/ Descriptions

DFN3×3A-8L N MOS

N-Channel Enhancement Mode Field Effect Transistor in a DFN3×3A-8L Plastic Package.

/ Features

V_{DS} (V) = 20V I_D = 43A (V_{GS} = ±12V)

$R_{DS(ON)}$@10V≤10mΩ(Typ.8.0mΩ)

$R_{DS(ON)}$@4.5V≤11mΩ(Typ.9.5mΩ)

$R_{DS(ON)}$@2.5V≤16mΩ(Typ.14mΩ)

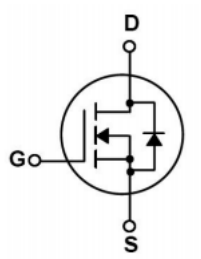
HF Product.

/ Applications

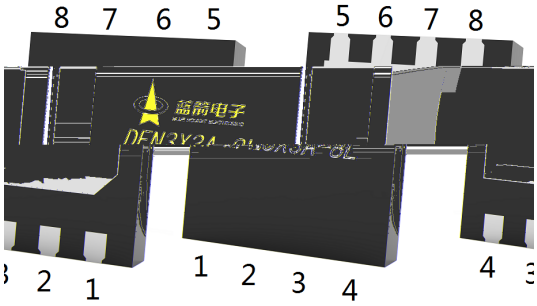
DC/DC

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.

/ Equivalent Circuit



/ Pinning



出脚	定义
Pin1	S
Pin2	S
Pin3	S
Pin4	G
Pin5	D
Pin6	D
Pin7	D
Pin8	D

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	20	V
Drain Current		I_D(Tc=25)	43	A
Drain Current - Pulsed		I_{DM}	107	A
Gate-Source Voltage		V_{GS}	±12	V
Avalanche Current		I_{AS}	12.5	A
Single Pulsed Avalanche Energy		E_{AS}	111	mJ
Power Dissipation		P_D(Tc=25)	28	W
Junction Temperature Range		T_j	150	
Storage Temperature Range		T_{stg}	-55 150	
Maximum Junction-to-Ambient	t≤10s	$R_{\theta JA}$	50	/W
	Steady-State		70	
Maximum Junction-to-Case	Steady-State	$R_{\theta JC}$	4.5	/W

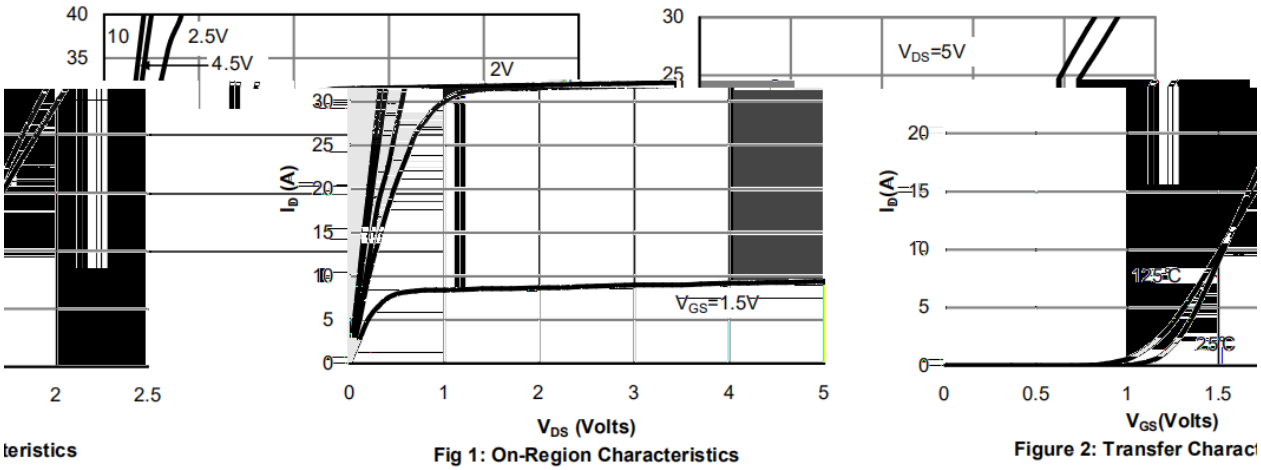
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	20	25		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V	V_{GS}=0V			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±12V	V_{DS}=0V			±0.1	μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V	I_D=10.0A		8	10	mΩ
		V_{GS}=4.5V	I_D=10.0A		9.5	11	mΩ
		V_{GS}=2.5V	I_D=10.0A		14	16	mΩ
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250μA	0.5	0.8	1.1	V
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V	I_F=1.0A		0.75	1.2	V
Signal Source Resistance	Rg	F=1MHz			2.7		Ω
Input Capacitance	C_{iss}	V_{DS}=15V f=1.0MHz	V_{GS}=0V		1100		pF
Output Capacitance	C_{oss}				160		
Reverse Transfer Capacitance	C_{rss}				130		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=10V V_{GS}=10V R_L=1.0Ω R_{GEN}=3.0Ω		2.5		ns
Turn-On Rise Time	t_r			7.2		
Turn-Off Delay Time	$t_{d(off)}$			49		
Turn-Off Fall Time	t_f			10.8		
Total Gate Charge	$Q_{g(4.5V)}$	V_{DS}=10V V_{GS}=4.5V I_D=12.0A		17.9		nC
Gate-Source Charge	Q_{gs}			1.5		
Gate-Drain Charge	Q_{gd}			4.7		

