

# BRCS2302MAQ

Rev.A Jun.-2022

## 描述 / Descriptions

SOT-23 塑封封装 N 沟道 MOS 场效应管。

N- CHANNEL MOSFET in a SOT-23 Plastic Package.

## 特征 / Features

芯片采用超高密度元胞设计技术,  $R_{DS(ON)}$  导通电阻小, SOT-23 封装, 符合 AEC-Q101 标准高可靠性要求, 无卤产品。

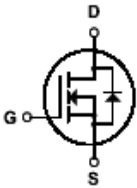
Super high dense cell design for low  $R_{DS(ON)}$ , SOT-23 package, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

## 用途 / Applications

电池管理, 高速开关, 低功率 DC-DC 转换, 满足汽车应用的严格要求。

Battery management, High speed switch, low power DC to DC converter, Meet the stringent requirements of automotive 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

A2Q

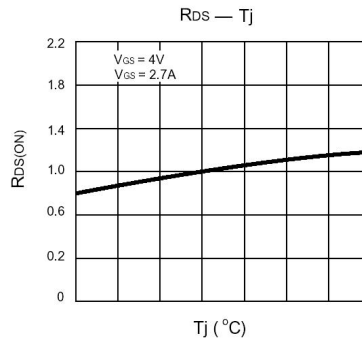
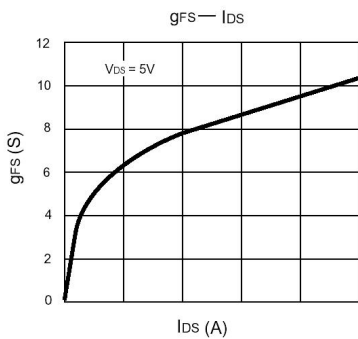
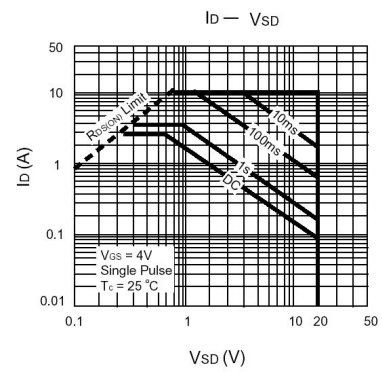
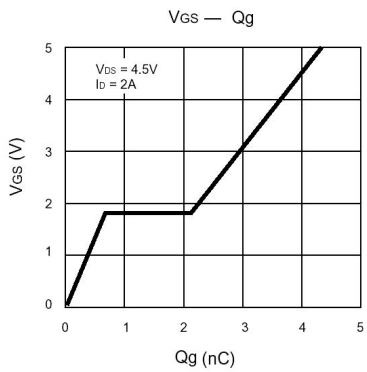
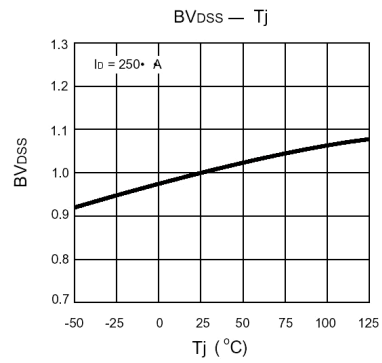
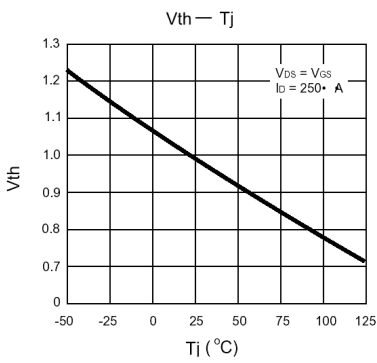
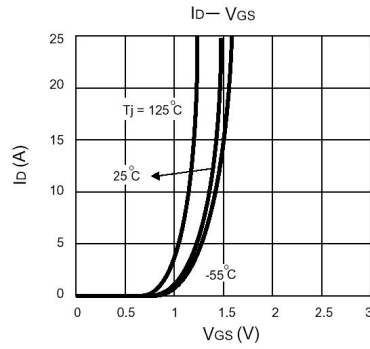
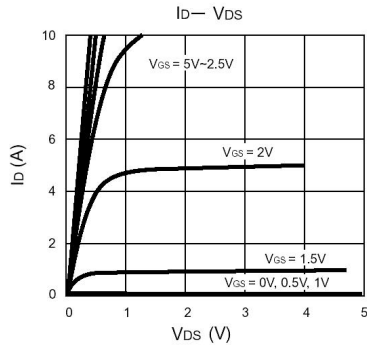
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	$V_{DSS}$	20	V
Gate-Source Voltage	$V_{GSS}$	±8	V
Drain Current – Continuous	$I_D$	3.0	A
Pulsed Drain Current	$I_{DM}$	10	A
Continuous Source Current	$I_S$	0.95	A
Power Dissipation	$P_D$	0.9	W
Storage Temperature Range	$T_{stg}$	-55~150	°C

