描述 / Descriptions

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

特征 / Features

与 2SB710(A)互补。

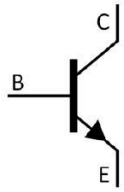
Complementary pair with 2SB710(A).

用途 / Applications

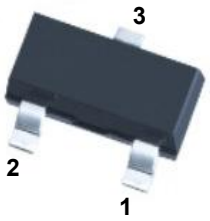
用于普通功率放大。

General power amplifier applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1：Emitter PIN 2：Base PIN 3：Collector

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

h_{FE} Classifications Symbol		Q	R	S
h_{FE} Range		85-170	120-240	170-340
Marking	2SD602 2SD602A	H2WQ H2XQ	H2WR H2XR	H2WS H2XS

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

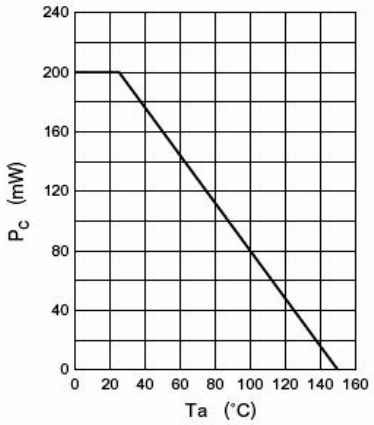
参数 Parameter		符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	2SD602 2SD602A	V_{CBO}	30 60	V
Collector to Emitter Voltage	2SD602 2SD602A	V_{CEO}	25 50	V
Emitter to Base Voltage		V_{EBO}	5.0	V
Collector Current		I_C	500	mA
Collector Current(pulse)		I_{CP}	1.0	A
Collector Power Dissipation		P_C	200	mW
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55～150	℃

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

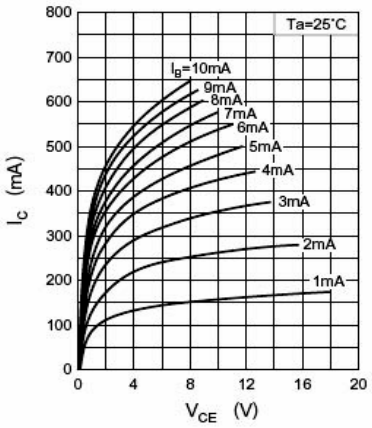
参数 Parameter	符号 Symbol		测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector Cut-Off Current	I_{CBO}		V_{CB}=20V I_E=0			0.1	μA
Collector-Base Breakdown Voltage	V_{CBO}	2SD602 2SD602A	I_C=10μA I_E=0	30 60			V
Collector-Emitter Breakdown Voltage	V_{CEO}	2SD602 2SD602A	I_C=10mA I_B=0	25 50			V
Emitter-Base Breakdown Voltage	V_{EBO}		I_E=10μA I_C=0	5			V
DC Current Gain	$h_{FE(1)}$		V_{CE}=10V I_C=150mA	85	160	340	
	$h_{FE(2)}$		V_{CE}=10V I_C=500mA	40			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$		I_C=300mA I_B=30mA		0.35	0.6	V
Transition Frequency	f_T		V_{CB}=10V I_E=-50mA f=200MHz		200		MHz
Collector Output Capacitance	C_{ob}		V_{CB}=10V I_E=0 f=1MHz		6.0	15	pF

