

描述 / Descriptions

TO-92 塑封封装 NPN 半导体三极管。Silicon NPN transistor in a TO-92 Plastic Package.

特征 / Features

耐压高,电流大,有极好的 hft 特性,低噪声系数,可与 2SA1015 互补。

High voltage and high current, excellent h_{FE} linearity ,low noise ,complementary pair with 2SA1015.

用途 / Applications

用于音频放大,激励级放大。

Audio frequency general purpose ,driver stage amplifier 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 / hFE Classifications & Marking

h _{FE} Classifications Symbol	0	Y	GR	BL	
h _{FE} Range	70~140	120~240	200~400	350~700	

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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}	60	V
Collector to Emitter Voltage	V _{CEO}	50	V
Emitter to Base Voltage	V _{EBO}	5.0	V
Collector Current - Continuous	I _C	150	mA
Base Current - Continuous	I _B	50	mA
Collector Power Dissipation	Pc	400	mW
Junction Temperature	Tj	150	$^{\circ}$
Storage Temperature Range	T _{stg}	-55∼150	$^{\circ}$

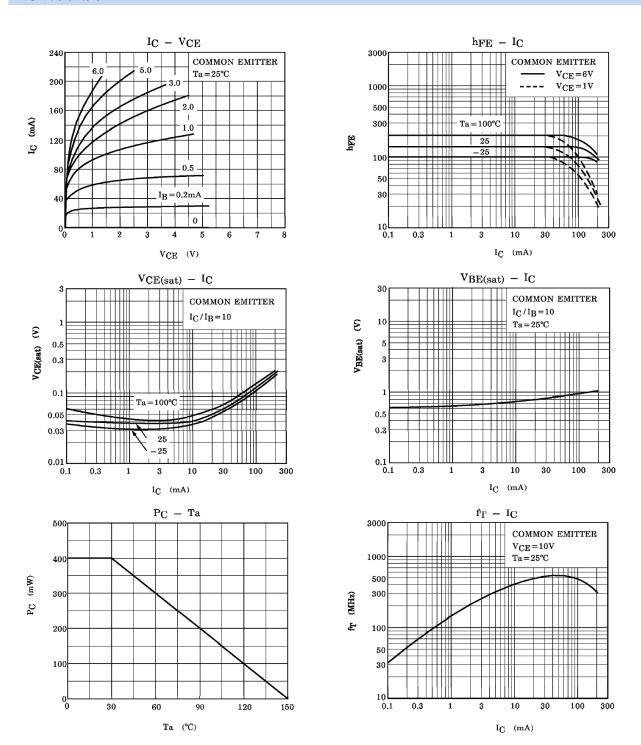
电性能参数 / Electrical Characteristics(Ta=25℃)

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参数	符号	测试条件		最小值	典型值	最大值	单位
Parameter	Symbol	Test Conditions		Min	Тур	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I _C =100μA	I _E =0	60			V
Collector to Emitter Breakdown Voltage	V_{CEO}	I _C =500μA	I _B =0	50			V
Emitter to Base Breakdown Voltage	V_{EBO}	I _E =100μA	I _C =0	5.0			V
Collector Cut-Off Current	I_{CBO}	V _{CB} =60V	I _E =0			0.1	μΑ
Emitter Cut-Off Current	I _{EBO}	V _{EB} =5.0V	I _C =0			0.1	μΑ
DC Current Gain	h _{FE(1)}	V _{CE} =6.0V	I_C =2.0mA	70		700	
DC Current Gain	h _{FE(2)}	V _{CE} =6.0V	I _C =150mA	25	100		
Collector to Emitter Saturation Voltage	V _{CE(sat)}	I _C =100mA	I _B =10mA		0.1	0.25	V
Base to Emitter Saturation Voltage	V _{BE(sat)}	I _C =100mA	I _B =10mA			1.0	V
Transition Frequency	f_T	V _{CE} =10V	I _C =1.0mA	80			MHz
Collector Output Capacitance	C _{ob}	V _{CB} =10V f=1.0MHz	I _E =0		2.0	3.5	pF
Noise Figure	NF	V_{CE} =6.0V R_{g} =10KΩ	I _C =0.1mA f=1.0KHz		1.0	10	dB
Base Intrinsic Resistance	rbb'	V _{CB} =10V f=30MHz	I_C =1.0mA		50		Ω

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电参数曲线图 / Electrical Characteristic Curve



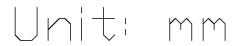
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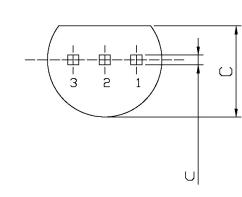
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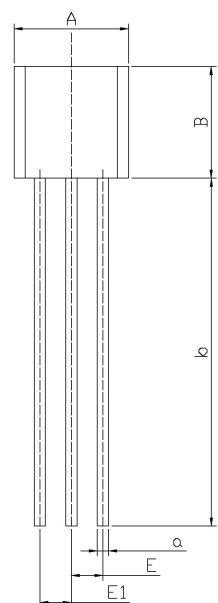


外形尺寸图 / Package Dimensions







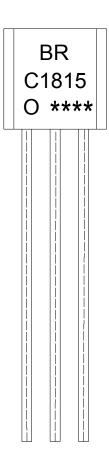


Symbol	Dimensions In Millmeters				
	Min	Max			
Α	4.4	4.8			
В	4.3	4.7			
Ø	13	15			
α	0.40	0.60			
E	1,22	1.32			
E1	1.22	1.32			
С	3.4	3,8			
С	0.30	0.50			

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印章说明 / Marking Instructions



说明:

BR: 为公司代码 C1815: 为型号代码

O: 为 hff 分档代码

****: 为生产批号代码,随生产批号变化。

Note:

BR: Company Code.
C1815: Product Type.

O: h_{FE} Classifications Symbol

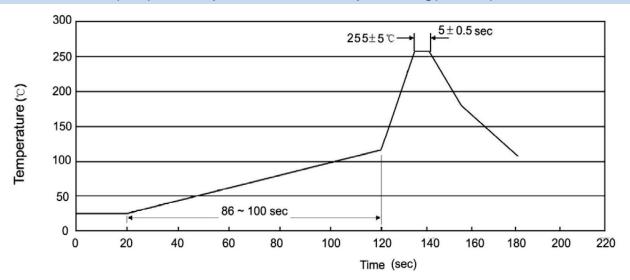
****: Lot No. Code,code change with Lot No.

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波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)



说明:

- 1、预热温度 25~150℃, 时间 60~90sec;
- 2、峰值温度 255±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°C, Time:60~90sec.
- 2.Peak Temp.:255±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: 270±5℃ 时间: 10±1 sec. Temp:270±5℃ Time:10±1 sec

包装规格 / Packaging SPEC.

散件包装 / BULK

Package Type		Units 包装数量					Dimension 包装尺寸 (unit: mm3)		
封装形式	Units/Bag 只/袋	Bags/Inner Box 袋/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Bag 袋	Inner Box 盒	Outer Box 箱	
	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195	
TO-92	1,000	10	10,000	10	100,000	135×190	237×172×102	560×245×375	

编带包装 / AMMO

Р	Package Type	Units 包装数量				Dimension 包装尺寸 (unit: mm3)		
	封装形式	Units/tape 只/纸带	Tape/Inner Box 纸带/盒	Rows/Inner Box 纸带层/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Inner Box 盒	Outer Box 箱
	TO-92	3,000	1	120	10	30,000	328×230×42	小箱 480×346×235, 大箱 547×407×268

使用说明 / Notices

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