**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	$V_{(BR)DSS}$	$V_{GS}=0$ $I_D=10\mu A$	20	21		V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{GS}=0$ $V_{DS}=20V$			1.0	$\mu A$
Gate–Body Leakage.	$I_{GSS}$	$V_{GS}=\pm 8V$ $V_{DS}=0V$			±100	nA
Static Drain–Source On–Resistance	$R_{DS(on)1}$	$V_{GS}=4.5V$ $I_D=3.6A$		34	60	m $\Omega$
	$R_{DS(on)2}$	$V_{GS}=2.5V$ $I_D=3.1A$		41	115	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS}=5V$ $I_D=3.6A$		8		S
Drain–Source Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V$ $I_D=1.25A$			1.2	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=50\mu A$	0.50		1.0	V
State Drain Current	$I_{D(on)}$	$V_{DS}=5V$ $V_{GS}=2.5V$	4			A
Turn–On Delay Time	$t_{d(on)}$	$V_{DD}=10V$ $I_D=3.6A$ $V_{GEN}=4.5V$ $R_{GEN}=6\Omega$ $R_L=2.8\Omega$		7		ns
Turn–On Rise Time	$t_r$			55		
Turn–Off Delay Time	$t_{d(off)}$			15		
Turn–Off Fall Time	$t_f$			10		

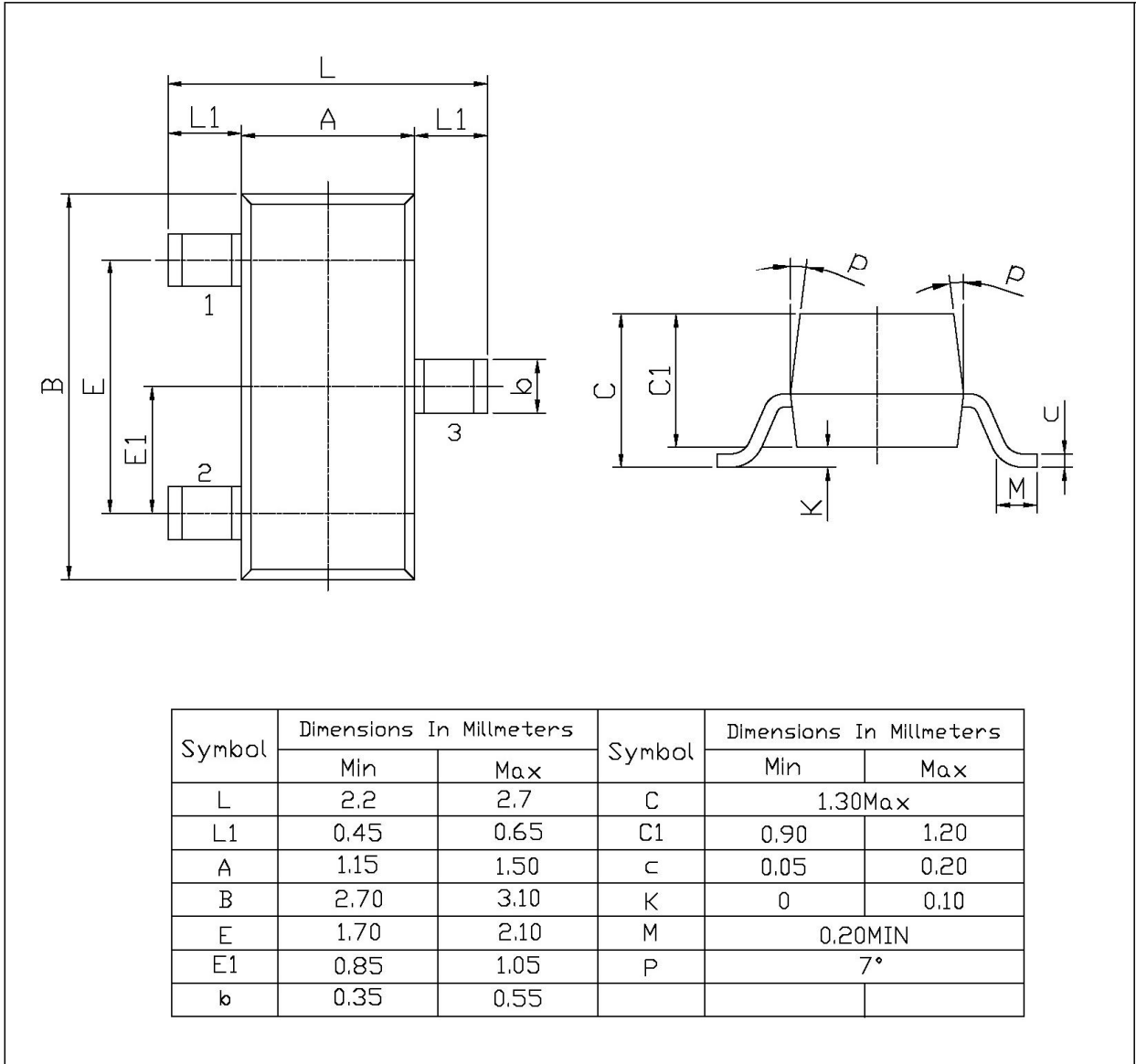
**电参数曲线图 / Electrical Characteristic Curve**



