

BRCS5N50YU

Rev.A Aug.-2023



DATA SHEET

DFN8×8-4L N

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

/ Absolute Maximum Ratings(Ta=25)

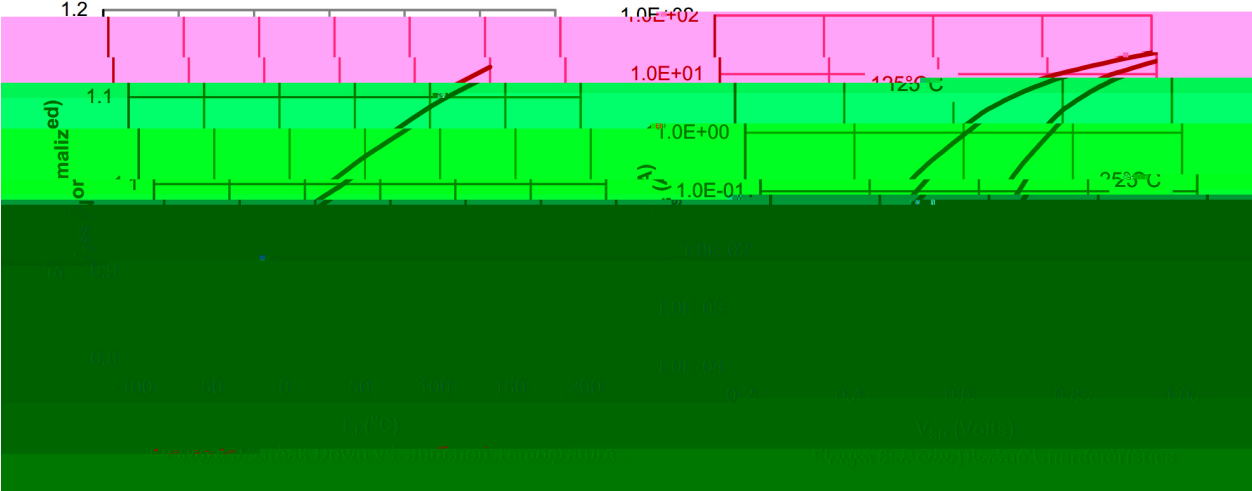
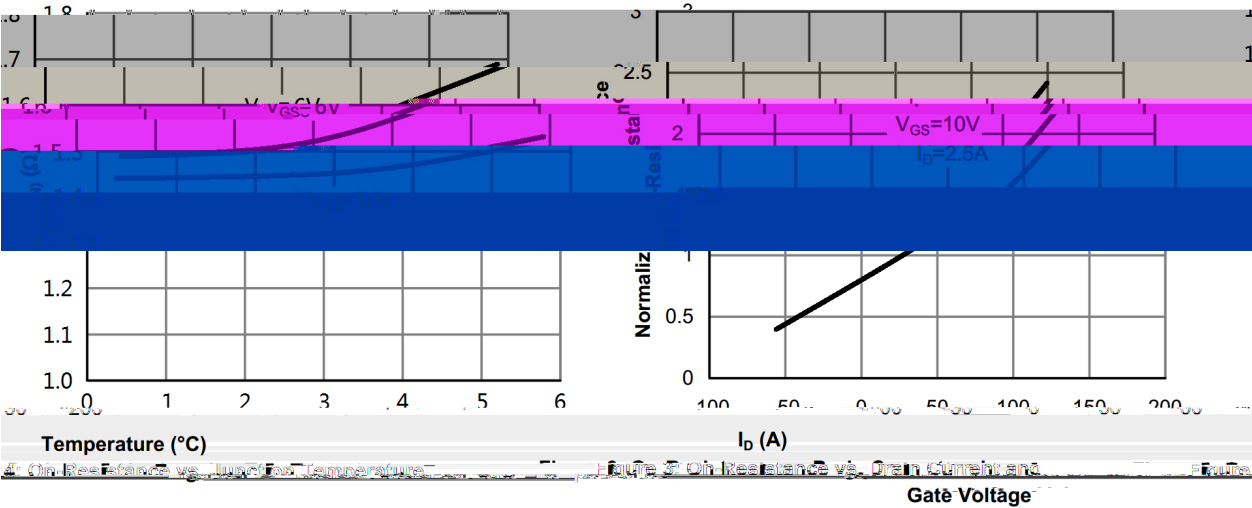
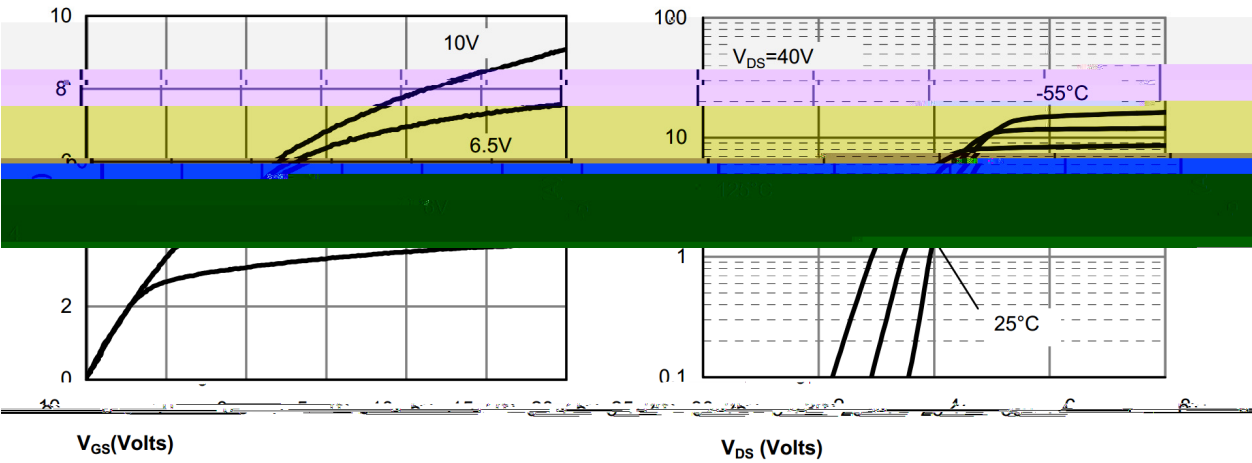
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	500	V
Drain Current	$I_D(T_C=25^\circ\text{C})$	5	A
Drain Current - Pulsed	I_{DM}	15.5	A
Gate-Source Voltage	V_{GS}	± 30	V
Avalanche Current	I_{AR}	7	A
Single Pulsed Avalanche Energy	E_{AS}	218	mJ
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D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

/ Electrical Characteristics(Ta=25)

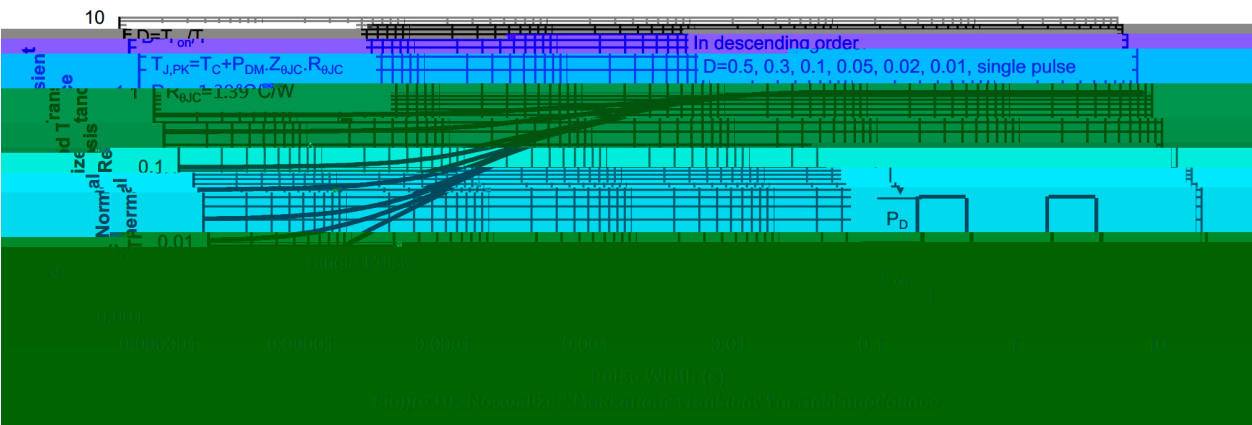
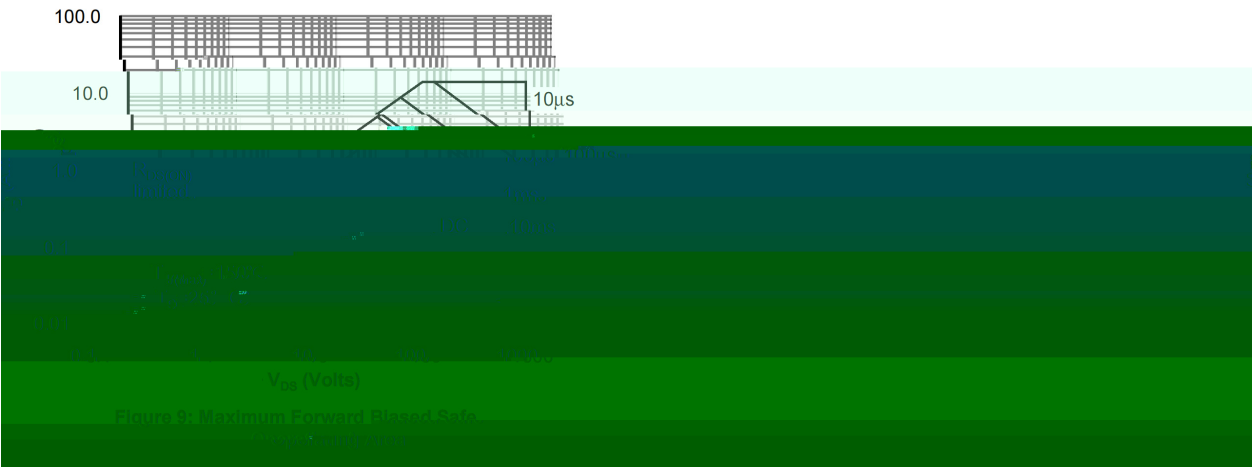
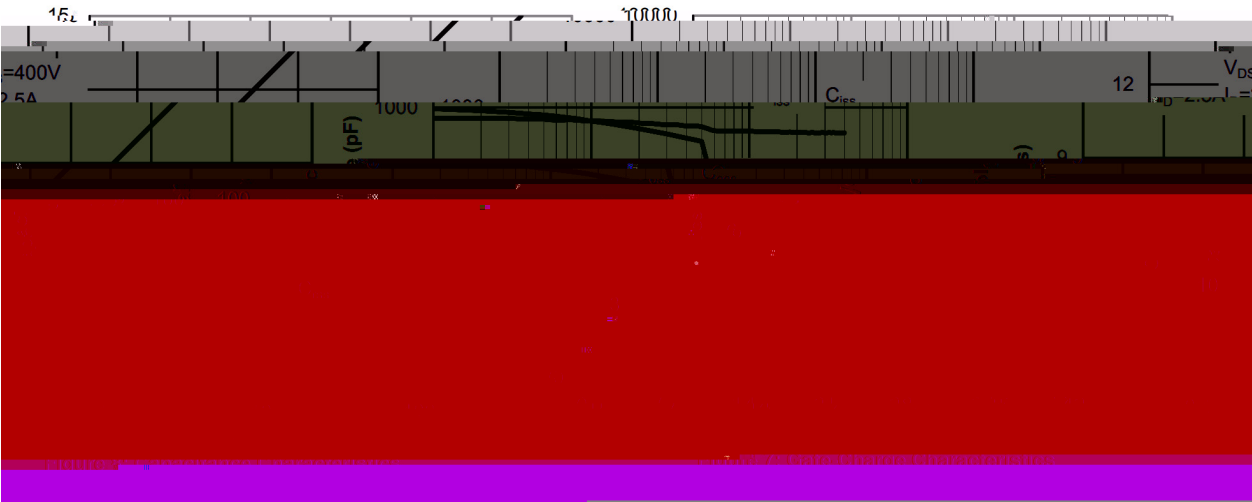
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250\mu A$	500	560		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=500V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2	3.2	4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=2.5A$		1.45	1.5	Ω
	$R_{DS(on)}$	$V_{GS}=6V$ $I_D=2A$		1.5	1.8	Ω
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		
Gate-Drain Charge	Q_{GD}			8		

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=250V$ $I_D=5.0A$ $R_G=25\Omega$		32		ns
Turn-On Rise Time	t_r			55		
Turn-Off Delay Time	$t_{d(off)}$			150		
Turn-Off Fall Time	t_f			73		
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0V$, $I_S = 5.0A$			1.4	V
Reverse Recovery Time	t_{rr}	$V_{GS} = 0V$, $I_S = 5.0A$, $dI_F/dt = 100A/\mu s$		350		nS
Reverse Recovery Charge	Q_{rr}			1600		nC

Electrical Characteristic Curve



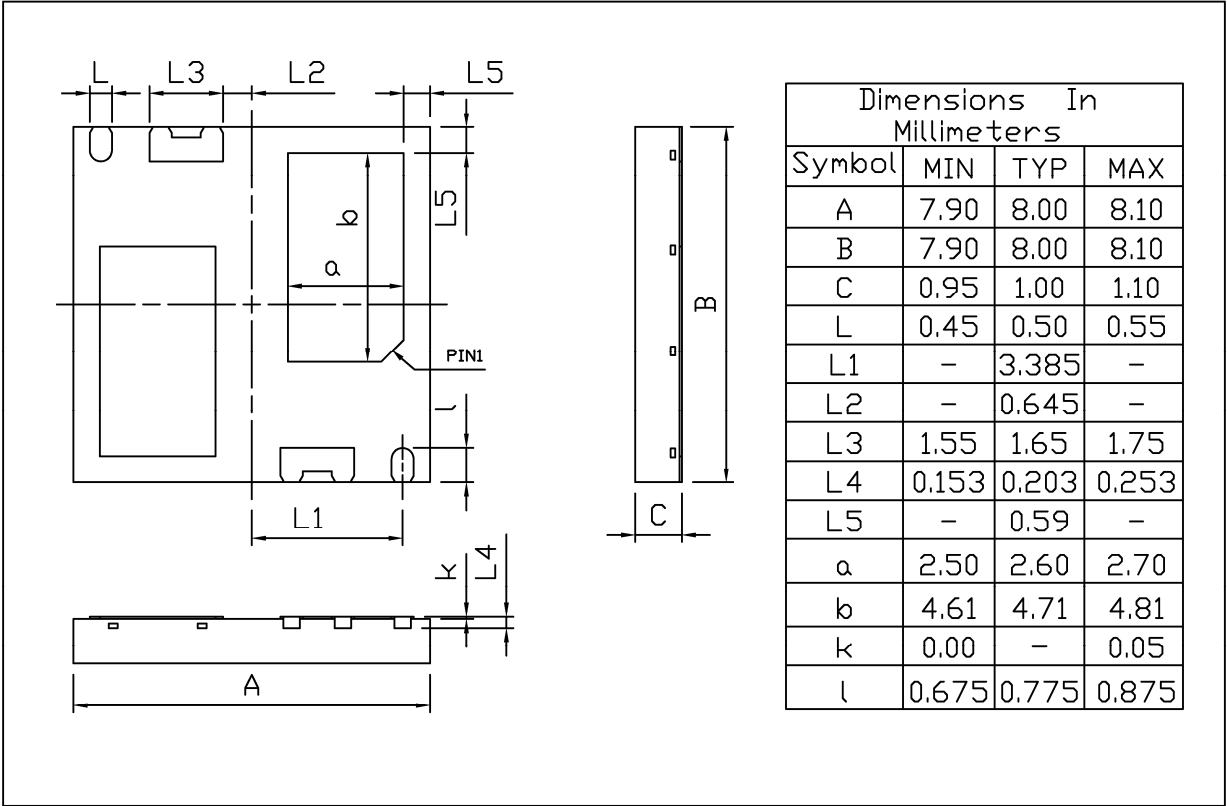
/ Electrical Characteristic Curve



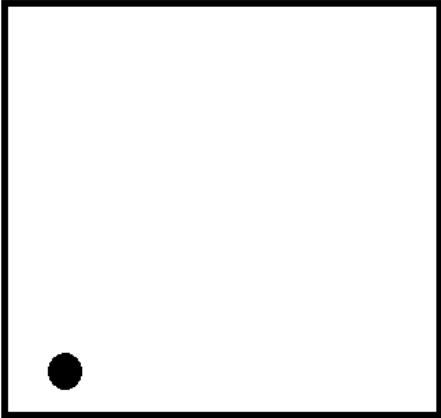
/ Package Dimensions

DFN8X8-4L

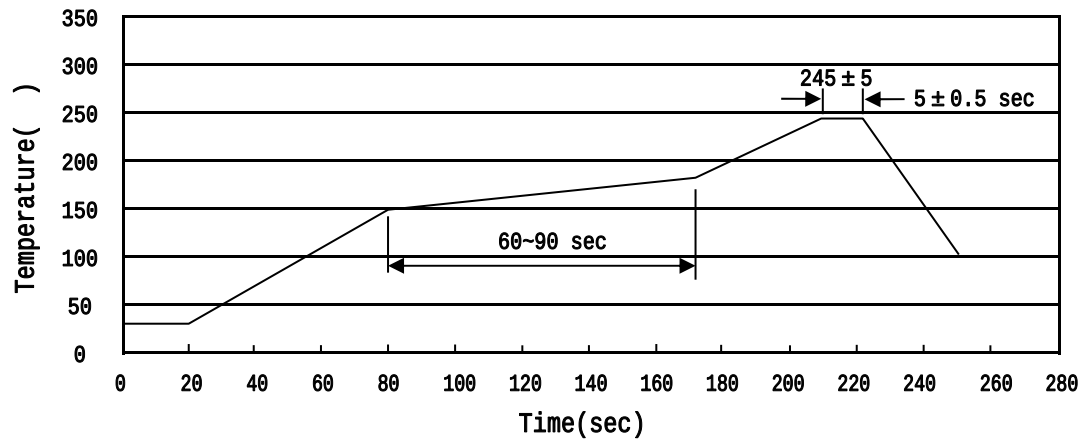
Unit:mm



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

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
DFN8×8-4L	3,000	2	6,000	6	36,000	13 ×16	360×360×50	380×335×366

/ Notices