

# BRPBSS5350TQ

Rev.A Feb.-2025

## 描述 / Descriptions

SOT-23 塑封封装 PNP 半导体三极管。Silicon PNP transistor in a SOT-23 Plastic Package.

## 特征 / Features

饱和压降低，电流大，符合 AEC-Q101 标准高可靠性要求，无卤产品。

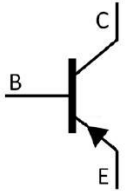
Low  $V_{CE(sat)}$ , high current, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

## 用途 / Applications

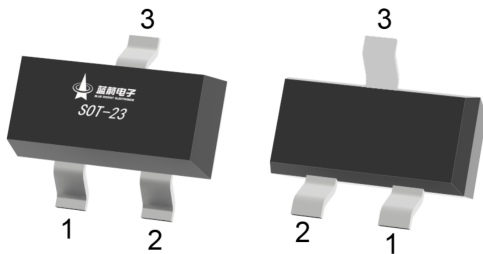
用于一般静音开关，液晶显示器的背景照明，线性开关电源，满足汽车应用的严格要求。

General purpose switching and muting, LCD back-lighting, supply line switching circuits, Meet the stringent requirements of automotive applications.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



PIN 1 : Base

PIN 2 : Emitter

PIN 3 : Collector

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

$h_{FE}$ Range	>200
Marking	ZDQ

**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 <sub>CB0</sub>	-50	V
Collector to Emitter Voltage	V <sub>CEO</sub>	-50	V
Emitter to Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current	I <sub>C</sub>	-2	A
Peak Collector Current	I <sub>CM</sub>	-5	A
Base Current	I <sub>B</sub>	-0.5	A
Total Power Dissipation	P <sub>tot</sub> (注1)	300	mW
Total Power Dissipation	P <sub>tot</sub> (注1、2)	1.2	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-65~150	°C