/ Electrical Characteristic Curve



teristics

Fig 1: On-Region Characteristics

Figure 2: Transfer Charact

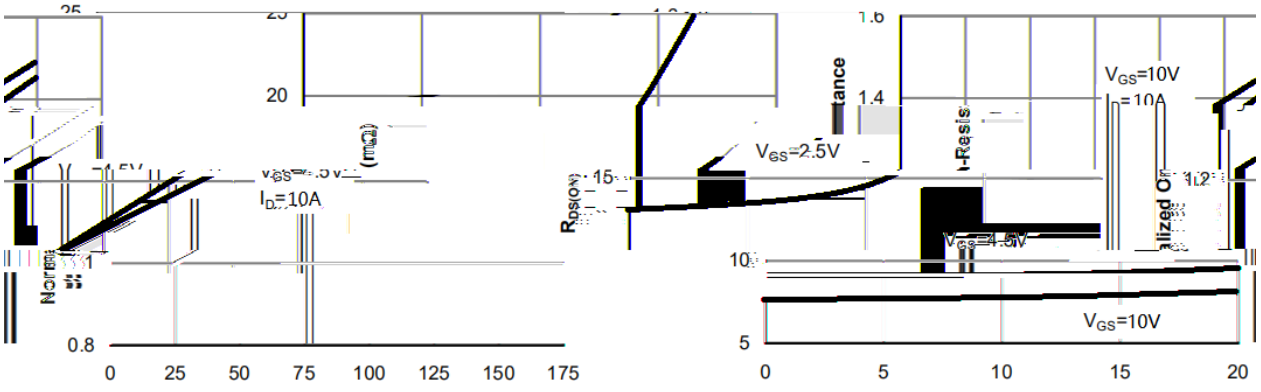
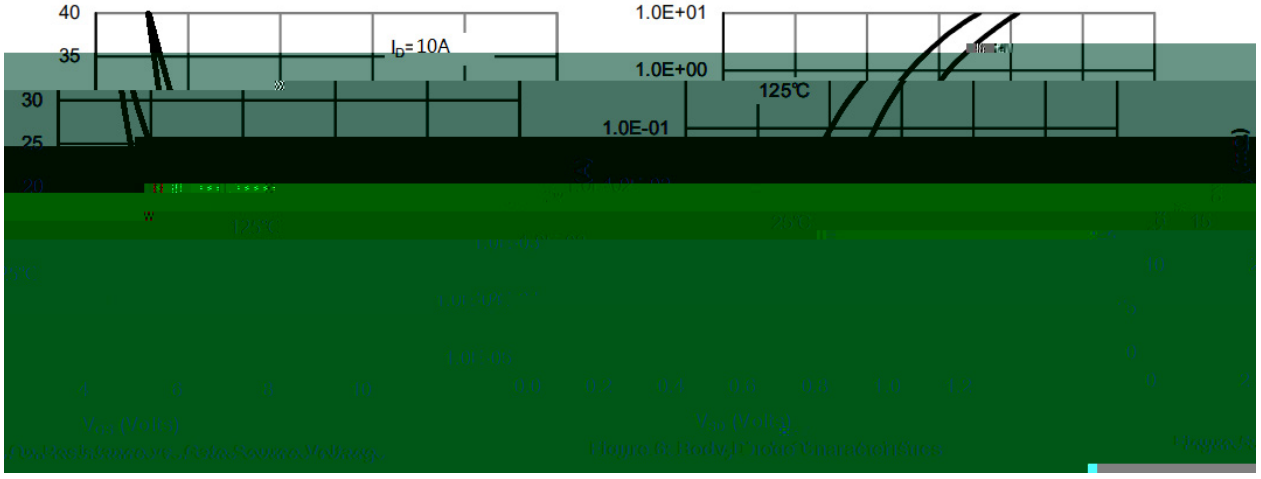
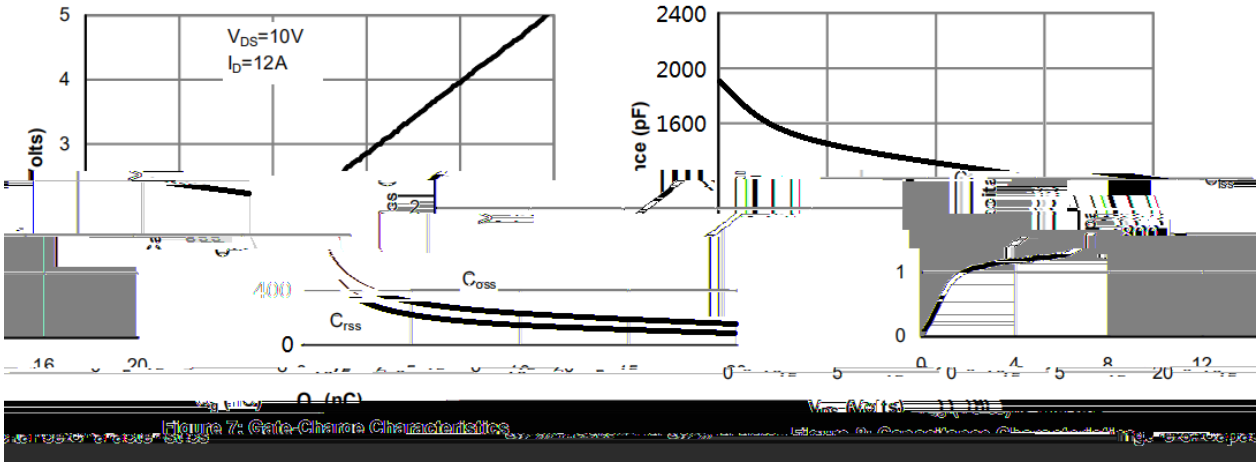


