

BR2SC4081WQ

Rev.A Apr.-2023

描述 / Descriptions

SOT-323 塑封封装 NPN 半导体三极管。Silicon NPN transistor in a SOT-323 Plastic Package.

特征 / Features

共基极输出电容小，符合 AEC-Q101 标准高可靠性要求，无卤产品。

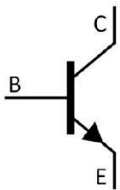
Low C_{ob} , Qualified to AEC-Q101 Standards for High Reliability, HF Product.

用途 / Applications

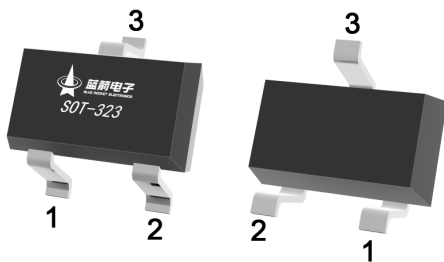
用于普通放大，满足汽车应用的严格要求。

General amplifier, Meet the stringent requirements of automotive applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1 : Base

PIN 2 : Emitter

PIN 3 : Collector

放大及印章代码 / h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	Q	R	S
h_{FE} Range	120~270	180~390	270~560
Marking	QBQ	QBR	QBS

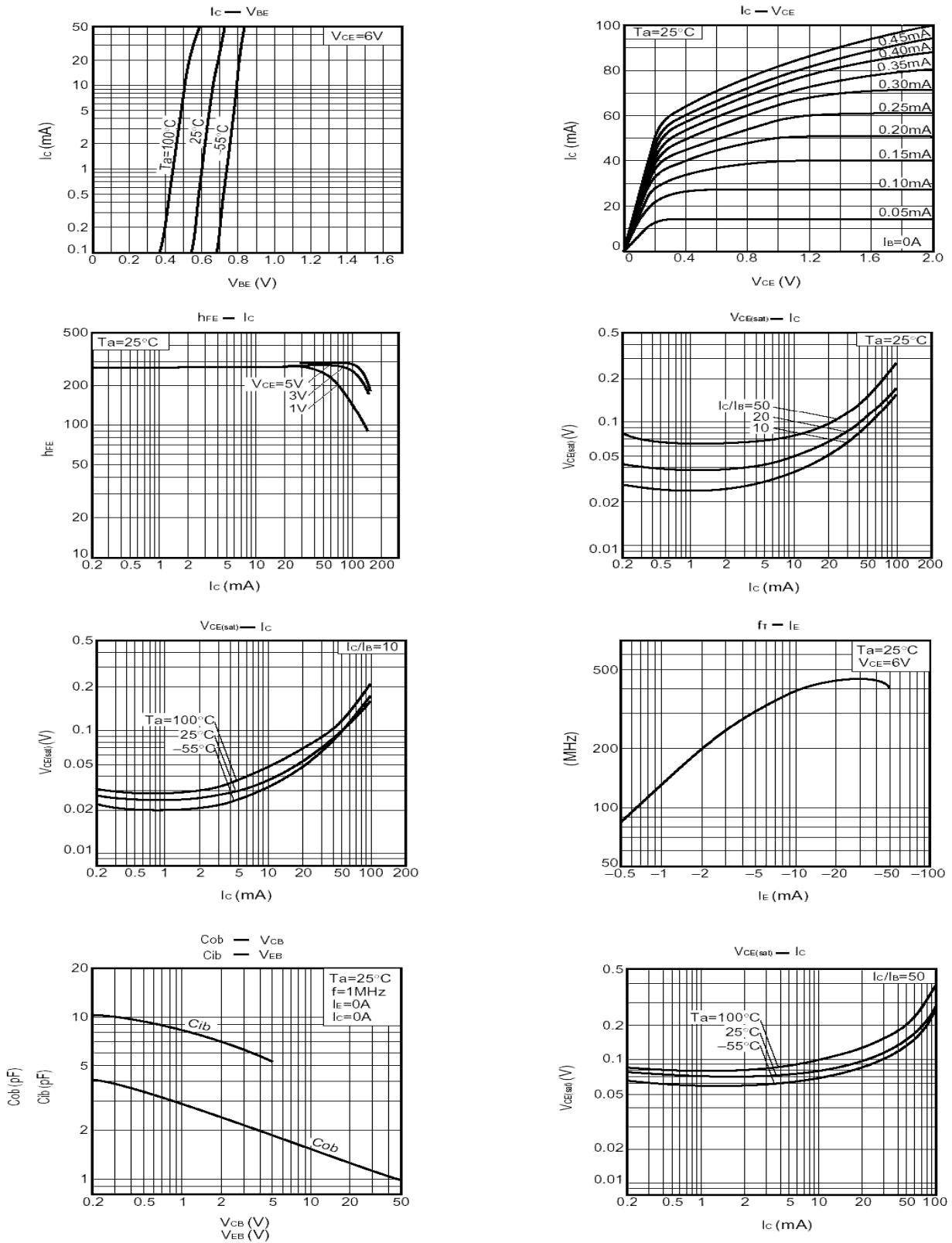
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V _{CBO}	60	V
Collector to Emitter Voltage	V _{CEO}	50	V
Emitter to Base Voltage	V _{EBO}	7.0	V
Collector Current - Continuous	I _C	150	mA
Collector Power Dissipation	P _C	200	mW
Junction Temperature	T _J	150	°C
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
Collector to Base Breakdown Voltage	V _{CBO}	I _C =50μA I _E =0	60			V
Collector to Emitter Breakdown Voltage	V _{CEO}	I _C =1.0mA I _B =0	50			V
Emitter to Base Breakdown Voltage	V _{EBO}	I _E =50μA I _C =0	7.0			V
Collector Cut-Off Current	I _{CBO}	V _{CB} =60V I _E =0			0.1	μA
Emitter Base Cut-Off Current	I _{EBO}	V _{EB} =7.0V I _C =0			0.1	μA
DC Current Gain	h _{FE}	V _{CE} =6.0V I _C =1.0mA	120		560	
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =50mA I _B =5.0mA			0.4	V
Transition Frequency	f _T	V _{CE} =12V f=100MHz I _E =-2.0mA		180		MHz
Output Capacitance	C _{ob}	V _{CB} =12V f=1.0MHz I _E =0		2.0	3.5	pF

