

# BRCS200P02YA

Rev.A Dec.-2023

## 描述 / Descriptions

PDFN3×3-8L 塑封封装双 P 沟道 MOS 场效应管。

Double P-CHANNEL MOSFET in a PDFN3×3-8L Plastic Package.

## 特征 / Features

$V_{DS}=-20V$   $I_D=-22.8A$

$R_{DS(ON)}@-4.5V \leq 22m\Omega$  (Type.20m $\Omega$ )

$R_{DS(ON)}@-2.5V \leq 30m\Omega$  (Type.26m $\Omega$ )

$R_{DS(ON)}@-1.8V \leq 100m\Omega$  (Type.35m $\Omega$ )

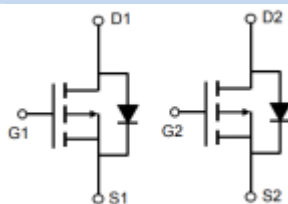
无卤产品。HF Product.

## 用途 / Applications

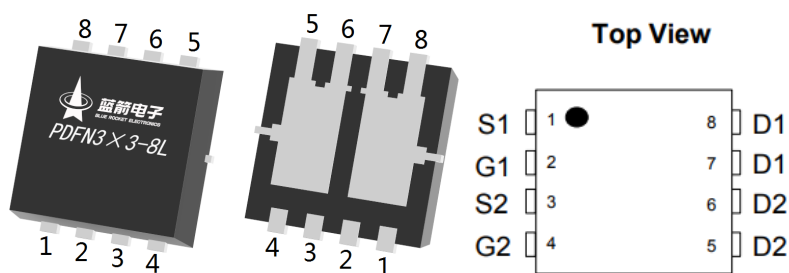
保护电路应用，逻辑/负载开关电路应用。

Protection Circuits Applications, Logic/Load Switch Circuits Applications.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



## 印章代码 / Marking

见印章说明。

See Marking Instructions.

**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V <sub>DSS</sub>	-20	V
Gate-Source Voltage	V <sub>GSS</sub>	±12	V
Continuous Drain Current	I <sub>D</sub> (Tc=25°C)	-22.8	A
Pulsed Drain Current	I <sub>DM</sub>	-37.5	A
Power Dissipation	P <sub>D</sub> (Tc=25°C)	16	W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C
Maximum Junction-to-Ambient	R <sub>θJA</sub> (Steady-State)	65	°C/W
Maximum Junction-to-Case	R <sub>θJC</sub> (Steady-State)	7.8	°C/W

**电性能参数 / Electrical Characteristics(Ta=25°C)**

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	I <sub>D</sub> =-250μA V <sub>GS</sub> =0V	-20	-22.5		V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V V <sub>GS</sub> =0V			-1.0	μA
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V V <sub>GS</sub> =±12V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250μA	-0.5	-0.6	-1.0	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-4.5V I <sub>D</sub> =-5A		20	22	mΩ
		V <sub>GS</sub> =-2.5V I <sub>D</sub> =-4A		26	30	
		V <sub>GS</sub> =-1.8V I <sub>D</sub> =-3A		35	100	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A V <sub>GS</sub> =0V			-1.2	V
Gate resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, f=1MHz V <sub>DS</sub> =0V,		11		Ω
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V V <sub>DS</sub> =-5V f=1MHz		1700		pF
Output Capacitance	C <sub>oss</sub>			600		
Reverse Transfer Capacitance	C <sub>rss</sub>			450		
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-6A V <sub>DS</sub> =-10V,		13		nC
Gate Source Charge	Q <sub>gs</sub>			2.5		
Gate Drain Charge	Q <sub>gd</sub>			4.2		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>GS</sub> =-4.5V R <sub>L</sub> =1.25Ω V <sub>DS</sub> =-10V R <sub>GEN</sub> =3Ω		7.5		ns
Turn-On Rise Time	t <sub>r</sub>			29.2		
Turn-Off Delay Time	t <sub>d(off)</sub>			103		
Turn-Off Fall Time	t <sub>f</sub>			50		

