

# BRCS2301MA

Rev.F Mar.-2024

## 描述 / Descriptions

SOT-23 塑封封装 P 道 MOS 场效应管。

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

## 特征 / Features

$V_{DS} (V) = -20V$        $I_D = -2.6A$

$R_{DS(ON)}@-4.5V \leq 100m\Omega$  (Type.76m $\Omega$ )

$R_{DS(ON)}@-2.5V \leq 150m\Omega$  (Type.107m $\Omega$ )

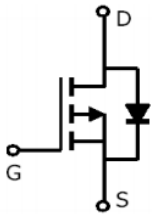
无卤产品。 HF Product.

## 用途 / Applications

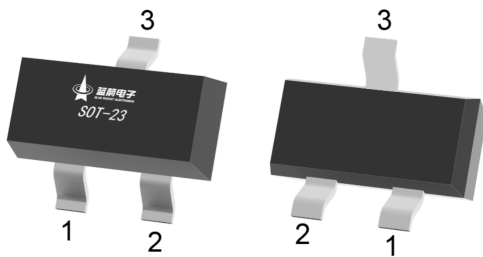
主要用于显示屏驱动。

Primarily the display screen drive 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	A1H
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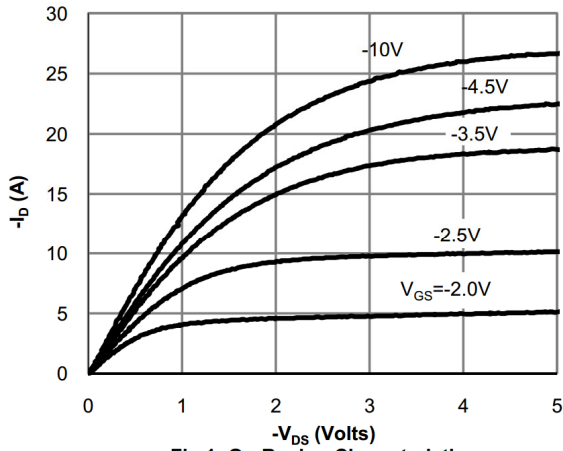
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

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>	±12	V
Drain Current – Continuous	I <sub>D</sub>	-2.8	A
Pulsed Drain Current	I <sub>DM</sub>	-11	A
Power Dissipation	P <sub>D</sub>	1.2	W
Storage Temperature Range	T <sub>stg</sub>	-55~+150	°C
Operating Junction Temperature Range	T <sub>j</sub>	-55~+150	°C
Maximum Junction-to-Ambient	R <sub>θJA</sub>	104	°C/W

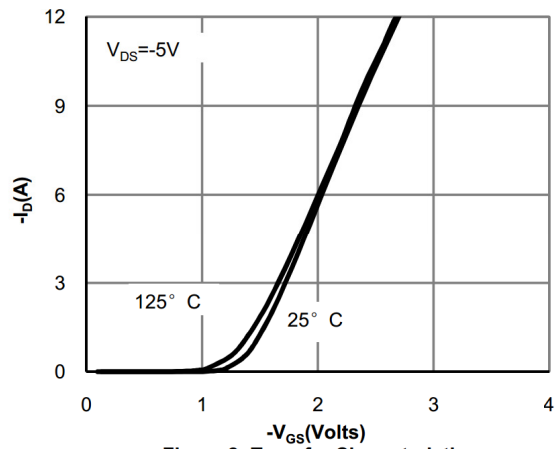
**电性能参数 / Electrical Characteristics(Ta=25°C)**

