2SD2142K

Rev.E Mar.-2016

蓝箭电子
BLUE ROCKET ELECTRONICS
DATA SHEET

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

达林顿管高 h_{FE},高输入阻抗。

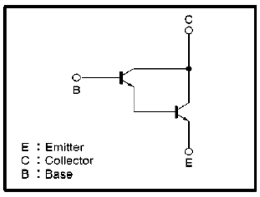
Darlington connection for a high h_{FE}, high input impedance.

用途 / Applications

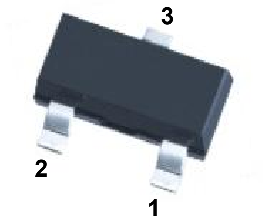
高增益放大。

High-gain amplifier transistor.

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} Range	>5000
Marking	HR1M

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

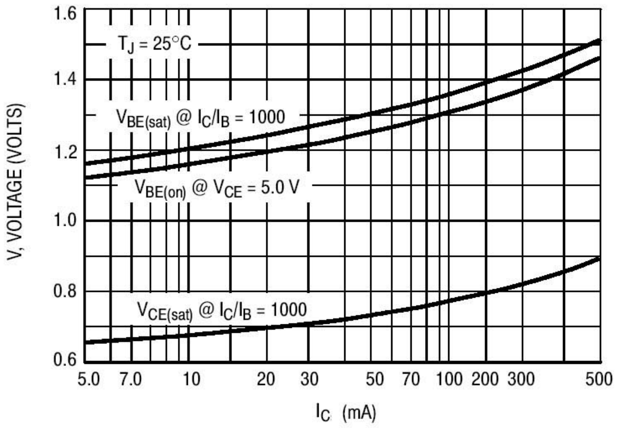
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CEO}	32	V
Emitter to Base Voltage	V_{EBO}	12	V
Collector Current	I_C	0.3	A
Collector Power Dissipation	P_C	0.2	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

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

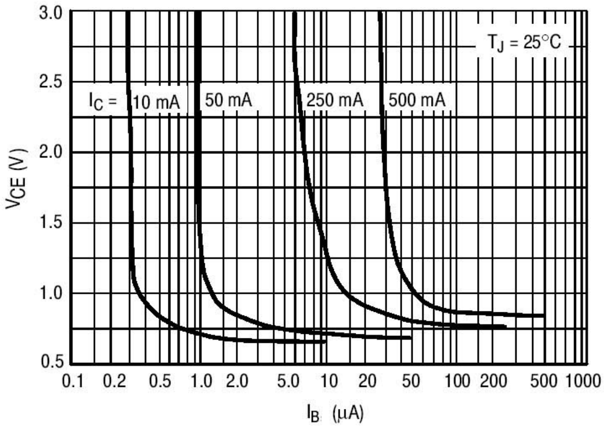
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector-Base Breakdown Voltage	V_{CBO}	I_C =100μA I_E=0	40			V
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C =10mA I_B=0	32			V
Emitter-Base Breakdown Voltage	V_{EBO}	I_E=100μA I_C=0	12			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=30V I_E=0			0.1	μA
Emitter Base Cut-Off Current	I_{EBO}	V_{EB}=12V I_c=0			0.1	μA
DC Current Gain	h_{FE}	V_{CE}=3.0V I_c=0.1A	5000			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_c=200mA I_B=0.2mA			1.4	V
Transition Frequency	f_T	V_{CE}=5.0V I_E=-10mA f=100MHz		200		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V I_E=0 f=1.0MHz		2.5		pF

