

# BRCS3019WB

Rev.B Jun.-2024

## 描述 / Descriptions

SOT-523 塑封封装 N 沟道 MOS 场效应管。  
N-CHANNEL MOSFET in a SOT-523 Plastic Package.

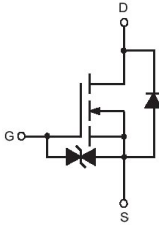
## 特征 / Features

灵敏的控制级触发电流和很低的维持电流。静电保护，无卤产品。  
Sensitive gate trigger current and Low Holding current.ESD protected,HF Product.

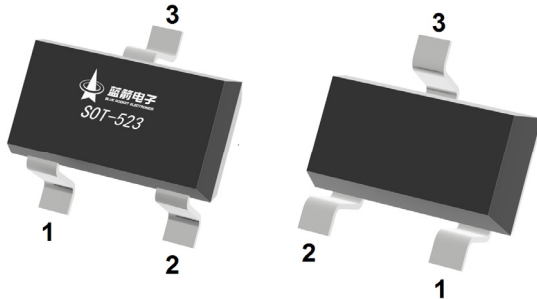
## 用途 / Applications

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



PIN 1 : G

PIN 2 : S

PIN 3 : D

## 印章代码 / Marking

Marking	KN
---------	----

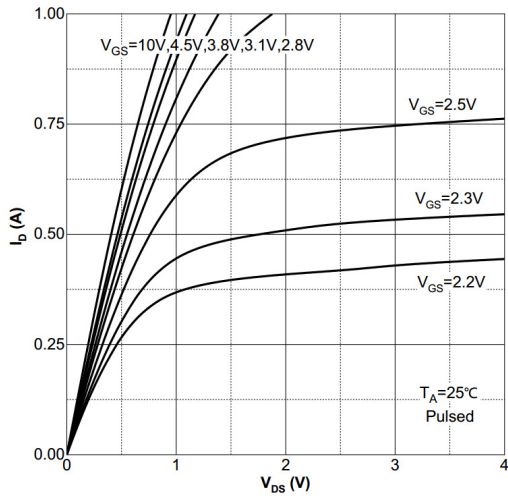
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V <sub>DS</sub>	50	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Drain Current	I <sub>D</sub>	300	mA
Drain Current – Pulsed	I <sub>DM</sub>	1200	mA
Power Dissipation	P <sub>D</sub>	250	mW
Junction Temperature Range	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C
Thermal Resistance from Junction to Ambient	R <sub>θJA</sub>	500	°C/W

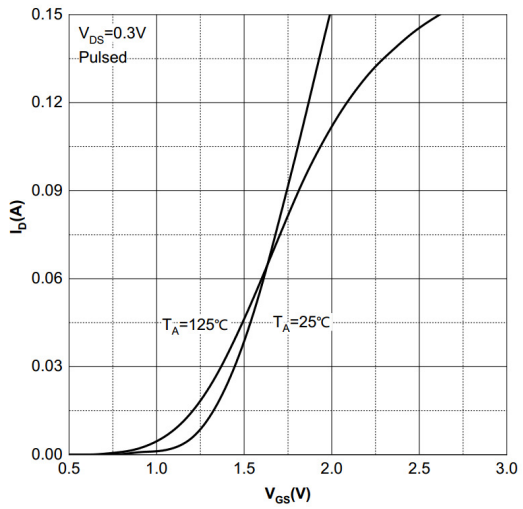
**电性能参数 / Electrical Characteristics(Ta=25°C)**

