

FH8808G2

N- Channel Enhancement Mode Power MOSFET

Description

The FH8808G2 is the highest performance trench N-Ch MOSFETs with extreme high cell density, which provide excellent RDSON and gate charge for most of the small power switching and load switch applications.

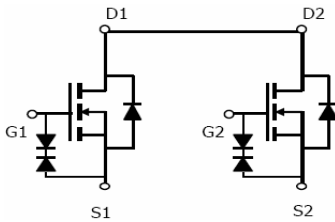
Application

- PWM application
- Load switch

General Features

V _{DS}	I _D	R _{DS(ON)} (mΩ) Typ
20V	9.5A	8.3 @ V _{GS} =4.5V
		9.0 @ V _{GS} =4.0V
		10.0 @ V _{GS} =3.0V
		11.5 @ V _{GS} =2.5V

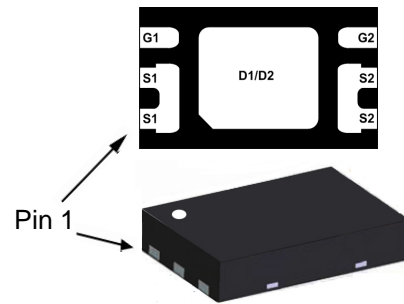
- Super high dense cell design for low RDS(ON)
- Rugged and reliable
- Surface mount package
- ESD Protected



Schematic diagram



Marking and pin Assignment



DFN2x3-6L Pin assignment and Top / Bottom View

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Symbol	Parameter	Limit	Units
V _{DS}	Drain-Source Voltage	20	V
V _{GS}	Gate-Source Voltage	±12	V
I _D	Drain Current-Continuous ^c	T _A =25°C	9.5
		T _A =70°C	7.6
I _{DM}	-Pulsed ^{a c}	60	A
P _D	Maximum Power Dissipation	T _A =25°C	1.56
		T _A =70°C	1.00
T _J T _{STG}	Operating Junction and Storage Temperature Range	-55 to 150	°C

THERMAL CHARACTERISTICS

R _{θJA}	Thermal Resistance, Junction-to-Ambient	80	°C/W
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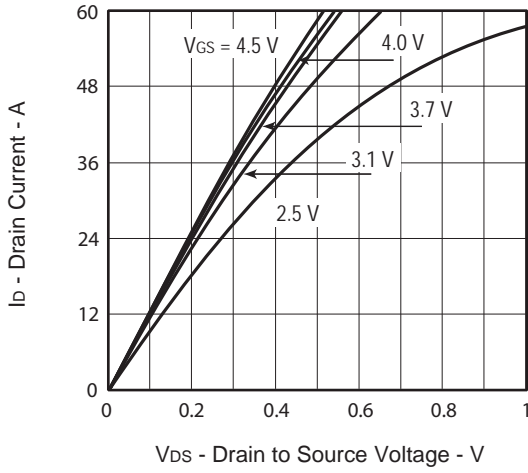
Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	20			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=18V, V_{GS}=0V$			1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 10V, V_{DS}=0V$			± 10	μA
ON CHARACTERISTICS						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=1.0mA$	0.5	0.85	1.5	V
$R_{DS(ON)}$	Drain-Source On-State Resistance	$V_{GS}=4.5V, I_D=2.4A$	7.3	8.3	9.7	m ohm
		$V_{GS}=4.0V, I_D=2.4A$	7.8	9.0	10.2	m ohm
		$V_{GS}=3.0V, I_D=2.4A$	8.8	10.0	11.2	m ohm
		$V_{GS}=2.5V, I_D=2.4A$	10.3	11.5	12.7	m ohm
g_{FS}	Forward Transconductance	$V_{DS}=5V, I_D=4.75A$		28		S
DYNAMIC CHARACTERISTICS^b						
C_{ISS}	Input Capacitance	$V_{DS}=10V, V_{GS}=0V$ $f=1.0MHz$		980		pF
C_{OSS}	Output Capacitance			213		pF
C_{RSS}	Reverse Transfer Capacitance			189		pF
SWITCHING CHARACTERISTICS^b						
$t_{D(ON)}$	Turn-On Delay Time	$V_{DD}=16V$ $I_D=4.75A$ $V_{GS}=4.5V$ $R_{GEN}=6\text{ ohm}$		24		ns
t_r	Rise Time			66		ns
$t_{D(OFF)}$	Turn-Off Delay Time			116		ns
t_f	Fall Time			46		ns
Q_g	Total Gate Charge				10.7	
Q_{gs}	Gate-Source Charge	$V_{DS}=16V, I_D=9.5A,$ $V_{GS}=4.5V$		2.1		nC
Q_{gd}	Gate-Drain Charge			5.4		nC
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=9.5A$		0.84	1.2	V