电参数曲线图 / Electrical Characteristic Curve

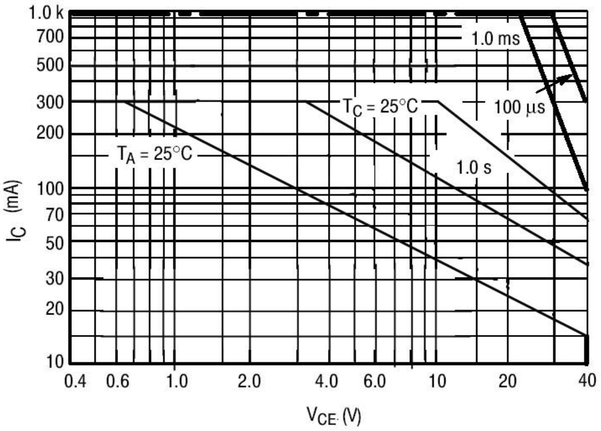
$V_{CE(sat)} - I_C$



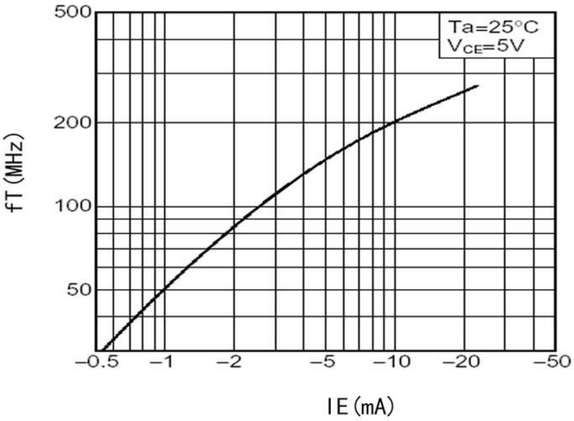
$V_{CE} - I_B$



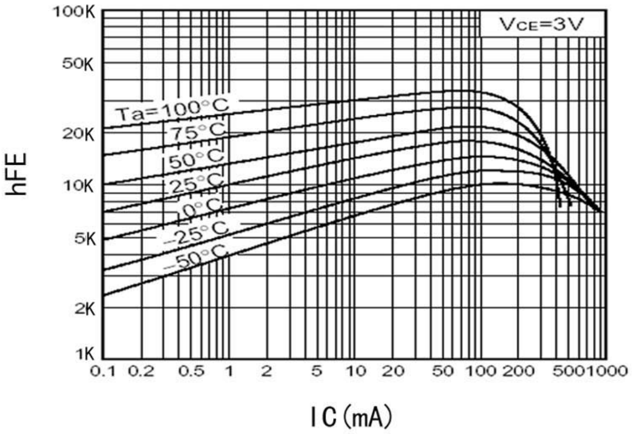
$I_C - V_{CE}$



$f_T - I_E$

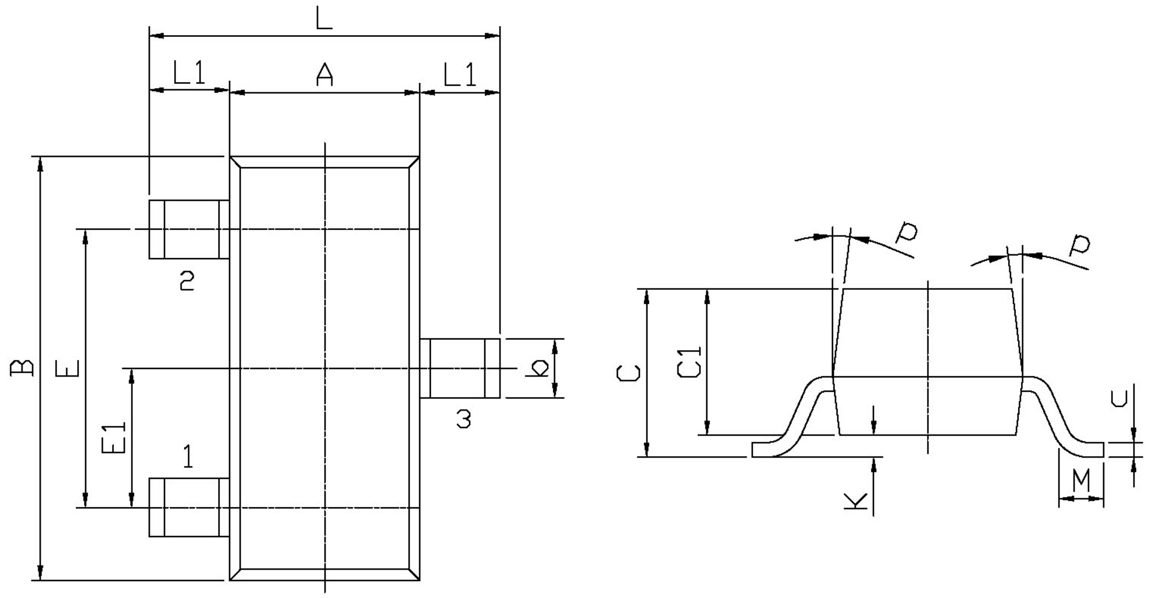


