

BRCS200P03YB

Rev.A May.-2022

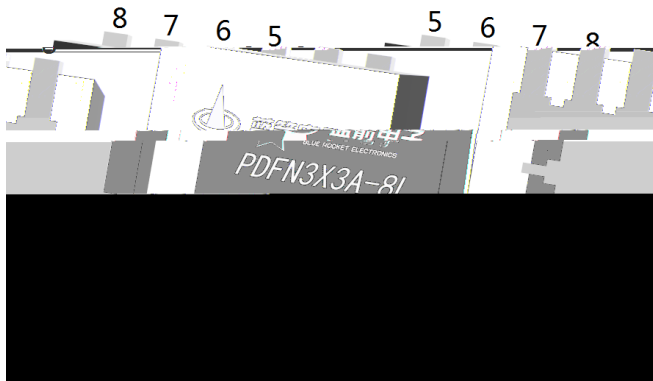
PDFN3×3A-8L P

P-Channel MOSFET in a PDFN3×3A-8L Plastic Package .

Low $R_{DS(ON)}$ to minimize conductive loss;low Gate Charge for fast switching;Low Thermal resistance;HF Product.

/

Notebook AC-in Load Switch,Battery Protection Charge/Discharge



PIN1、 2、 3: S PIN4: G PIN5、 6、 7、 8: D

G

5

/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	-30	V
Drain Current - Continuous		I _D (T _c =25°C)	-24	A
Drain Current – Pulsed		I _{DM}	-80	A
Gate-Source Voltage		V _{GS}	± 20	V
Power Dissipation		P _D (T _c =25°C)	20	W
Single Pulse Avalanche Energy(L=0.5mH)		E _{AS}	152	mJ
Avalanche Current(L=0.5mH)		I _{AS}	19.5	A
Junction and Storage Temperature Range		T _j , T _{stg}	-55 to 150	
Thermal resistance, junction - ambient	t ≤ 10s	R _{θJA}	30	/ W
	Steady-State		65	
Thermal resistance, junction - case	Steady-State	R _{θJC}	7	

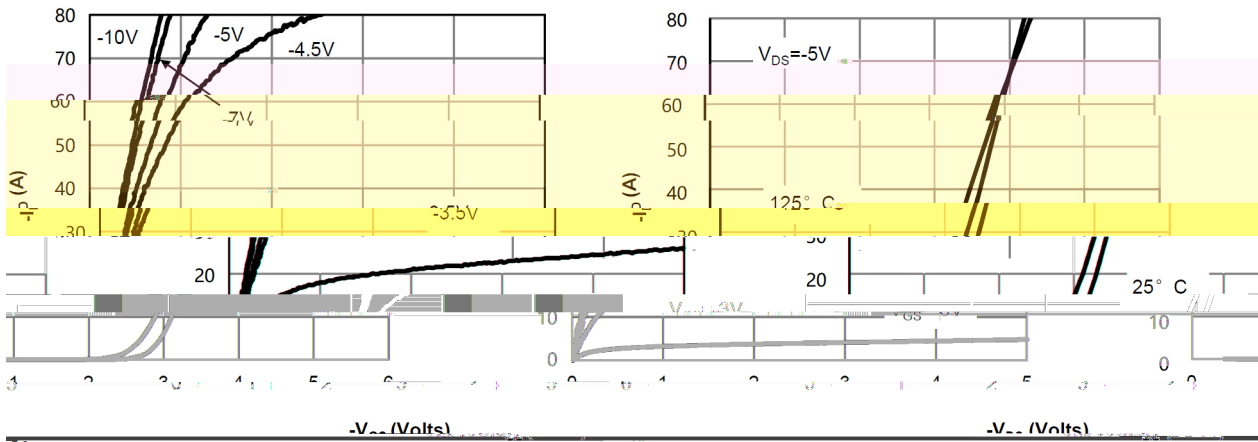
/ Electrical Characteristics($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu A$ $V_{GS}=0V$	-30	-33		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V$ $V_{GS}=0V$			-1.0	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0V$, $V_{GS}=\pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1.0	-1.3	-3.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-10V$, $I_D=-10A$		17.5	20	m
		$V_{GS}=-4.5V$, $I_D=-10A$		25.5	30	
Diode Forward Voltage	V_{SD}	$I_S=-1A$, $V_{GS}=0V$			-1.2	V
Input Capacitance	C_{iss}	$V_{DS}=-25V$ $V_{GS}=0V$ $f=1.0MHz$		1430		pF
Output Capacitance	C_{oss}			580		
Reverse Transfer Capacitance	C_{rss}			350		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		13		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=-10V$, $V_{DS}=-15V$, $I_D=-9.7A$		20		nC
Total Gate Charge	$Q_{g(4.5V)}$			9.5		
Gate Source Charge	Q_{gs}			3.5		
Gate Drain Charge	Q_{gd}			4.5		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-10V$ $V_{DS}=-15V$ $R_L=1.5\ \Omega$ $R_{GEN}=3\ \Omega$		10		ns
Turn-On Rise Time	t_r			5.5		
Turn-Off Delay Time	$t_{d(off)}$			26.1		
Turn-Off Fall Time	t_f			9.1		