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>(BR)DSS</sub>	V <sub>GS</sub> =0V I <sub>D</sub> =-250μA	-20	-22		V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250μA	-0.5	-0.7	-1.0	V
Static Drain–Source On–Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-4.5V I <sub>D</sub> =-2.8A		76	100	mΩ
	R <sub>DS(on)</sub>	V <sub>GS</sub> =-2.5V I <sub>D</sub> =-2.0A		107	150	mΩ
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V V <sub>GS</sub> =0V			-1	μA
Gate–Body Leakage	I <sub>GSS</sub>	V <sub>GS</sub> =±12V V <sub>DS</sub> =0V			±0.1	μA
Drain–Source Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1.6A V <sub>GS</sub> =0V			-1.2	V
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =0V f=1MHz		330		pF
Output Capacitance	C <sub>oss</sub>			65		
Reverse Transfer Capacitance	C <sub>rss</sub>			40		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V V <sub>GS</sub> =-4.5V I <sub>D</sub> =-2.8A		3.3		nC
Gate-to-Source Charge	Q <sub>gs</sub>			0.8		
Gate-to-Drain Charge	Q <sub>gd</sub>			1.5		
Turn–On Delay Time	t <sub>d(on)</sub>	V <sub>DS</sub> =-10V V <sub>GS</sub> =-10V R <sub>L</sub> =28Ω R <sub>GEN</sub> =3Ω		12		ns
Turn–On Rise Time	t <sub>r</sub>			5.7		
Turn–Off Delay Time	t <sub>d(off)</sub>			23		
Turn–Off Fall Time	t <sub>f</sub>			8.5		

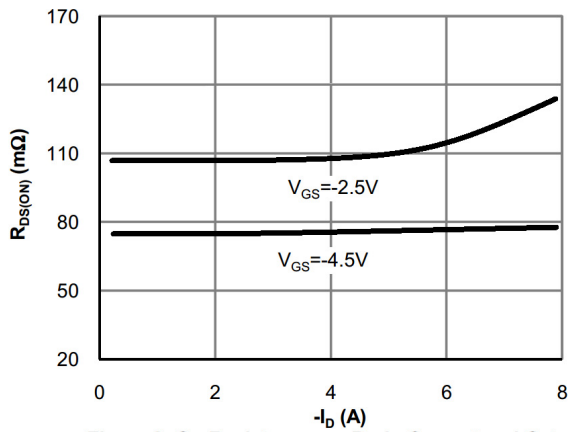
**电参数曲线图 / Electrical Characteristic Curve**