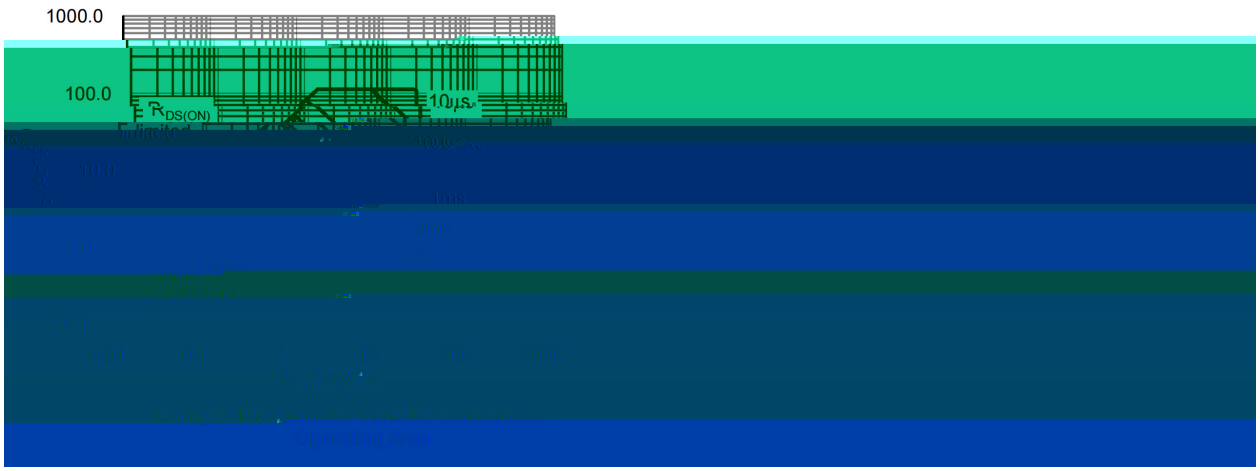
Figure 4: On-Resistance vs. Junction Temperature

