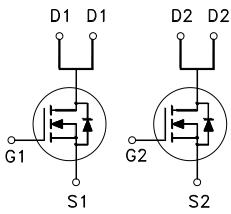
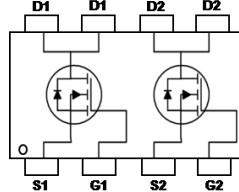
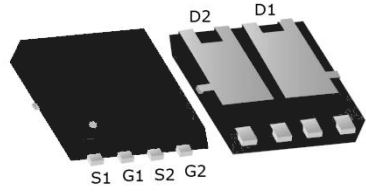


FH8906G6

Dual N-Channel Enhancement Mode MOSFET

<p>Features</p> <ul style="list-style-type: none"> ☑ Surface-mounted package ☑ Advanced trench cell design <p>Applications</p> <ul style="list-style-type: none"> ☑ Motor appliances ☑ High power inverter system 	<p>Quick reference</p> <ul style="list-style-type: none"> ☑ $BV \geq 30\text{ V}$ ☑ $P_{tot} \leq 28\text{ W}$ ☑ $I_D \leq 40\text{ A}$ <ul style="list-style-type: none"> ☑ $R_{DS(ON)} = (\text{Typ.}) 6.5\text{ m}\Omega @ V_{GS} = 10\text{ V}$ $R_{DS(ON)} = (\text{Typ.}) 8.5\text{ m}\Omega @ V_{GS} = 4.5\text{ V}$ 	
 <p>Schematic diagram</p>	 <p>Marking and pin Assignment</p>	 <p>PDFN3.3x3.3-8L top and bottom view</p>

Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DS}	Drain-Source Voltage	$T_A = 25\text{ }^\circ\text{C}$	-	30	V
V_{GS}	Gate-Source Voltage	$T_A = 25\text{ }^\circ\text{C}$	-	± 20	V
I_D^*	Drain Current	$T_A = 25\text{ }^\circ\text{C}, V_{GS} = 10\text{ V}$	-	40	A
		$T_A = 100\text{ }^\circ\text{C}, V_{GS} = 10\text{ V}$	-	25	A
I_{DM}^{***}	Pulsed Drain Current	$T_A = 25\text{ }^\circ\text{C}, V_{GS} = 10\text{ V}$	-	58	A
P_{tot}	Total Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	-	28	W
T_{stg}	Storage Temperature		- 55	150	$^\circ\text{C}$
T_J	Junction Temperature		55	150	$^\circ\text{C}$
I_S	Diode Forward Current	$T_A = 25\text{ }^\circ\text{C}$		40	A
$R_{\theta JA}^*$	Thermal Resistance- Junction to Ambient		-	60.2	$^\circ\text{C} / \text{W}$

Notes :

* Surface Mounted on 1 in² pad area, $t \leq 10\text{ sec}$

** Pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$

*** limited by bonding wire

Electrical Characteristics ($T_A=25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV_{DSS}	Drain Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_{DS} = 250\text{ }\mu\text{A}$	30			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_{DS} = 250\text{ }\mu\text{A}$	1.0	-	2.0	V
I_{DSS}	Drain Leakage Current	$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}$	-	-	1	μA
		$T_J = 85\text{ }^\circ\text{C}$	-	-	30	μA
I_{GSS}	Gate Leakage Current	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$	-	-	± 100	nA
$R_{DS(ON)}^a$	On-State Resistance	$V_{GS} = 10\text{ V}, I_{DS} = 12\text{ A}$	-	6.5	9.5	m Ω
		$V_{GS} = 4.5\text{ V}, I_{DS} = 10$	-	8.5	11	
Diode Characteristics						
V_{SD}^a	Diode Forward Voltage	$I_{SD} = 10\text{ A}, V_{GS} = 0\text{ V}$	-	-	1.3	V
t_{rr}	Reverse Recovery Time	$I_{DS} = 10\text{ A}, V_{GS} = 0\text{ V}$ $di_{SD}/dt = 100\text{ A}/\mu\text{s}$	-	42	-	ns
Q_{rr}	Reverse Recovery Charge		-	9.2	-	nC
Dynamic Characteristics ^b						
C_{iss}	Input Capacitance	$V_{GS} = 0\text{ V}, V_{DS} = 15\text{ V}$ Frequency = 1 MHz	-	1436	-	pF
C_{oss}	Output Capacitance		-	114	-	
C_{rss}	Reverse Transfer Capacitance			92		
$t_d(on)$	Turn-on Delay Time	$V_{DS} = 15\text{ V}, V_{GEN} = 10\text{ V},$ $R_G = 4.5\text{ }\Omega, R_L = 1.5\text{ }\Omega,$ $I_{DS} = 10\text{ A}$	-	8	-	ns
t_r	Turn-on Rise Time		-	30	-	
$t_d(off)$	Turn off Delay Time			22		
t_f	Turn-off Fall Time		-	18	-	
Gate Charge Characteristics ^b						
Q_g	Total Gate Charge	$V_{GS} = 15\text{ V}, V_{DS} = 10\text{ V},$ $I_{DS} = 10\text{ A}$	-	27	-	nC
Q_{gs}	Gate-Source Charge		-	5	-	
Q_{gd}	Gate-Drain Charge		-	3.3	-	