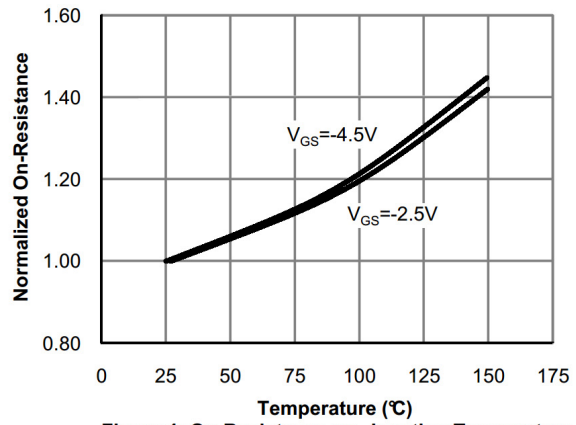
**Fig 1: On-Region Characteristics**



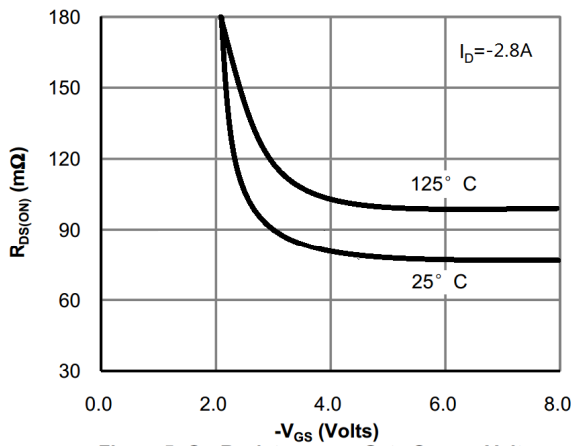
**Figure 2: Transfer Characteristics**



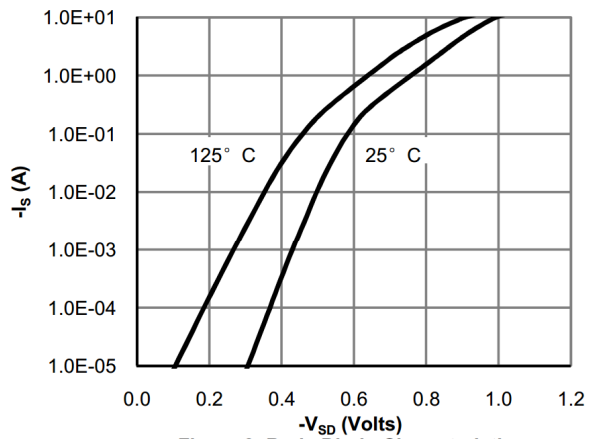
**Figure 3: On-Resistance vs. Drain Current and Gate Voltage**



