

# BRCS3134WA

Rev.C Nov.-2023

## 描述 / Descriptions

SOT-323 塑封封装 N 沟 MOS 场效应管。  
N-Channel MOSFET in a SOT-323 Plastic Package.

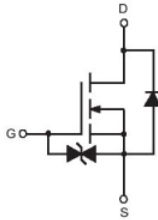
## 特征 / Features

灵敏的控制级触发电流和很低的维持电流。静电保护达 2KV，无卤产品。  
Sensitive gate trigger current and Low Holding current.ESD protected up to 2KV, HF Product.

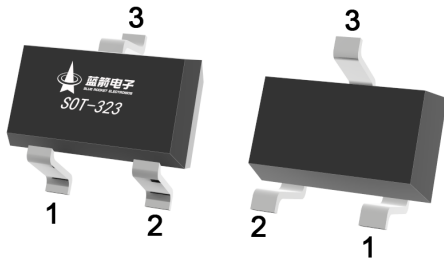
## 用途 / Applications

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



Pin1:G    Pin2:S    Pin3: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 <sub>DSS</sub>	20	V
Gate-Source Voltage	V <sub>GSS</sub>	±8	V
Drain Current – Continuous	I <sub>D</sub>	0.75	A
Pulsed Drain Current	I <sub>DM</sub>	3	A
Power Dissipation	P <sub>D</sub>	200	mW
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C
Thermal resistance, junction - ambient	R <sub>θJA</sub>	t ≤ 10s	450
		Steady-State	570

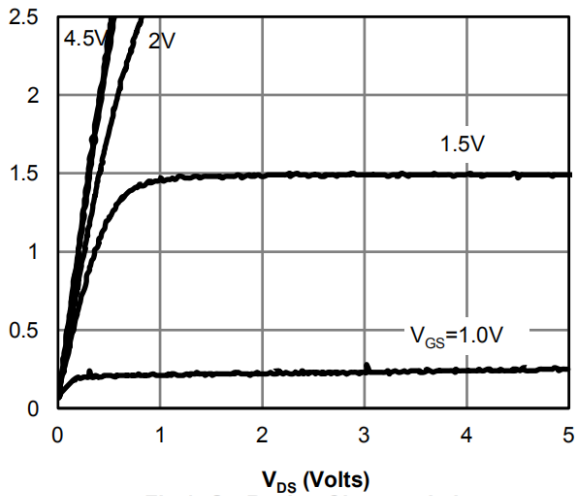
**电性能参数 / Electrical Characteristics(Ta=25°C)**

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> =250uA	20	22.9		V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>GS</sub> =0 V <sub>DS</sub> =20V			1	μA
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> =0V V <sub>GS</sub> =±8V			10	μA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =250uA	0.3	0.68	1	V
Static Drain-Source On-Resistance	R <sub>DS(on)(1)</sub>	V <sub>GS</sub> =2.5V I <sub>D</sub> =200mA		273	400	mΩ
	R <sub>DS(on)(2)</sub>	V <sub>GS</sub> =1.8V I <sub>D</sub> =100mA		353	750	mΩ
	R <sub>DS(on)(3)</sub>	V <sub>GS</sub> =1.5V I <sub>D</sub> =50mA		442		mΩ
	R <sub>DS(on)(4)</sub>	V <sub>GS</sub> =1.2V I <sub>D</sub> =20mA		733		mΩ
Drain-Source Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V I <sub>S</sub> =250mA		0.86	1.2	V
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> =0V V <sub>DS</sub> =0V f=1MHz		60		Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V V <sub>GS</sub> =0V f=1.0MHz		105		pF
Output Capacitance	C <sub>oss</sub>			65		
Reverse Transfer Capacitance	C <sub>rss</sub>			20		

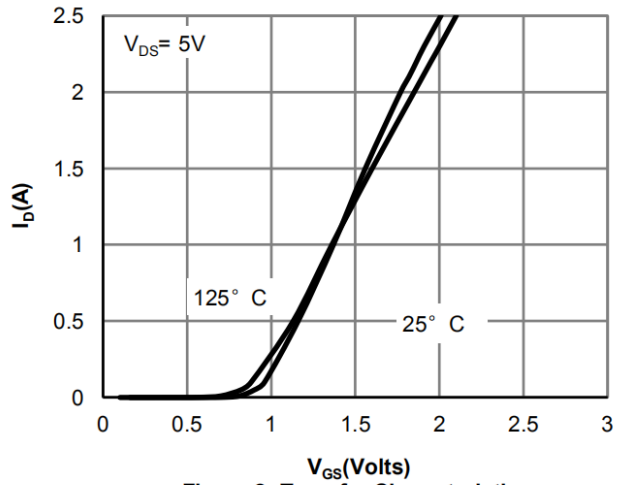
## 电性能参数 / Electrical Characteristics(Ta=25°C)