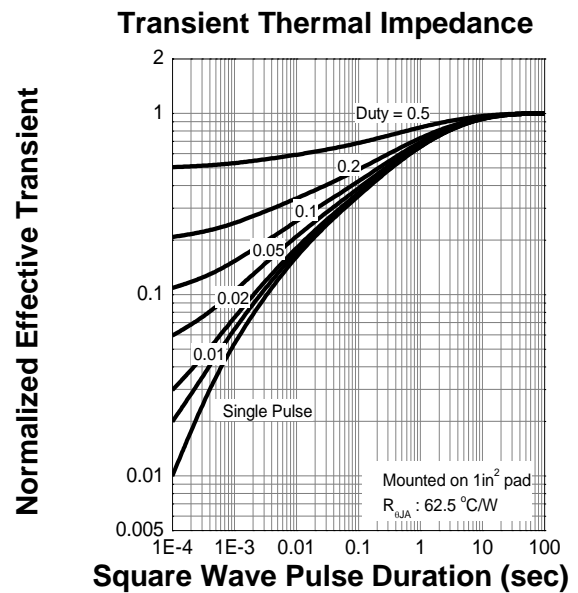
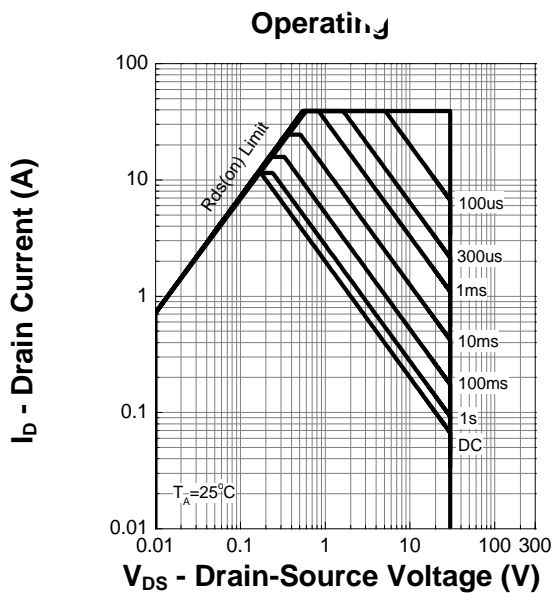
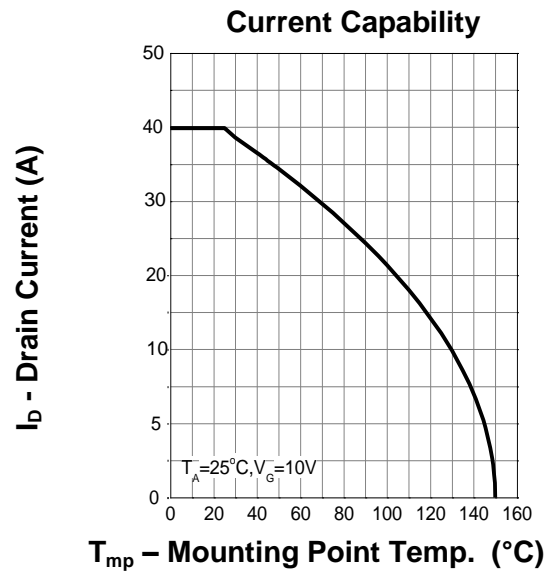
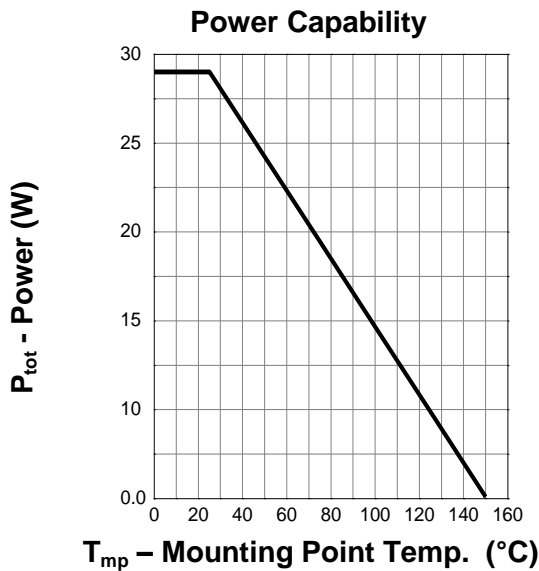
Notes :

