8

Electrical Characteristics： (T_C=25℃ unless otherwise noted)

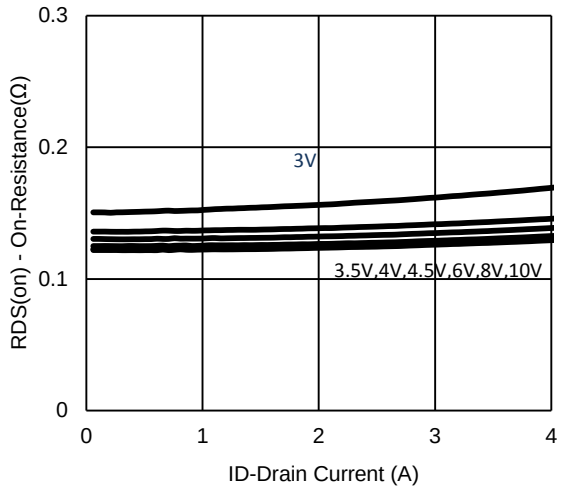
Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	100	---	---	V
I_{DSS}	Drain-Source Leakage Current	V_{GS}=0V, V_{DS}=80V, T_J=25℃	---	---	1	μA
		V_{GS}=0V, V_{DS}=80V, T_J=55℃			10	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1	---	---	V
$R_{DS(ON)}$	Drain-Source On Resistance[3]	V_{GS}=10V,I_D=3.2A	---	---	140	mΩ
		V_{GS}=4.5V,I_D=2.6A	---	---	150	
G_{FS}	Forward Transconductance	V_{DS}=15V, I_D=3.2A	---	8	---	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1MHz	---	1514	---	pF
C_{oss}	Output Capacitance		---	56	---	
C_{rss}	Reverse Transfer Capacitance		---	54	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time[3.4]	V_{DS} = 50 V, R_L = 15.7 Ω, I_D = 3.2 A, V_{GEN} = 10 V, R_{GEN} = 6 Ω	---	7	---	ns
t_r	Rise Time[3.4]		---	5	---	ns
$t_{d(off)}$	Turn-Off Delay Time[3.4]		---	31	---	ns
t_f	Fall Time[3.4]		---	7	---	ns
Q_g	Total Gate Charge[3.4]	V_{DS}=50V , V_{GS}=4.5V , I_D=3.2A	---	8.8	---	nC
Q_{gs}	Gate-Source Charge[3.4]		---	3.4	---	nC
Q_{gd}	Gate-Drain “Miller” Charge[3.4]		---	2.9	---	nC

Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage[2]	V_{GS}=0V , I_S=2.3A , T_J=25℃	---	0.81	---	V

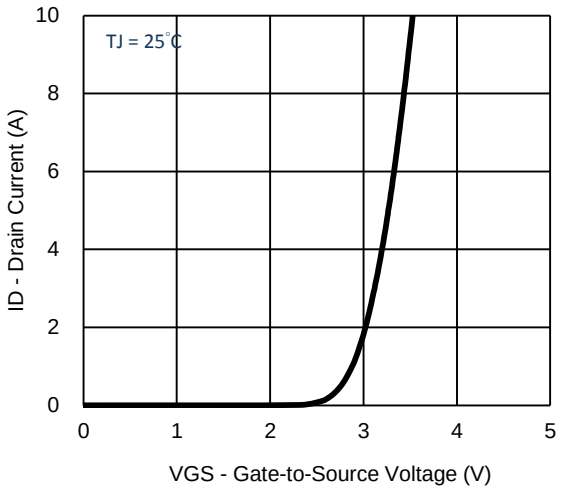
Notes:

a. Pulse test: PW <= 300us duty cycle <= 2%.
b. Guaranteed by design, not subject to production testing.

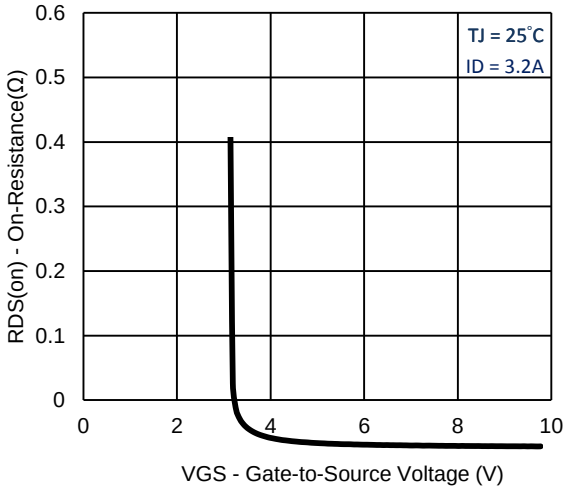
Typical Characteristics: (T_C=25℃ unless otherwise noted)