电参数曲线图 / Electrical Characteristic Curve

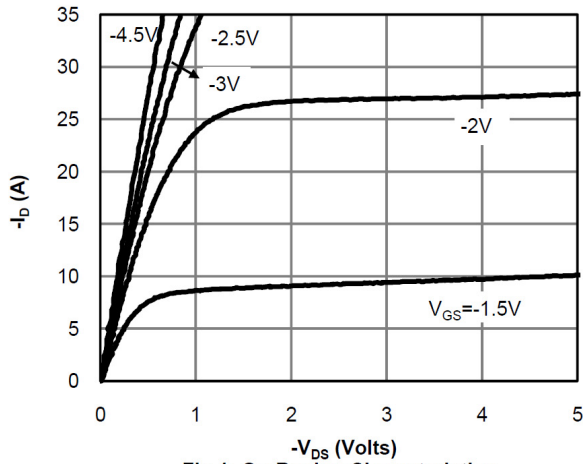


Fig 1: On-Region Characteristics

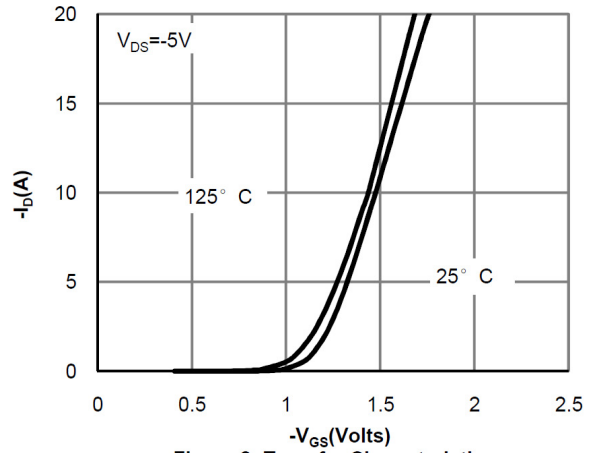


Figure 2: Transfer Characteristics

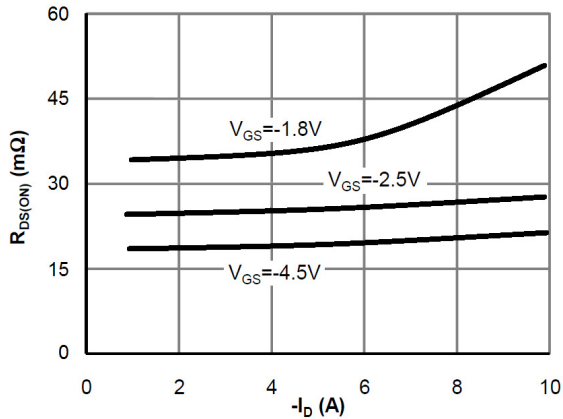


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

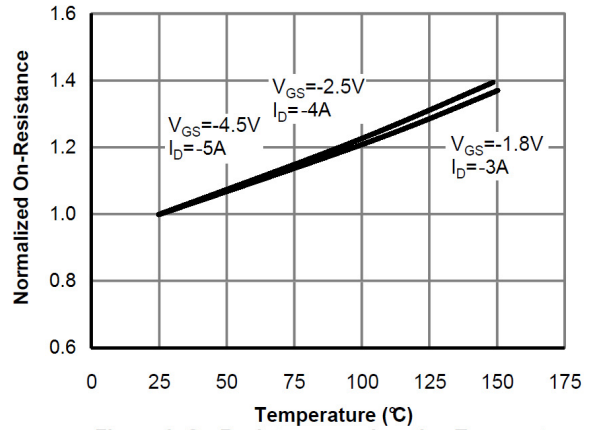


Figure 4: On-Resistance vs. Junction Temperature

