2SA733M

Rev.E Mar.-2016

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

hFE 高、特性好。

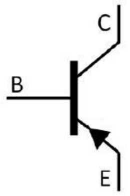
High h_{FE} and excellent h_{FE} linearity.

用途 / Applications

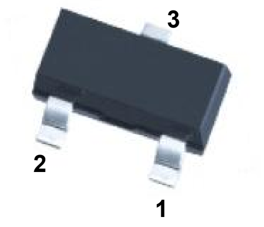
用于音频功率放大推动级。

Driver stage of AF power amplifier.

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	R	Q	P	K
h_{FE} Range	90～180	135～270	200～400	300～600
Marking	HDRR	HDRQ	HDRP	HDRK

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

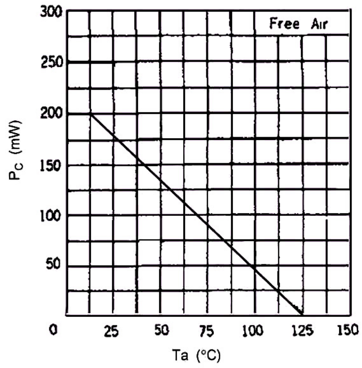
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{CBO}	-60	V
Collector to Emitter Voltage	V_{CEO}	-50	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current	I_C	-150	mA
Collector Base	I_B	-20	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

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

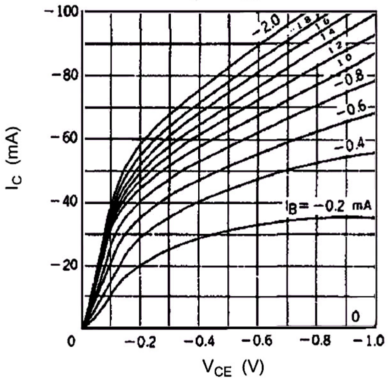
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector Cut-Off Current	I_{CBO}	V_{CB}=-60V I_E=0			-0.1	μA
Emitter Base Cut-Off Current	I_{EBO}	V_{EB}=-5.0V I_C=0			-0.1	μA
DC Current Gain	h_{FE}	V_{CE}=-6.0V I_C=-1.0mA	90		600	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-100mA I_B=-10mA		-0.18	-0.3	V
Collector to Base Voltage	V_{BE}	V_{CE}=-6.0V I_C=-1.0mA	-0.55	-0.62	-0.65	V
Transition Frequency	f_T	V_{CE}=-6.0V I_C=-10mA	100	180		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-10V I_E=0 f=1.0MHz		4.5	6.0	pF
Noise Figure	NF	V_{CE}=-6.0V I_C=-0.3mA f=100Hz R_g=10kΩ		6.0	20	dB