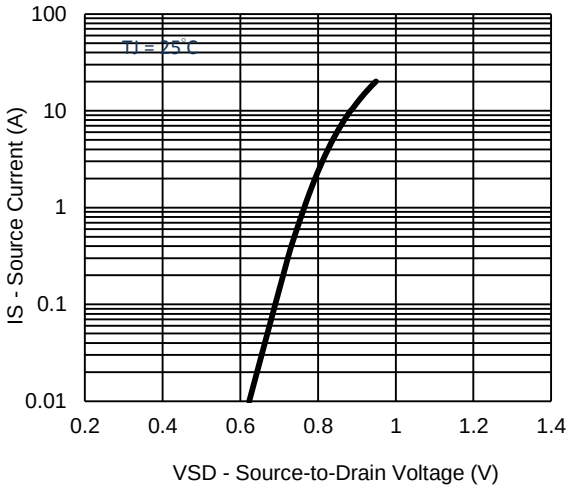
1. On-Resistance vs. Drain Current



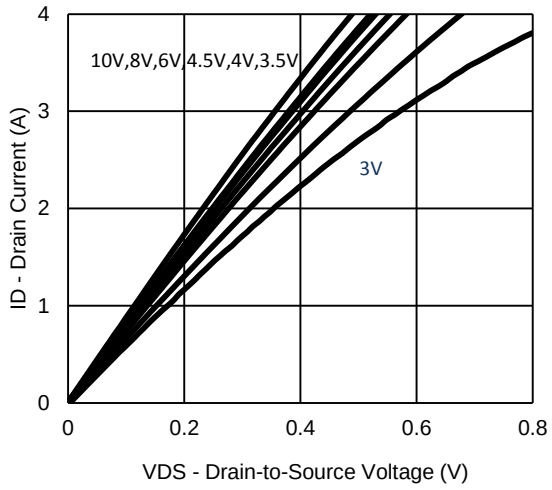
2. Transfer Characteristics



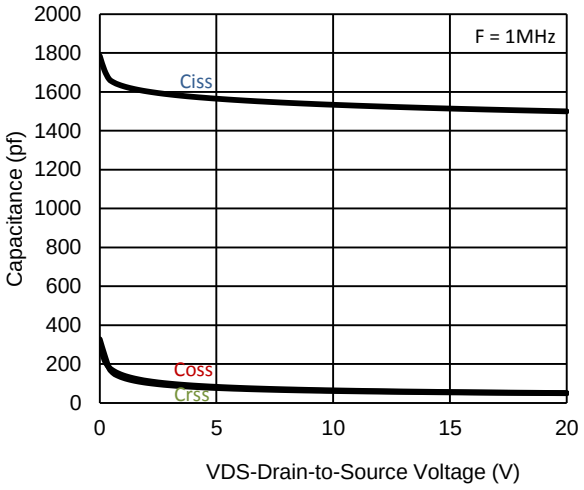
3. On-Resistance vs. Gate-to-Source Voltage