电参数曲线图 / Electrical Characteristic Curve

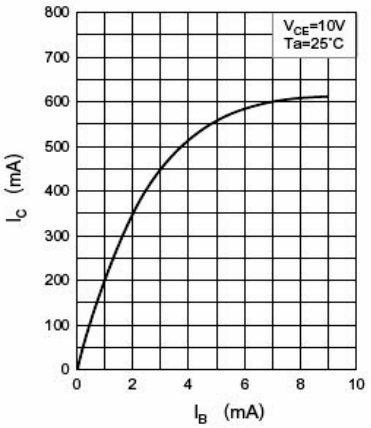
P_C — Ta



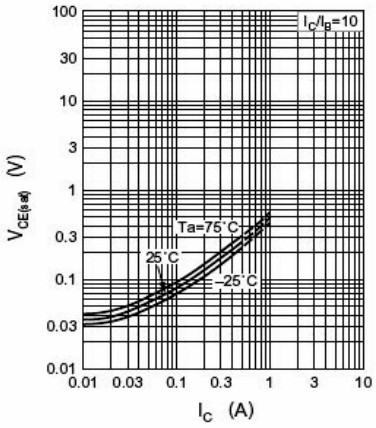
I_C — V_{CE}



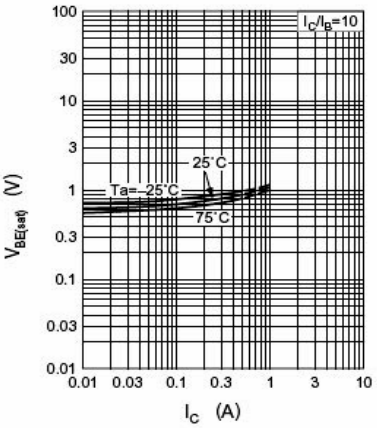
I_C — I_B



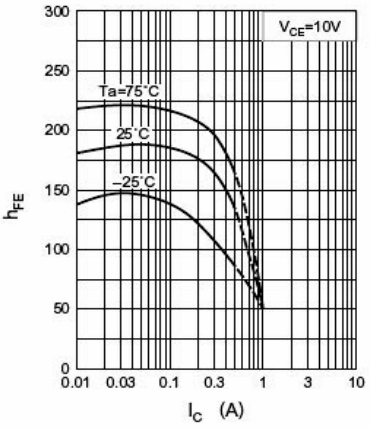
$V_{CE(sat)}$ — I_C



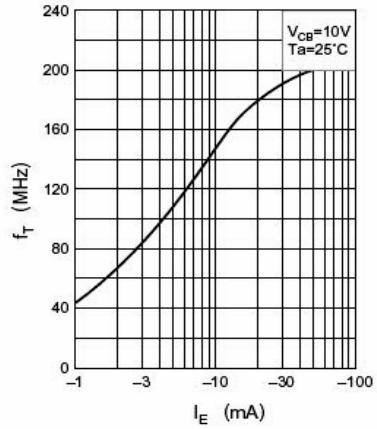
$V_{BE(sat)}$ — I_C



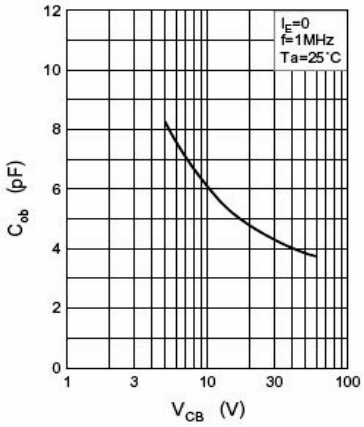
h_{FE} — I_C



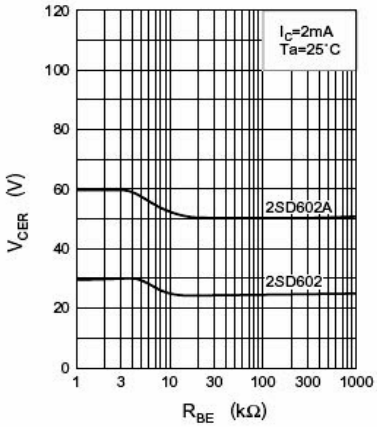
f_T — I_E



C_{ob} — V_{CB}



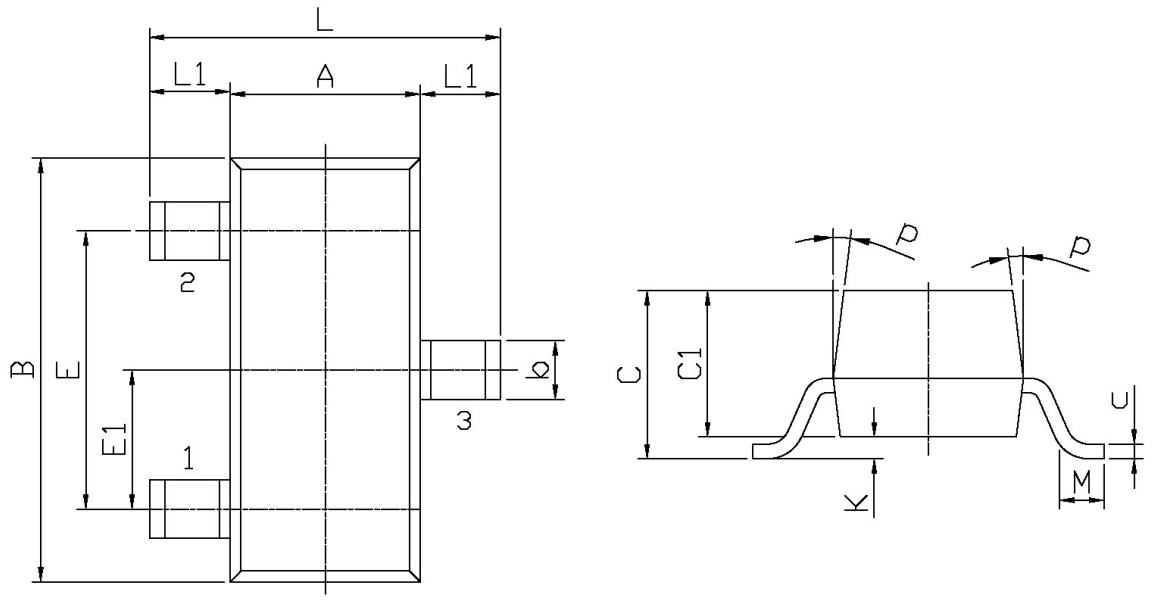
V_{CER} — R_{BE}



外形尺寸图 / Package Dimensions

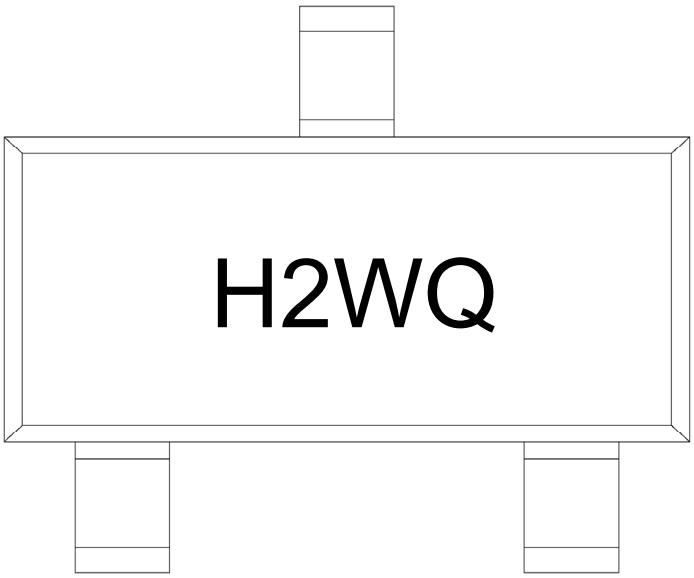
SOT-23

单位：mm



