

BRCS022N06SZC-58

Rev.A Aug.-2025

描述 / Descriptions

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

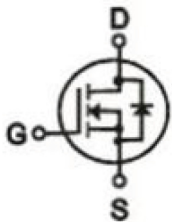
特征 / Features

$V_{DS}(V)=60V$ $I_D=80A$
 $R_{DS(ON)}@10V \leq 2.2m\Omega$ (Typ. 2.0m Ω)
 $R_{DS(ON)}@6V \leq 3.2m\Omega$ (Typ. 2.5m Ω)
 无卤产品。HF Product.

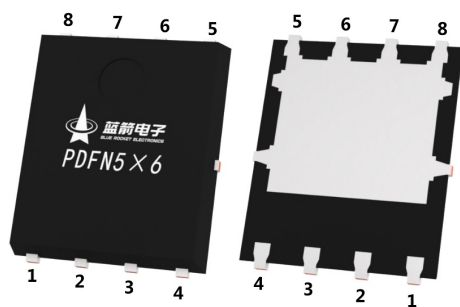
用途 / Applications

电机驱动器，DC - DC 转换器
 Motor drivers, DC - DC Converter.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1、2、3: S PIN4: G PIN5、6、7、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°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V _{DS}	60	V
Continuous Drain Current*	I _D (T _c =25°C)	80	A
Pulsed Drain Current* ^{**,***}	I _{DM}	209	A
Gate-Source Voltage	V _{GS}	±20	V
Power Dissipation	P _D (T _c =25°C)	156	W
Junction and Storage Temperature Range	T _j , T _{stg}	-55 to 175	°C
Continuous-Source Current	I _S	80	A
Single Pulsed Avalanche Energy (V _{DD} =50V, L=0.5mH)	E _{AS}	506	mJ
Maximum Junction-to-Ambient*	R _{θJA}	38	°C/W
Maximum Junction-to-Case*	R _{θJC}	1.1	

Notes:

* Surface Mounted on 1 in² pad area, t ≤ 10 sec

** Pulse width ≤ 300 μs, duty cycle ≤ 2 %

*** Limited by bonding wire

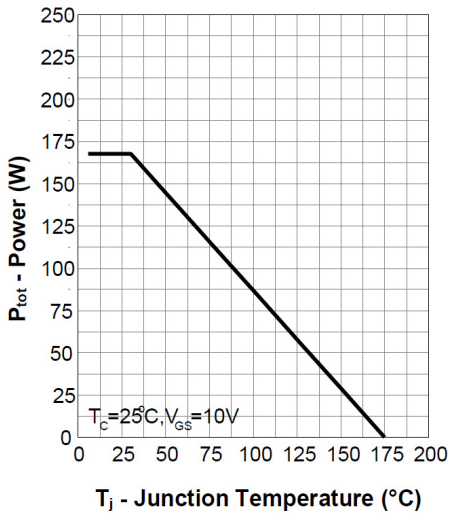
电性能参数 / Electrical Characteristics(T_a=25°C)

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}	I _D =250μA, V _{GS} =0V	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V			1.0	μA
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1		3	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =30A		2.0	2.2	mΩ
		V _{GS} =4.5V, I _D =20A		2.5	3.2	
Diode Forward Voltage	V _{SD}	I _S =30A, V _{GS} =0V			1.3	V
Reverse Recovery Time	t _{rr}	I _{DS} = 30 A, V _{GS} = 0 V dI _{SD} /dt = 100 A/μs		70		ns
Reverse Recovery Charge	Q _{rr}			110		μC
Input Capacitance	C _{iss}	V _{DS} =30V V _{GS} =0V f=1.0MHz		4887		pF
Output Capacitance	C _{oss}			1549		
Reverse Transfer Capacitance	C _{rss}			64		

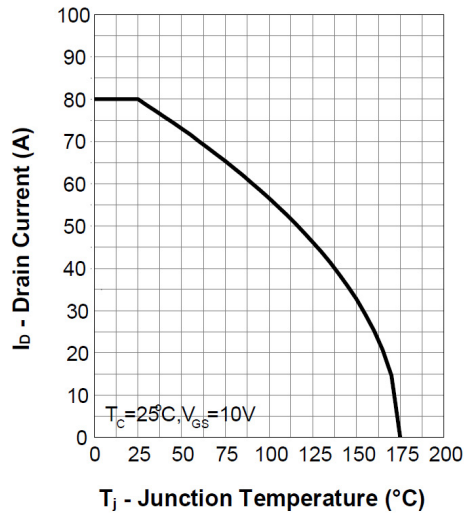
电性能参数 / Electrical Characteristics(Ta=25°C)