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	V <sub>DSS</sub>	V <sub>GS</sub> =0 I <sub>D</sub> =250μA	50			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>GS</sub> =0 V <sub>DS</sub> =50V			1.0	μA
Gate-Source Leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V V <sub>GS</sub> =±20V			±2	μA
Static Drain-Source On-Resistance	R <sub>DS(on)(1)</sub>	V <sub>GS</sub> =10V I <sub>D</sub> =0.3A		0.92	2.5	Ω
	R <sub>DS(on)(2)</sub>	V <sub>GS</sub> =4.5V I <sub>D</sub> =0.2A		0.98	3	Ω
	R <sub>DS(on)(3)</sub>	V <sub>GS</sub> =2.5V I <sub>D</sub> =0.01A		1.2	4.5	Ω
Drain-Source Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V I <sub>S</sub> =300mA			1.2	V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =250uA	0.6	0.9	1.5	V
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, f=1MHz, V <sub>DS</sub> =15V		30		pF
Output Capacitance	C <sub>oss</sub>			5.2		
Reverse Transfer Capacitance	C <sub>rss</sub>			3.3		
Gate Resistance	R <sub>g</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = 0V, f = 1MHz		157		Ω
Turn-On Delay Time	t <sub>d(ON)</sub>	V <sub>GS</sub> =5V, V <sub>DD</sub> =5V, R <sub>L</sub> =500 Ω, R <sub>G</sub> =10 Ω		15		ns
Rise Time	t <sub>r</sub>			35		
Turn-Off Delay Time	t <sub>d(OFF)</sub>			80		
Fall Time	t <sub>f</sub>			80		

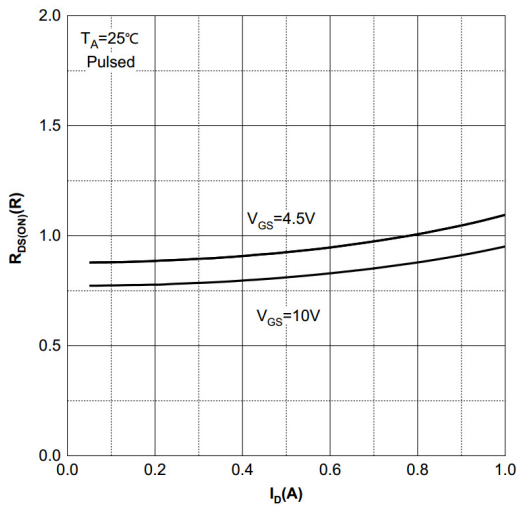
**电参数曲线图 / Electrical Characteristic Curve**