Notes

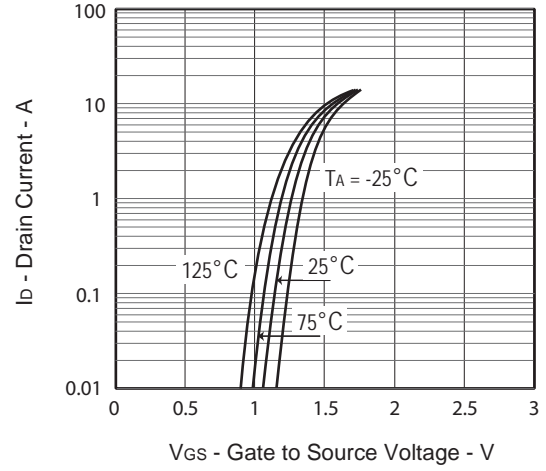
- Pulse Test: Pulse Width $\leq 10\mu s$, Duty Cycle $\leq 1\%$.
- Guaranteed by design, not subject to production testing.
- Drain current limited by maximum junction temperature.
- Mounted on FR4 Board of 1 inch², 2oz.

Typical Electrical and Thermal Characteristics

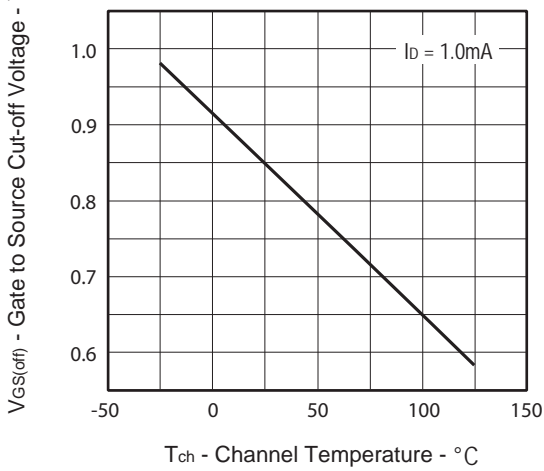
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



