

# BRCS400P03YA

Rev.A Feb.-2022

DATA SHEET

## 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.

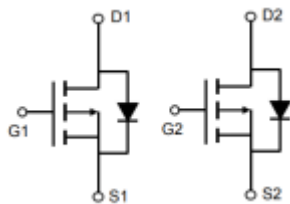
## 特征 / Features

P-channel  
 VDS(V)=-30V  
 ID=-10A  
 RDS(ON)<40mΩ (VGS=-10V)  
 RDS(ON)<70mΩ (VGS=-4.5V)  
 无卤产品。Halogen-free Product.

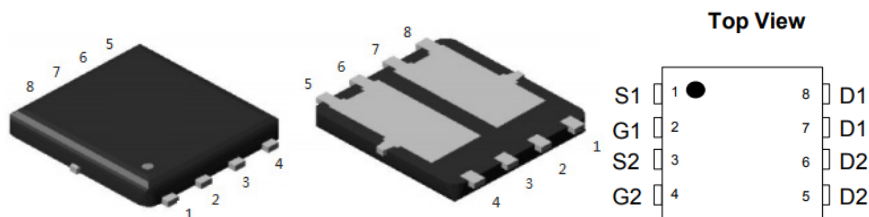
## 用途 / Applications

用作一般的开关和相位控制。  
 Intended for use in general purpose switching and phase control 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	$V_{DSS}$	-30	V
Gate-Source Voltage	$V_{GSS}$	±20	V
Continuous Drain Current	$I_D(T_A=25^\circ\text{C})$	-11	A
Pulsed Drain Current	$I_{DM}$	-40	A
Power Dissipation	$P_D(T_A=25^\circ\text{C})$	11	W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C
Maximum Junction-to-Case	$R_{\theta JC}(\text{Steady-State})$	11.4	°C/W
Maximum Junction-to-Ambient	$R_{\theta JA}(\text{Steady-State})$	45	°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	$BV_{DSS}$	$V_{GS}=0V$ $I_D=-250\mu A$	-30	-34		V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-30V$ $V_{GS}=0V$			-1.0	μA
Gate-Body leakage current	$I_{GSS}$	$V_{GS}=\pm 20V$ $V_{DS}=0V$			100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1.0	-1.6	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V$ $I_D=-10A$		33	40	mΩ
		$V_{GS}=-4.5V$ $I_D=-8A$		56	70	mΩ
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V$ $I_S=-1.0A$			-1.2	V
Input Capacitance	$C_{ISS}$	$V_{DS}=-25V$ $V_{GS}=0V$ $f=1.0MHz$		1100		pF
Output Capacitance	$C_{OSS}$			290		pF
Reverse Transfer Capacitance	$C_{RSS}$			180		pF
Gate resistance	$R_g$	$V_{DS}=0V$ $f=1.0MHz$ $V_{GS}=0V$		9.0		Ω
Total Gate Charge(10V)	$Q_g(10V)$	$V_{GS}=-10V$ $V_{DS}=-15V$ $I_D=-5A$		12.5		nC
Total Gate Charge(4.5V)	$Q_g(4.5V)$			6		nC
Gate-Source Charge	$Q_{gs}$			1.6		nC
Gate-Drain Charge	$Q_{gd}$			3		nC
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-15V$ $V_{GS}=-10V$ $R_L=3\Omega$ $R_{GEN}=6\Omega$		6.5		ns
Turn-On Rise Time	$t_r$			3.5		ns
Turn-Off Delay Time	$t_{d(off)}$			41		ns
Turn-Off Fall Time	$t_f$			9		ns