电参数曲线图 / Electrical Characteristic Curve

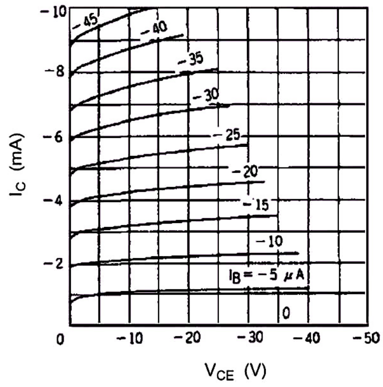
P_C – Ta



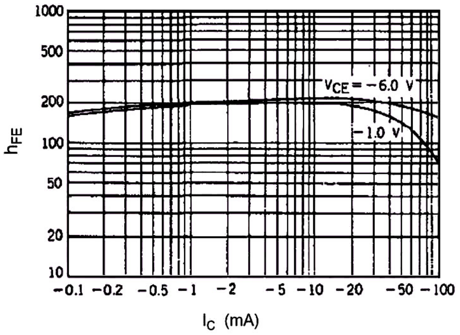
I_C – V_{CE}



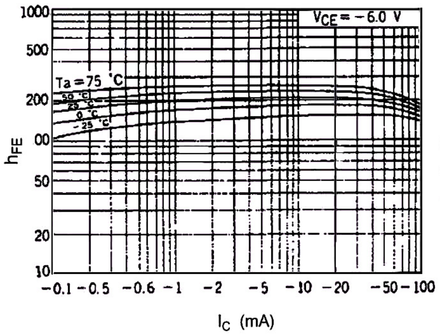
I_C – V_{CE}



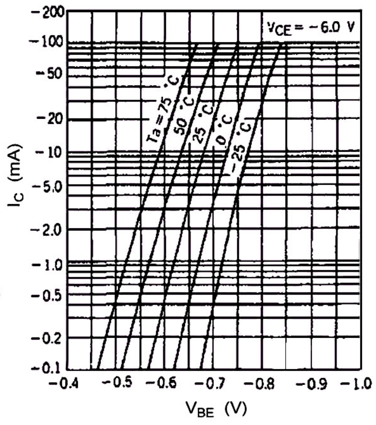
h_{FE} – I_C



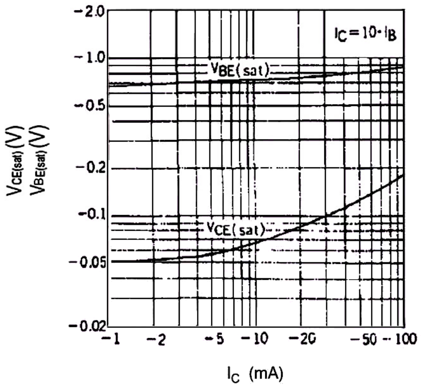
h_{FE} – I_C



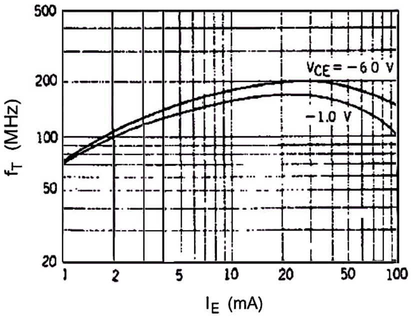
I_C – V_{BE}



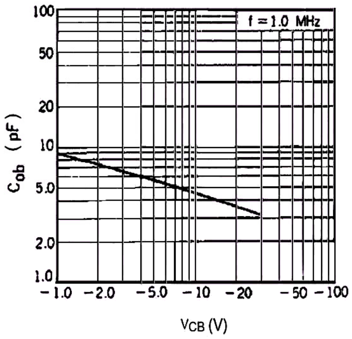
$V_{CE(sat)}$ $V_{BE(sat)}$ – I_C



f_T – I_E

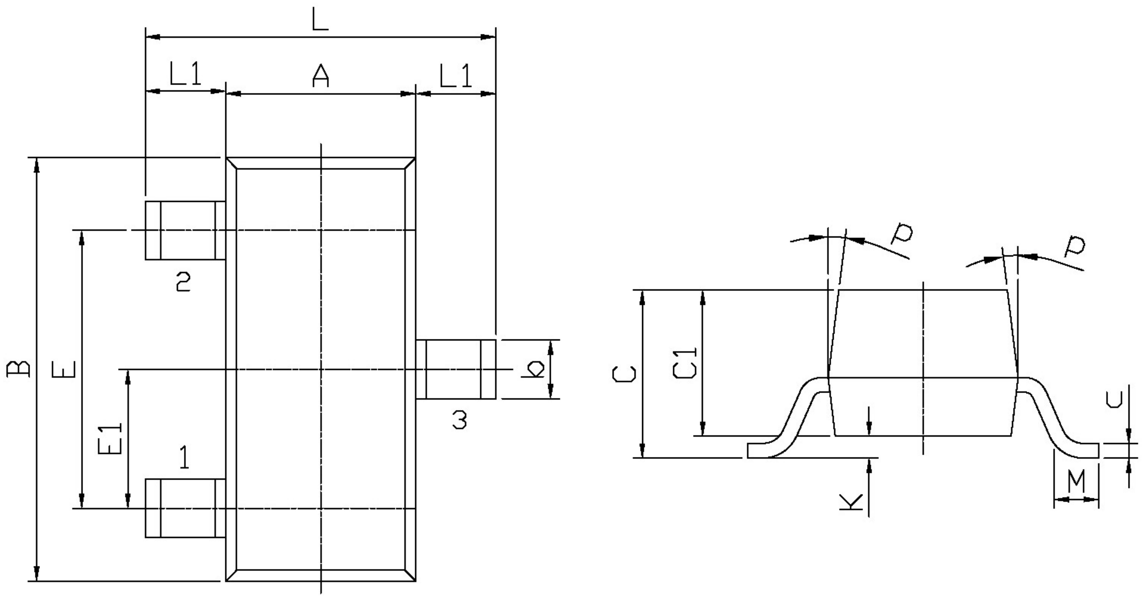


Cob – V_{CB}



