

**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**

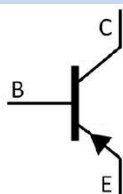
饱和压降低,可与 2SD1781K 互补。

Low VCE(sat),complements the 2SD1781K.

**用途 / Applications**

用于一般低频放大。

Low frequency amplifier 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
$h_{FE}$ Range	120~270	180~390
Marking	HAHQ	HAHR

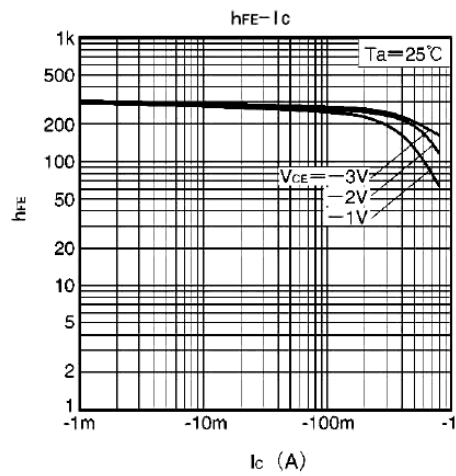
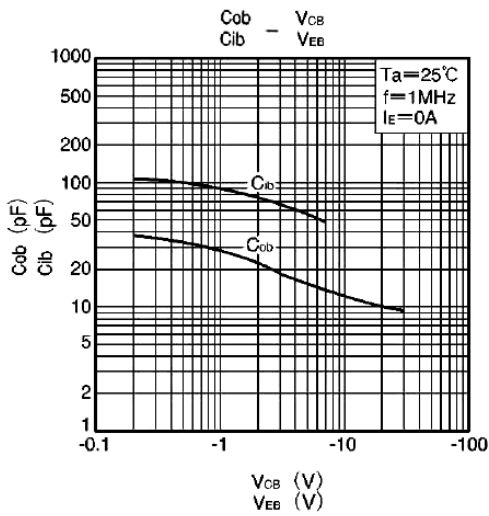
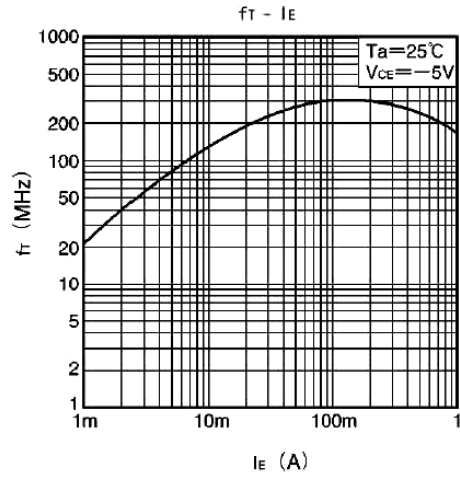
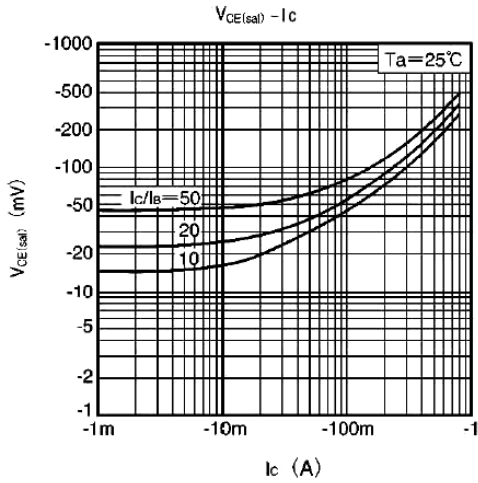
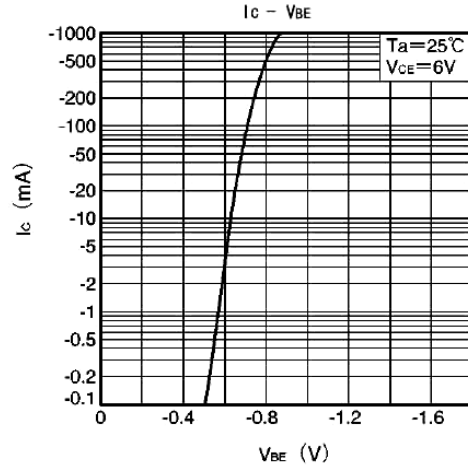
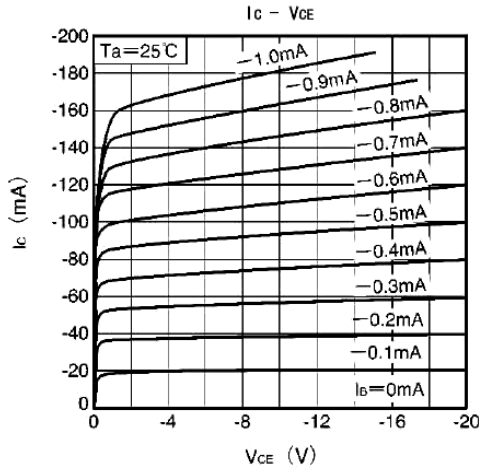
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	$V_{CBO}$	-40	V
Collector to Emitter Voltage	$V_{CEO}$	-32	V
Emitter to Base Voltage	$V_{EBO}$	-5.0	V
Collector Current	$I_C$	-800	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-Base Breakdown Voltage	$V_{CBO}$	$I_C = -50\mu A$	-40			V
Collector-Emitter Breakdown Voltage	$V_{CEO}$	$I_C = -1.0mA$	-32			V
Emitter-Base Breakdown Voltage	$V_{EBO}$	$I_E = -50\mu A$	-5.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB} = -20V$ $I_E = 0$			-0.5	$\mu A$
Emitter Base Cut-Off Current	$I_{EBO}$	$V_{EB} = -4.0V$ $I_C = 0$			-0.5	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE} = -3.0V$ $I_C = -100mA$	120		390	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -500mA$ $I_B = -50mA$			-0.5	V
Transition Frequency	$f_T$	$V_{CE} = -5.0V$ $f = 100MHz$ $I_E = 50mA$	50	200		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = -10V$ $f = 1.0MHz$ $I_E = 0$		12	30	pF