电参数曲线图 / Electrical Characteristic Curve

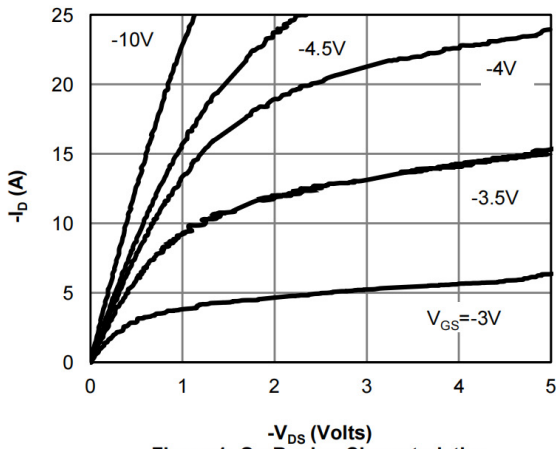


Figure 1: On-Region Characteristics

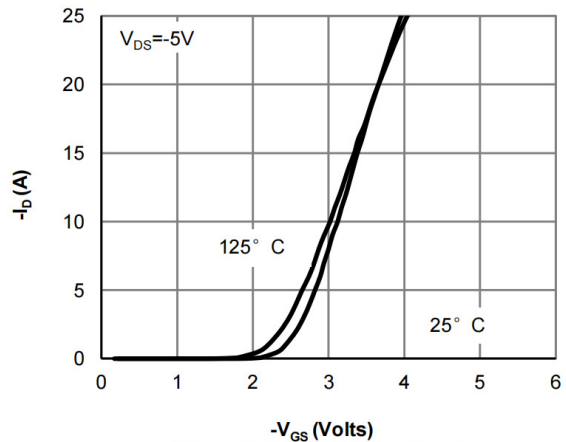


Figure 2: Transfer Characteristics

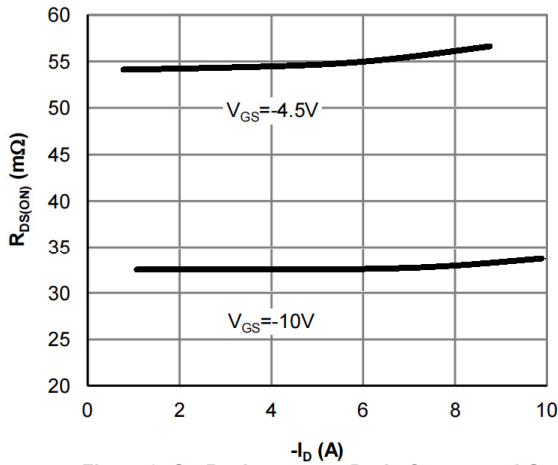


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

