

# BRCS065N08SHZC

Rev.A Dec.-2022

## 描述 / Descriptions

PDFN5×6 封装 N 沟道场效应管。  
N-Channel MOSFET in a PDFN5×6 Plastic Package.

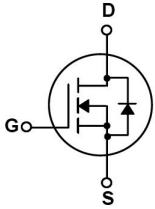
## 特征 / Features

阻抗低，开关速度快，无卤产品。  
Low On-Resistance, fast switching, HF Product.

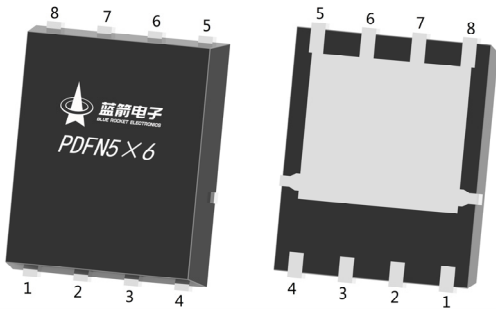
## 用途 / Applications

手机快充、无刷电机、家电控制板。  
Mobile phone fast charging, Brushless motor, Home appliance control board.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



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

Pin	极性
1	S
2	S
3	S
4	G
5	D
6	D
7	D
8	D

## 印章代码 / Marking

见印章说明。  
See Marking Instructions.

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

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	$V_{DS}$	80	V
Drain Current	$I_D(T_c=25^{\circ}\text{C})$	83	A
Drain Current - Pulsed	$I_{DM}$	180	A
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Single Pulsed Avalanche Energy	$E_{AS}$	710	mJ
Avalanche Current	$I_{AS}$	36.5	A
Power Dissipation	$P_D(T_c=25^{\circ}\text{C})$	80	W
Operating and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	$^{\circ}\text{C}$
Junction-to-Ambient	$t \leq 10$	16	$^{\circ}\text{C/W}$
Junction-to-Ambient	Steady-State		
Junction-to-Case	Steady-State		
		$R_{\theta JC}$	1.56

**电性能参数 / Electrical Characteristics( $T_a=25^{\circ}\text{C}$ )**

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	$BV_{DSS}$	$V_{GS}=0V$ $I_D=250\mu A$	80	95		V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=85V$ $V_{GS}=0V$			1	$\mu A$
Gate-Body Leakage Current Forward	$I_{GSS}$	$V_{GS}=\pm 20V$ $V_{DS}=0V$			$\pm 0.1$	$\mu A$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2	3	4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		5.1	6.5	$m\Omega$
		$V_{GS}=6V$ $I_D=10A$		7.0	10	$m\Omega$
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V$ $I_S=1A$			1.2	V
Input Capacitance	$C_{iss}$	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		3230		pF
Output Capacitance	$C_{oss}$			1310		
Reverse Transfer Capacitance	$C_{rss}$			185		
Gate resistance	$R_g$	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		1.4		$\Omega$
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $V_{DS}=40V$ $I_D=20A$		46		nC
Gate Source Charge	$Q_{gs}$			13		
Gate Drain Charge	$Q_{gd}$			8.5		

## 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
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=40V$ $R_L=2\Omega$ $R_{GEN}=3\Omega$		14		ns
Turn-On Rise Time	$t_r$			12		
Turn-Off Delay Time	$t_{d(off)}$			37		
Turn-Off Fall Time	$t_f$			15		