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
Total Gate Charge	Q _g	V _{GS} =10V V _{DS} =30V I _D =30A		83		nC
Gate Source Charge	Q _{gs}			16		
Gate Drain Charge	Q _{gd}			13		
Turn-On Delay Time	t _{d(on)}	V _{GEN} =10V V _{DS} =30V I _{DS} =30A R _G =4.5Ω R _L =1Ω		22		ns
Turn-On Rise Time	t _r			21		
Turn-Off Delay Time	t _{d(off)}			60		
Turn-Off Fall Time	t _f			15		

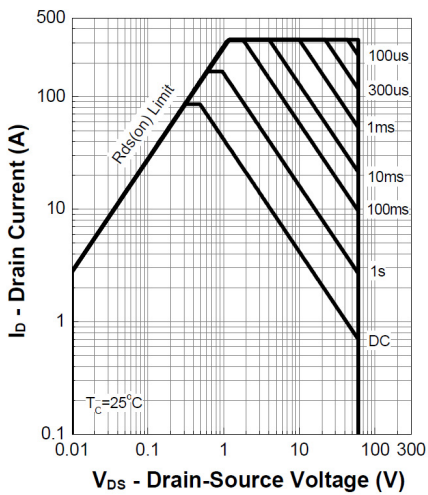
电参数曲线图 / Electrical Characteristic Curve