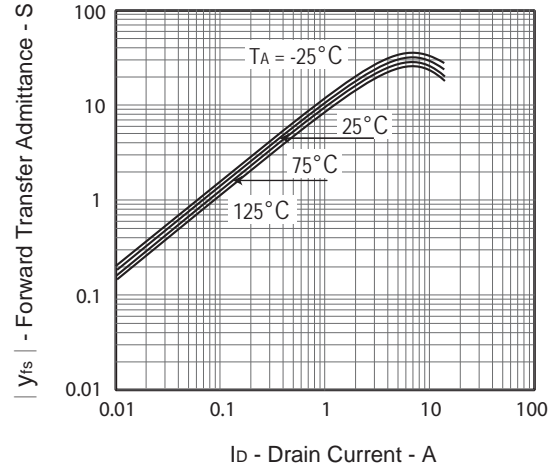
FORWARD TRANSFER CHARACTERISTICS



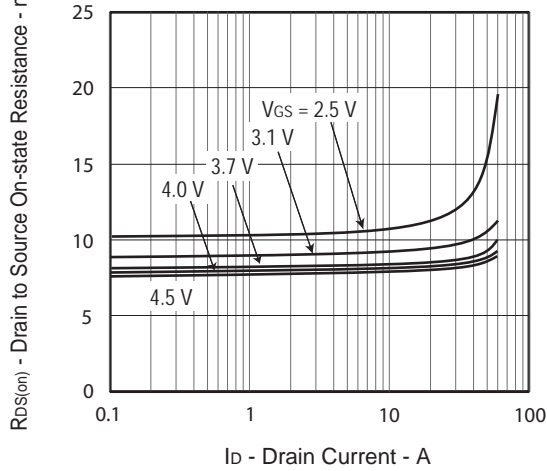
GATE TO SOURCE CUT-OFF VOLTAGE vs. CHANNEL TEMPERATURE



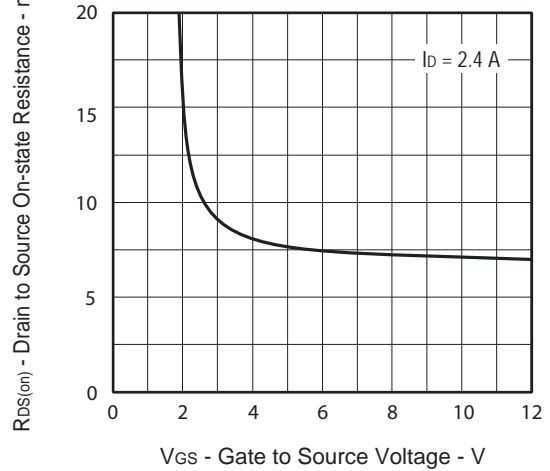
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



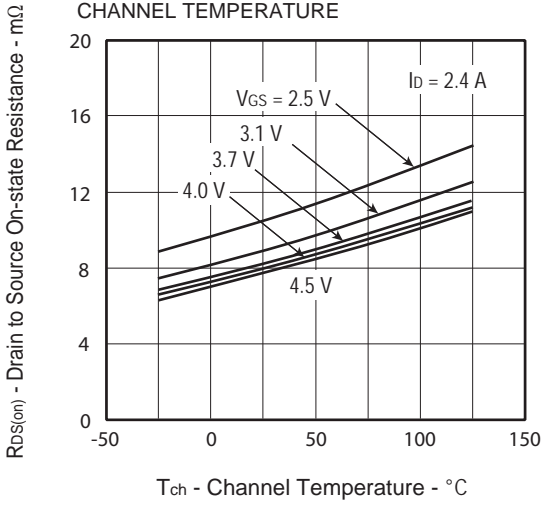
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



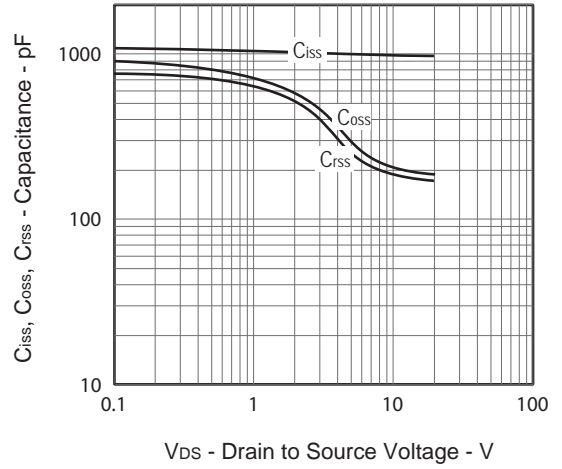
DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE



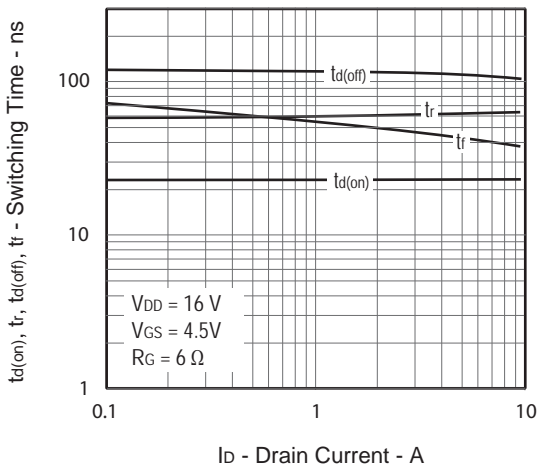
DRAIN TO SOURCE ON-STATE RESISTANCE vs. CHANNEL TEMPERATURE



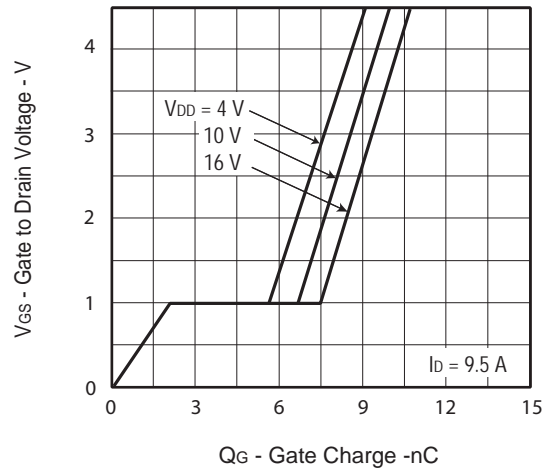
CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