电参数曲线图 / Electrical Characteristic Curve

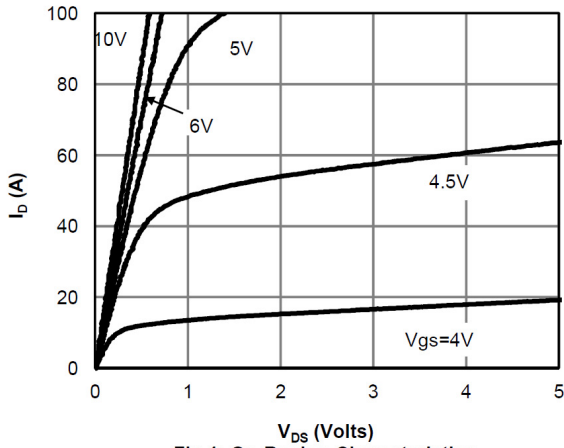


Fig 1: On-Region Characteristics

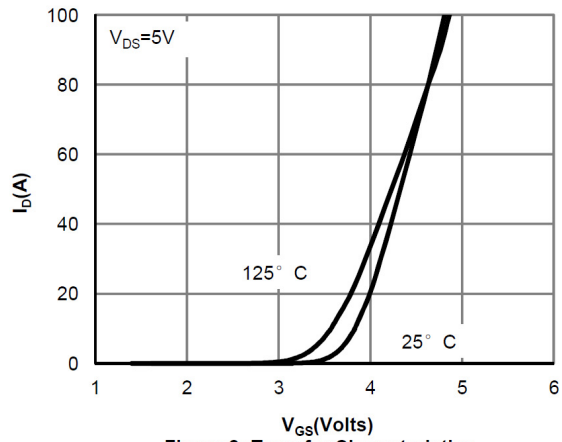


Figure 2: Transfer Characteristics

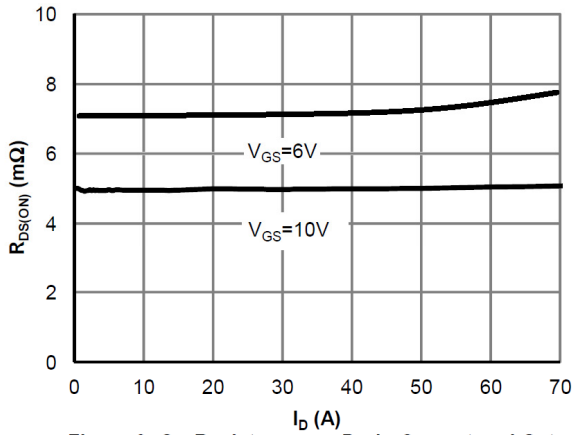


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

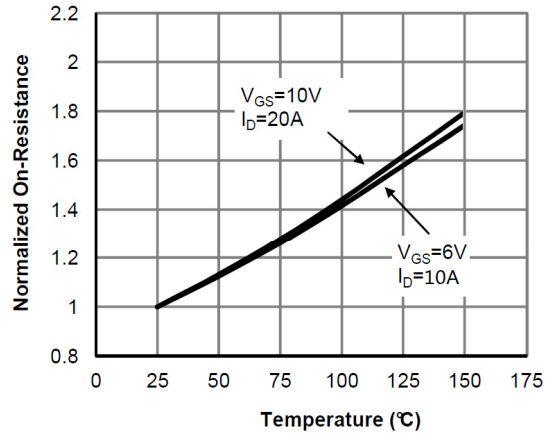