Symbol	Dimensions In Millmeters		Symbol	Dimensions In Millmeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			

印章说明 / Marking Instructions



说明：

H： 为公司代码

2W： 为型号代码

Q: 为 h_{FE} 档次代码

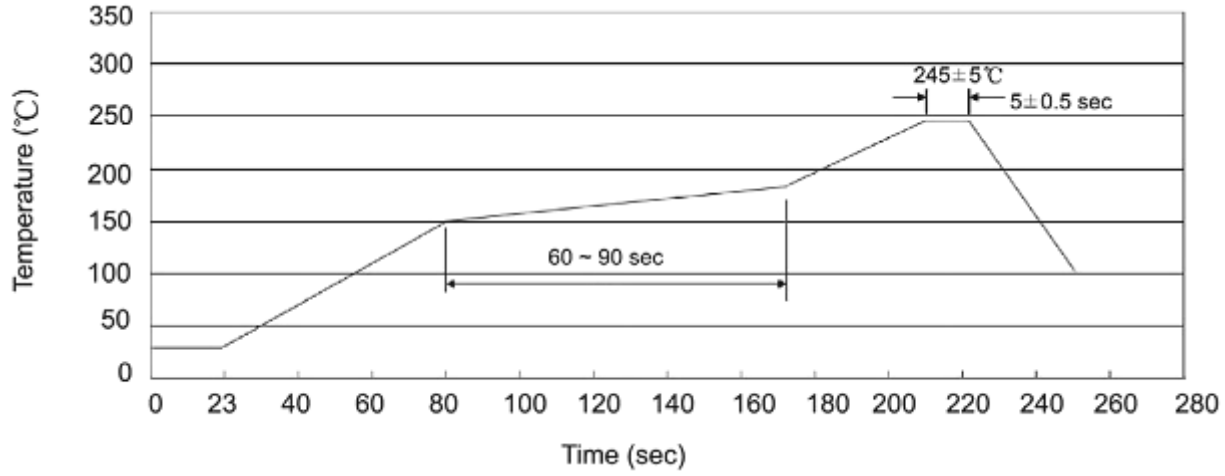
Note:

H: Company Code

2W: 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℃，时间 60～90sec;

2、峰值温度 245±5℃，时间持续为 5±0.5sec;

3、焊接制程冷却速度为 2～10℃/sec.

Note:

1.Preheating:25~150℃, Time:60~90sec.

2.Peak Temp.:245±5℃, Duration:5±0.5sec.

3. Cooling Speed: 2~10℃/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5℃　　时间：10±1 sec.　　Temp.:260±5℃　　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-23	3,000	10	30,000	8	240,000	7″ ×8	180×120×180	385×257×392

使用说明 / Notices