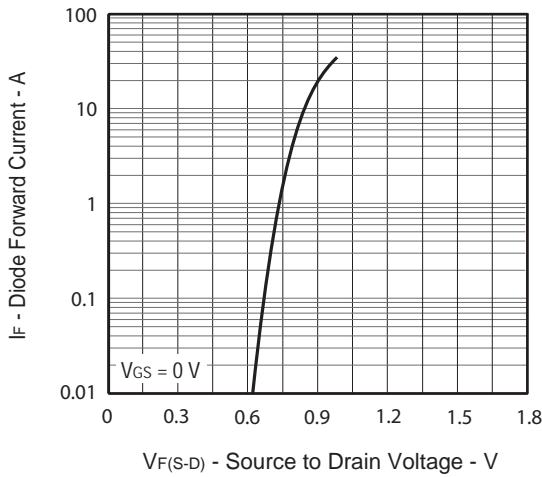
SWITCHING CHARACTERISTICS



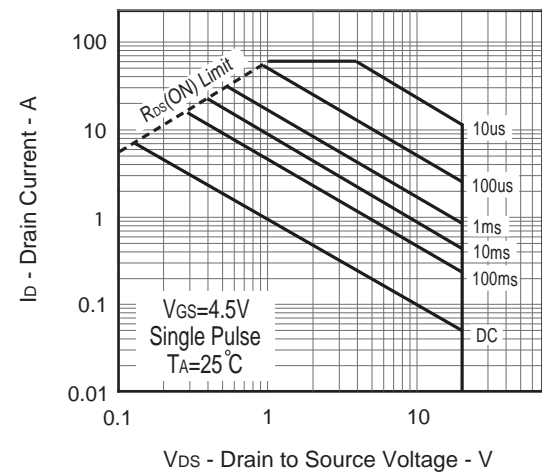
DYNAMIC INPUT CHARACTERISTICS

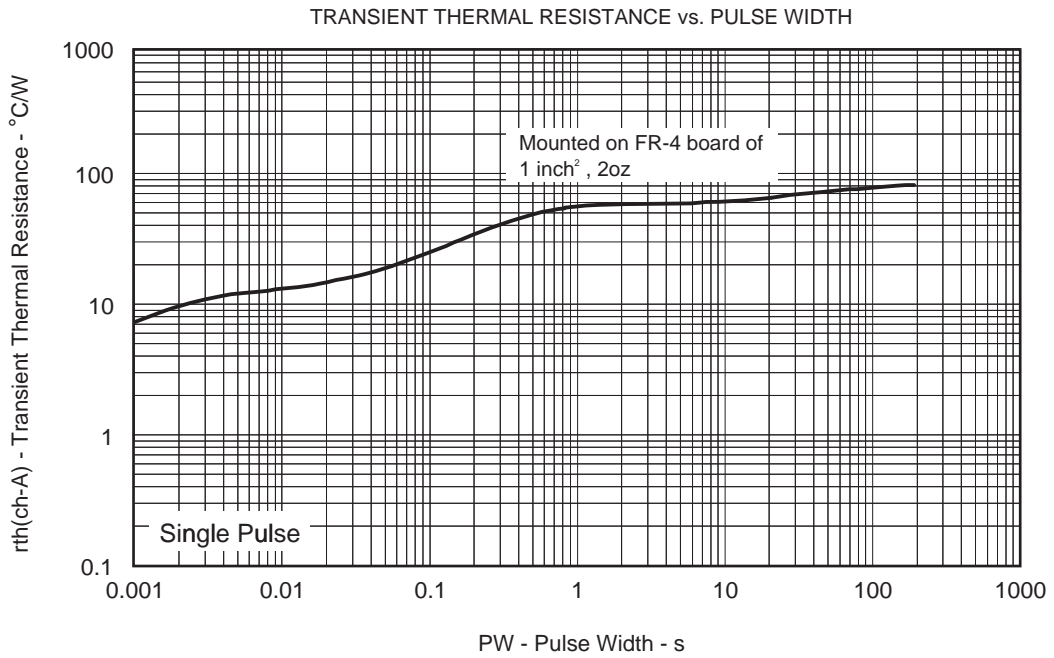
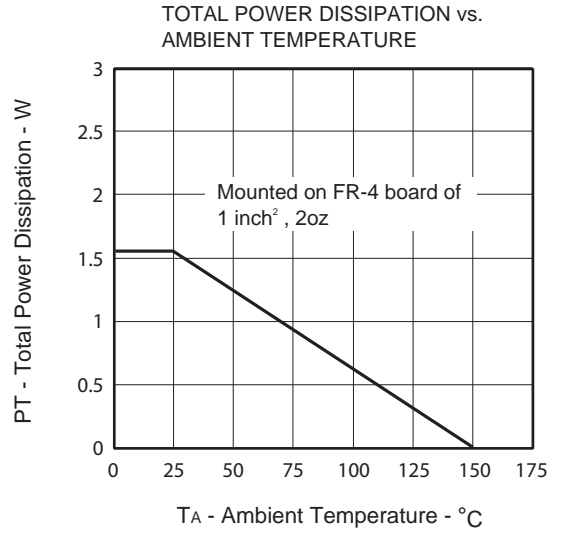
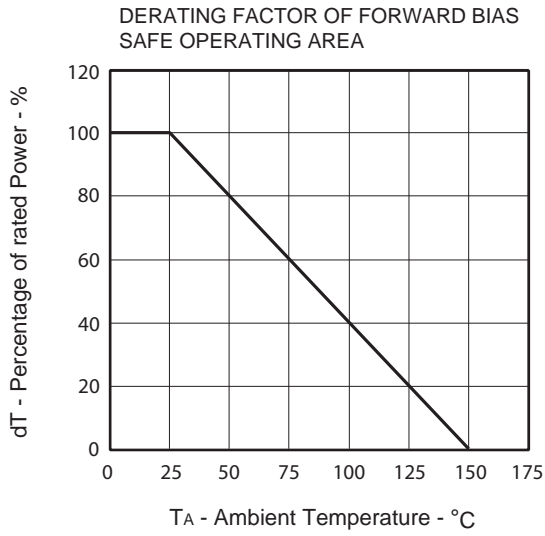