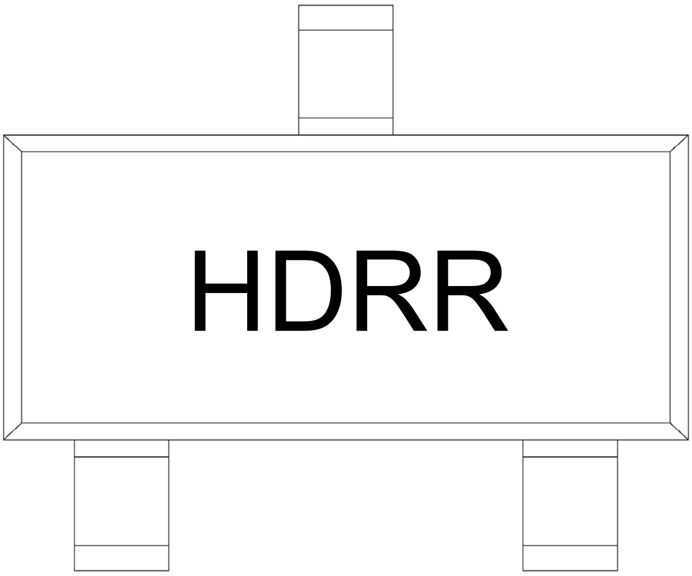
外形尺寸图 / Package Dimensions

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



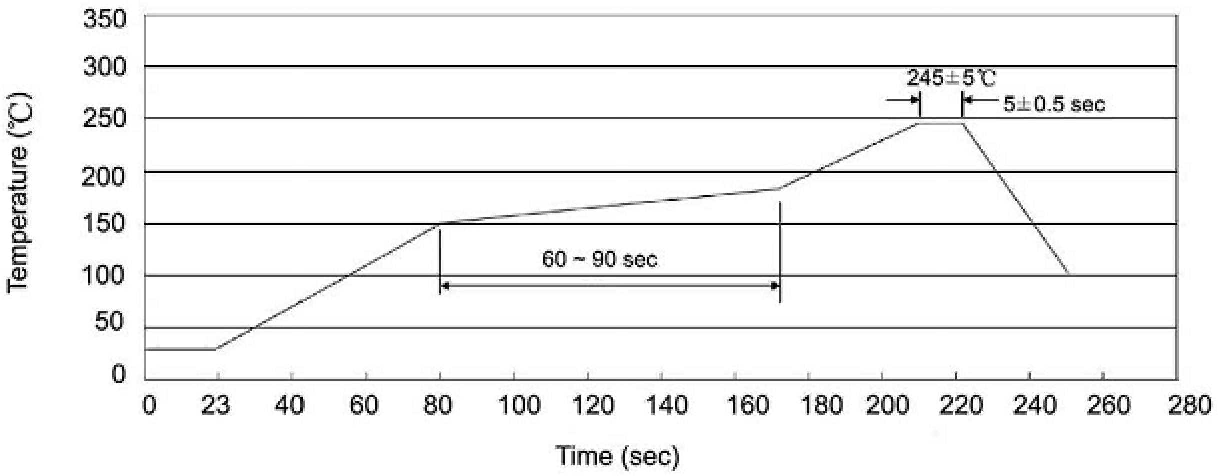
说明：

H：	为公司代码
DR：	为型号代码
R：	为 h_{FE} 档次代码

Note:

H:	Company Code.
DR:	Product Type Code
R:	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：	Note:
1、预热温度 25 ~ 150℃，时间 60 ~ 90sec;	1.Preheating:25~150℃, Time:60~90sec.
2、峰值温度 245±5℃，时间持续为 5±0.5sec;	2.Peak Temp.:245±5℃, Duration:5±0.5sec.
3、焊接制程冷却速度为 2 ~ 10℃/sec.	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