Figure 4: On-Resistance vs. Junction Temperature

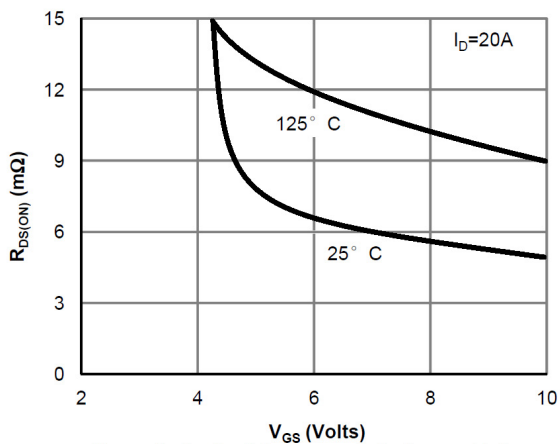


Figure 5: On-Resistance vs. Gate-Source Voltage

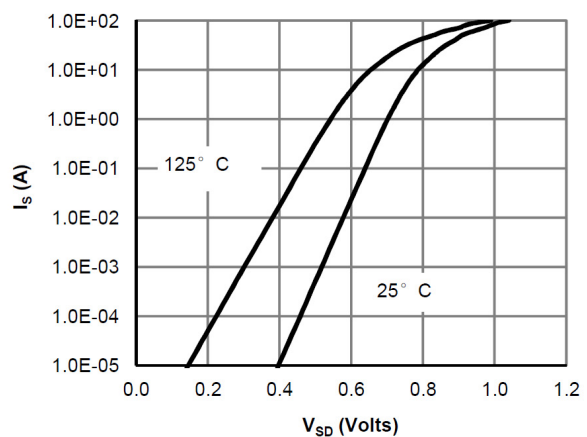


Figure 6: Body-Diode Characteristics

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

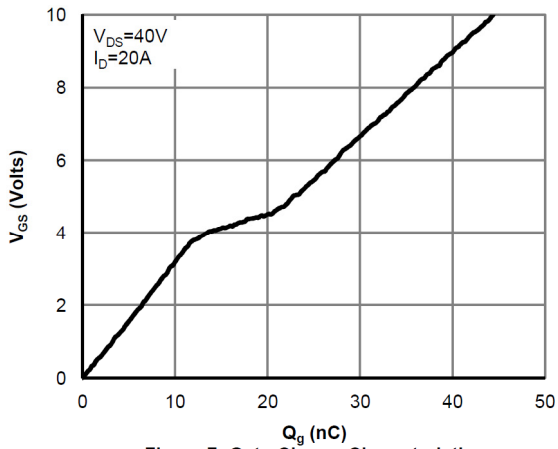


Figure 7: Gate-Charge Characteristics

