

BCP53

Rev.E Mar.-2016

描述 / Descriptions

SOT-223 塑封封装 PNP 半导体三极管。Silicon PNP transistor in a SOT-223 Plastic Package.

特征 / Features

大电流, 低电压。

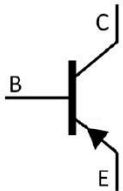
High current, Low voltage.

用途 / Applications

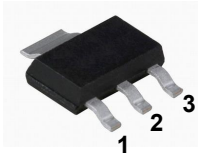
用于中功率开关或放大。

Medium Power Switching or Amplification Applications .

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1 : Base

PIN 2 : Collector

PIN 3 : Emitter

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

h_{FE} Classifications Symbol	10	16
h_{FE} Range	63~160	100~250

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}	-100	V
Collector to Emitter Voltage	V_{CEO}	-80	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-1.0	A
Peak Pulse Collector Current	I_{CM}	-2.0	A
Continuous Base Current	I_B	-100	mA
Peak Pulse Base Current	I_{BM}	-200	mA
Power Dissipation	P_D	2.0	W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62	W
Thermal Resistance, Junction to Leads	$R_{\theta JL}$	19.4	W
Operating and Storage Temperature Range	$T_j T_{stg}$	-65~150	°C

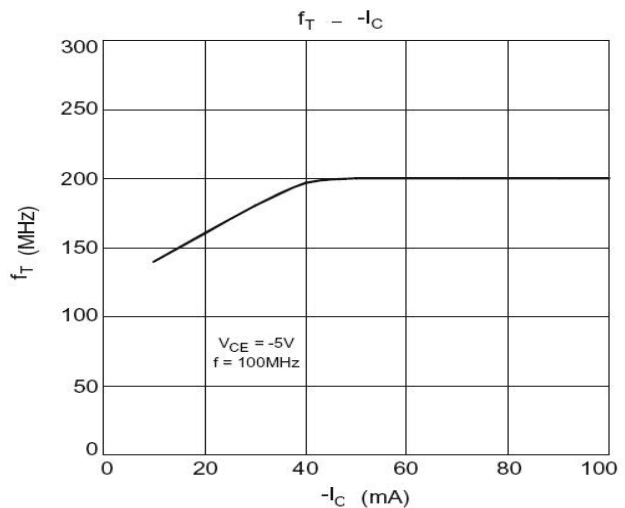
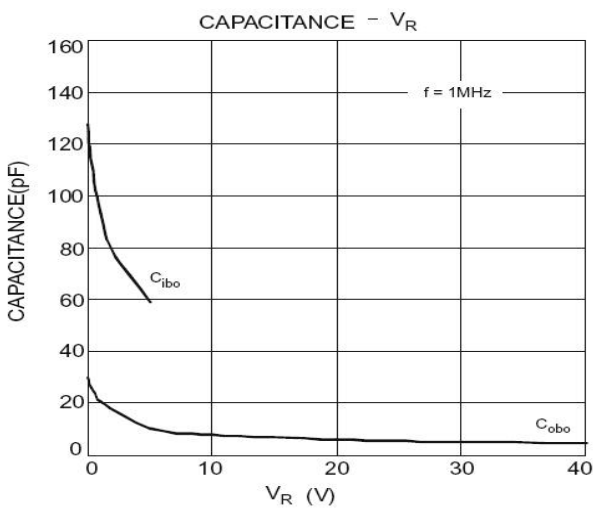