注：

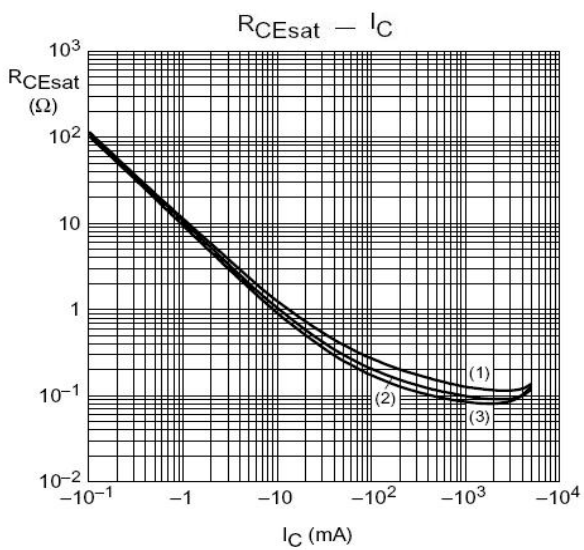
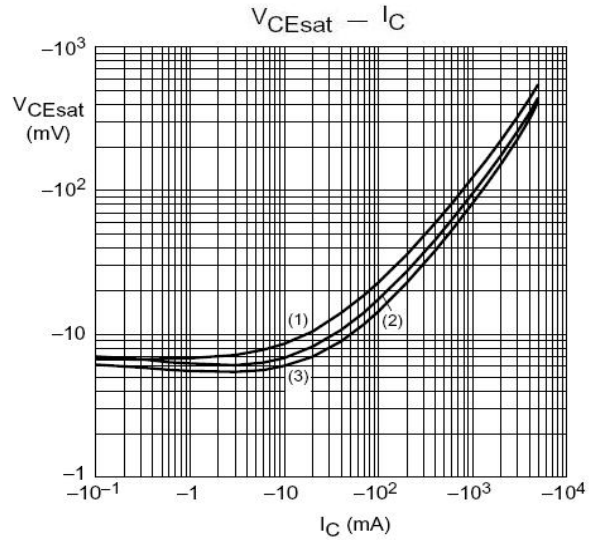
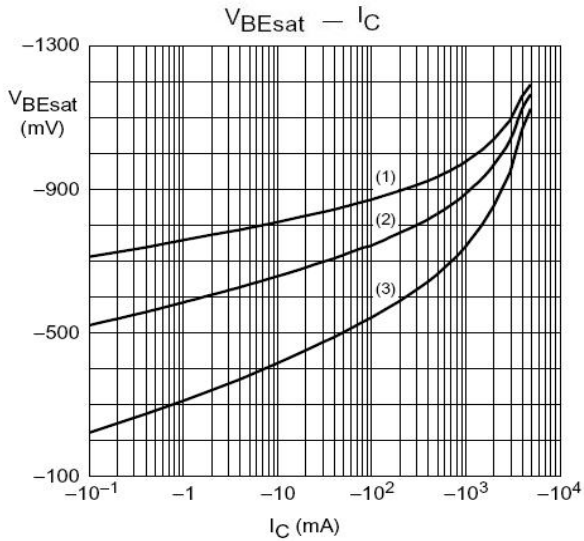
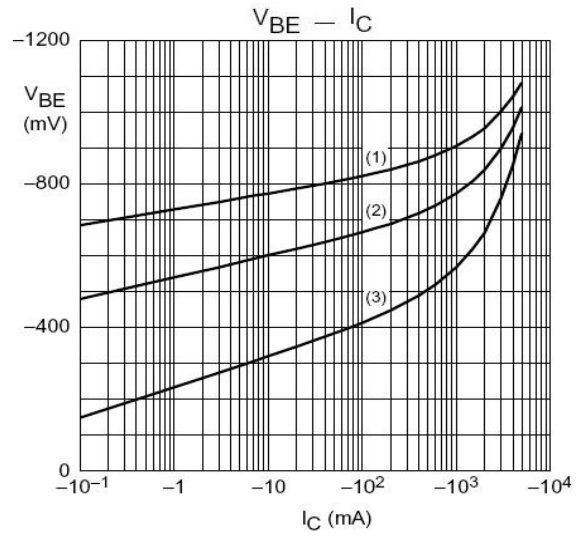
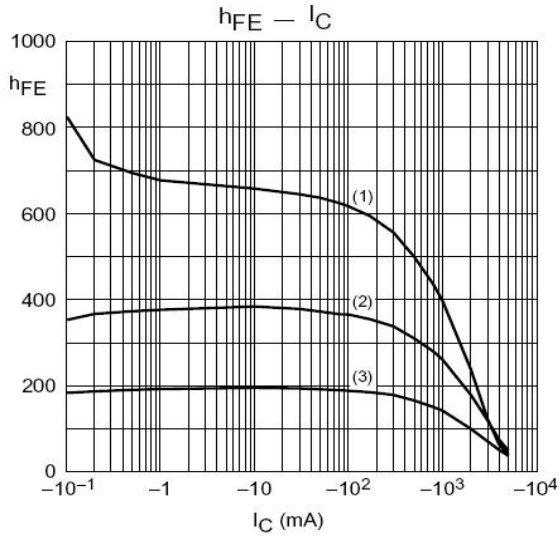
1. 脉冲条件下操作：脉冲宽度 $t_p \leq 100$  ms，占空比 $\delta \leq 0.25$ 。
2. 器件安装在印刷电路板上。