Electrical Characteristic Curve



Region Characteristics

Figure 2: Transfer Characteristics

Figure 1: On-R

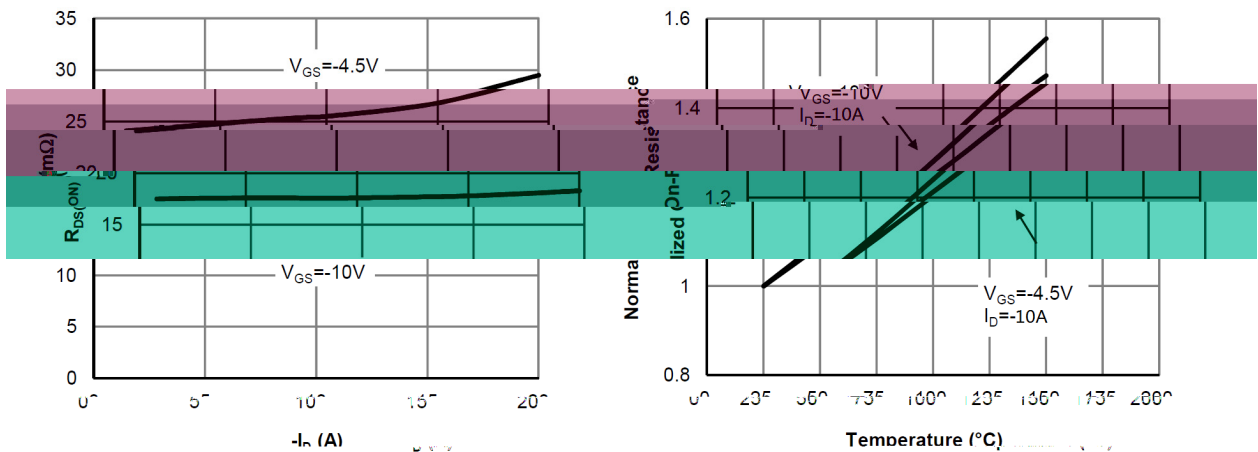
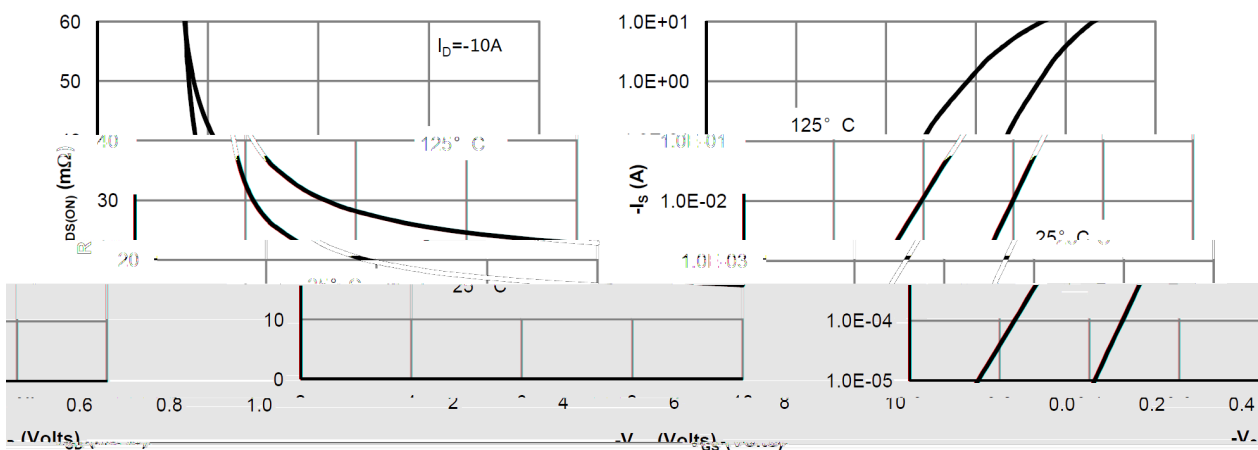