$h_{FE} - I_C$



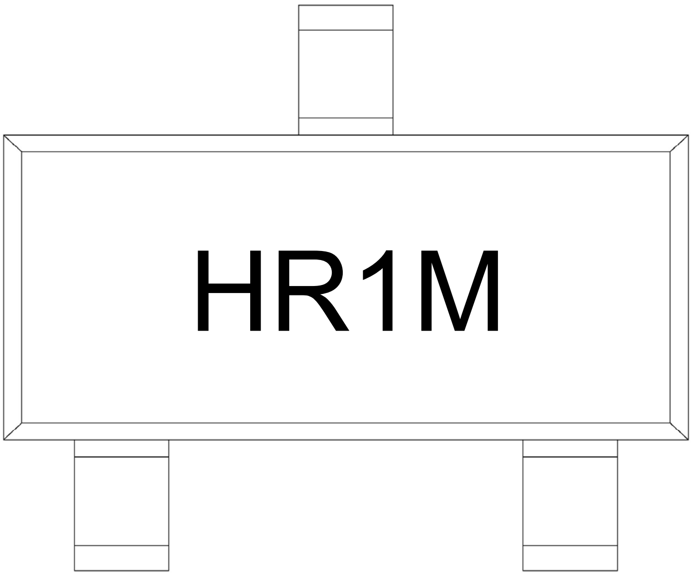
外形尺寸图 / Package Dimensions

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

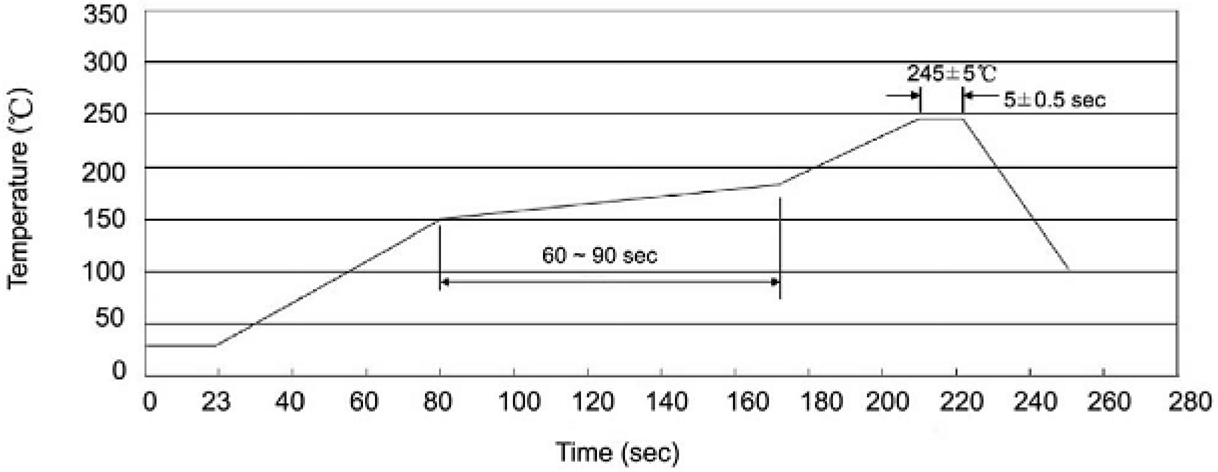
R1M： 为型号代码

Note:

H: Company Code

R1M: Product Type 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