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	$Q_g$	$V_{GS}=4.5V, V_{DS}=10V,$ $I_D=0.4A$		0.85		nC
Gate Source Charge	$Q_{gs}$			0.1		
Gate Drain Charge	$Q_{gd}$			0.25		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=4.5V V_{DS}=10V$ $R_L=25\Omega R_{GEN}=3\Omega$		2		ns
Turn-On Rise Time	$t_r$			4		ns
Turn-Off Delay Time	$t_{d(off)}$			18		ns
Turn-Off Fall Time	$t_f$			8		ns

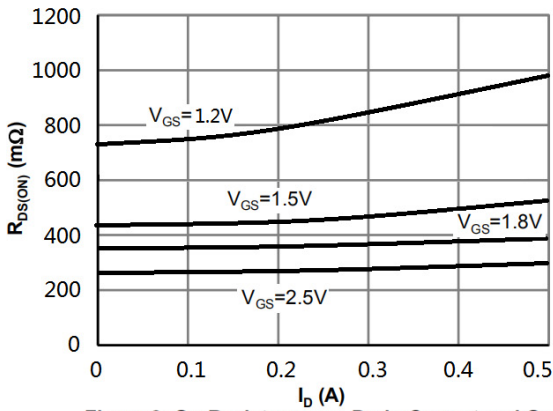
电参数曲线图 / Electrical Characteristic Curve



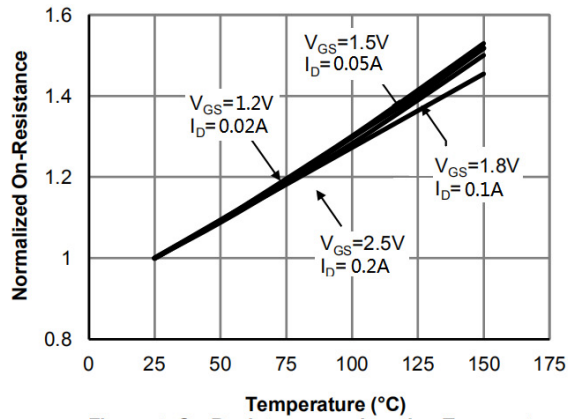
**Fig 1: On-Region Characteristics**



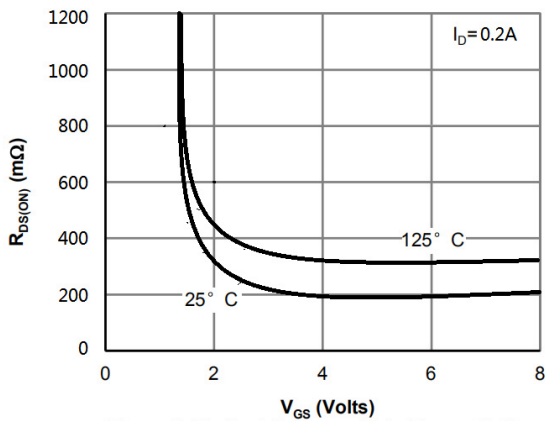
**Figure 2: Transfer Characteristics**



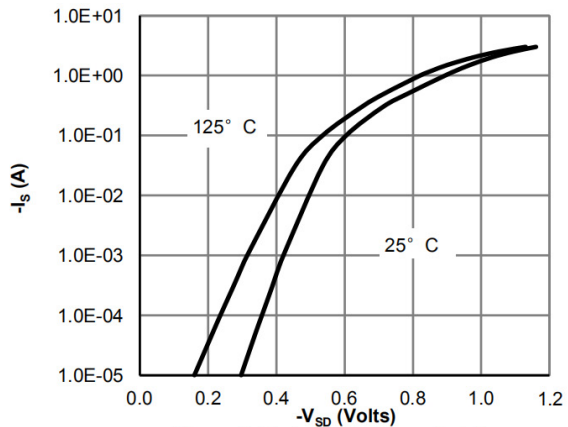
**Figure 3: On-Resistance vs. Drain Current and Gate Voltage**