Figure 3: On-Resistance vs. Drain Current and

Figure 4: On-Resistance vs. Junction



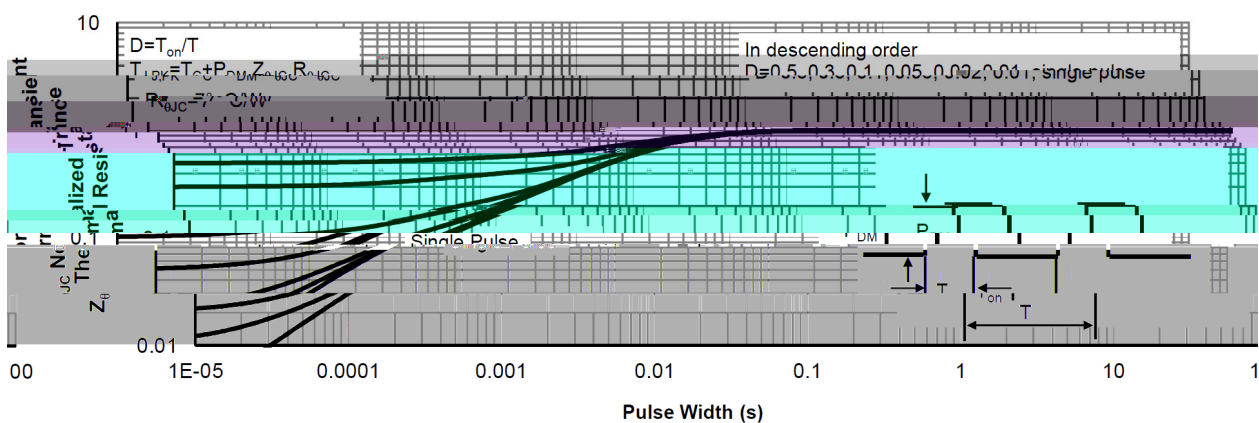
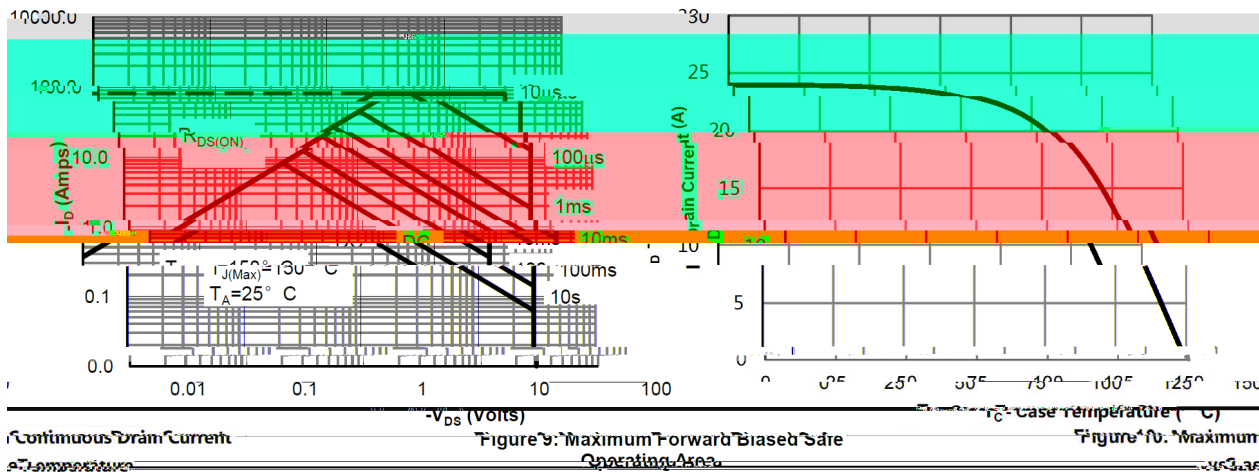
Body-Diode Characteristics

Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6:



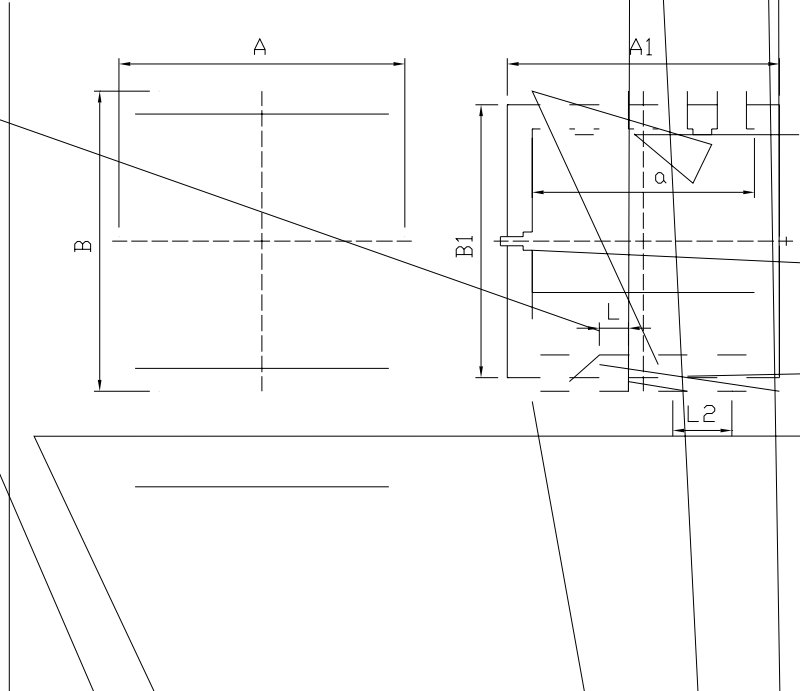
Electrical Characteristic Curve



I Package Dimensions

PDFN3X3A-8L

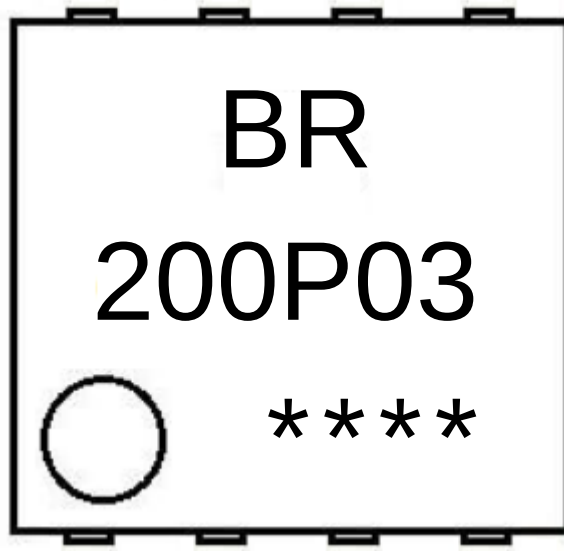
Unit:mm



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	3.20	3.30	3.40
A1	3.10	3.15	3.20
B	3.20	3.30	3.40
B1	2.95	3.00	3.05
C	0.75	0.80	0.85
L	0.25	0.30	0.35
L1	-	-	0.75
L2	0.55	0.65	0.75
L4	0.14	0.15	0.20
a	2.35	2.45	2.55
b	1.635	1.735	1.835

Rev.00 202011

/ Marking Instructions



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Note:

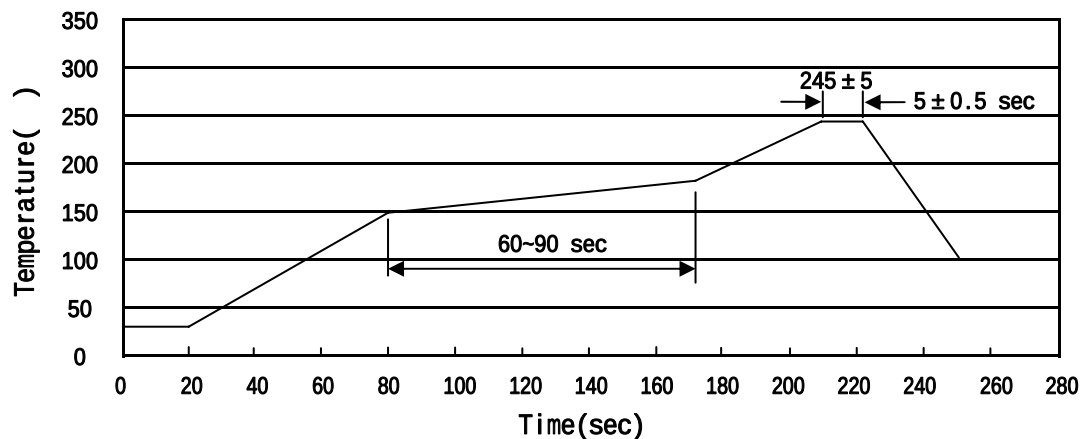
BR: Company Code.

200P03: 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 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	只 卷盘	卷盘 盒	只 盒	盒 箱	只 箱		盒	箱
x						"		

/ Notices