a : Pulse test ; pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$

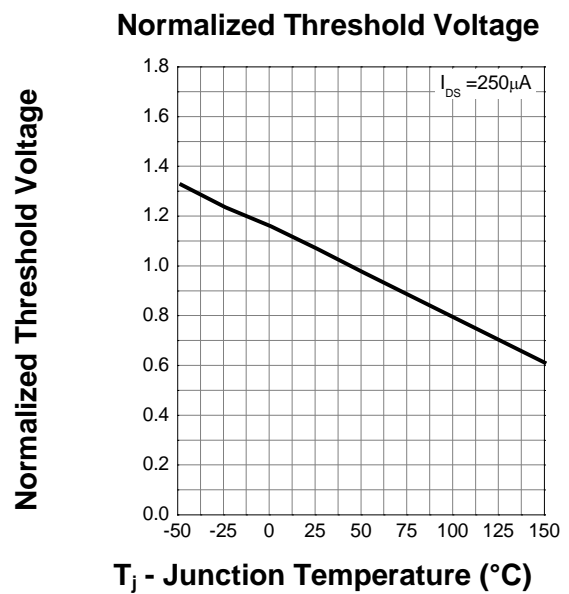
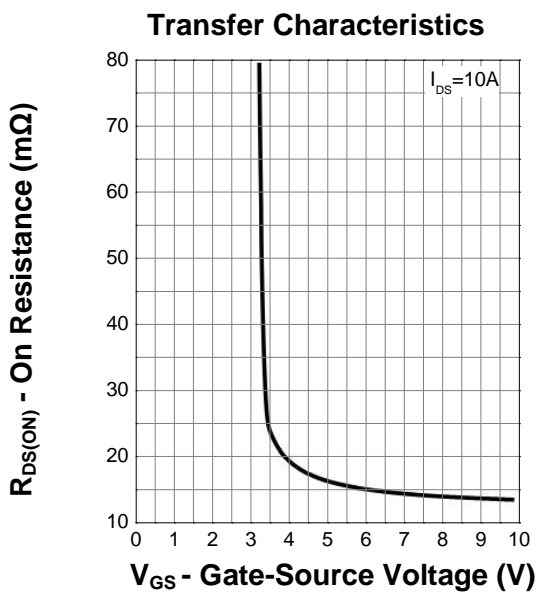
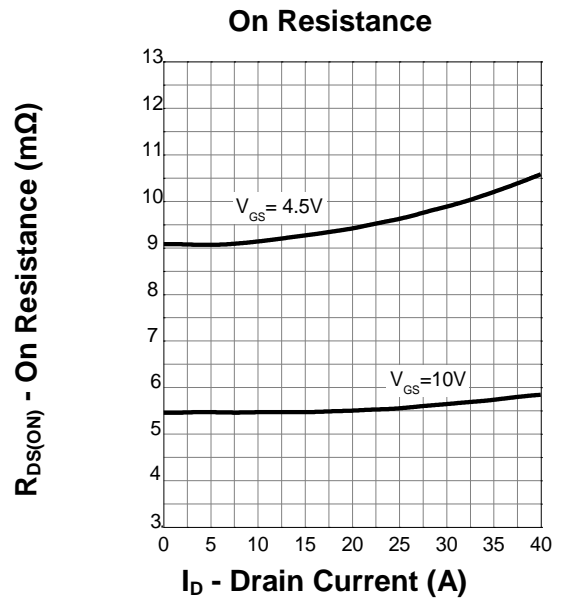
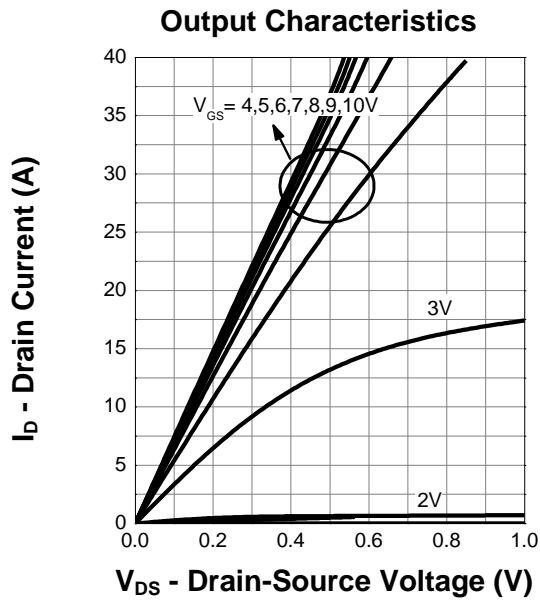
b : Guaranteed by design, not subject to production testing

