

BRCS055N08SHZC

Rev.A Oct.-2024

描述 / Descriptions

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

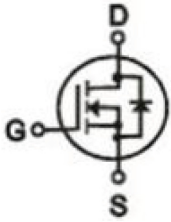
特征 / Features

$V_{DS}=80V$ $I_D=90A$
 $R_{DS(on)}@10V \leq 5.5m\Omega$ (Type.4.8m Ω)
无卤产品。HF Product.

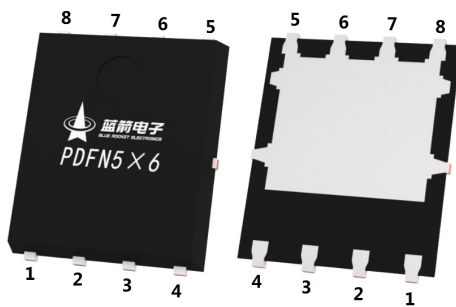
用途 / Applications

该器件非常适合消费电子、电信、工业应用的升压转换器和同步整流器电源和 LED 背光。
This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



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(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V _{DSS}	80	V
Drain Current	I _D (Tc=25°C)	90	A
Pulsed Drain Current	I _{DM}	202	A
Gate-Source Voltage	V _{GS}	±20	V
Single Pulsed Avalanche Energy(L=0.5mH)	E _{AS}	940.8	mJ
Avalanche Current	I _{AS}	42	A
Total Power Dissipation	P _D (Tc=25°C)	81	W
Junction and Storage Temperature Range	T _J , T _{STG}	-55 to 150	°C
Thermal Resistance-Junction to Ambient	Steady-State R _{θJA}	55	°C/W
Thermal Resistance-Junction to Case	Steady-State R _{θJC}	1.54	

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 =250μA	80	90		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =85V V _{GS} =0V			1	μA
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±20V V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250μA	2	3	4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V I _D =20A		4.8	5.5	mΩ
	R _{DS(on)}	V _{GS} =6V I _D =10A		7.8	10	
Forward On Voltage	V _{SD}	V _{GS} =0V I _S =1A			1.2	V
Gate resistance	R _g	f=1MHz		2.3		Ω
Input Capacitance	C _{iss}	V _{DS} =25V V _{GS} =0V f=1MHz		3680		pF
Output Capacitance	C _{oss}			1700		
Reverse Transfer Capacitance	C _{rss}			90		
Total Gate Charge	Q _{g(10V)}	V _{GS} =10V, I _D =20A V _{DS} =40V,		62		nC
Gate Source Charge	Q _{gs}			20		
Gate Drain Charge	Q _{gd}			23		

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	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=40V$ $R_L=2\Omega$ $R_{GEN}=3\Omega$		23		ns
Turn-On Rise Time	t_r			32		
Turn-Off Delay Time	$t_{d(off)}$			35		
Turn-Off Fall Time	t_f			27		