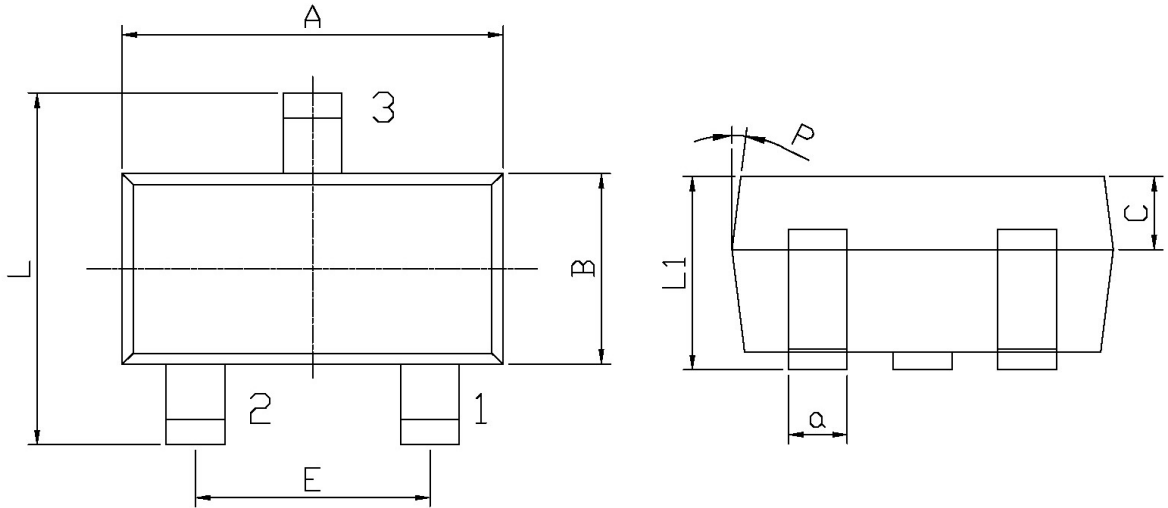
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

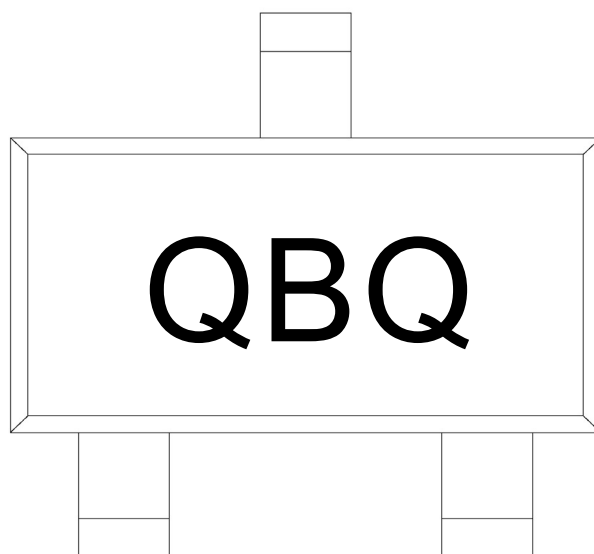
SOT-323

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	α	0.20	0.40
B	1.15	1.35	P	7°	

印章说明 / Marking Instructions



说明：

Q： 为汽车无卤产品标识

B： 为型号代码

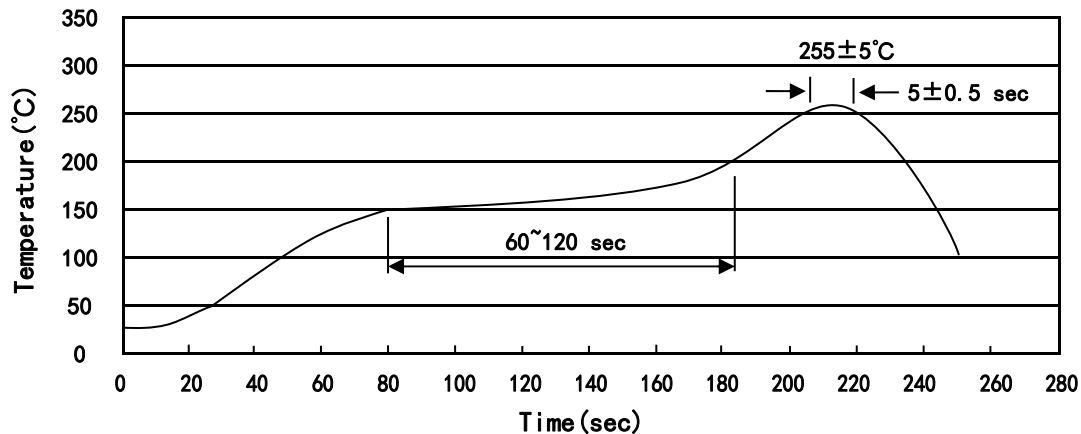
Q： 为 h_{FE} 分档代码

Note:

Q: Automobile halogen-free product Code

B: Product Type

Q: h_{FE} Classifications Symbol

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

使用说明 / Notices