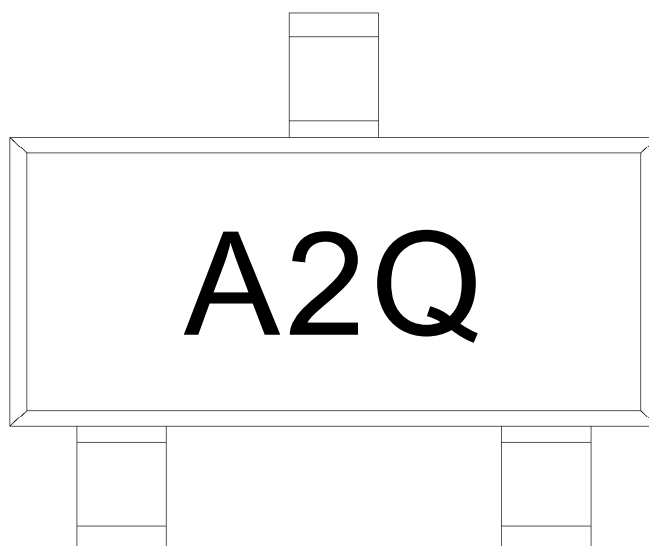
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

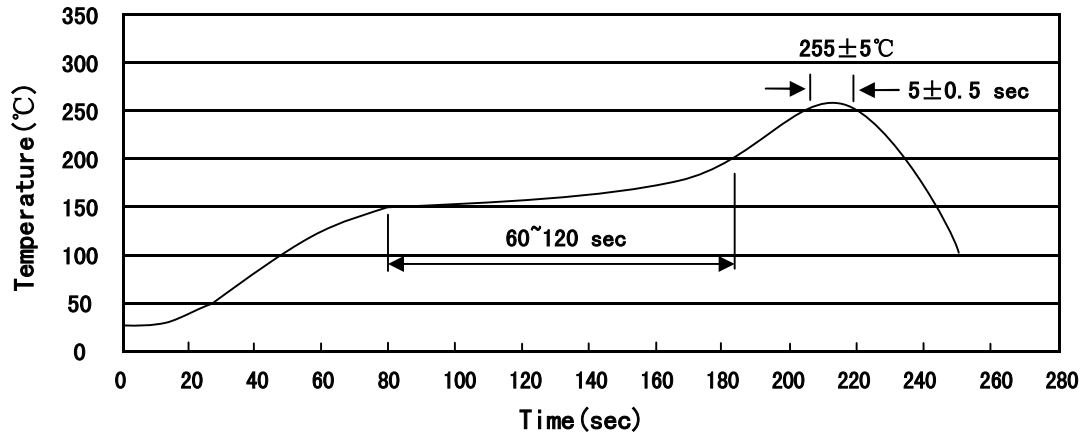
A2: 为型号代码

Q: 为汽车无卤产品标识

Note:

A2 : Product Type Code

Q: Automobile halogen-free product 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 150~200°C，时间 60~120sec;
- 2、峰值温度 255±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:150~200°C, Time:60~120sec.
- 2.Peak Temp.:255±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-23	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

**使用说明 / Notices**