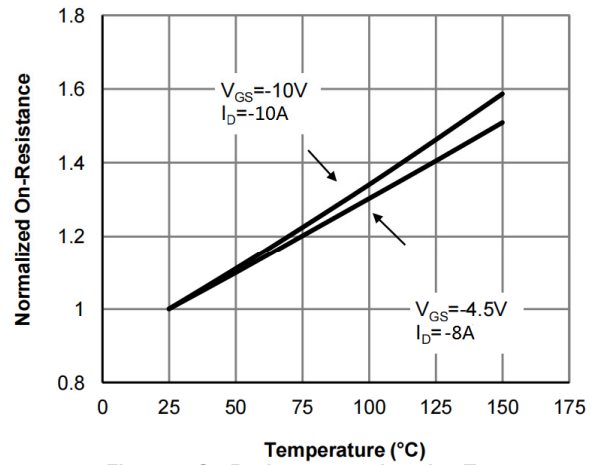


Figure 4: On-Resistance vs. Junction Temperature

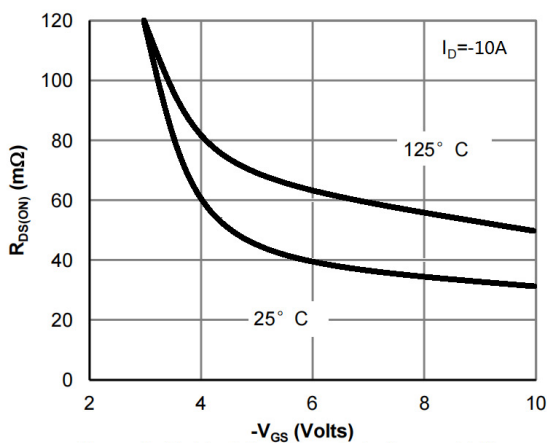


Figure 5: On-Resistance vs. Gate-Source Voltage

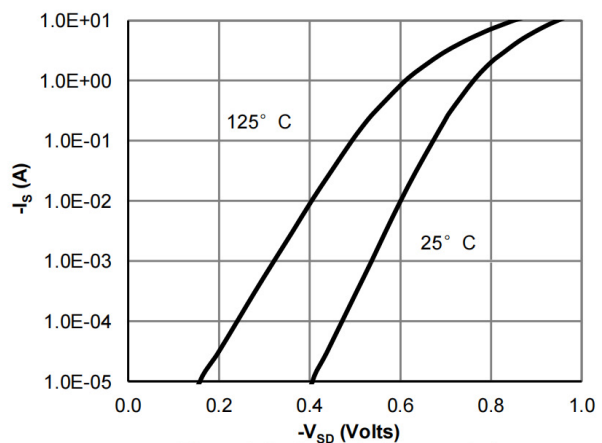


Figure 6: Body-Diode Characteristics

## 电参数曲线图 / Electrical Characteristic Curve

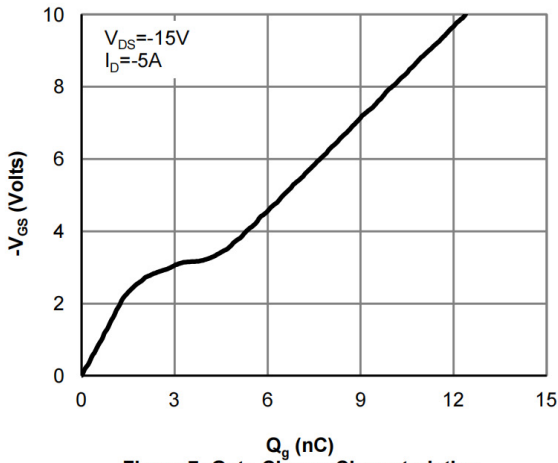


