

BRC5N50YU

Rev.A Aug.-2023

/ Descriptions

DFN8×8-4L N

Dual N-CHANNEL MOSFET in a DFN8×8-4L Plastic Package.

/ Features

$V_{DS}(V)=500V$ $I_D=5A$

$R_{DS(ON)}@10V<1.5$ (Typ. 1.45)

$R_{DS(ON)}@6V<1.8$ (Typ. 1.5)

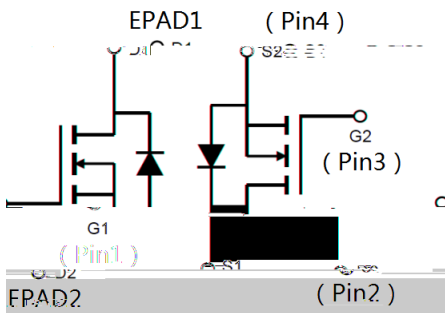
HF Product.

/ Applications

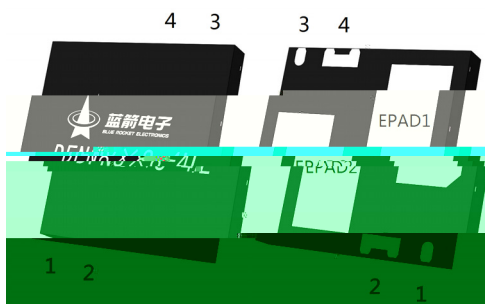
LED

Used in high-frequency switching power supply, electronic ballast, LED power supply and high-speed air duct.

/ Equivalent Circuit



/ Pinning



PIN 1	G1	PIN 2	S1	EPAD1	D1
PIN 3	G2	PIN 4	S2	EPAD2	D2

/ Marking

See Marking Instructions.

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DATA SHEET

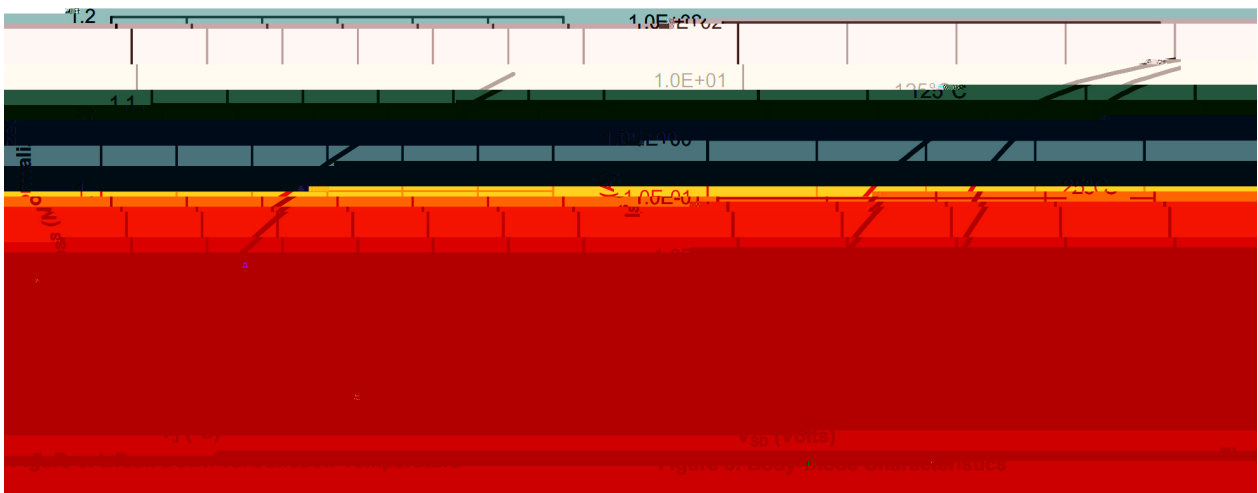
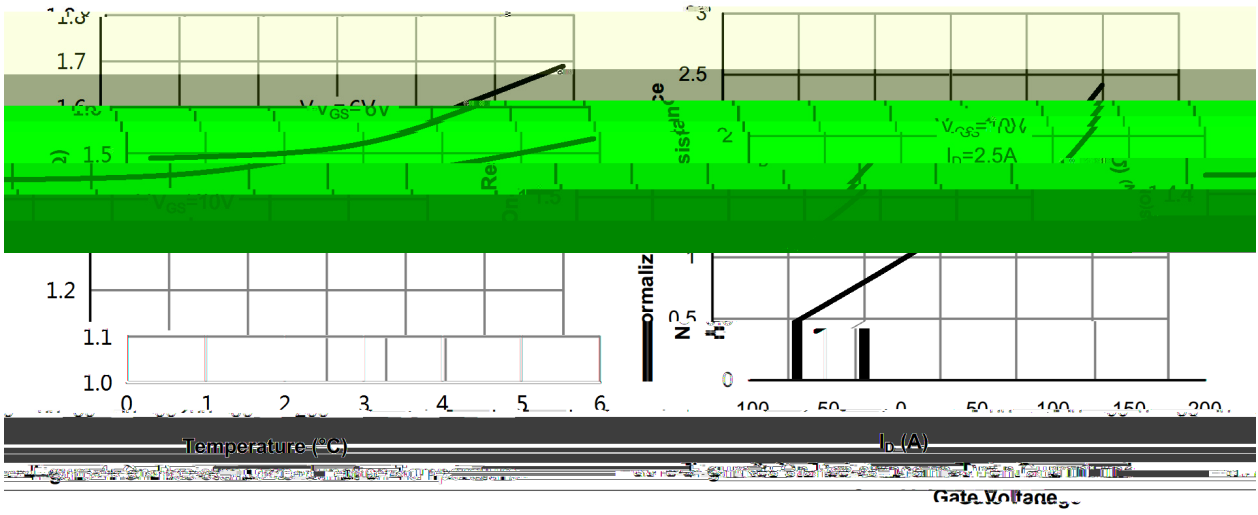
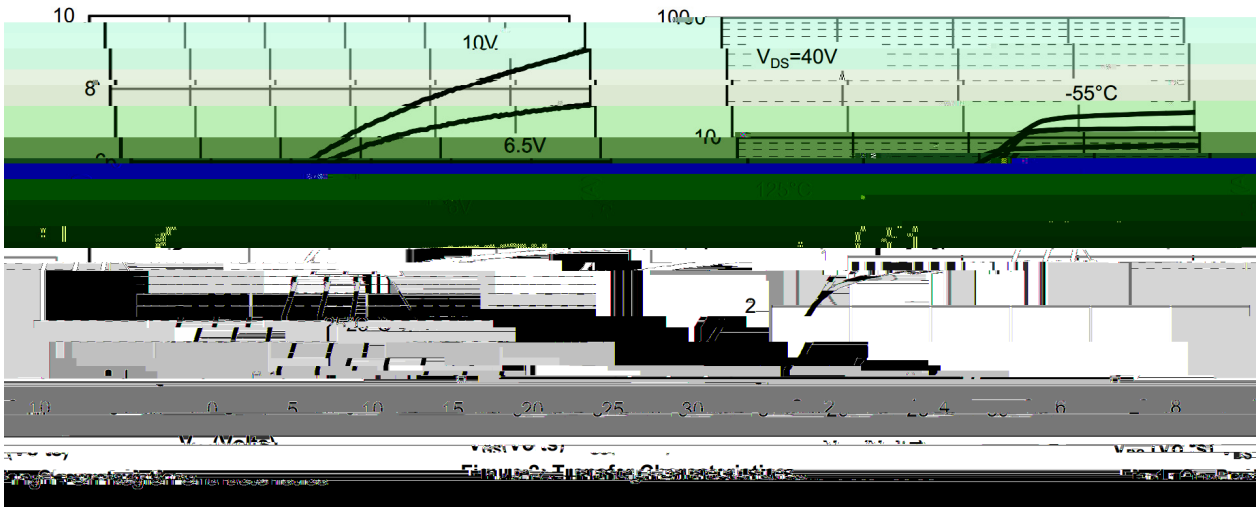
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	500	V
Drain Current	$I_D(T_C=25^\circ\text{C})$	5	A
Drain Current - Pulsed	I_{DM}	15.5	A
Gate-Source Voltage	V_{GSS}	± 30	V
Avalanche Current	I_{AR}	7	A
Single Pulsed Avalanche Energy	E_{AS}	218	mJ
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	90	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	
Thermal resistance, Junction to Case	R_{JC}	1.39	/W

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\text{ A}$	500	560		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=500V$ $V_{GS}=0V$			1	A
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 0.1	A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\text{ A}$	2	3.2	4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=2.5A$		1.45	1.5	
	$R_{DS(on)}$	$V_{GS}=6V$ $I_D=2A$		1.5	1.8	
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		570		pF
Output Capacitance	C_{oss}				150	pF
Reverse Transfer Capacitance	C_{rss}				10	pF
Total Gate Charge	Q_G	$V_{DS}=400V,$ $I_D=5.0A,$ $V_{GS}=10V$		25		nC
Gate-Source Charge	Q_{GS}				6	

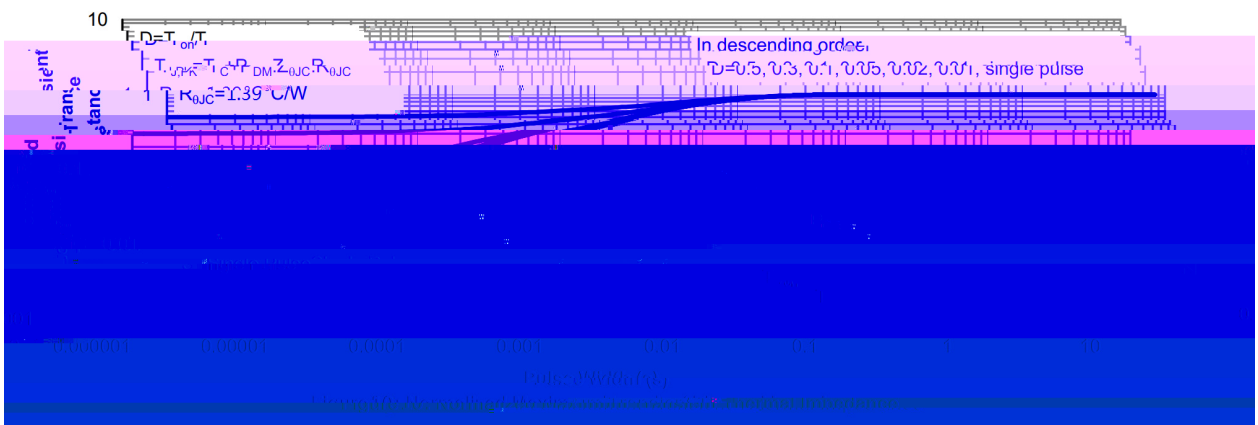
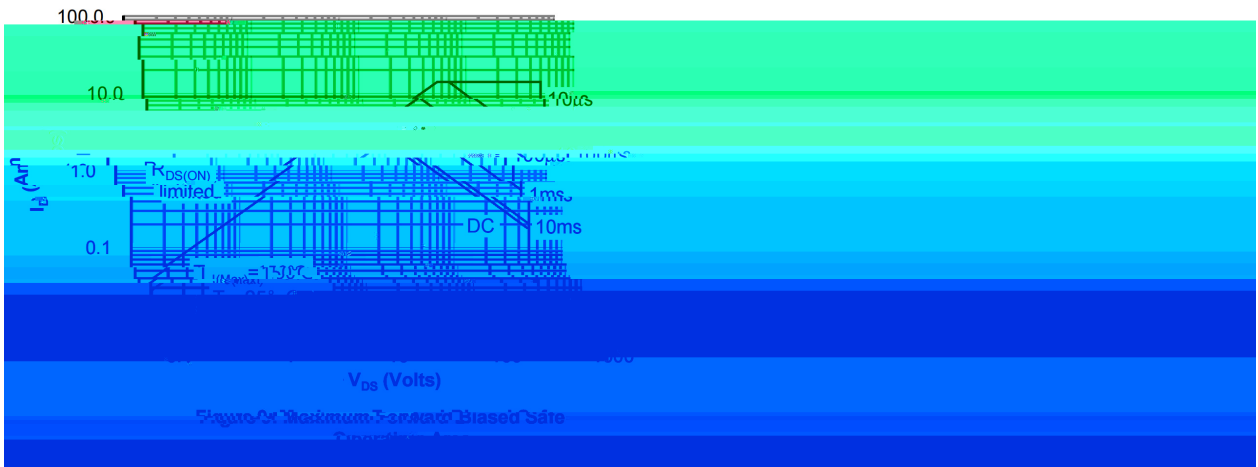
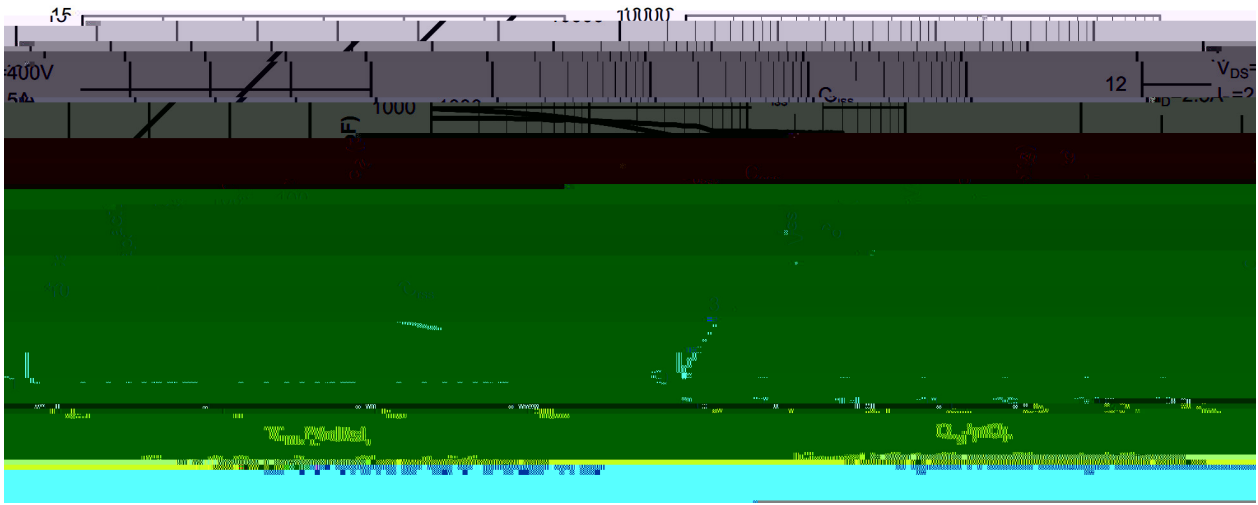
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/ Electrical Characteristic Curve



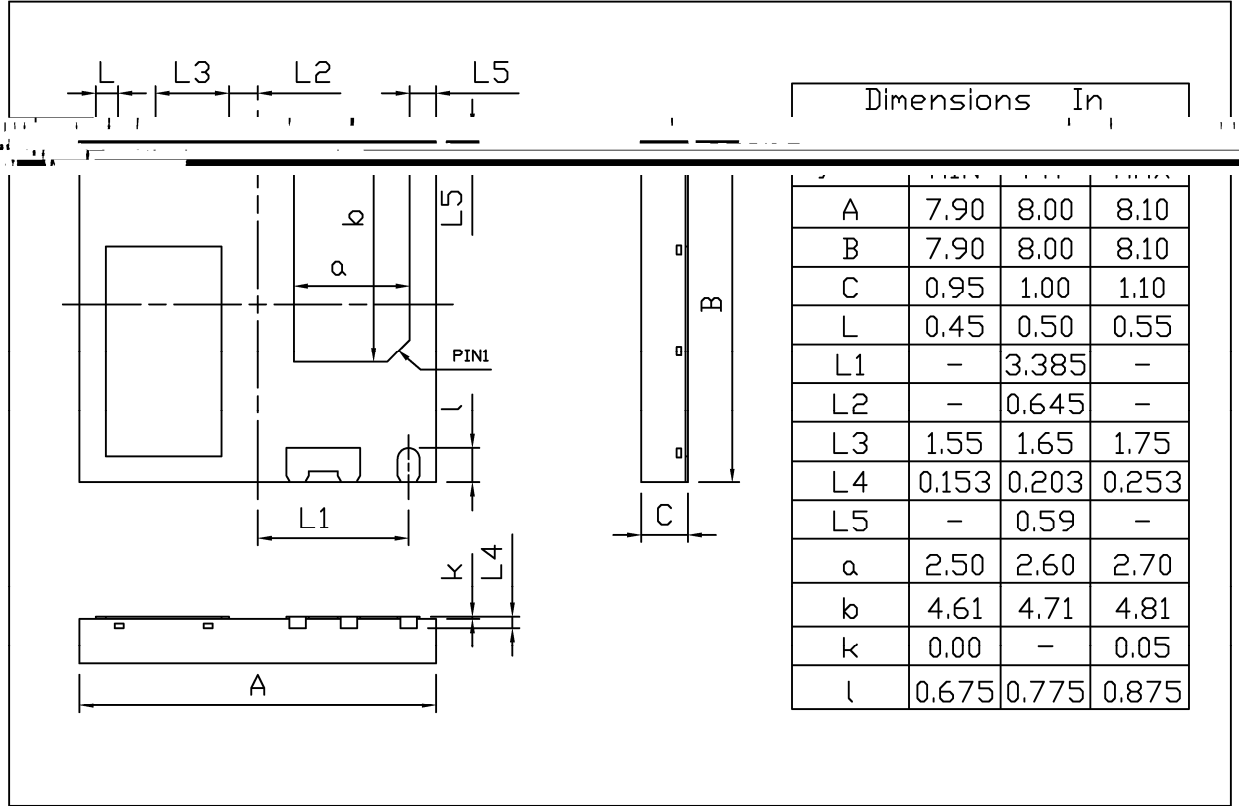
/ Electrical Characteristic Curve



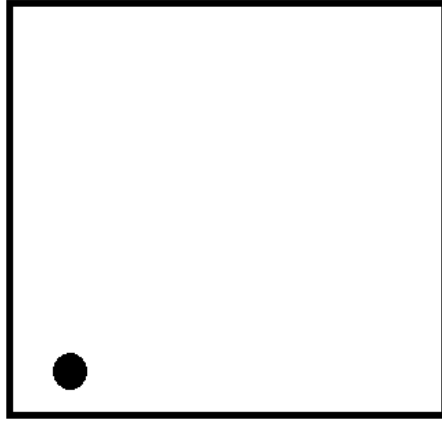
/ Package Dimensions

DFN8X8-4L

Unit:mm



REV.00 202307



() / Temperature Profile for IR Reflow Soldering(Pb-Free)

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
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/ Packaging SPEC.

/ REEL