**Figure 4: On-Resistance vs. Junction Temperature**

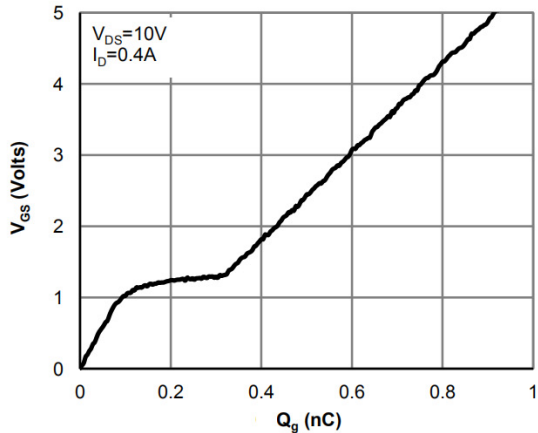


**Figure 5: On-Resistance vs. Gate-Source Voltage**

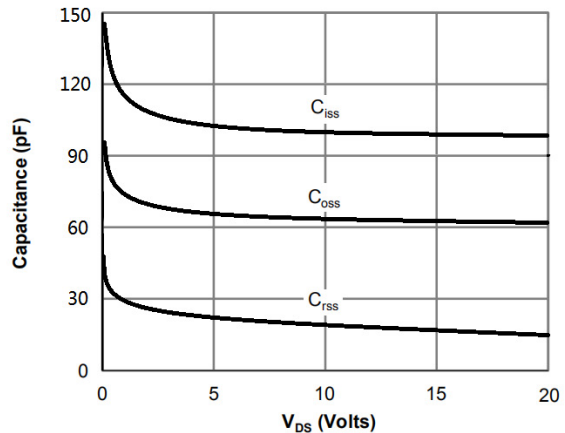


**Figure 6: Body-Diode Characteristics**

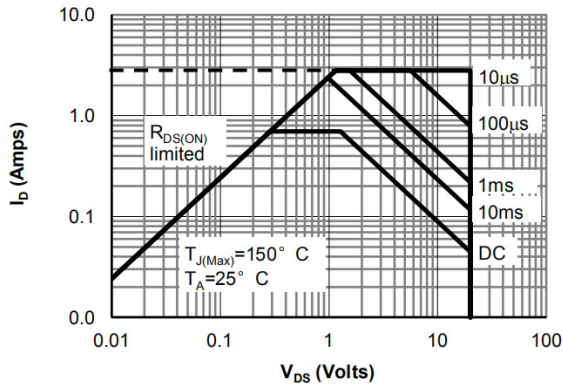
**电参数曲线图 / Electrical Characteristic Curve**



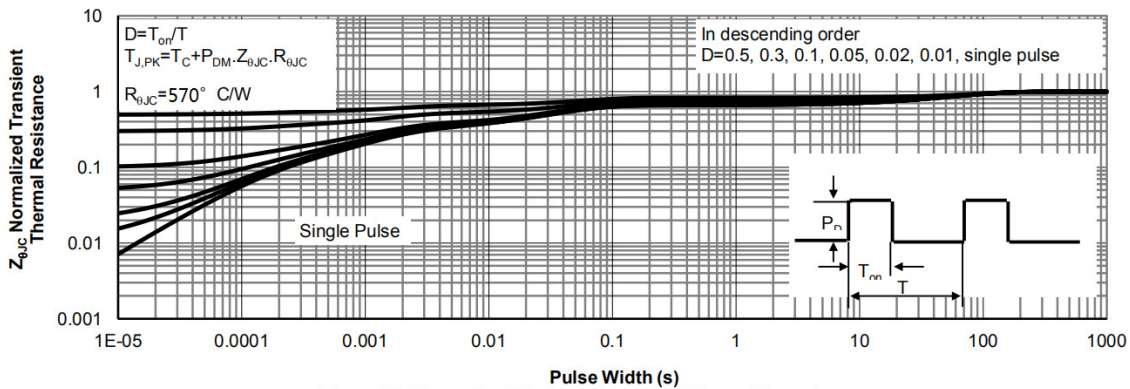
**Figure 7: Gate-Charge Characteristics**