**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 Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =-50V I <sub>E</sub> =0			-100	nA
		V <sub>CB</sub> =-50V I <sub>E</sub> =0 T <sub>J</sub> =150°C			-50	μA
emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =-5.0V I <sub>C</sub> =0			-100	nA
DC Current Gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =-2.0V I <sub>C</sub> =-100mA	200			
	h <sub>FE(2)</sub>	V <sub>CE</sub> =-2.0V I <sub>C</sub> =-500mA	200			
	h <sub>FE(3)*</sub>	V <sub>CE</sub> =-2.0V I <sub>C</sub> =-1.0A	200			
	h <sub>FE(4)*</sub>	V <sub>CE</sub> =-2.0V I <sub>C</sub> =-2.0A	130			
	h <sub>FE(5)*</sub>	V <sub>CE</sub> =-2.0V I <sub>C</sub> =-3.0A	80			
Collector-Emitter Saturation Voltage	V <sub>CE(sat)(1)*</sub>	I <sub>C</sub> =-500mA I <sub>B</sub> =-50mA			-80	mV
	V <sub>CE(sat)(2)*</sub>	I <sub>C</sub> =-2.0A I <sub>B</sub> =-100mA			-320	mV
Equivalent On-Resistance	R <sub>CE(sat)*</sub>	I <sub>C</sub> =-2.0A I <sub>B</sub> =-200mA		90	135	mΩ
Base-Emitter Saturation Voltage	V <sub>BE(sat)*</sub>	I <sub>C</sub> =-2.0A I <sub>B</sub> =-100mA			-1.1	V
		I <sub>C</sub> =-3.0A I <sub>B</sub> =-300mA			-1.2	V
Base-Emitter Voltage	V <sub>BE(ON)*</sub>	V <sub>CE</sub> =-2.0V I <sub>C</sub> =-1.0A			-1.2	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =-5.0V I <sub>C</sub> =-100mA f=100MHz	100			MHz
Collector Capacitance	C <sub>C</sub>	V <sub>CB</sub> =-10V I <sub>E</sub> =0 f=1.0MHz			35	pF

\*注：脉冲测试:  $t_p \leq 300\mu s$ ;  $\delta \leq 0.02$ .

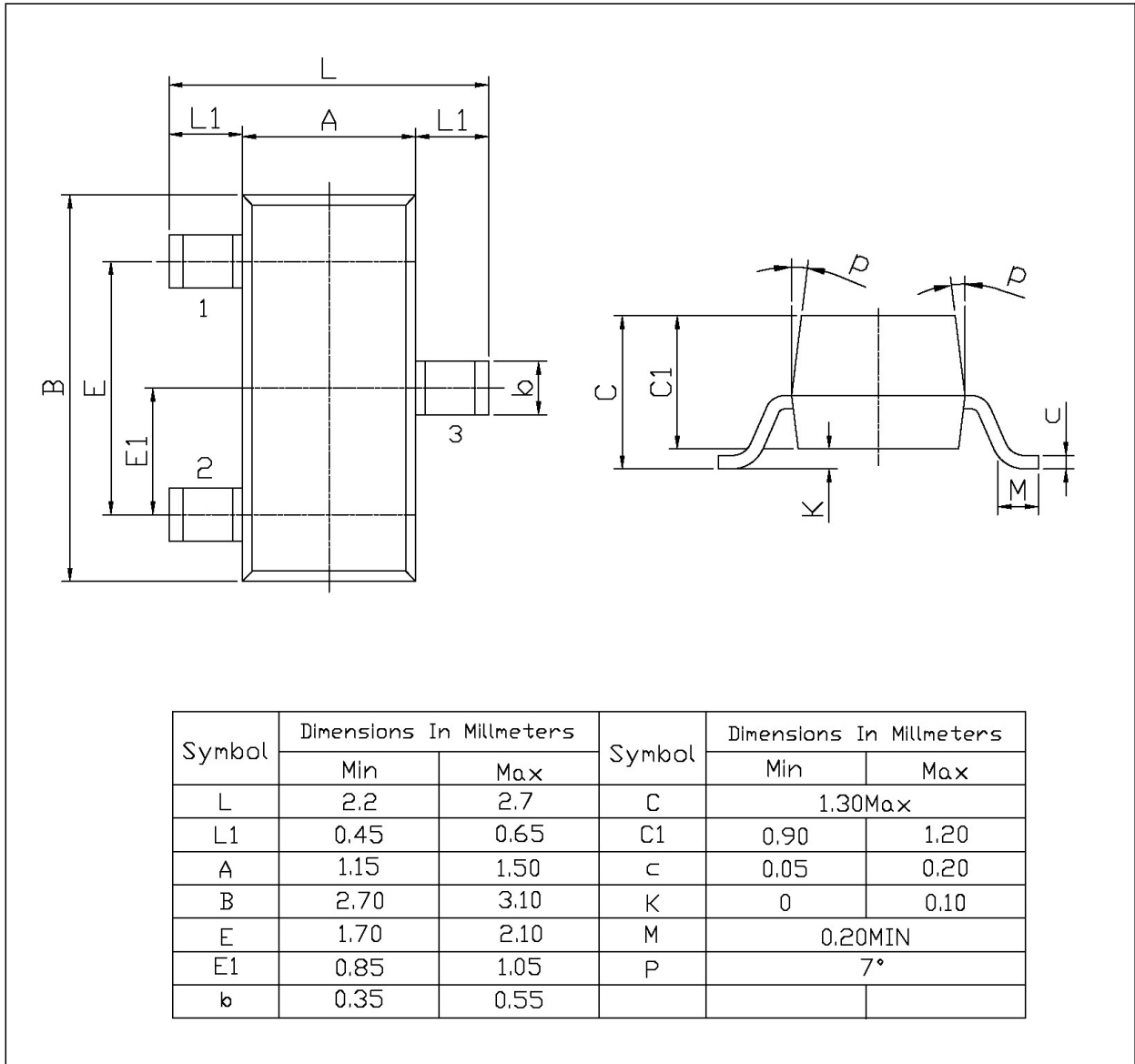
## 电参数曲线图 / Electrical Characteristic Curve