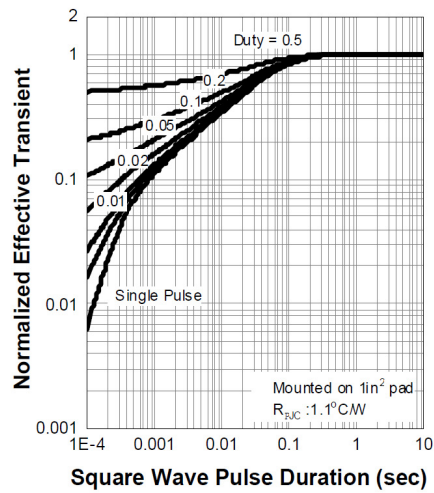
1. Power Capability



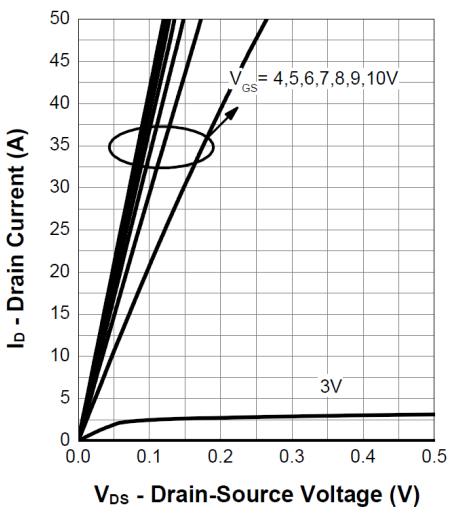
2. Current Capability



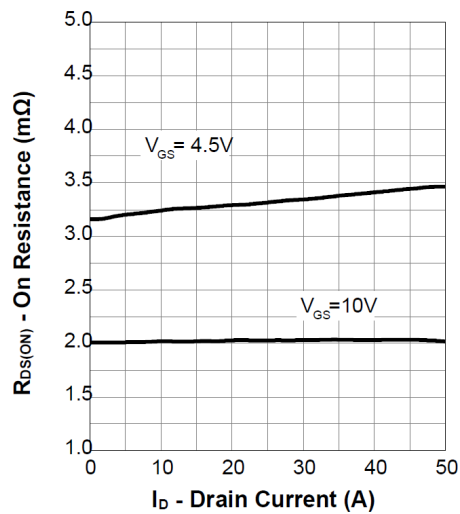
3. Safe Operating Area



4. Transient Thermal Impedance

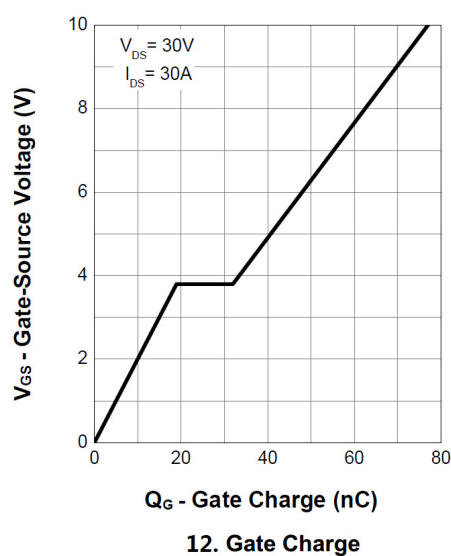
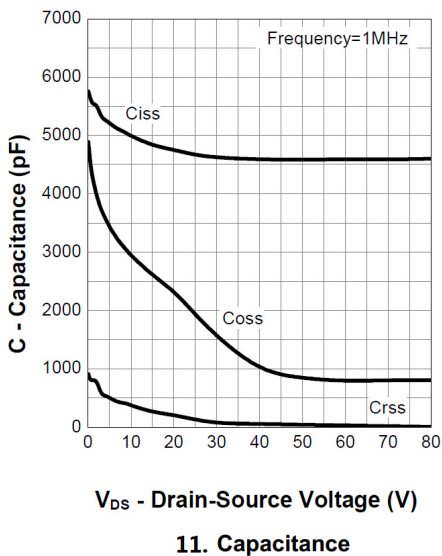
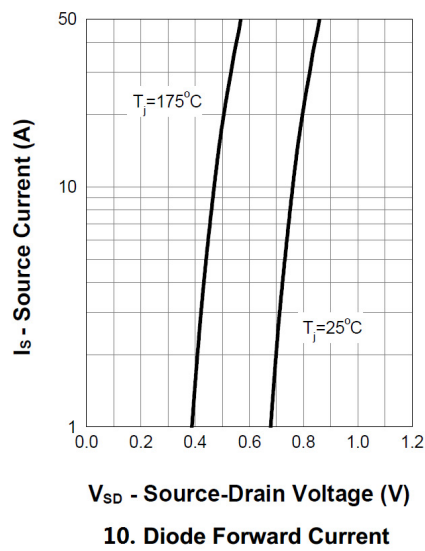
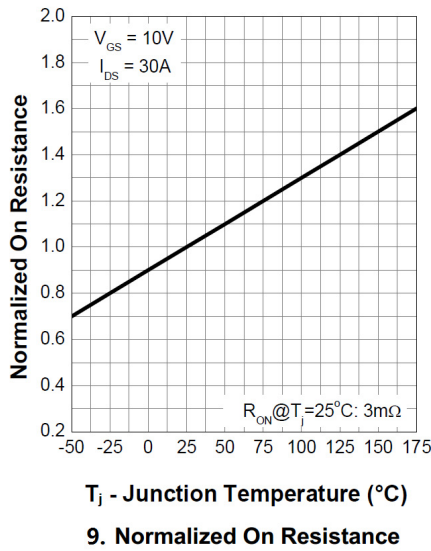
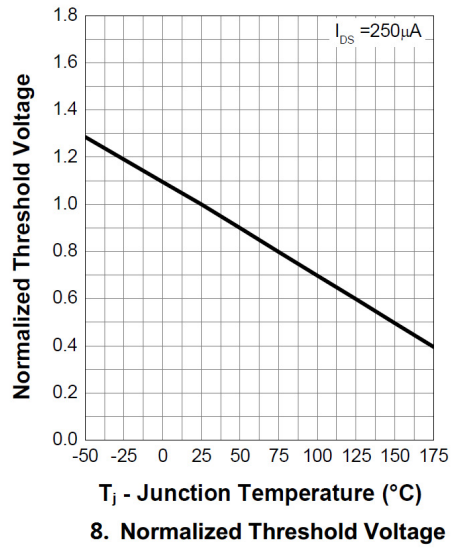
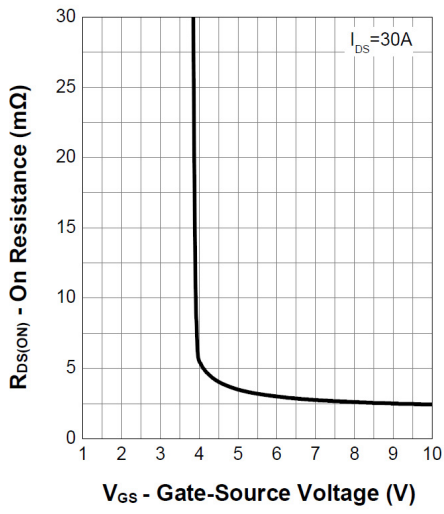