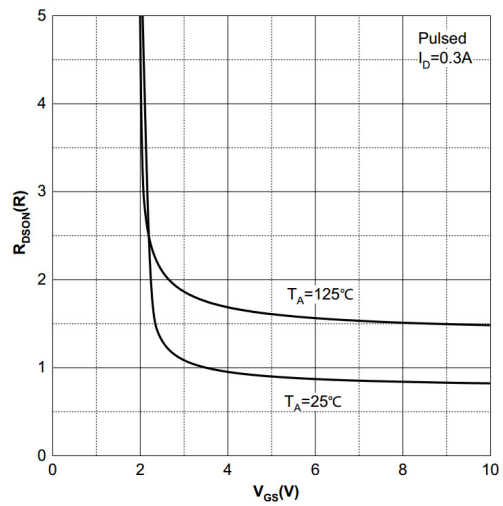
**Figure.1 Output Characteristics**



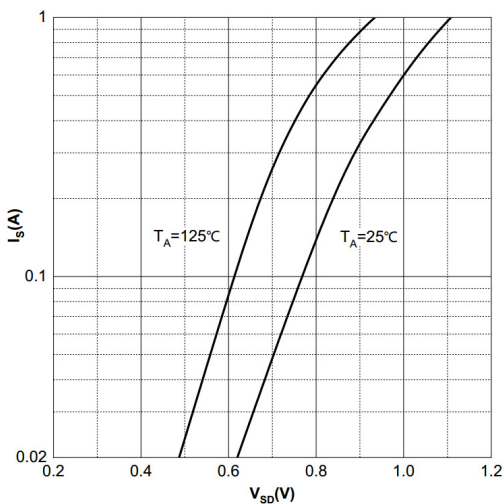
**Figure.2 Transfer Characteristics**



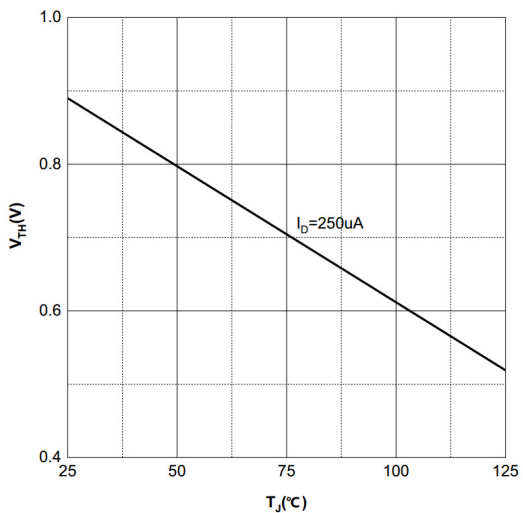
**Figure.3 On-Resistance vs. Drain Current**