电参数曲线图 / Electrical Characteristic Curve

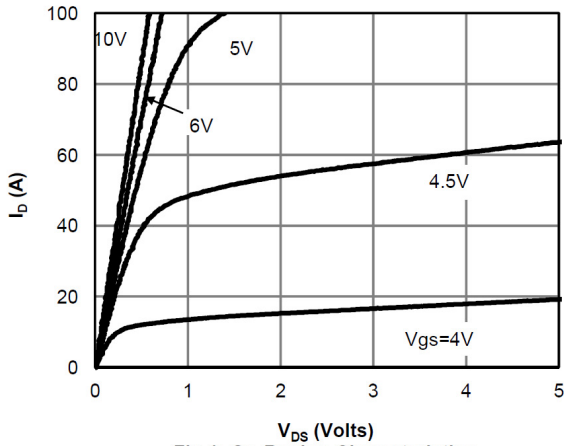


Fig 1: On-Region Characteristics

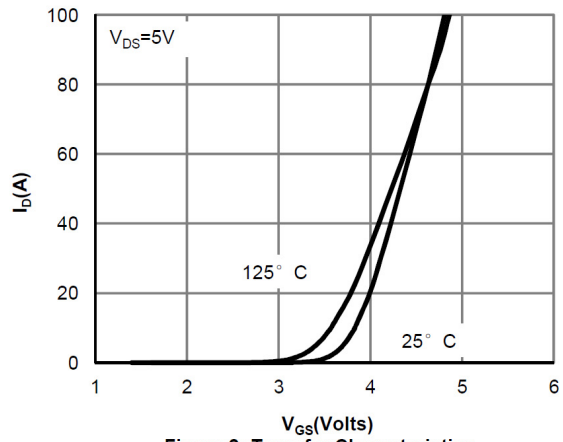


Figure 2: Transfer Characteristics

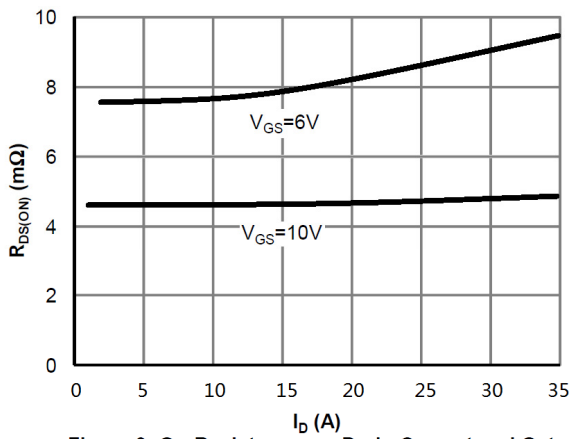


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

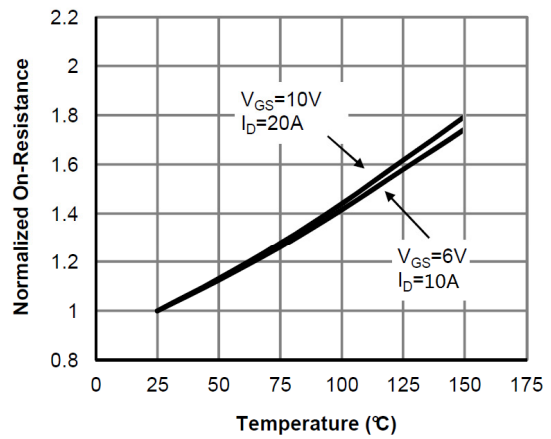


Figure 4: On-Resistance vs. Junction Temperature

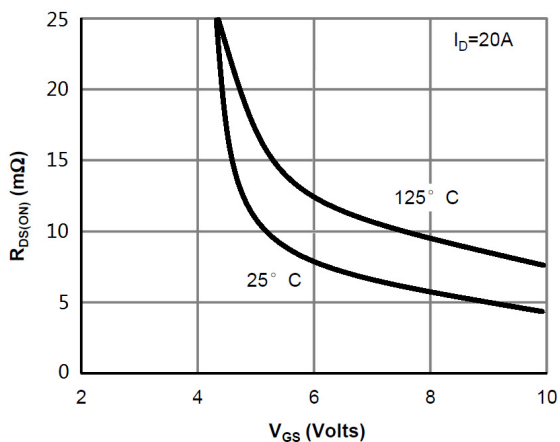


Figure 5: On-Resistance vs. Gate-Source Voltage