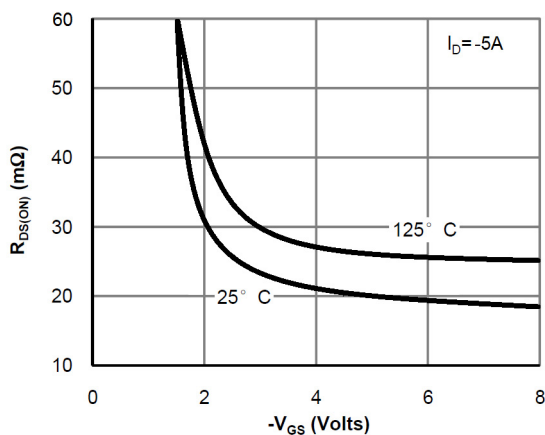


Figure 5: On-Resistance vs. Gate-Source Voltage

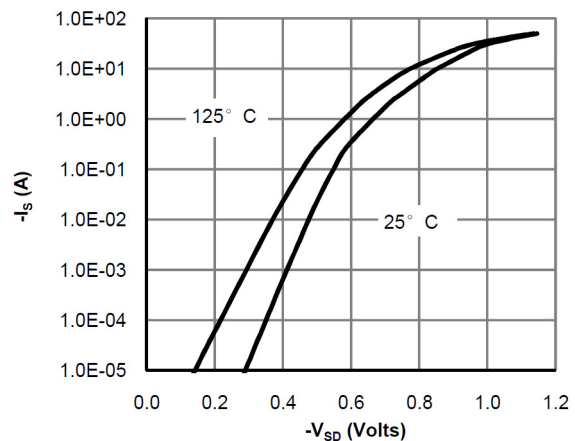
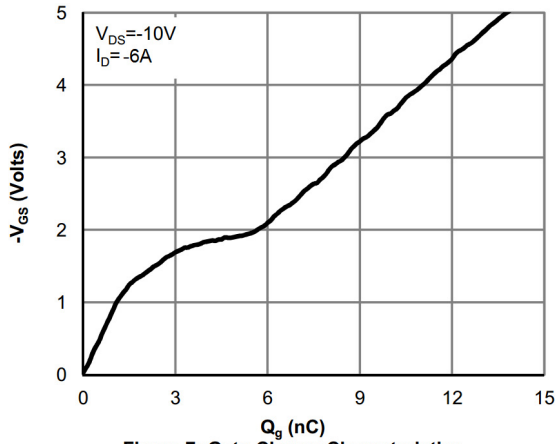
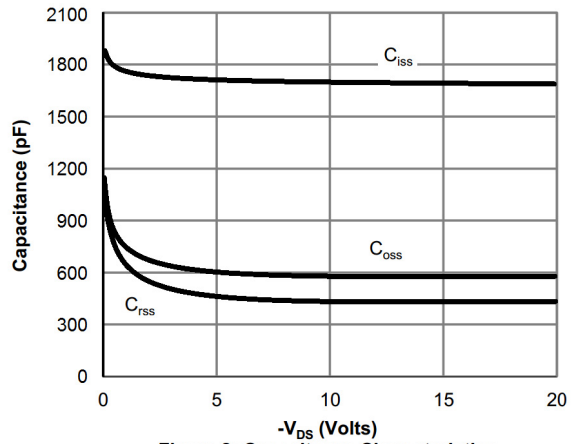


Figure 6: Body-Diode Characteristics

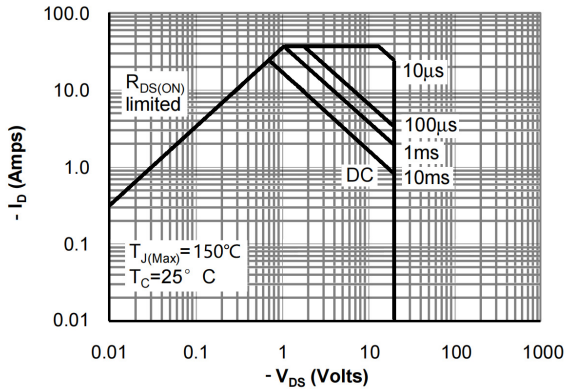
**电参数曲线图 / Electrical Characteristic Curve**