**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

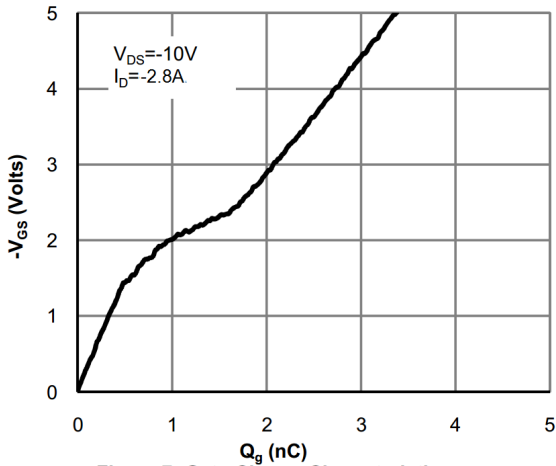


Figure 7: Gate-Charge Characteristics

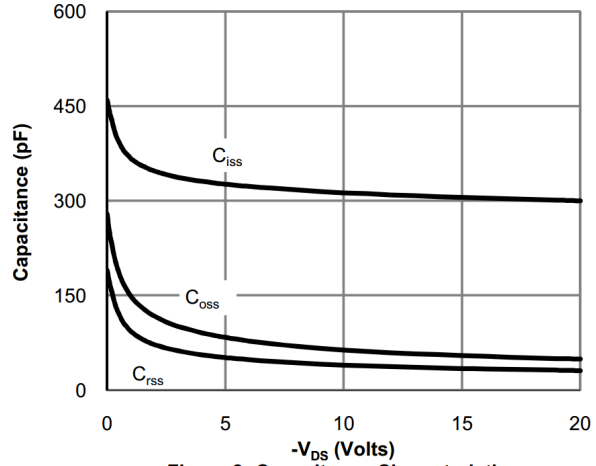


Figure 8: Capacitance Characteristics

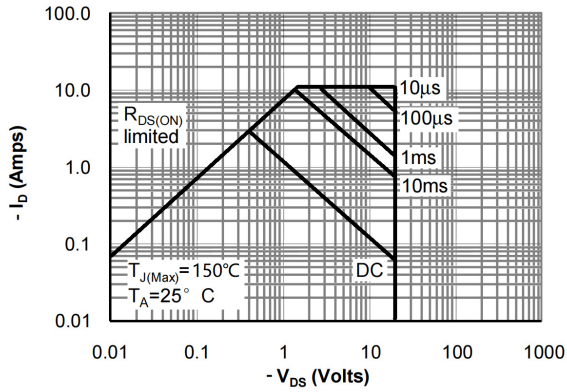


Figure 9: Maximum Forward Biased Safe Operating Area

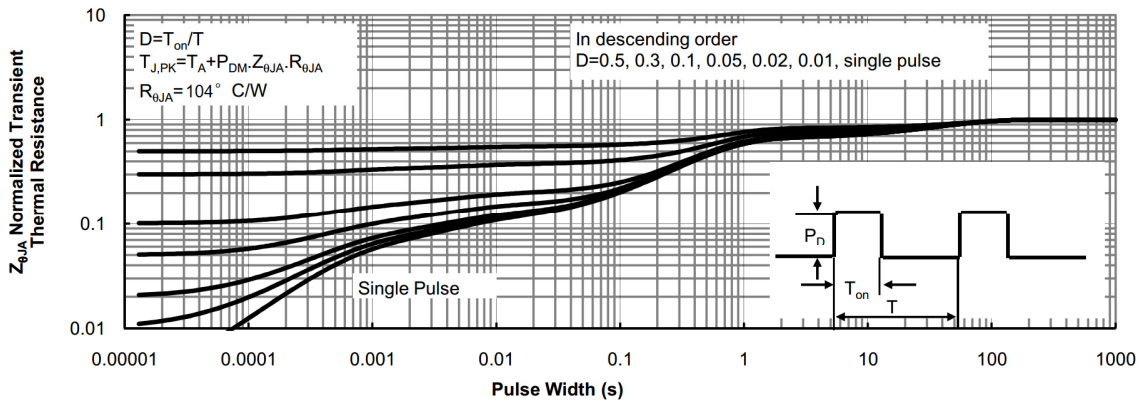
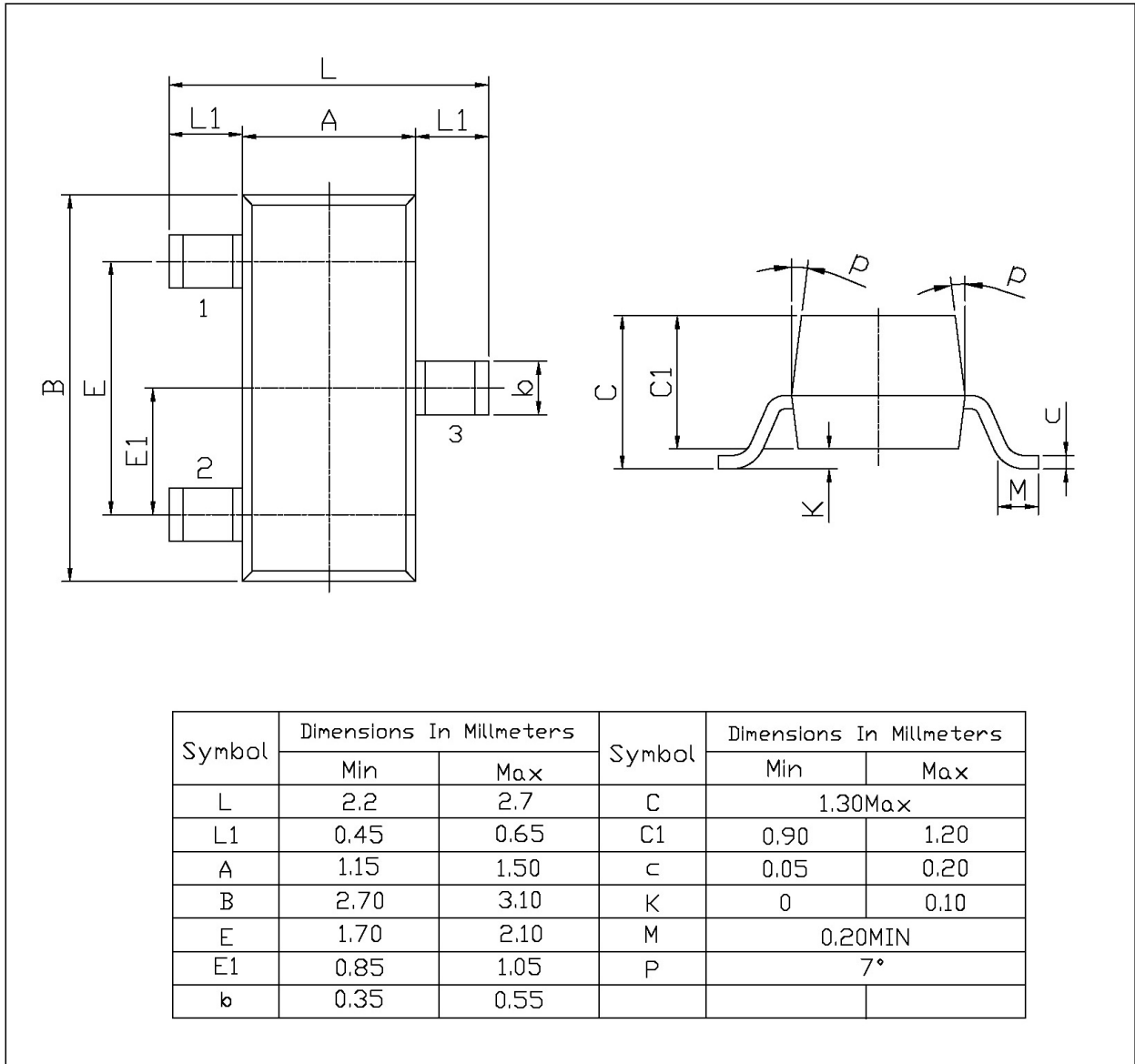