SOURCE TO DRAIN DIODE FORWARD VOLTAGE

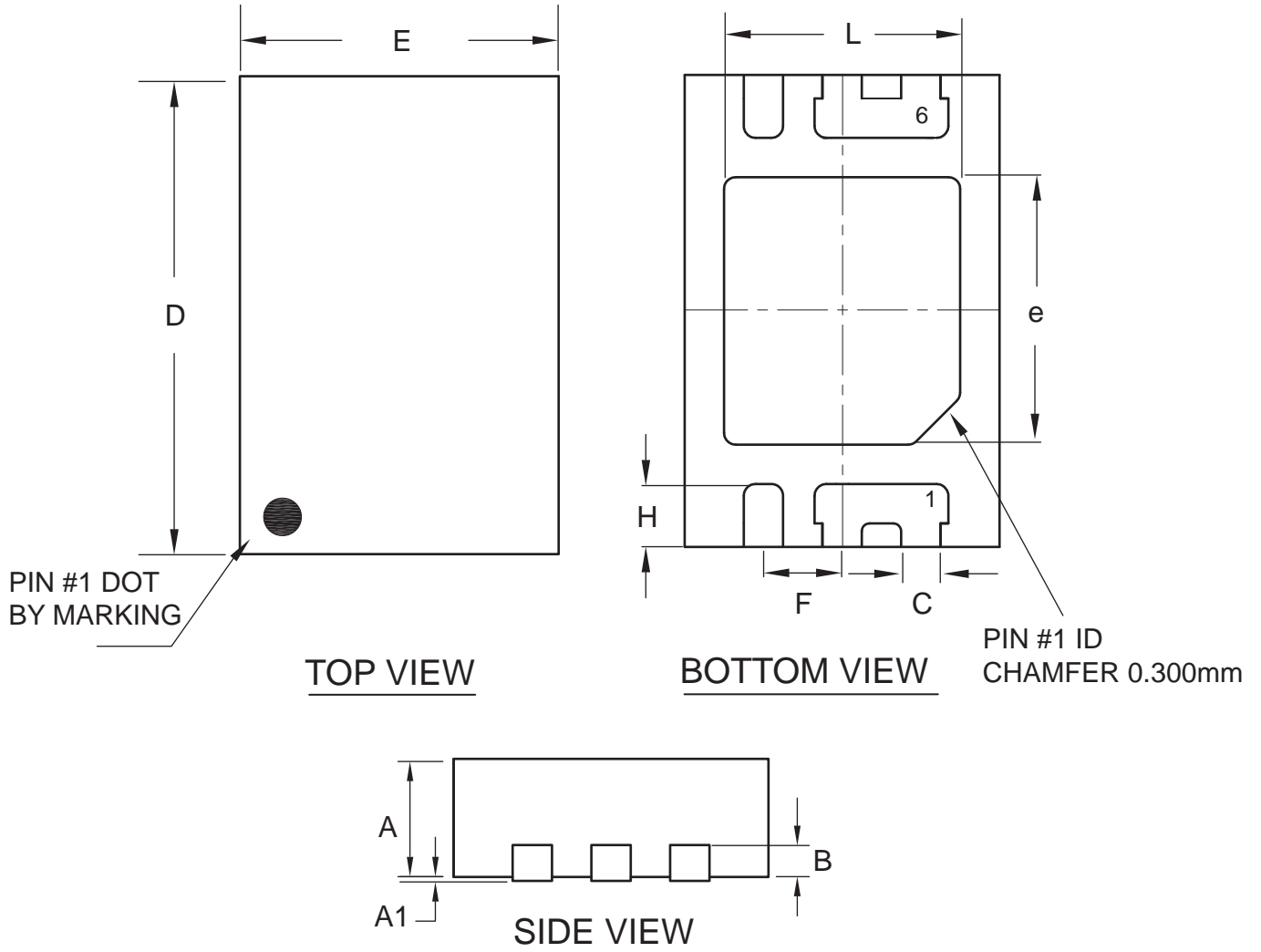


FORWARD BIAS SAFE OPERATING AREA





Package Outline Dimensions : DFN2X3-6L



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
D	2.950	3.050	0.116	0.120
E	1.950	2.050	0.077	0.081
H	0.350	0.450	0.014	0.018
L	1.450	1.550	0.057	0.061
e	1.650	1.750	0.065	0.069
B	0.195	0.211	0.0076	0.008
C	0.200	0.300	0.008	0.012
F	0.500 BSC		0.020 BSC	