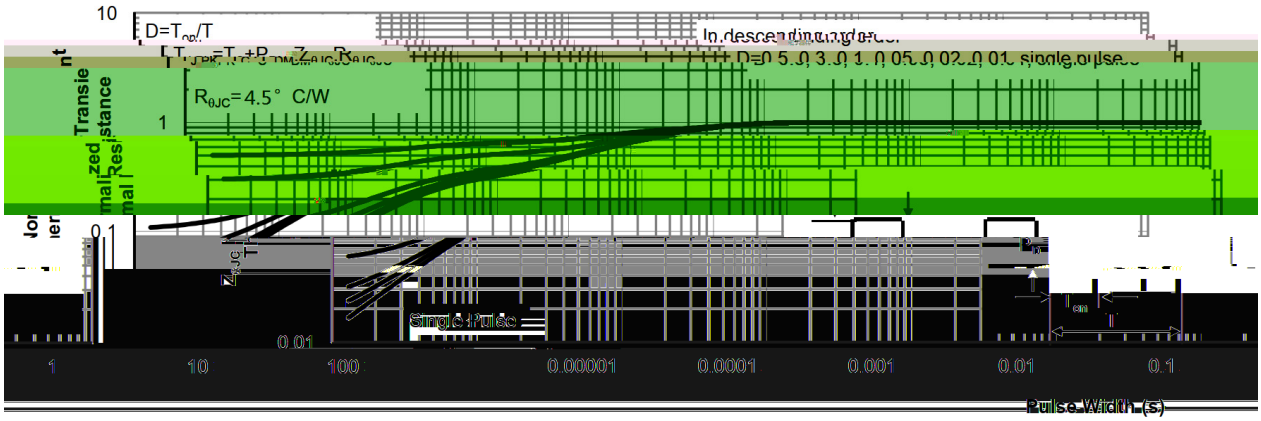
Figure 3: On-Resistance vs. Drain Current and Gate Voltage