5. Output Characteristics

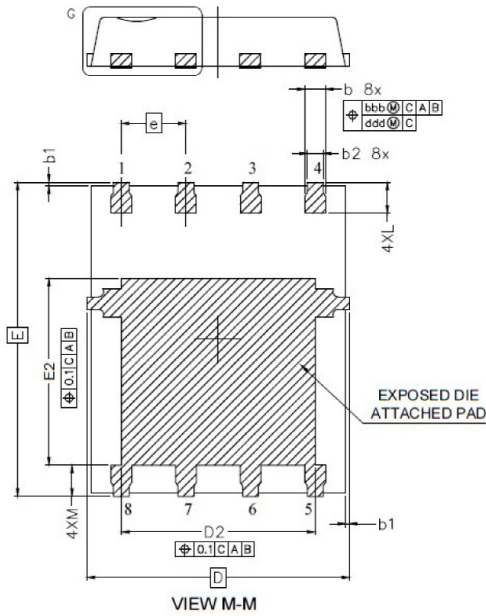
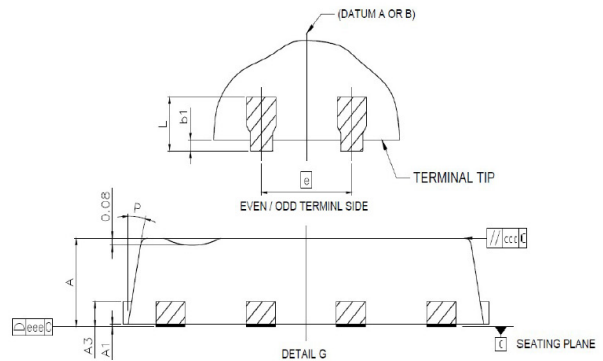
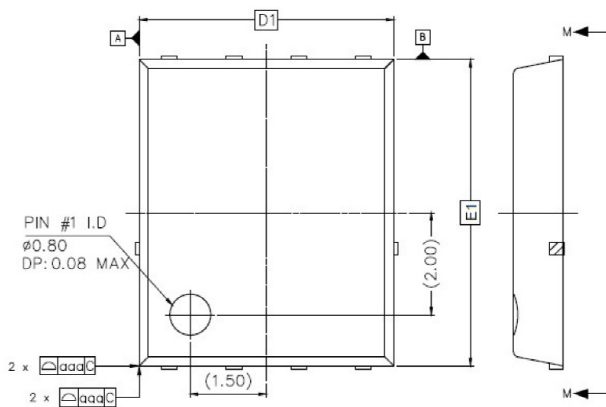


6. On Resistance

电参数曲线图 / Electrical Characteristic Curve

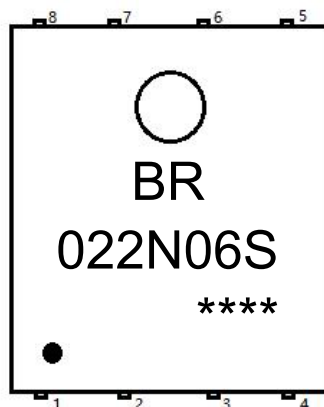


外形尺寸图 / Package Dimensions



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	0.95	1.05
A1	0.00	0.05
A3	0.254REF	
b	0.31	0.51
b1	0.03	0.13
b2	0.21	0.41
D	5.15BSC	
D1	5.00BSC	
D2	3.70	3.90
E	6.15BSC	
E1	6.00BSC	
E2	3.56	3.76
e	1.27BSC	
L	0.51	0.71
M	0.51	0.71
P	10°	12°
aaa	0.10	
bbb	0.10	
ccc	0.10	
ddd	0.05	
eee	0.08	

印章说明 / Marking Instructions



说明：

BR： 为公司代码

022N06S： 为型号代码

****： 为生产批号代码，随生产批号变化

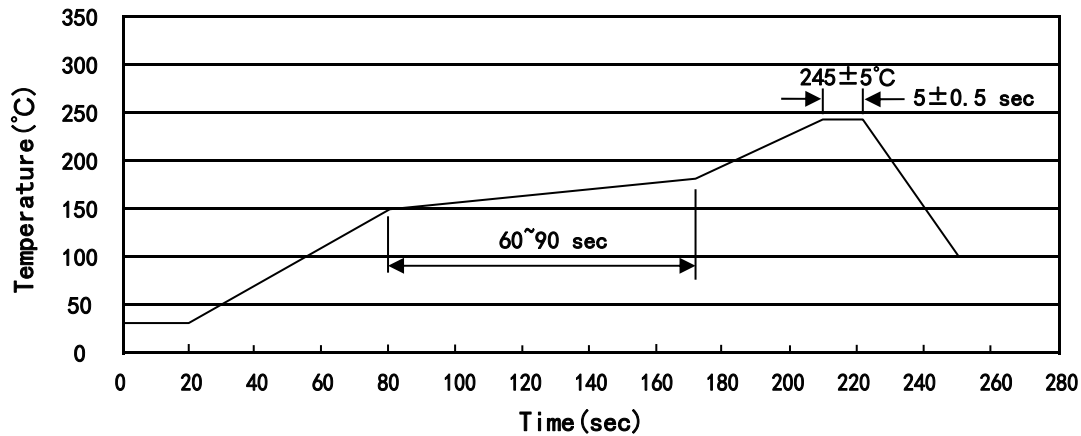
Note:

BR: Company Code

022N06S: 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

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