Figure 7: Gate-Charge Characteristics

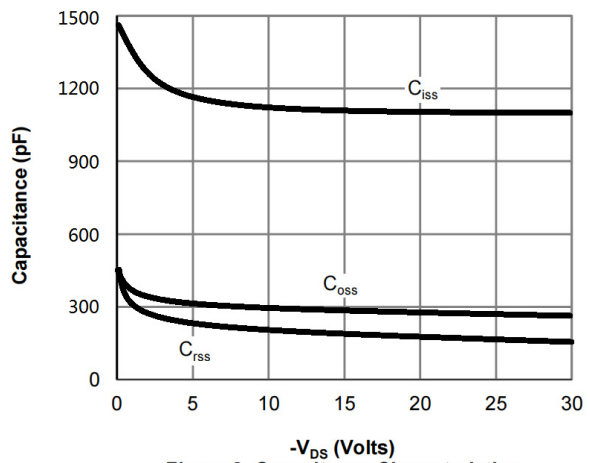


Figure 8: Capacitance Characteristics

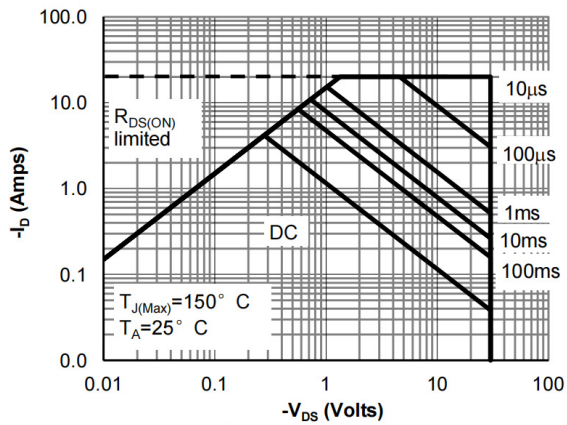


Figure 9: Maximum Forward Biased Safe Operating Area

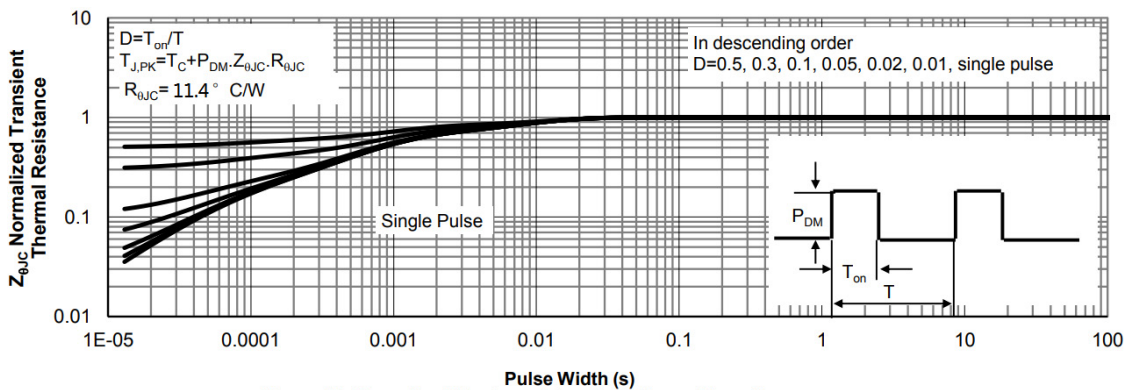
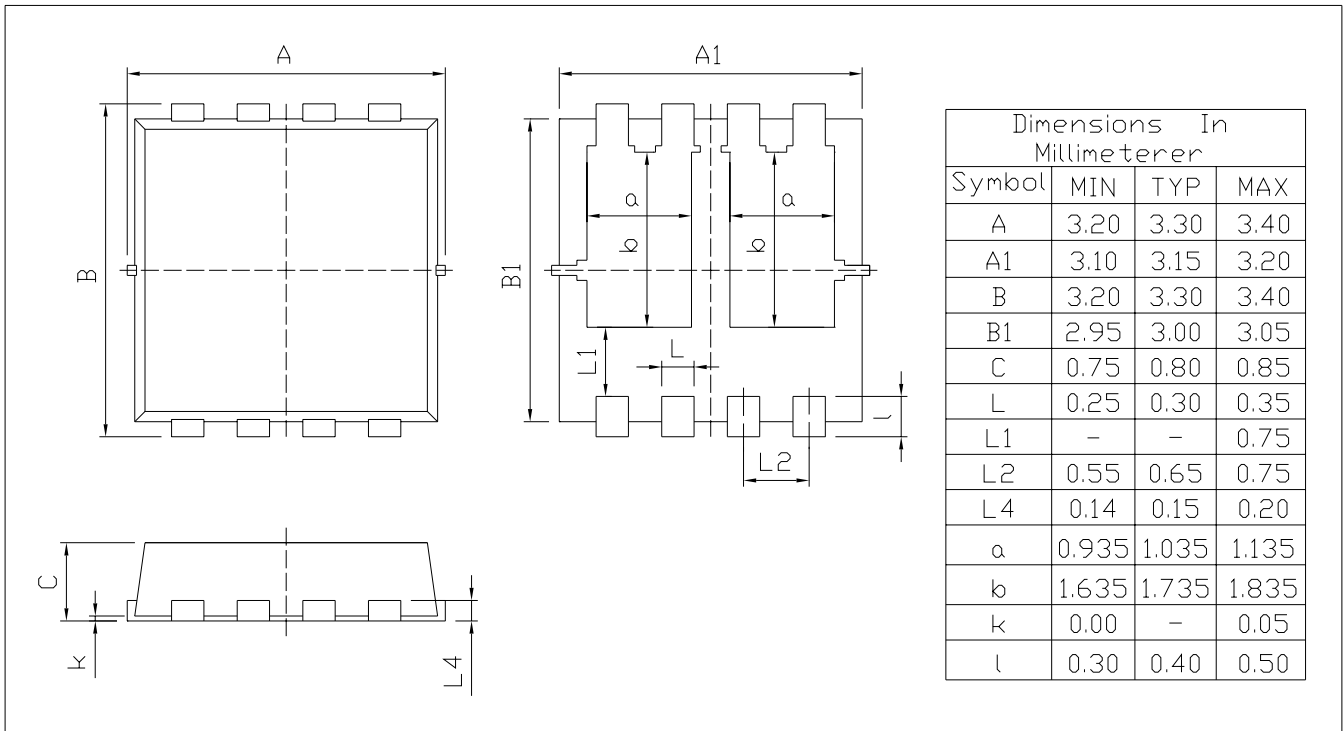