**Figure.4 On-Resistance vs. Gate-to-Source Voltage**

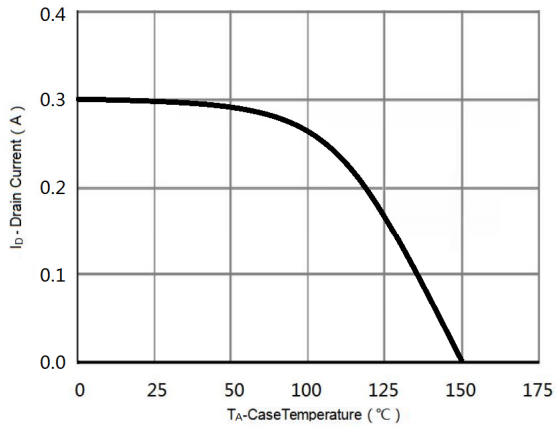


**Figure.5 Diodes Forward Voltage vs. Current**



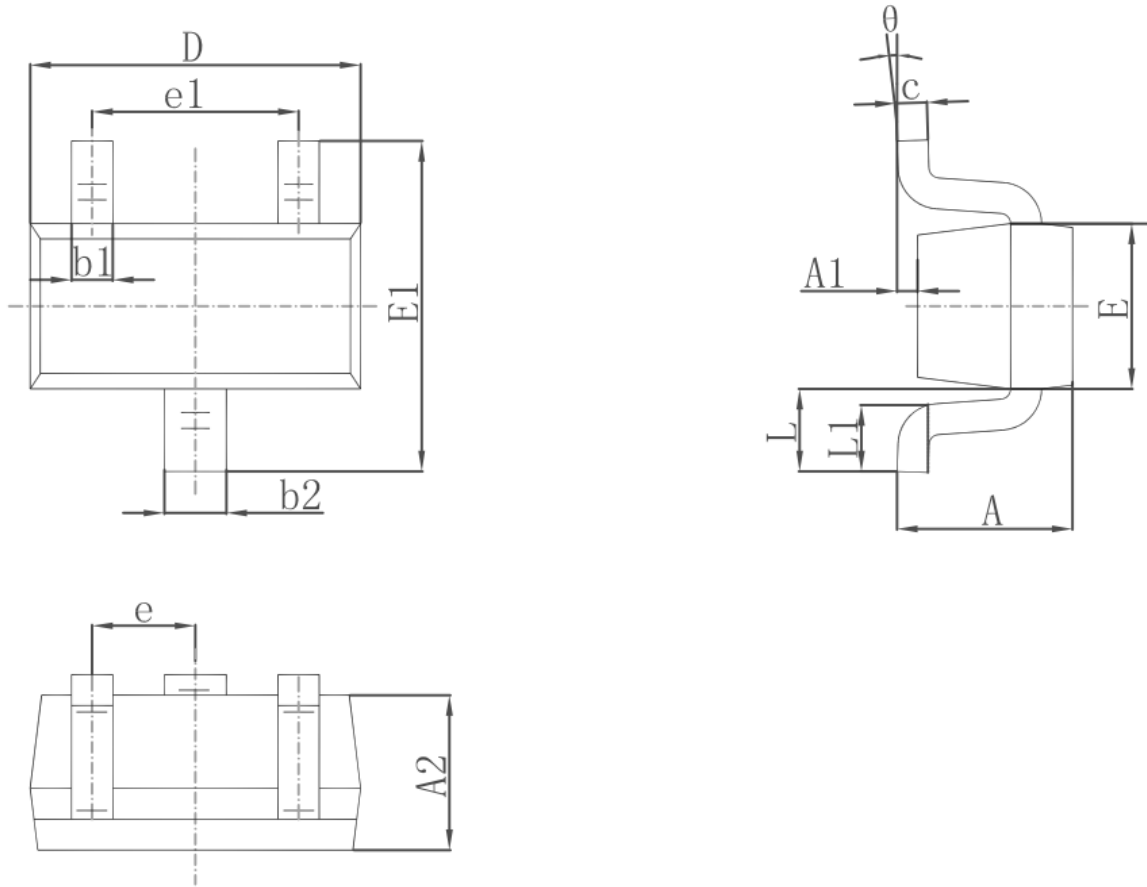
**Figure.6 Threshold Voltage**

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



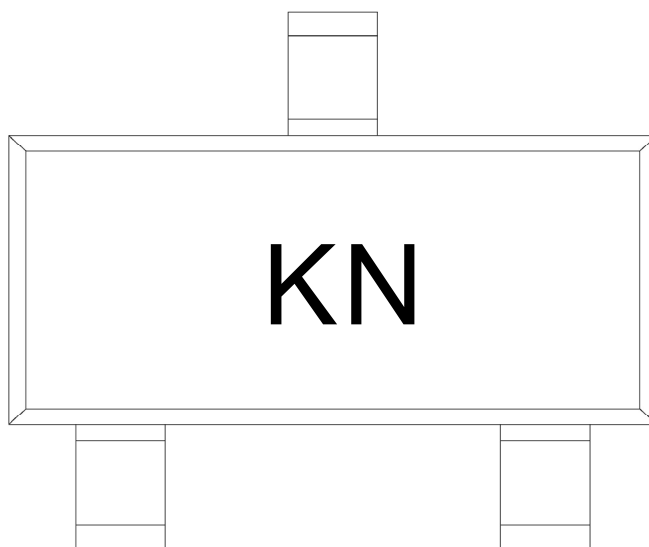
**Figure 7 : Current De-rating**

**外形尺寸图 / Package Dimensions**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
$\theta$	0°	8°	0°	8°

**印章说明 / Marking Instructions**

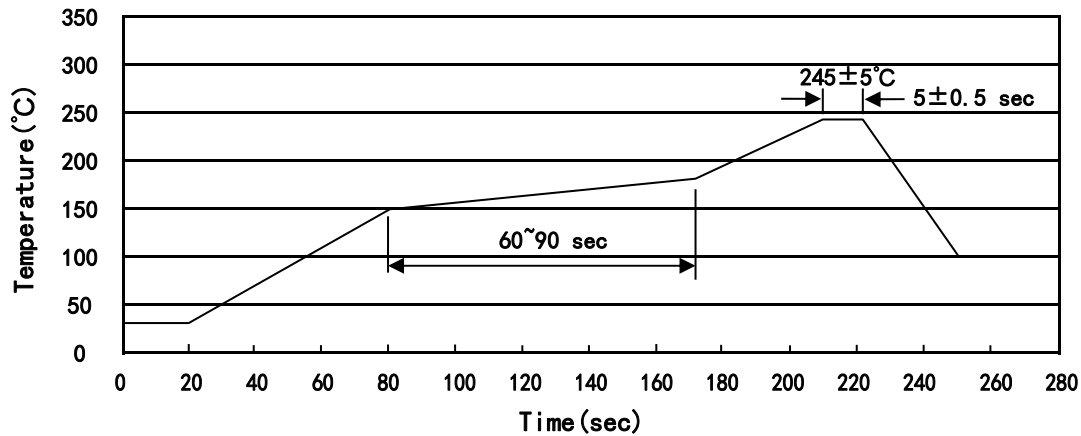


说明：

KN： 为型号代码

Note:

KN: Product Type Code

**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
SOT-523	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

**使用说明 / Notices**