Figure 10: Normalized Maximum Transient Thermal Impedance

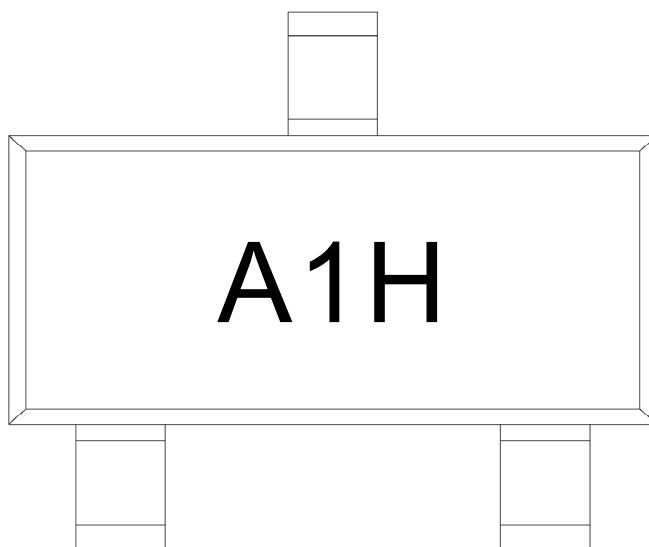
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



**印章说明 / Marking Instructions**



说明：

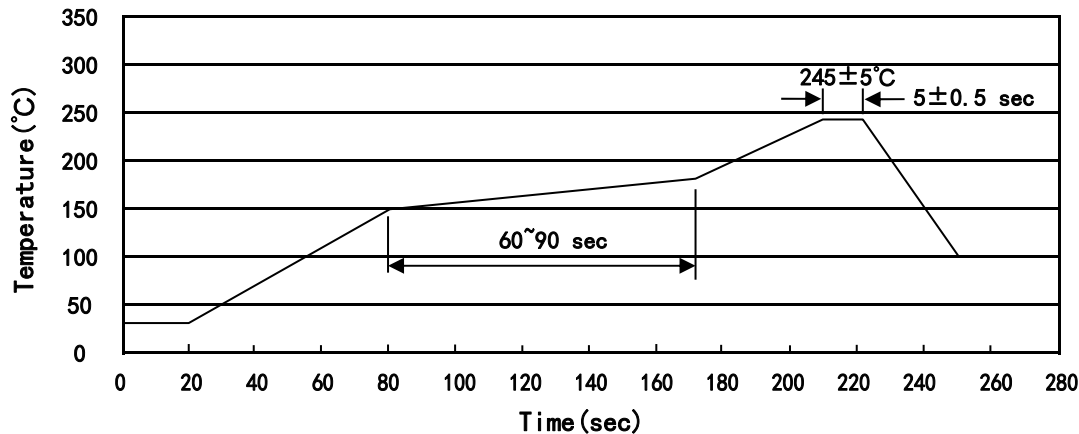
A1: 为型号代码

H: 为公司代码

Note:

A1 : Product Type Code

H: Company 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-23	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

**使用说明 / Notices**