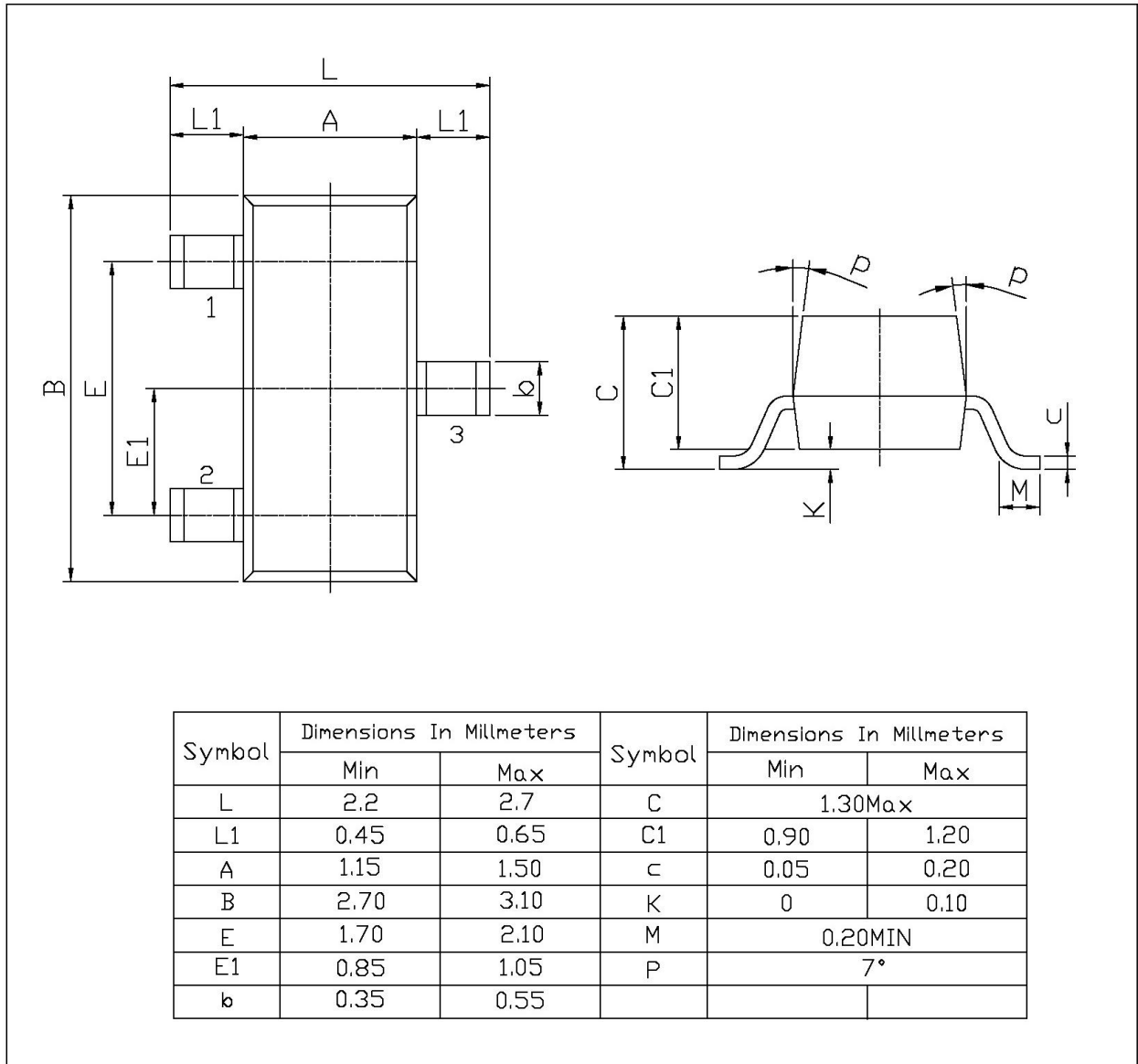
电参数曲线图 / Electrical Characteristic Curve