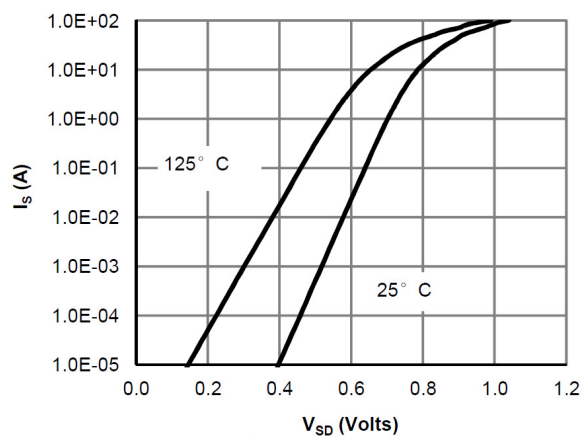


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

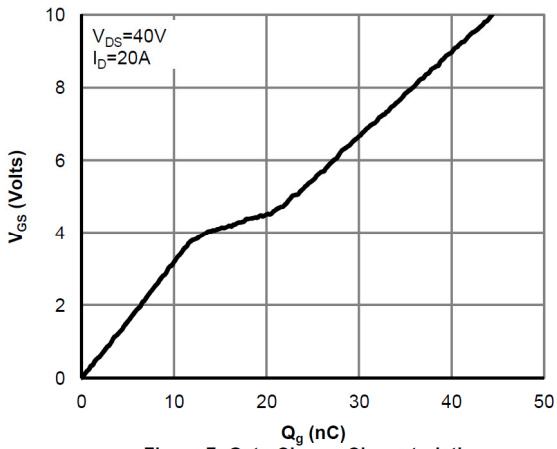


Figure 7: Gate-Charge Characteristics

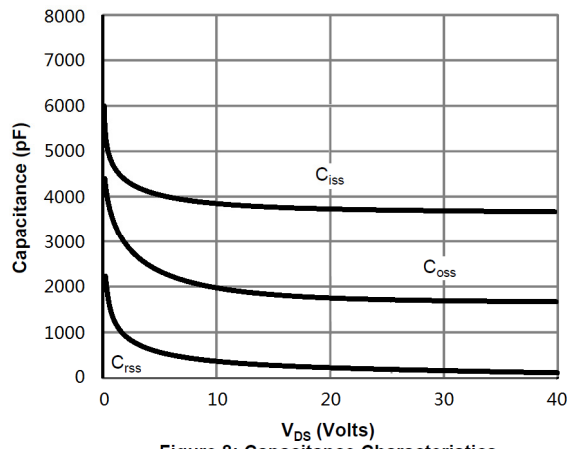


Figure 8: Capacitance Characteristics

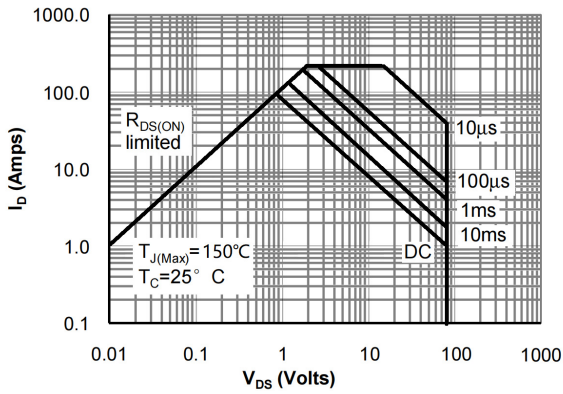


Figure 9: Maximum Forward Biased Safe Operating Area

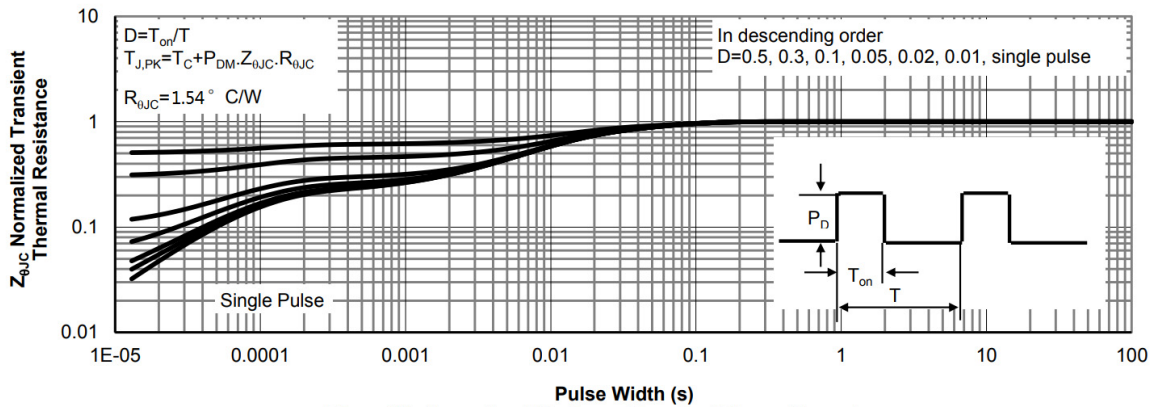
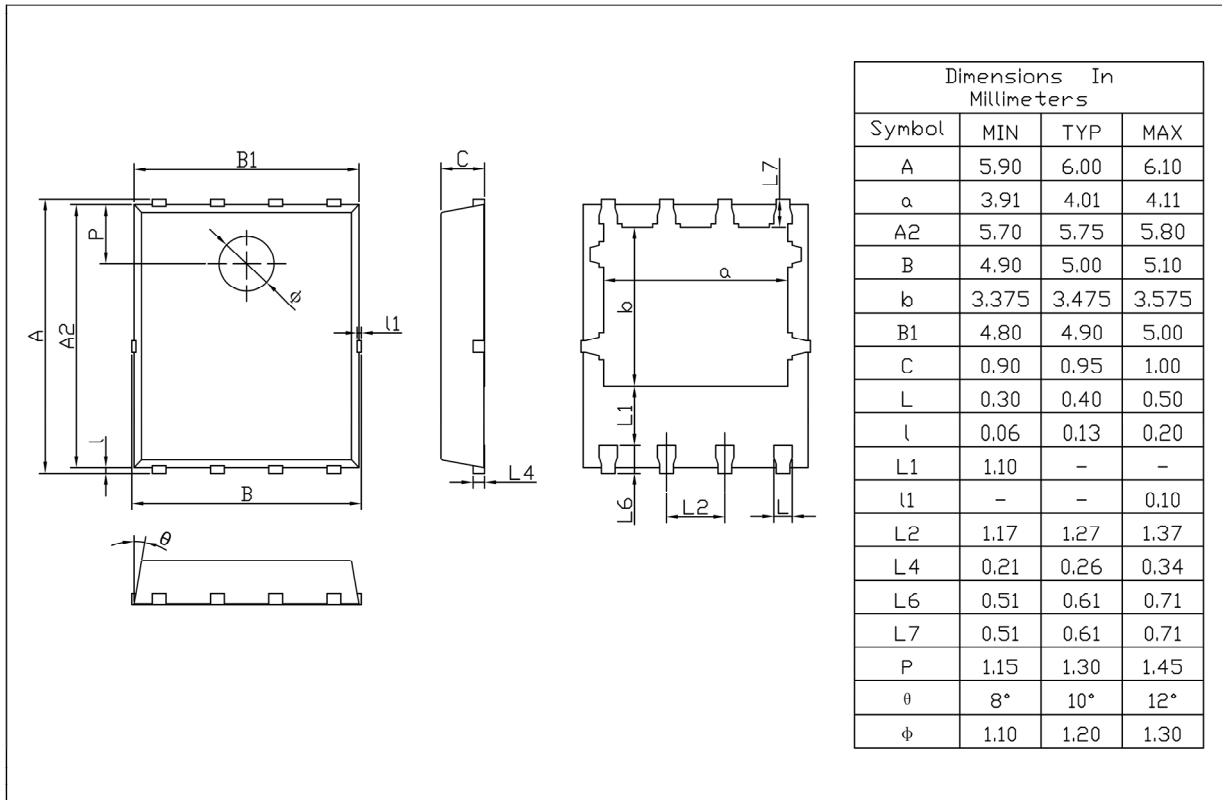