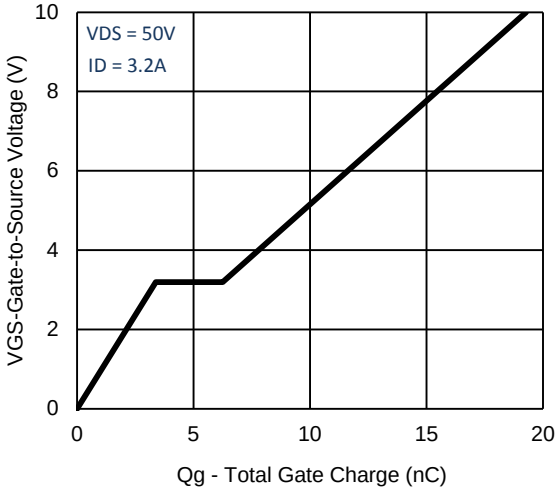
4. Drain-to-Source Forward Voltage



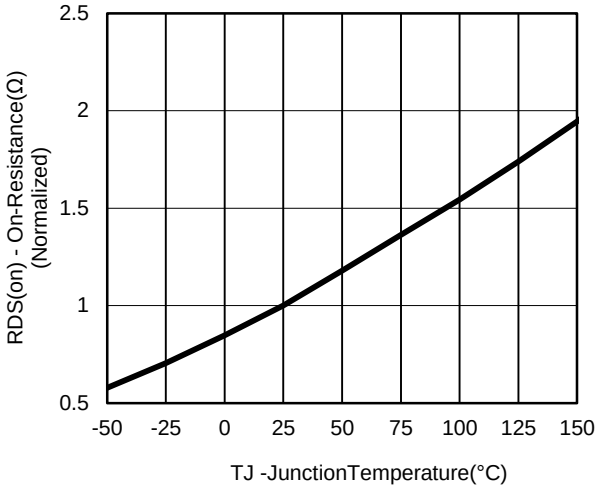
5. Output Characteristics



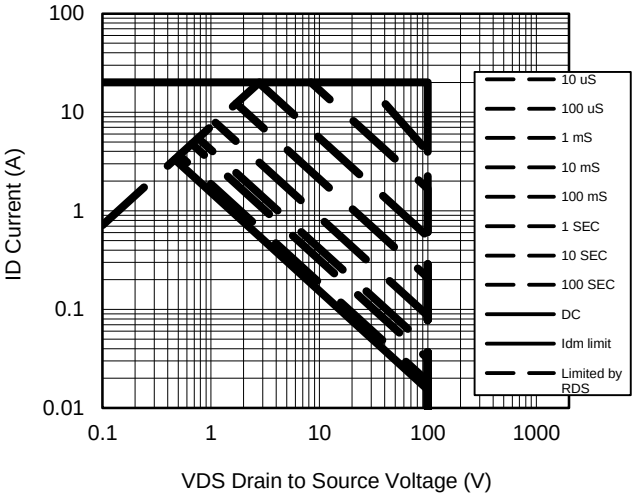
6. Capacitance



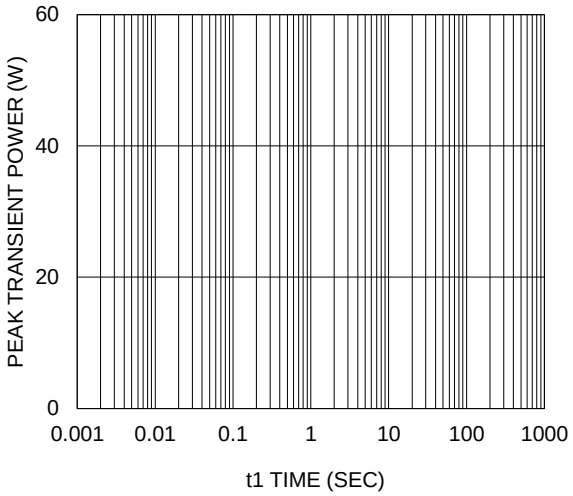
7. Gate Charge



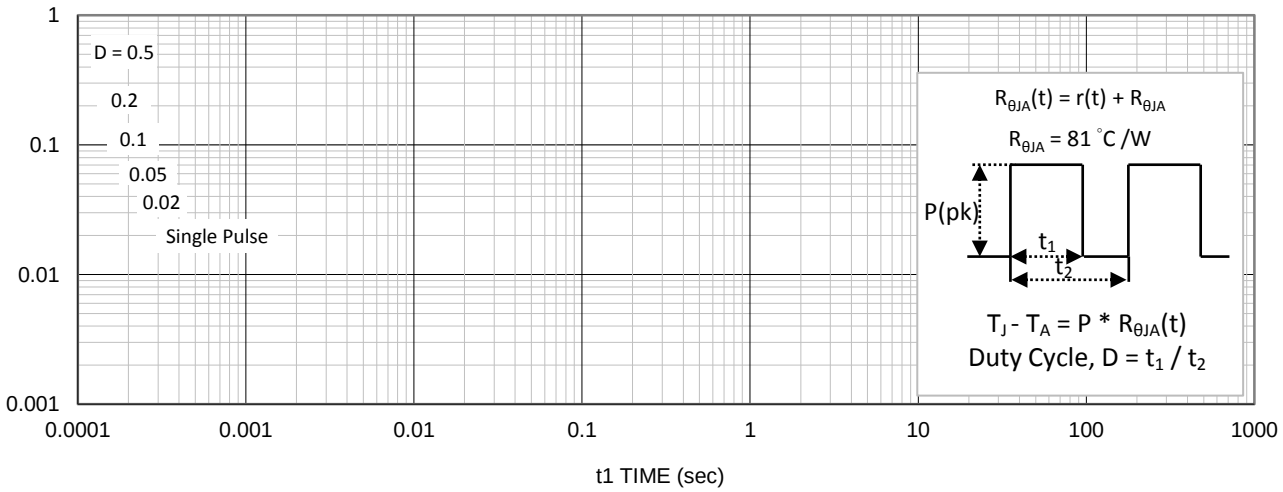
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area



10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient