

BRCS200N04YB

Rev.A May.-2023

DATA SHEET

/ Descriptions

PDFN 3×3A-8L N MOS

N-Channel Enhancement Mode Field Effect Transistor in a PDFN3×3A-8L Plastic Package.

/ Features

$V_{DS}=40V$ $I_D=21A$

$R_{DS(ON)}@10V<20m$ (Typ.18mR)

$R_{DS(ON)}@4.5V<35m$ (Typ.24mR)

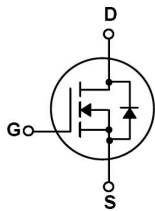
HF Product.

/ Applications

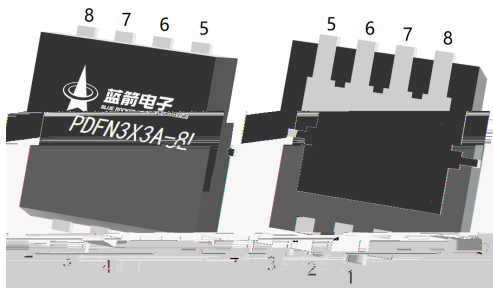
LED

Motor Drive, Power Tools, LED Lighting, Quick Charger.

/ 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.

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Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	40	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	21	A
Drain Current - Pulsed		I_{DM}	42	A
Gate-Source Voltage		V_{GS}	± 20	V
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	15	W
Operating and Storage Temperature Range		T_J, T_{stg}	-55 to 150	
Junction-to-Ambient	Steady-State	R_{JA}	80	/W
Junction-to-Case	Steady-State	R_{JC}	8.3	

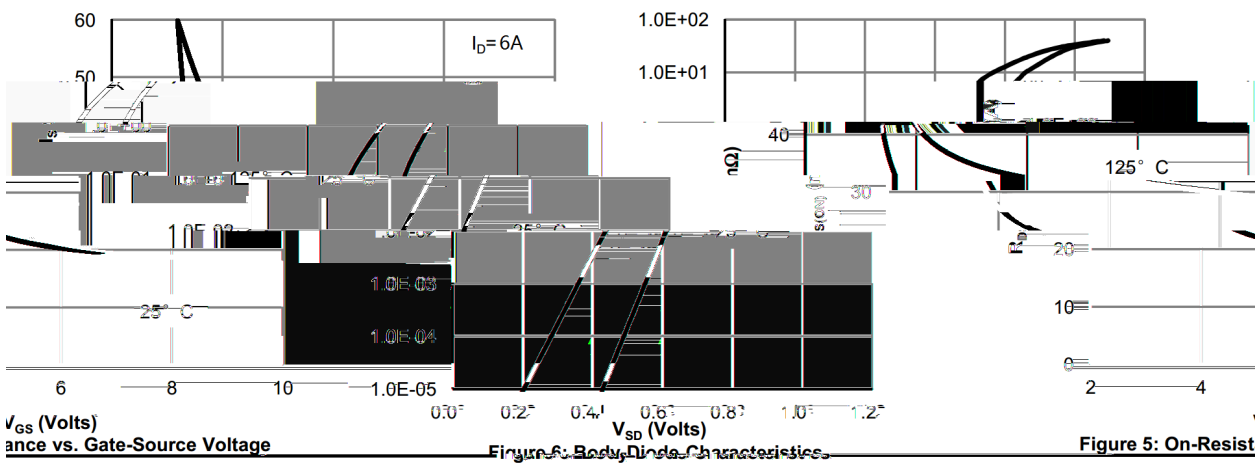
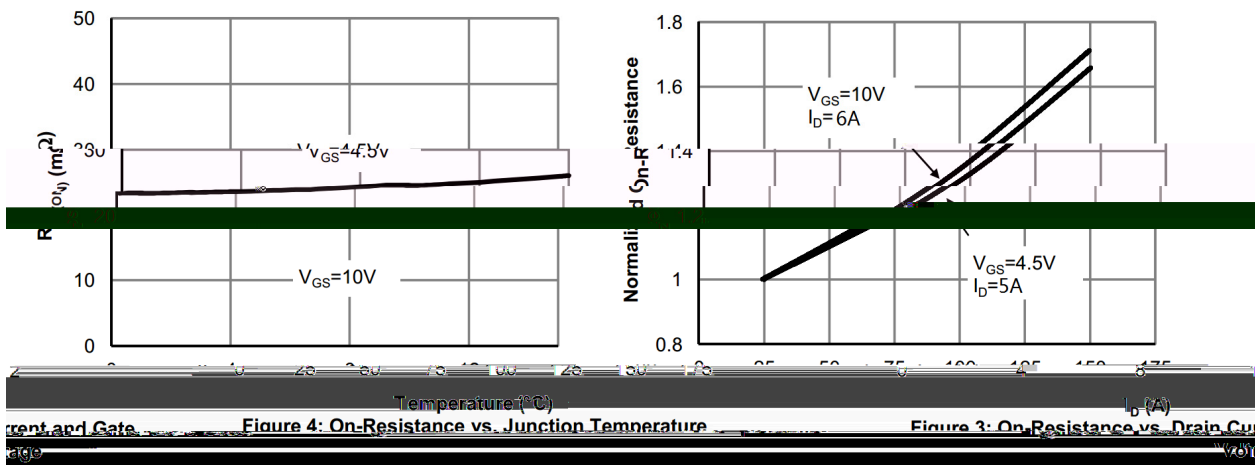
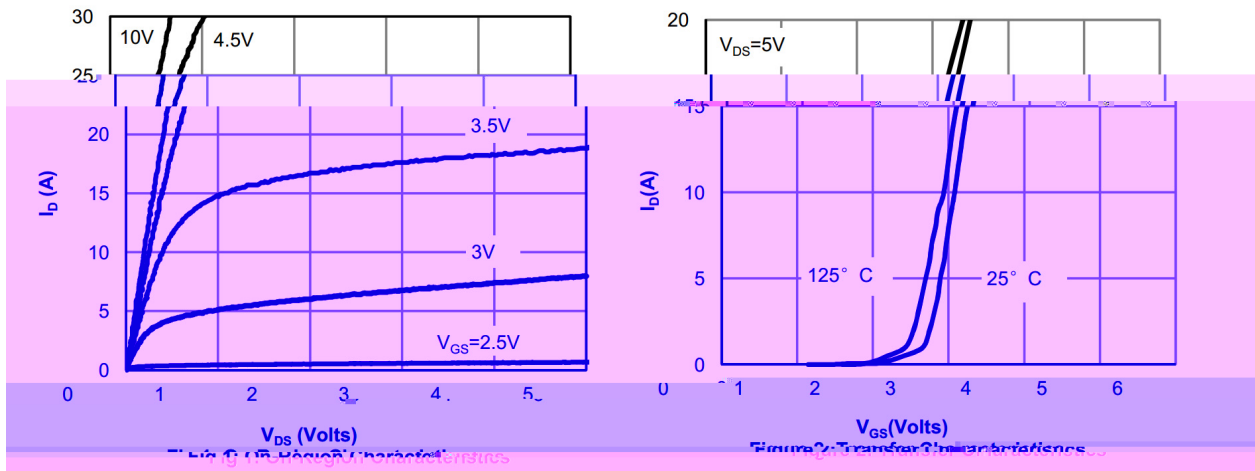
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\text{ A}$	40	45		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V$ $V_{GS}=0V$			1.0	A
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\text{ A}$	1	1.8	3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=6.0A$		18	20	m
		$V_{GS}=4.5V$ $I_D=5.0A$		24	35	m
Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1.0A$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		1200		pF
Output Capacitance	C_{oss}			350		pF

Reverse Tran 0 7.02 330.36 2573.47998 18.48 ref53TT400 pF TwTc0(ancej)10.4 re30 0 10.5 237.6 270.4403 Tm8

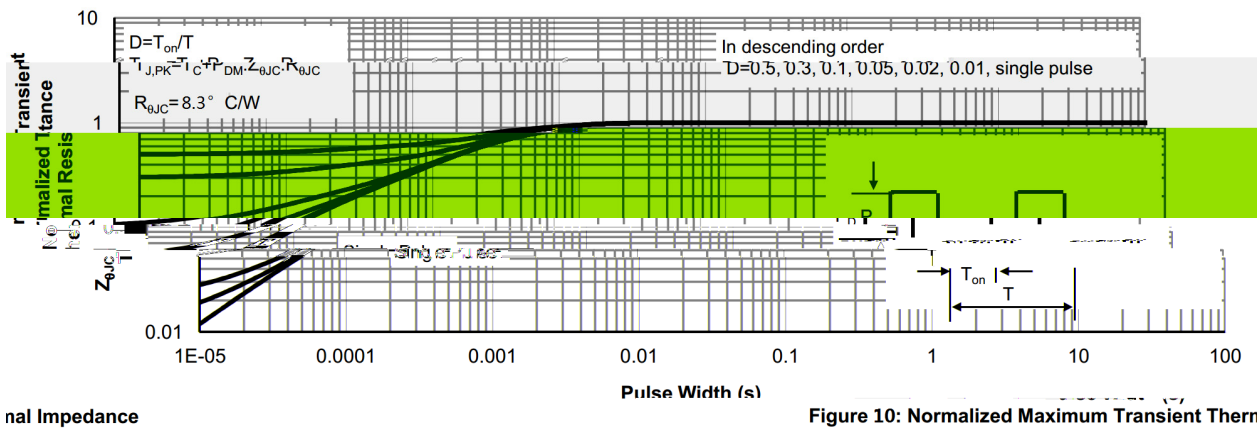
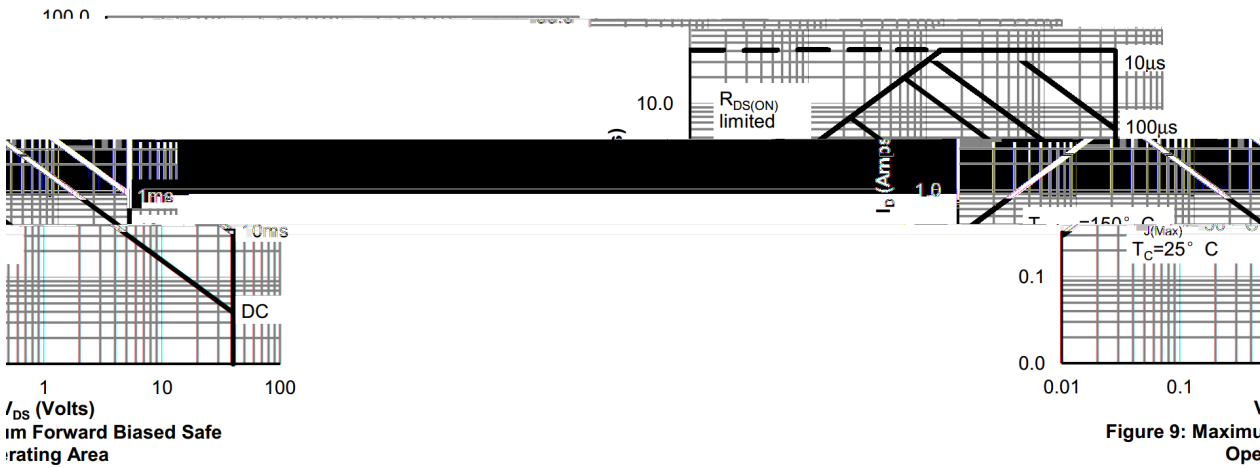
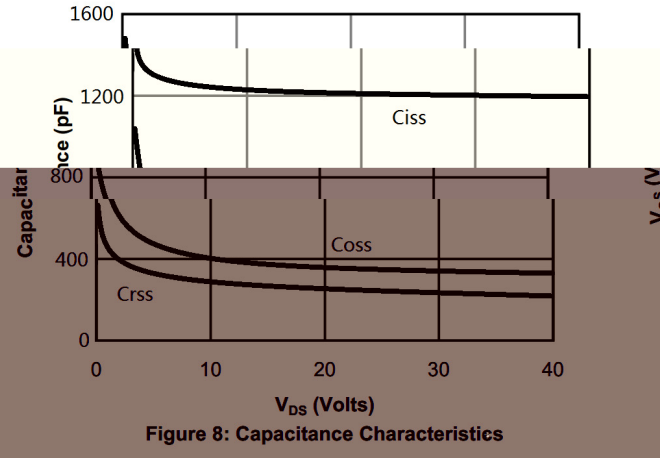
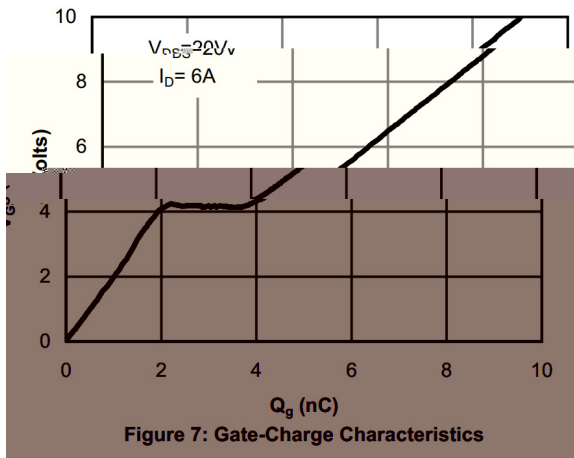
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=20V$ $V_{GS}=10V$ $R_L=3.3$ $R_{GEN}=3$		6.5		ns
Turn-On Rise Time	t_r			3.7		ns
Turn-Off Delay Time	$t_{d(off)}$				18.2	ns
Turn-Off Fall Time	t_f				7.1	ns

/ Electrical Characteristic Curve



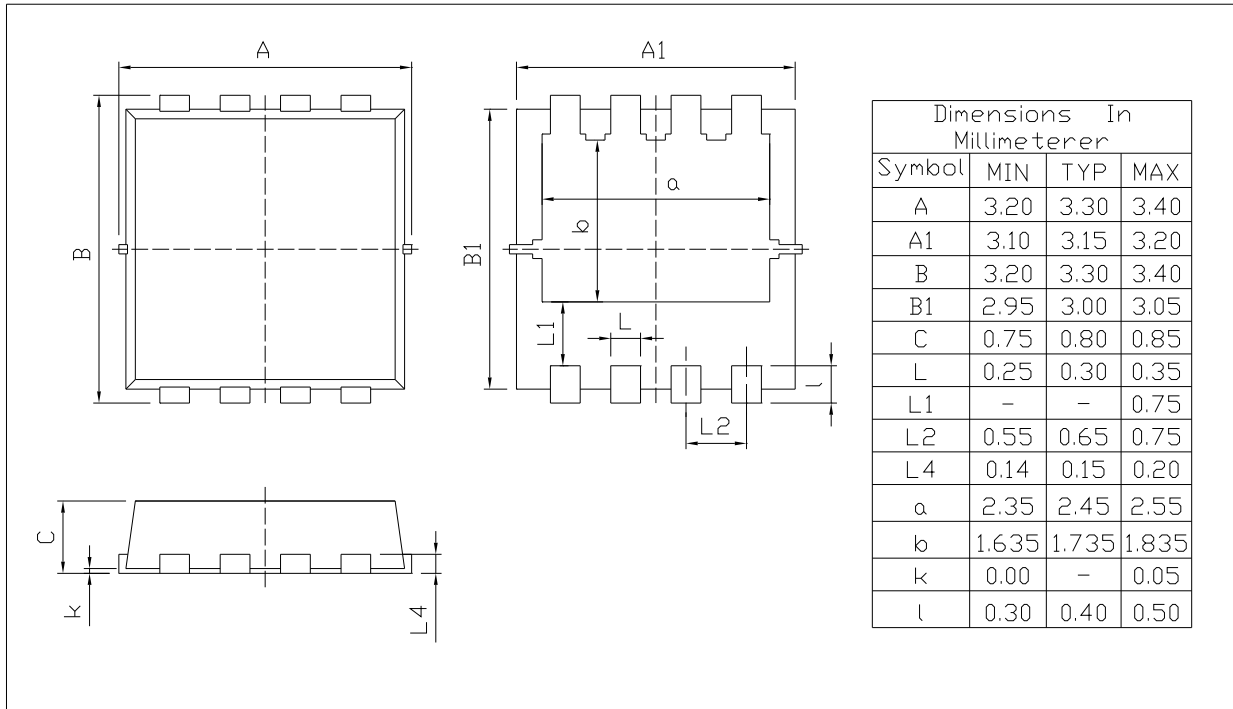
N- / N-CHANNEL Electrical Characteristic Curve



/ Package Dimensions

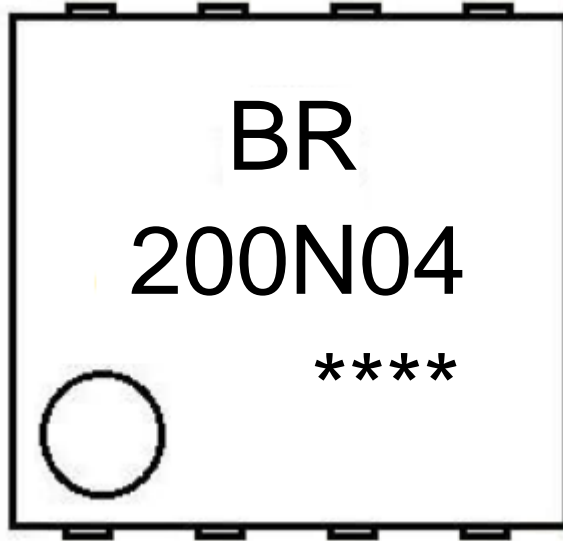
PDFN3X3A-8L

Unit:mm



Rev.00 202011

/ Marking Instructions



BR

200N04

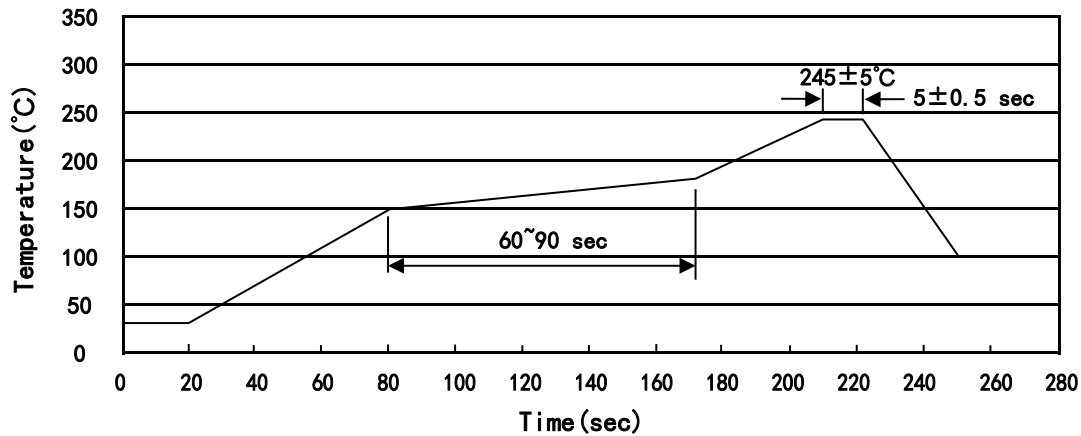
Note:

BR: Company Code

200N04: Product Type Code

****: Lot No. Code, code change with Lot No

() / 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
PDFN3x3A-8L	5,000	2	10,000	6	60,000	13 x12	360x360x50	380x335x366

/ Notices