

/ Descriptions

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

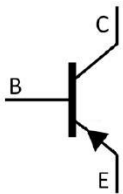
/ Features

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

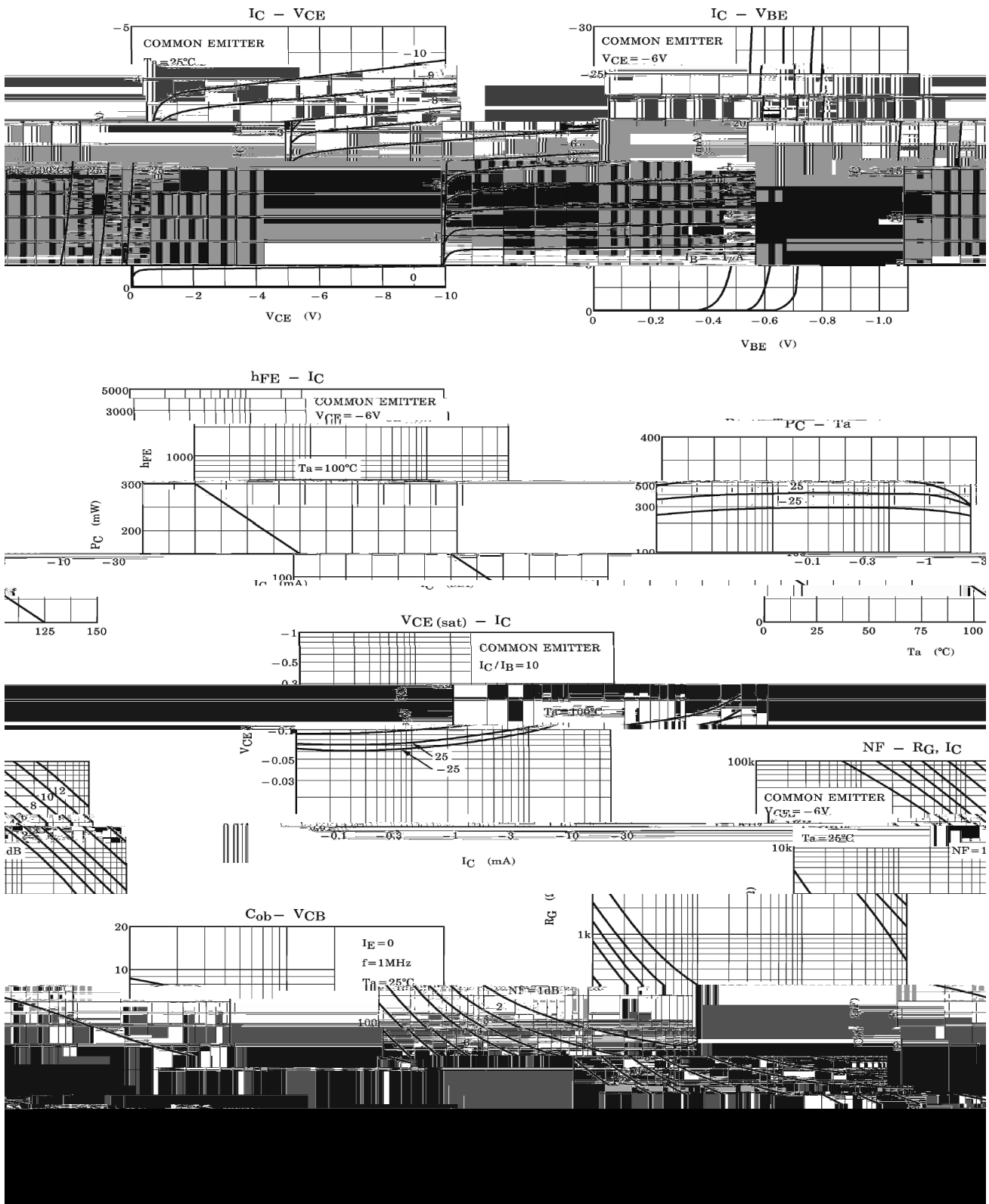
/ Absolute Maximum Ratings(Ta=25)

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)

