

/ Descriptions

TO-92 PNP Silicon PNP transistor in a TO-92 Plastic Package.

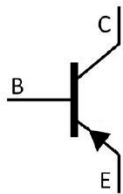
/ Features

Low noise, high DC current gain, high breakdown voltage.

/ Applications

Low noise audio amplifier applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ hFE Classifications & Marking

h _{FE} Classifications Symbol	GR	BL
h _{FE} Range	200~400	350~700

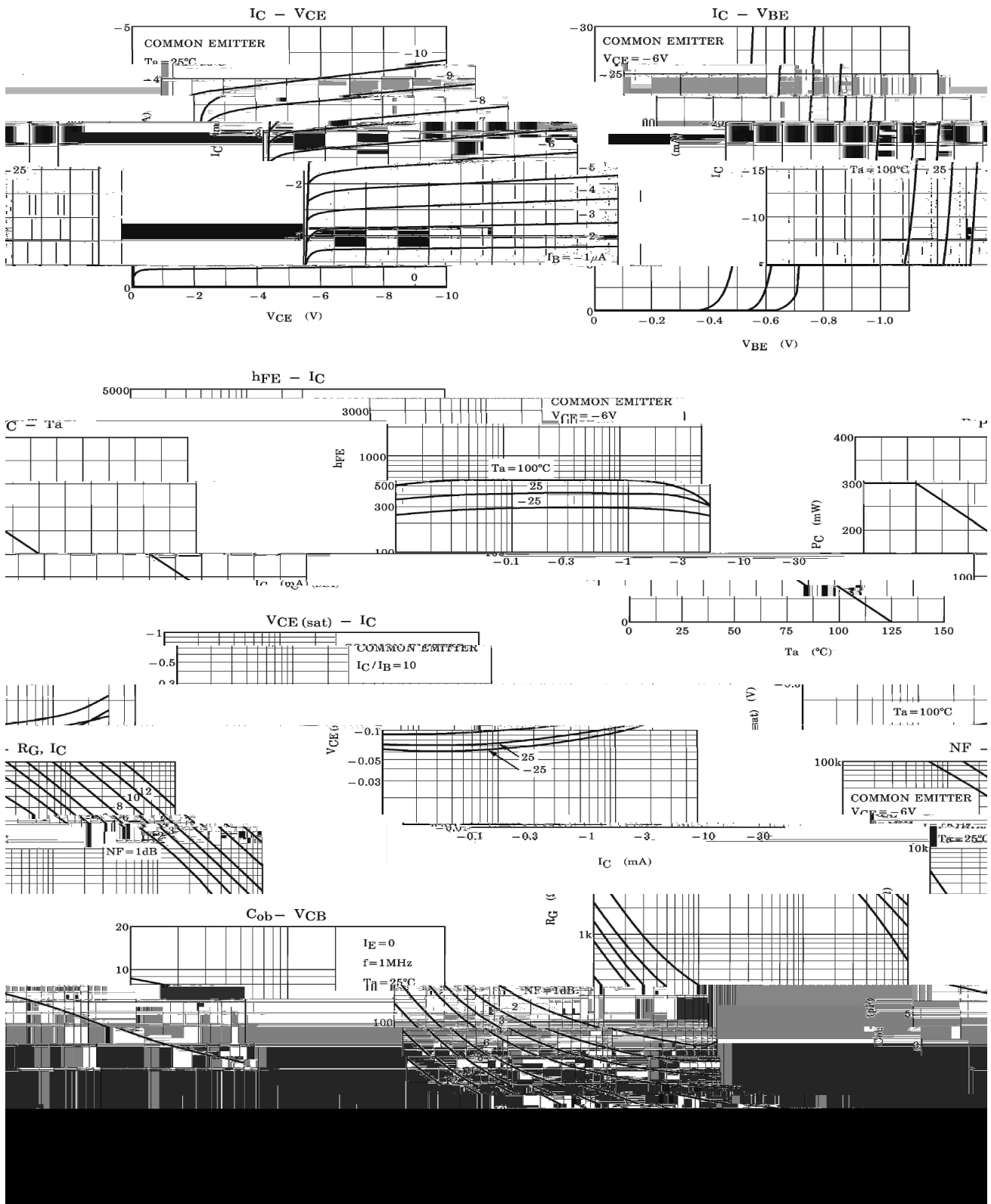
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-120	V
Collector to Emitter Voltage	V_{CEO}	-120	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-100	mA
Emitter Current – Continuous	I_E	100	mA
Collector Power Dissipation	P_C	300	mW
Junction Temperature	T_J	150	
Storage Temperature Range	T_{stg}	-55 150	