NHCX defines "Green" as lead free (RoHS compliant) and halogen free (Br or Cl does not exceed 900 ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500 ppm by weight; Follow IEC 61249 2 21 and IPC / JEDEC J STD 020C)

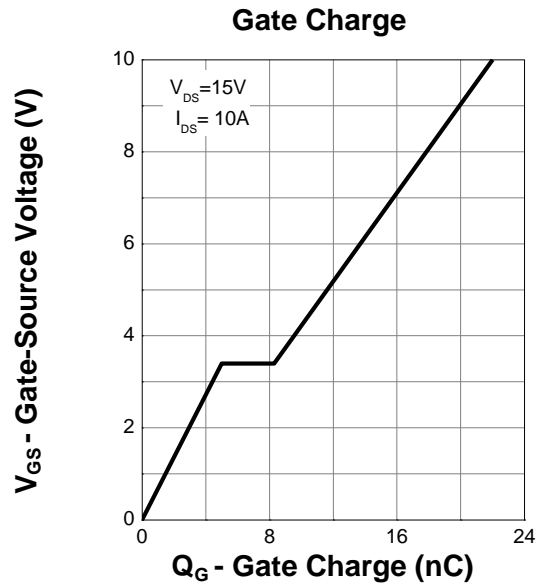
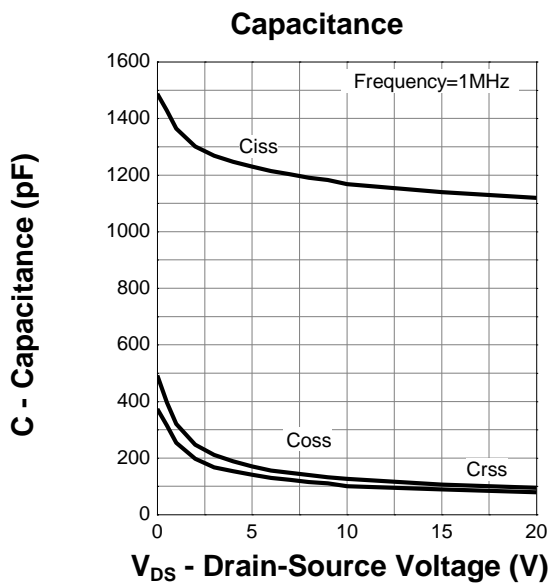
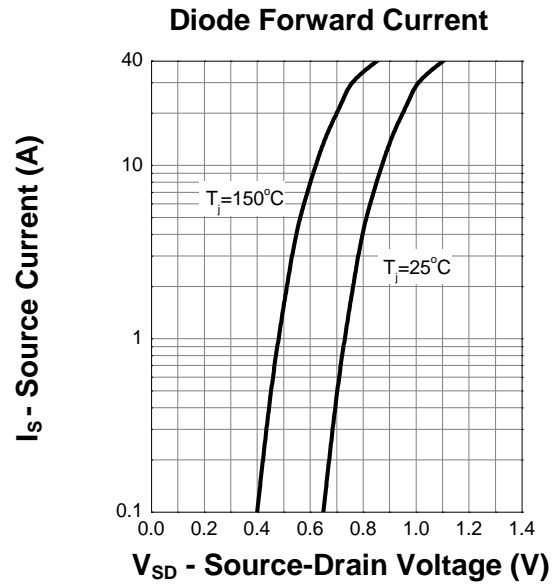
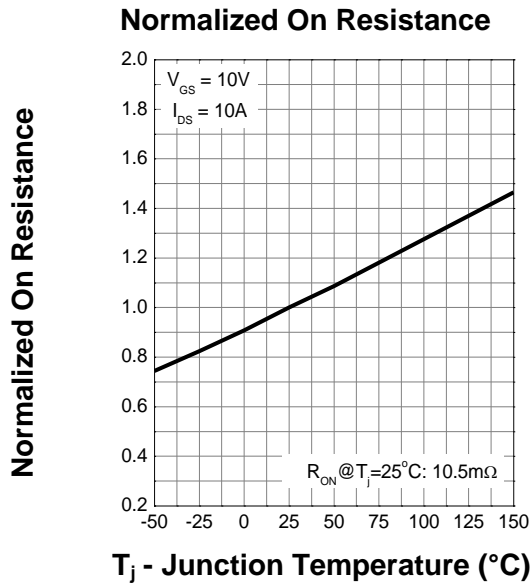
Typical Characteristics



Typical Characteristics (cont.)



Typical Characteristics (cont.)



Package Dimensions : PDFN3.3*3.3-8L