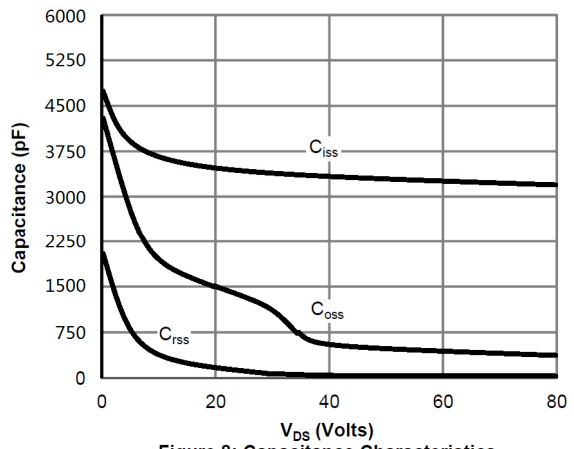


Figure 8: Capacitance Characteristics

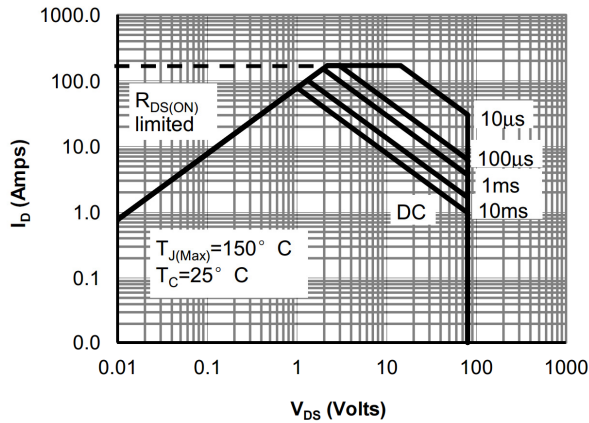


Figure 9: Maximum Forward Biased Safe Operating Area

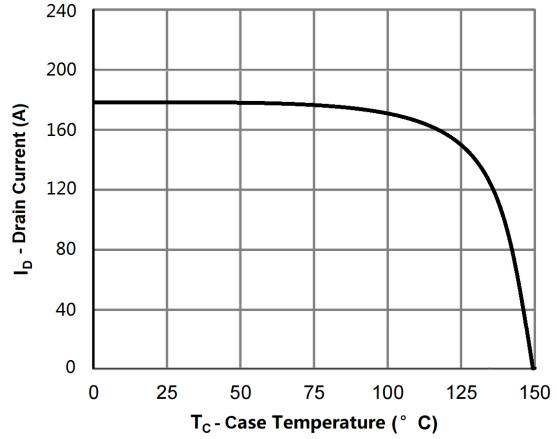


Figure 10: Maximum Continuous Drain Current vs Case Temperature

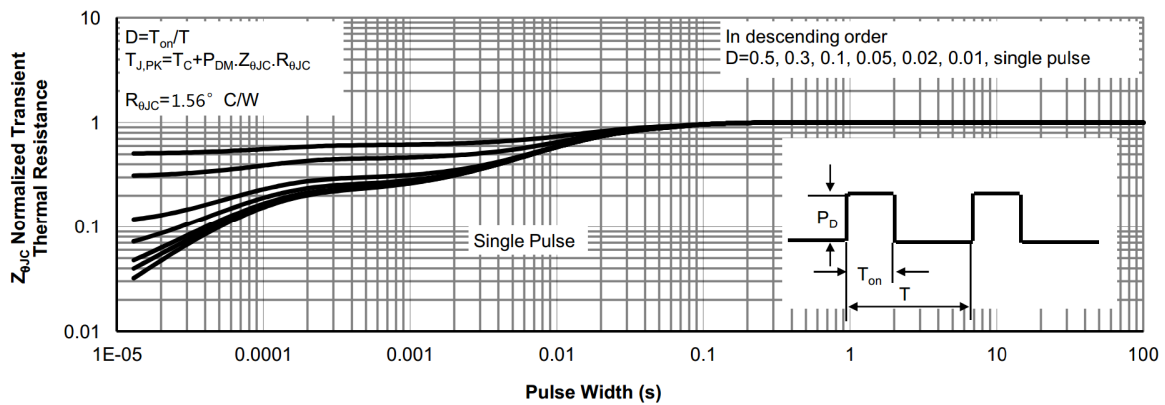
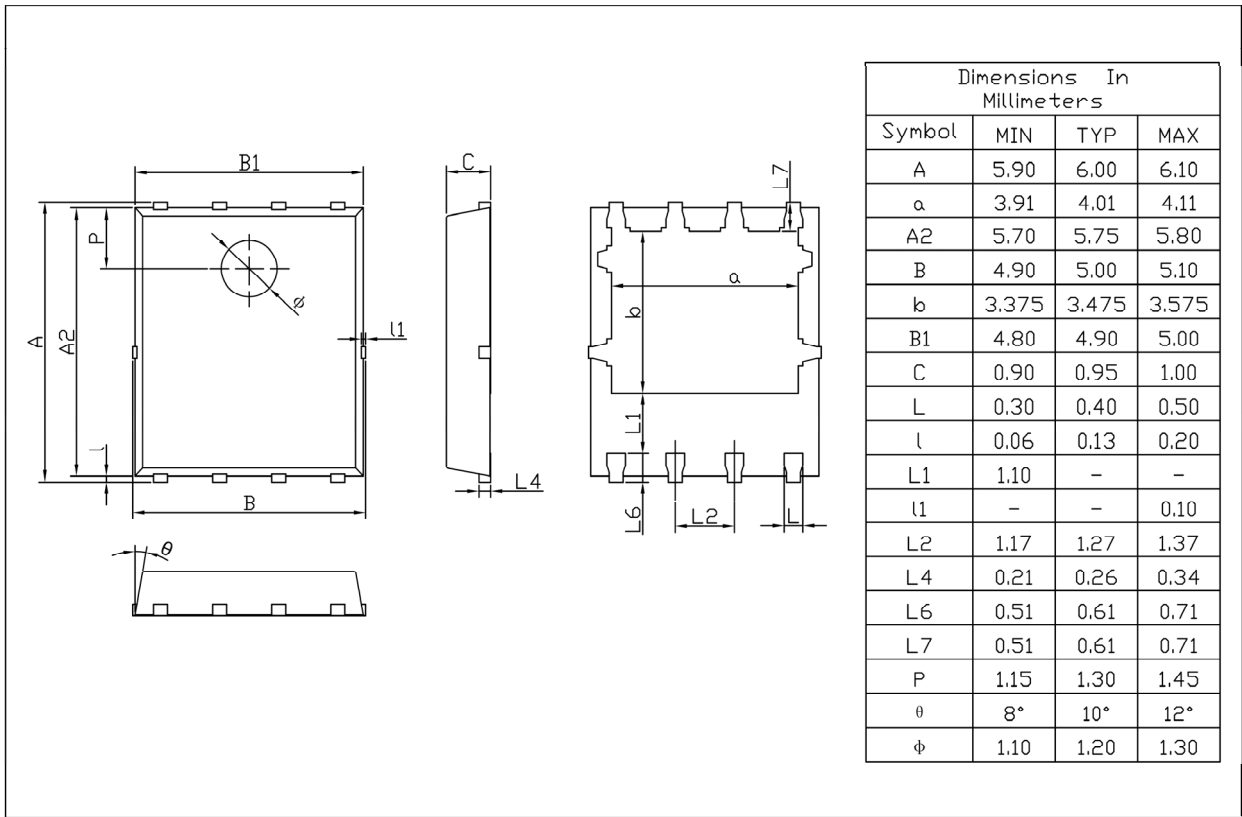