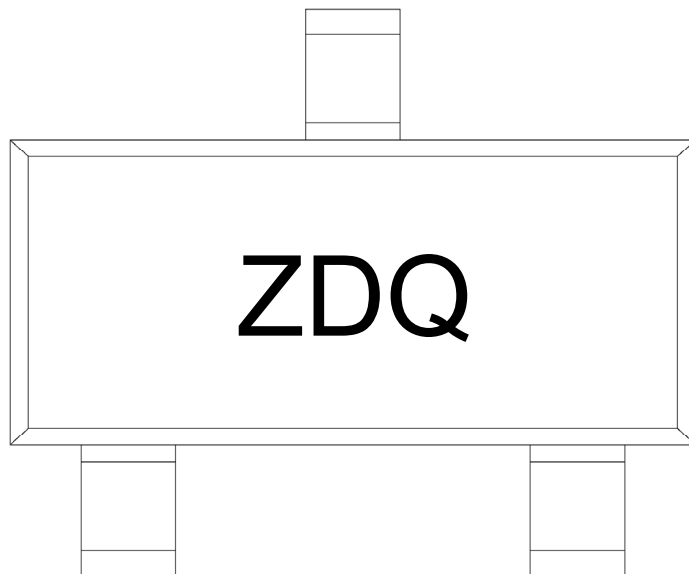
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

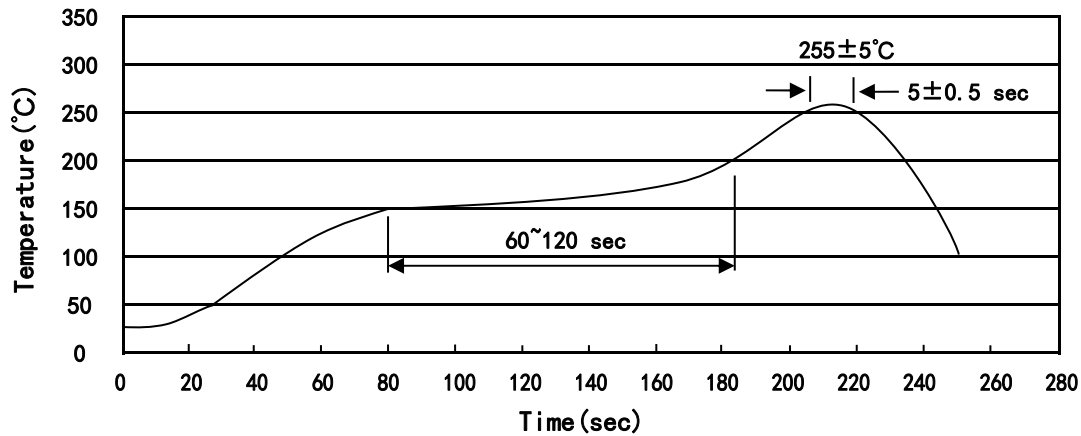
ZD： 为型号代码

Q： 为汽车无卤产品标识

Note:

ZD： Product Type

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**