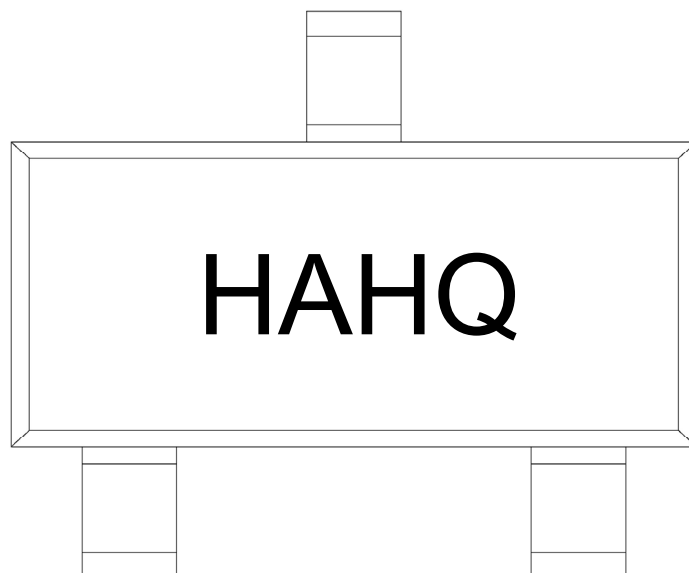
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

H： 为公司代码

AH： 为型号代码

Q： 为  $h_{FE}$  档次代码

Note:

H: Company Code

AH: Product Type Code

Q:  $h_{FE}$  Classifications Symbol 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 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 <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" x8	180×120×180	390×385×205

**使用说明 / Notices**