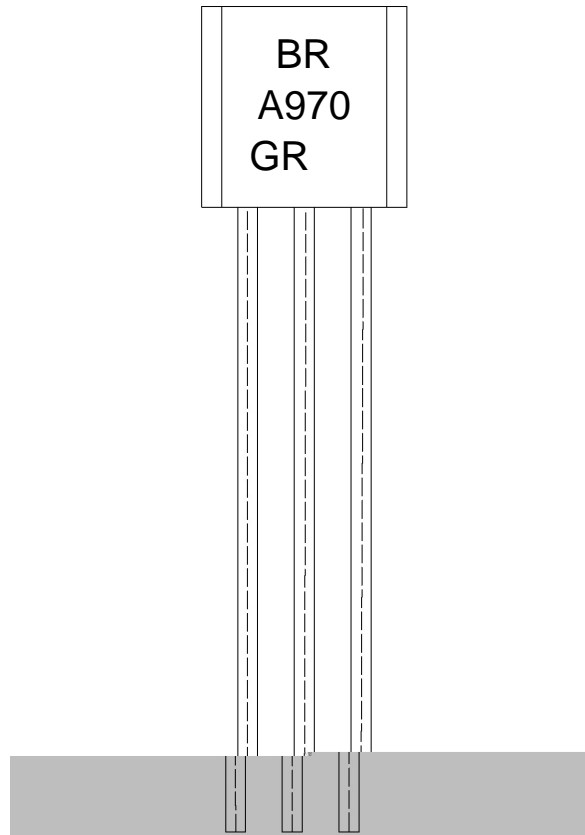
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=-1.0mA$ $I_B=0$	-120			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-120V$ $I_E=0$			-0.1	A
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-5.0V$ $I_C=0$			-0.1	A
DC Current Gain	h_{FE}	$V_{CE}=-6.0V$ $I_C=-2.0mA$	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	$V_{CE}=-6.0V$ $I_C=-0.1mA$ $f=10Hz$ $R_g=10K$			6.0	dB
		$V_{CE}=-6.0V$ $I_C=-0.1mA$ $f=1.0KHz$ $R_g=10K$			2.0	
		$V_{CE}=-6.0V$ $I_C=-0.1mA$ $f=1.0KHz$ $R_g=100$		3.0		

/ Electrical Characteristic Curve



2SA970
Rev.E Mar.-2016

/ Marking Instructions



BR:

A970

GR: h_{FE}

Note:

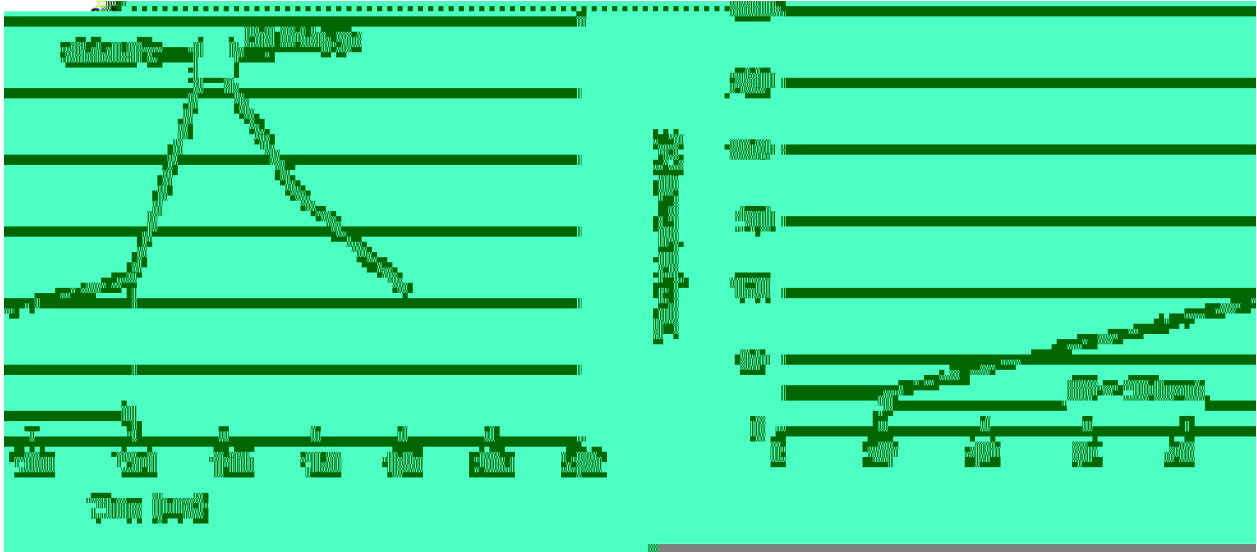
BR: Company Code.

A970: Product Type Code.

GR: h_{FE} Classifications Symbol

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

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



- 1 25 150 60 90sec;
- 2 255±5 5± 0.5sec;
- 3 2 10 /sec.

Note:

- 1.Preheating:25~150 , Time:60~90sec.
- 2.Peak Temp.:255±5 , Duration:5± 0.5sec.
- 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)		
	只袋	袋盒	只盒	盒箱	只箱	袋	盒	箱

/ AMMO

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)	
	只纸带	纸带盒	纸带层盒	盒箱	只箱	盒	箱
							小箱 大箱

/ Notices