/ Electrical Characteristic Curve



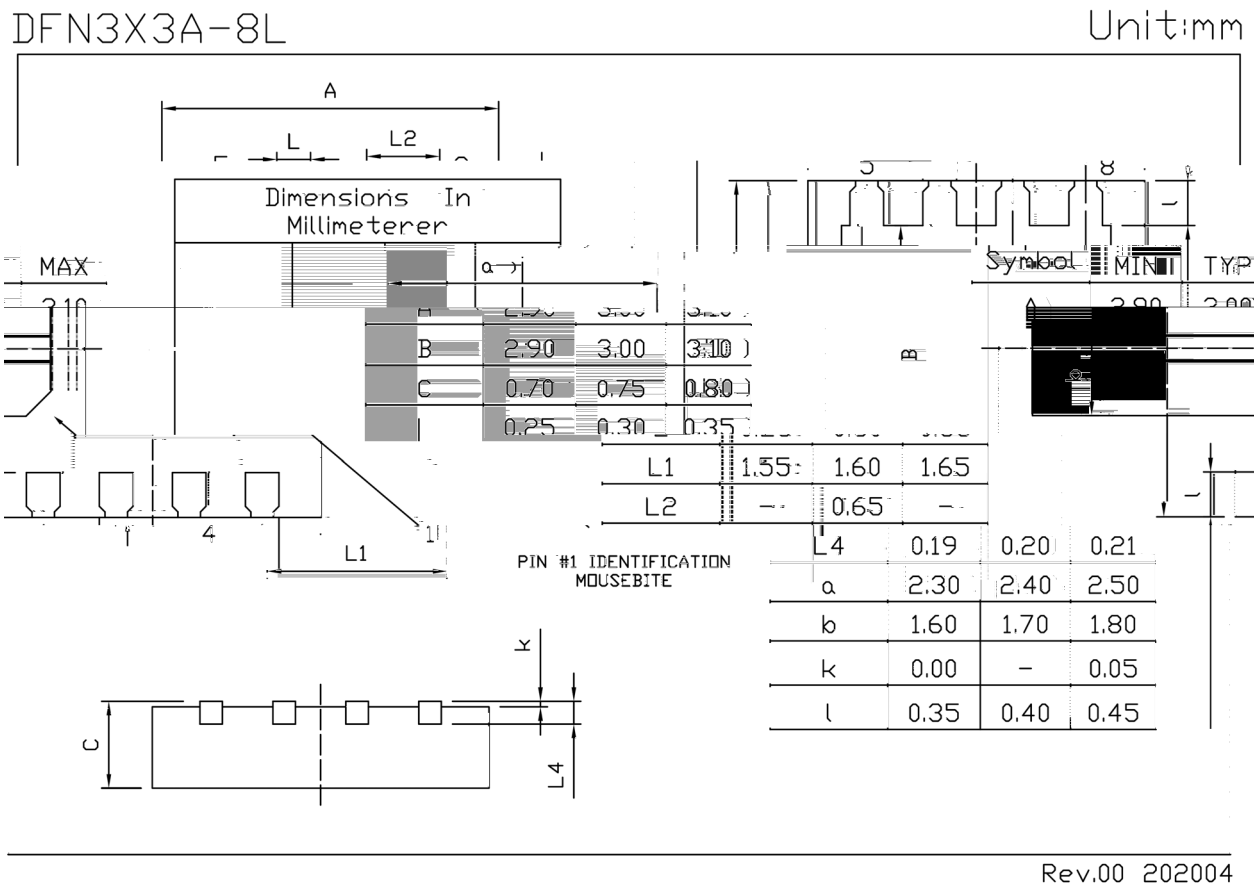




al Impedance

Figure 10: Normalized Maximum Transient Therm

/ Package Dimensions



Symbol	MIN	TYP	MAX
A	2.90	3.00	3.10
B	2.90	3.00	3.10
C	0.70	0.75	0.80
D	0.25	0.30	0.35
L1	1.55	1.60	1.65
L2	–	0.65	–
L4	0.19	0.20	0.21
a	2.30	2.40	2.50
b	1.60	1.70	1.80
k	0.00	–	0.05
l	0.35	0.40	0.45

/ Marking Instructions

BR

080N02

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Note:

BR:	Company Code
080N02:	Product Type Code
****:	Lot No. Code, code change with Lot No

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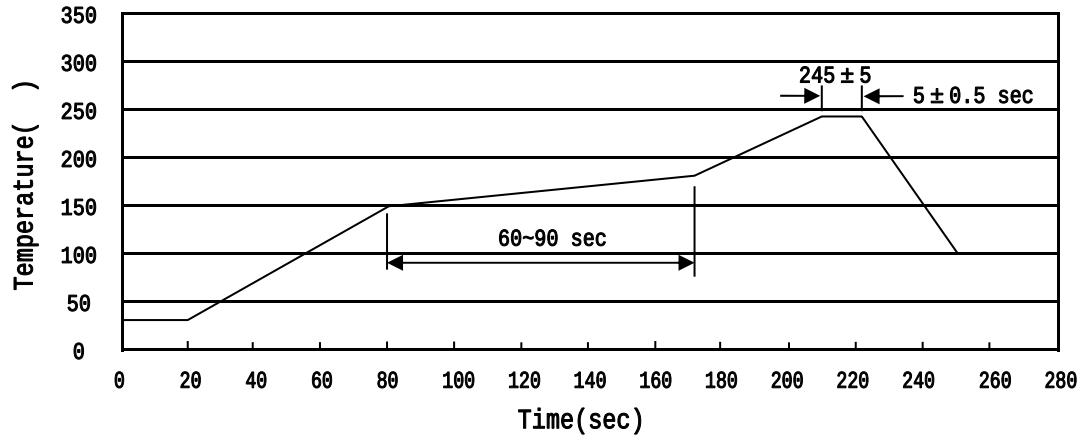

Note:

1	150 180 60 90sec;	1.Preheating:150~180 , Time:60~90sec.
2	245±5 5±0.5sec;	2.Peak Temp.:245±5 , Duration:5±0.5sec.
3	2 10 /sec.	3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5	10±1 sec.	Temp.:260±5	Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension		(unit mm³)
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
DFN3×3A-8L	5,000	2	10,000	6	60,000	13″ ×12	360×360×50	380×335×366

/ Notices