**Figure 8: Capacitance Characteristics**



**Figure 9: Maximum Forward Biased Safe Operating Area**

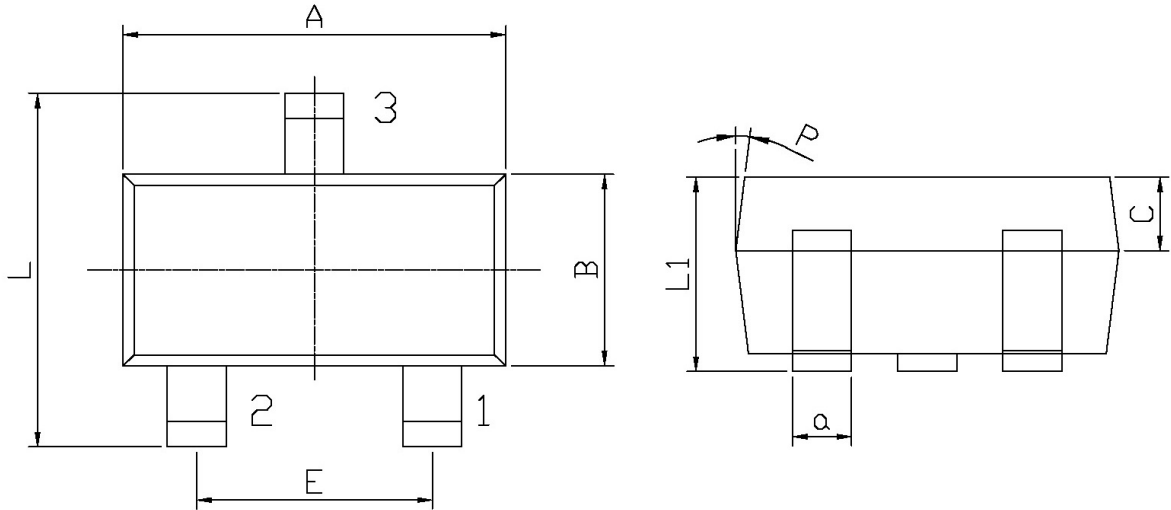


**Figure 10: Normalized Maximum Transient Thermal Impedance**

外形尺寸图 / Package Dimensions

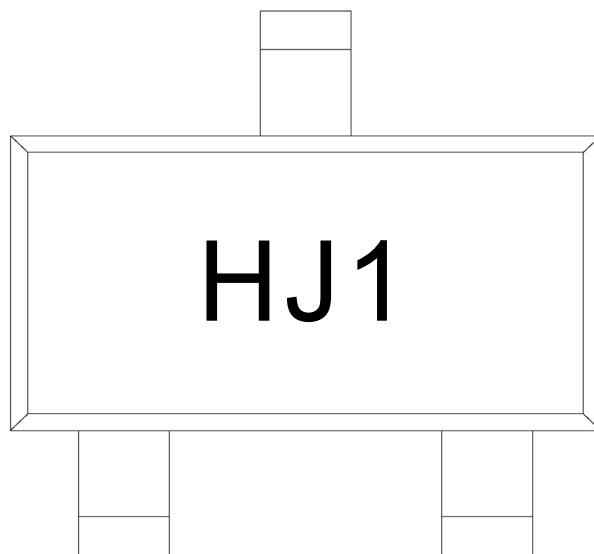
SOT-323

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	1.95	2.35	C	0.30	0.50
L	2.00	2.2	L1	0.85	1.15
E	1.20	1.40	a	0.20	0.40
B	1.15	1.35	P	7°	

**印章说明 / Marking Instructions**



说明：

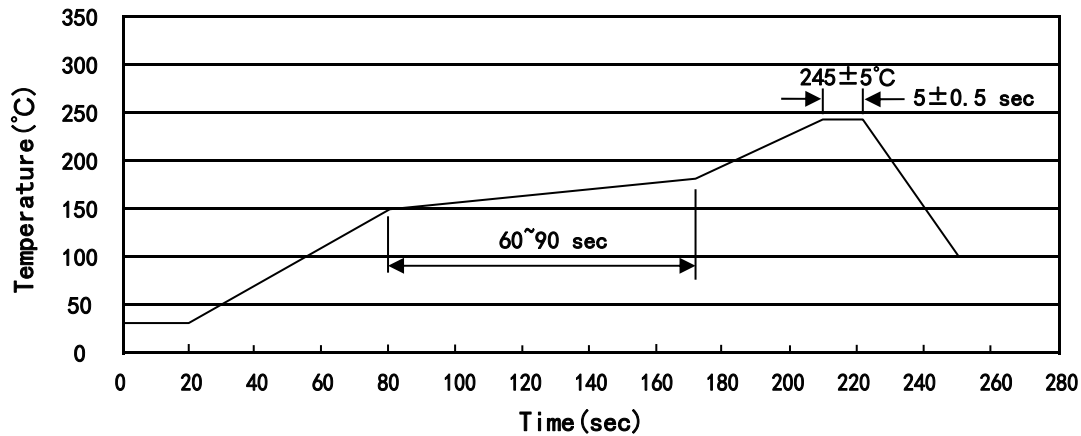
H： 为公司代码

J1： 为型号代码

Note:

H: Company Code

J1: 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-323	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

**使用说明 / Notices**