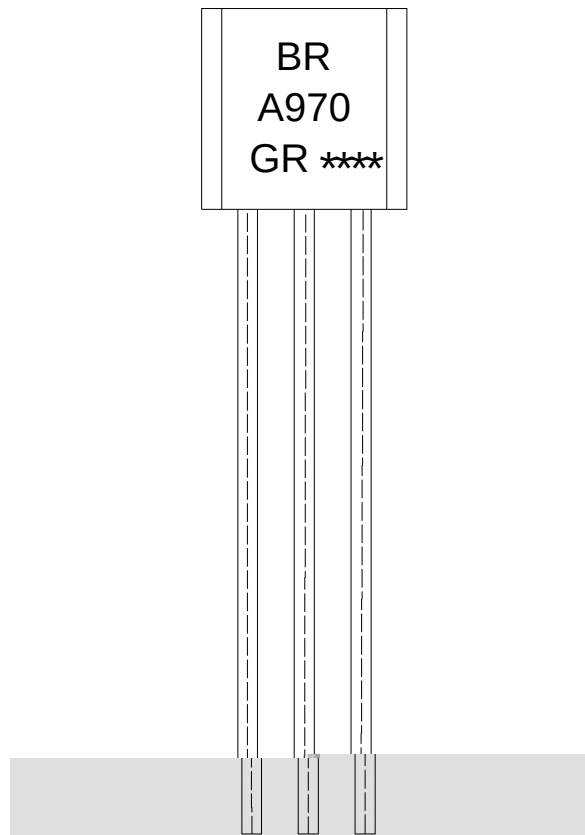
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C = -1.0mA$ $I_B = 0$	-120			V
Collector Cut-Off Current	I_{CBO}	$V_{CB} = -120V$ $I_E = 0$			-0.1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = -5.0V$ $I_C = 0$			-0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = -6.0V$ $I_C = -2.0mA$	200		700	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -10mA$ $I_B = -1.0mA$			-0.3	V
Base to Emitter Voltage	V_{BE}	$V_{CE} = -6.0V$ $I_C = -2.0mA$		-0.65		V
Transition Frequency	f_T	$V_{CE} = -6.0V$ $I_C = -1.0mA$		100		MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = -10V$ $I_E = 0$ $f = 1.0MHz$		4.0		pF
Noise Figure	NF	$V_{CE} = -6.0V$ $I_C = -0.1mA$ $f = 10Hz$ $R_g = 10K\Omega$			6.0	dB
		$V_{CE} = -6.0V$ $I_C = -0.1mA$ $f = 1.0KHz$ $R_g = 10K\Omega$			2.0	
		$V_{CE} = -6.0V$ $I_C = -0.1mA$ $f = 1.0KHz$ $R_g = 100\Omega$		3.0		

/ Electrical Characteristic Curve



/ Marking Instructions



BR:

A970

GR: h_{FE}

Note:

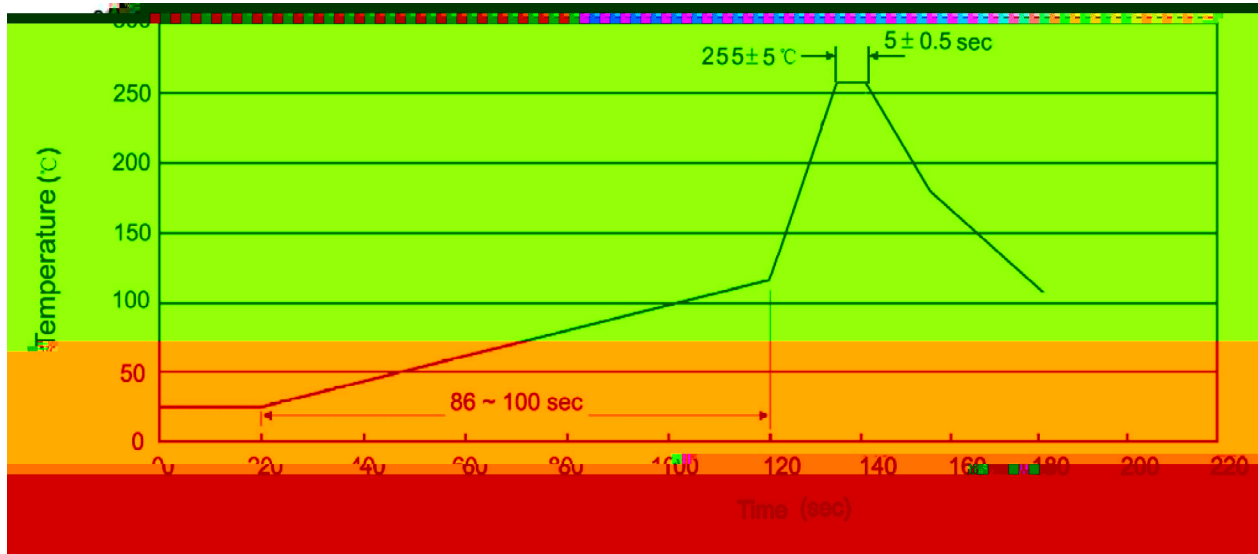
BR: Company Code.

A970: Product Type Code.

GR: h_{FE} Classifications Symbol

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

() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-------|-----|-----------|---|--------------------------------------|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 255±5 | | 5±0.5sec; | 2.Peak Temp.:255±5 , Duration:5±0.5sec. | |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

270±5 10±1 sec. Temp:270±5 Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)		
	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
TO-92	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195
	1,000	10	10,000	10	100,000	135×190	237×172×102	560×245×375

/ AMMO

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)	
	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

/ Notices