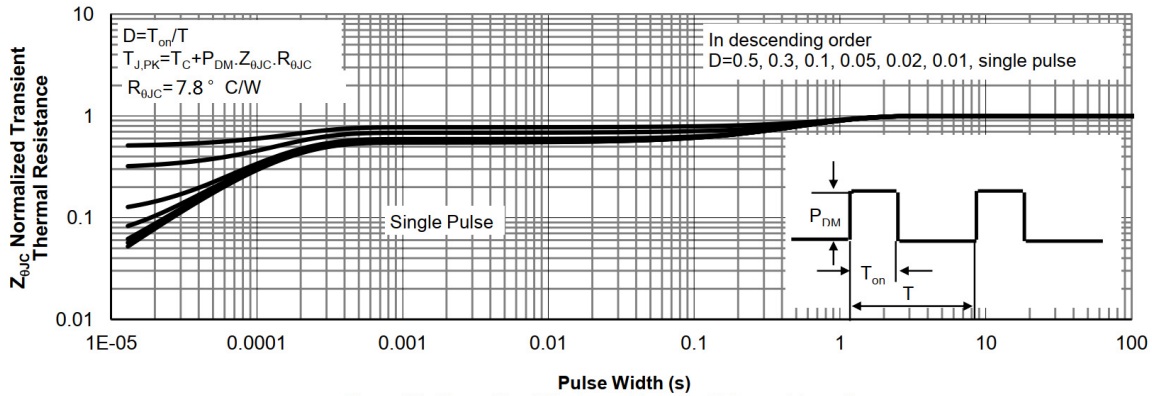
**Figure 7: Gate-Charge Characteristics**