Figure 11: Normalized Maximum Transient Thermal Impedance

**外形尺寸图 / Package Dimensions**

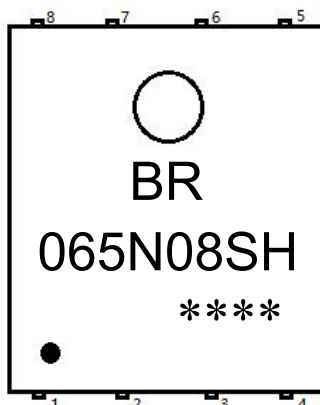
PDFN5 × 6

Unit:mm



Rev.01 202209

**印章说明 / Marking Instructions**



说明：

BR： 为公司代码

065N08SH： 为产品型号

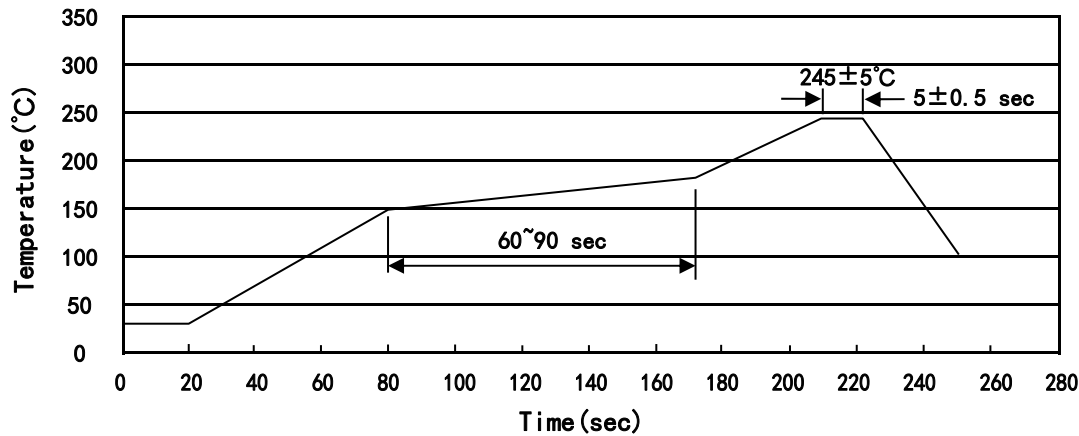
\*\*\*\*： 为生产批号代码，随生产批号变化

Note：

BR： Company Code

065N08SH： Product Type

\*\*\*\*： 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
PDFN5×6	5000	2	10000	6	60000	13"×12	360×360×50	380×335×366

**使用说明 / Notices**