Figure 10: Normalized Maximum Transient Thermal Impedance

**外形尺寸图 / Package Dimensions**

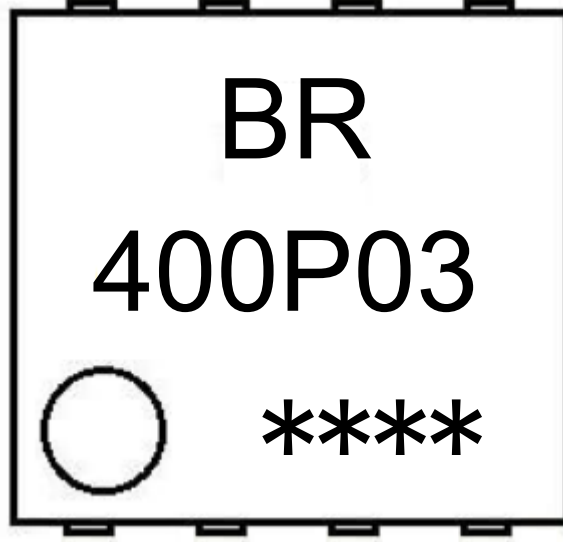
PDFN3X3-8L

Unit:mm



Rev.00 202011

印章说明 / Marking Instructions



说明：

BR： 为公司代码

400P03： 为型号代码

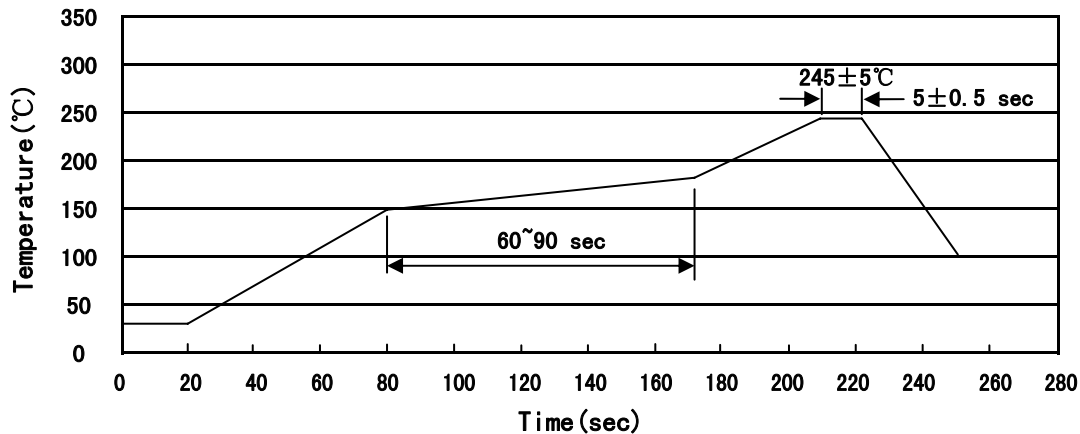
\*\*\*\*： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

400P03: 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
PDFN 3 × 3-8L	5,000	2	10,000	6	60,000	13" ×12	360×360×50	380×335×366

**使用说明 / Notices**