**Figure 8: Capacitance Characteristics**



**Figure 9: Maximum Forward Biased Safe Operating Area**

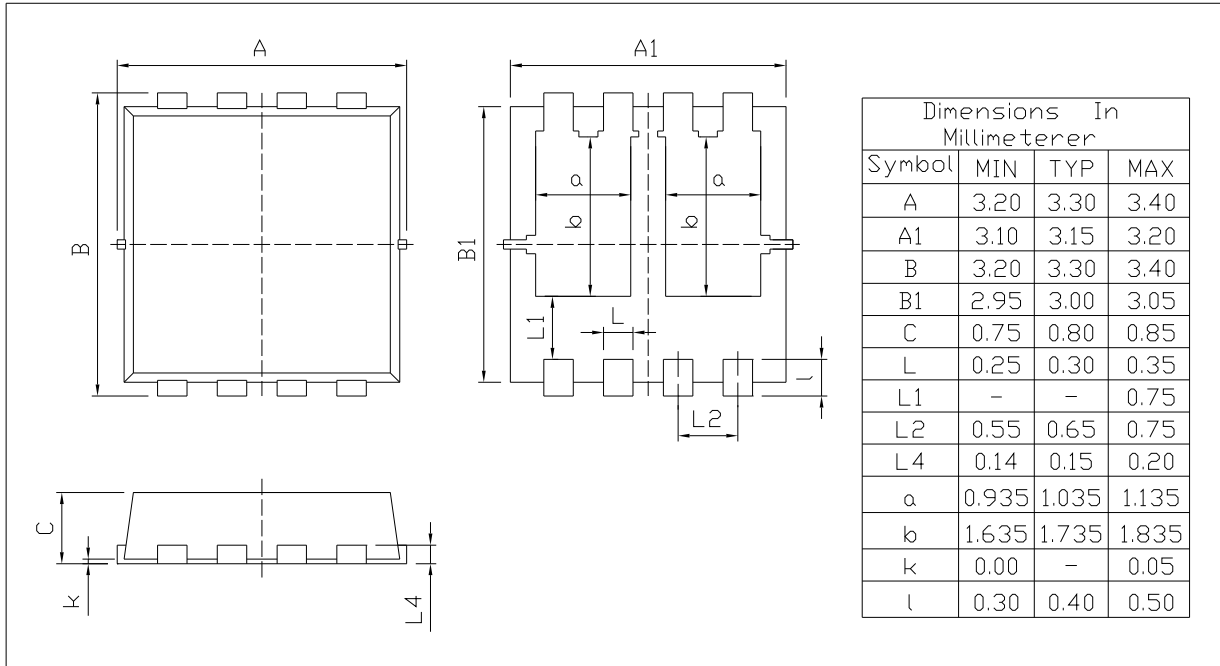


**Figure 10: Normalized Maximum Transient Thermal Impedance**

**外形尺寸图 / Package Dimensions**

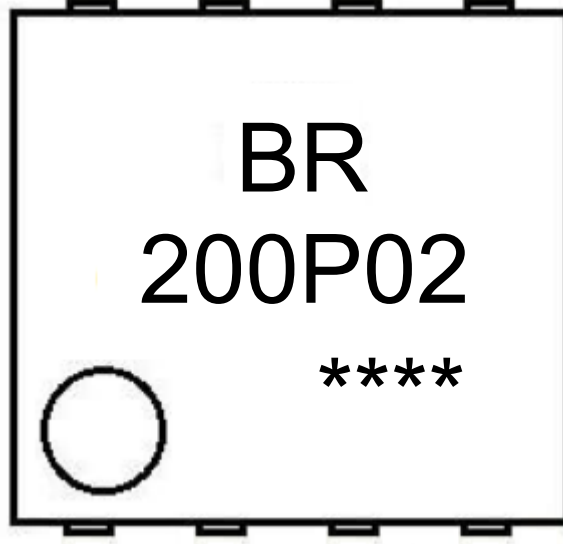
PDFN3X3-8L

Unit:mm



Rev.00 202011

**印章说明 / Marking Instructions**



说明：

BR： 为公司代码

200P02： 为型号代码

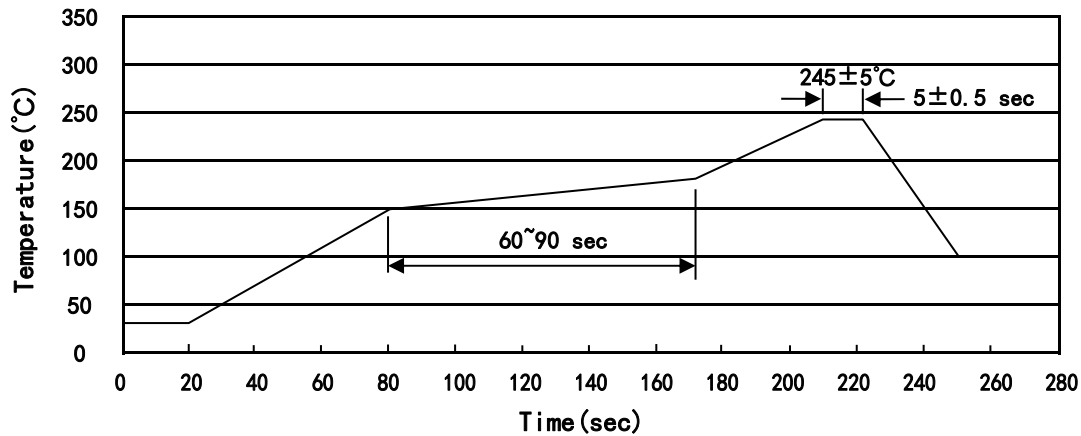
\*\*\*\*： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

200P02: Product Type Code

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

**回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)**


说明：

- 1、预热温度 150~180°C，时间 60~90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2~10°C/sec.

Note:

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

**耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions**

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

**包装规格 / Packaging SPEC.**

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
PDFN3×3-8L	5,000	2	10,000	6	60,000	13" ×12	360×360×50	380×335×366

**使用说明 / Notices**