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

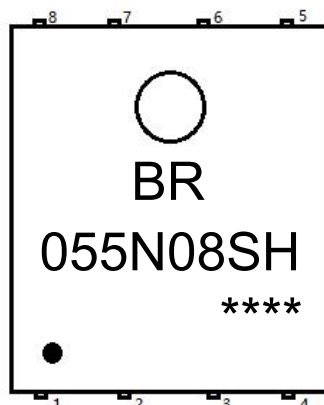
PDFN5 × 6

Unit:mm



Rev.01 202209

印章说明 / Marking Instructions



说明：

BR： 为公司代码

055N08SH： 为型号代码

****： 为生产批号代码，随生产批号变化

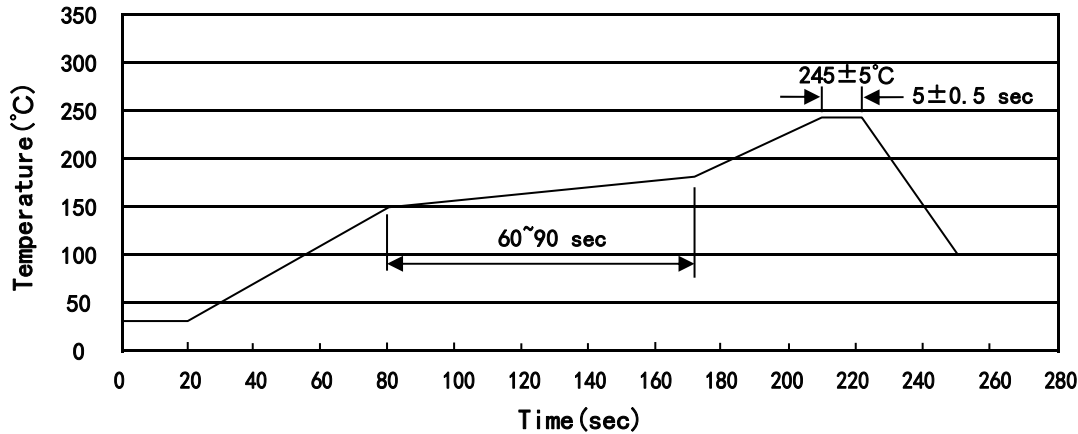
Note：

BR： Company Code

055N08SH： 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 ³)		
	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	5,000	2	10,000	6	60,000	13"×12	360×360×50	380×335×366

使用说明 / Notices