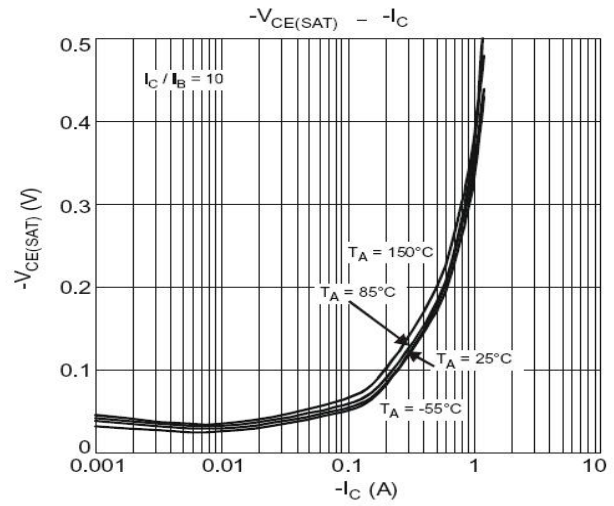
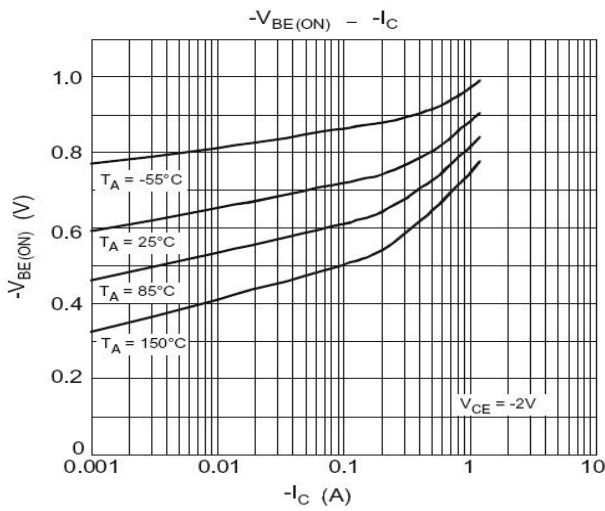
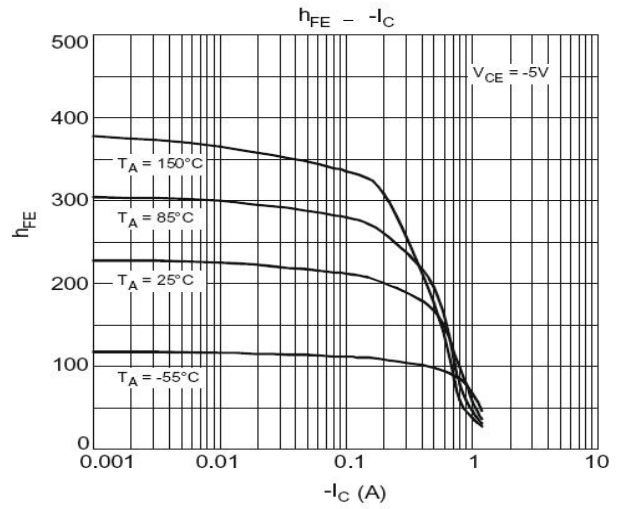
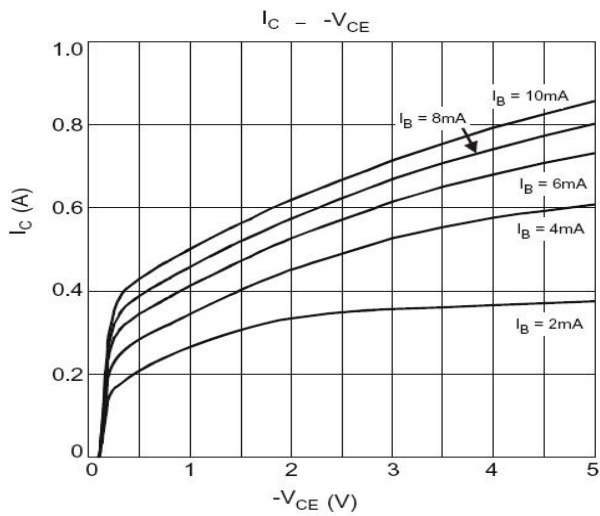
电性能参数 / Electrical Characteristics(Ta=25°C)

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}	$I_C=-100\mu A$ $I_E=0$	-100			V
Collector to Emitter Breakdown Voltage	$*V_{CEO}$	$I_C=-10mA$ $I_B=0$	-80			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=-10\mu A$ $I_C=0$	-5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-100V$ $I_E=0$			-0.1	μA
		$V_{CB}=-100V$ $T_A=150^\circ C$			-20	μA
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=-5.0V$ $I_C=0$			-20	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-2.0V$ $I_C=-5mA$	25			
	$h_{FE(2)}$	$V_{CE}=-2.0V$ $I_C=-150mA$	40		250	
	$h_{FE(3)}$	$V_{CE}=-2.0V$ $I_C=-500mA$	25			
Collector to Emitter Saturation Voltage*	$*V_{CE(sat)}$	$I_C=-500mA$ $I_B=-50mA$			-0.5	V
Base to Emitter Saturation Voltage*	$*V_{BE(sat)}$	$I_C=-500mA$ $V_{CE}=-2.0V$			-1.0	V
Transition Frequency	f_T	$V_{CE}=-10V$ $I_C=-50mA$ $f=1.0MHz$	150			MHz
Collector output capacitance	C_{ob}	$V_{CB}=-10V$ $f=1.0MHz$			25	pF

*Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

*脉冲宽度 ≤ 300 ，占空比 $\leq 2\% \mu s$ 。

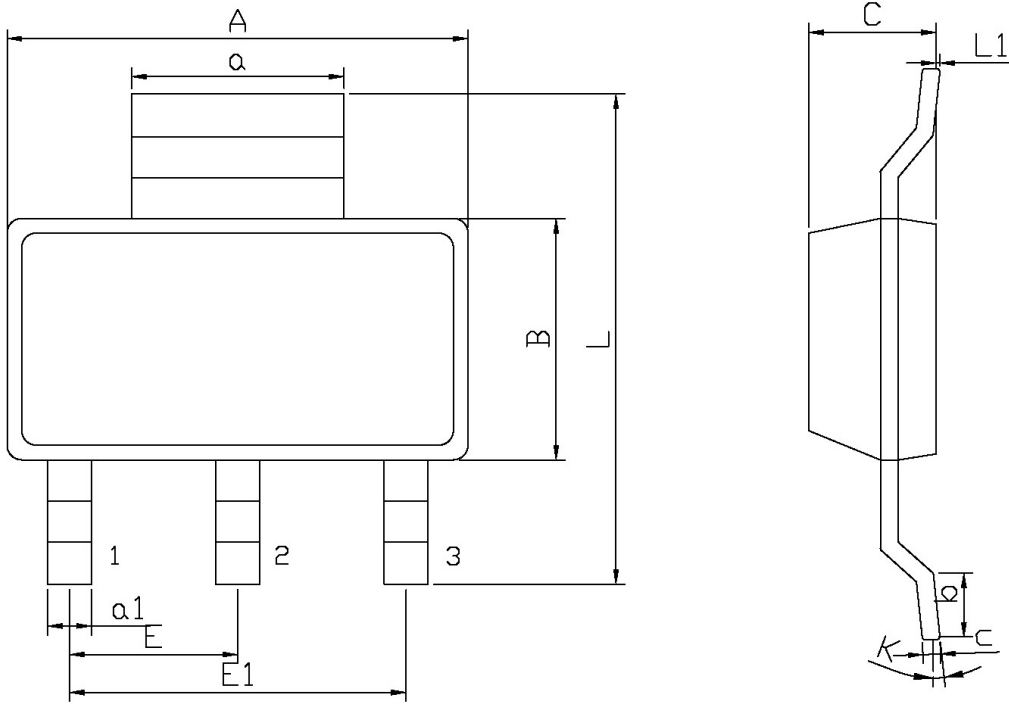
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

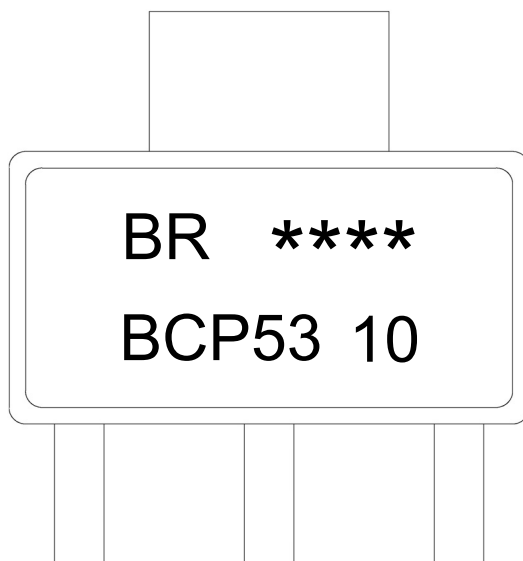
SOT-223

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	6.30	6.70	C	1.80Max	
a	2.90	3.10	b	0.91	-
B	3.30	3.70	c	0.24	0.32
L	6.70	7.30	K	0°	10°
a ₁	0.60	0.80	L ₁	0.02	0.10
E ₁	4.60				
E	2.30				

印章说明 / Marking Instructions



说明：

BR： 为公司代码

BCP53： 为产品型号

10： 为 h_{FE} 分档代码

****： 为生产批号代码，随生产批号变化。

Note:

BR: Company Code.

BCP53: Product Type.

10: h_{FE} Classifications Symbol

****: Lot No. Code, code change with Lot No.

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 25~150°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:25~150°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 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-223	2,500	2	5000	5	25,000	13" ×12	340×340×50	385×257×392

使用说明 / Notices