

**/ Descriptions**

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

**/ Features**

2SC2021  
Complementary pair with 2SC2021.

**/ Applications**

General small-signal amplifier, preamplifiers, equalizer amplifiers, RF amplifiers and oscillators, medium-speed switching.

**/ Equivalent Circuit**



**/ Pinning**



PIN1 Base          PIN 2 Collector          PIN 3 Emitter

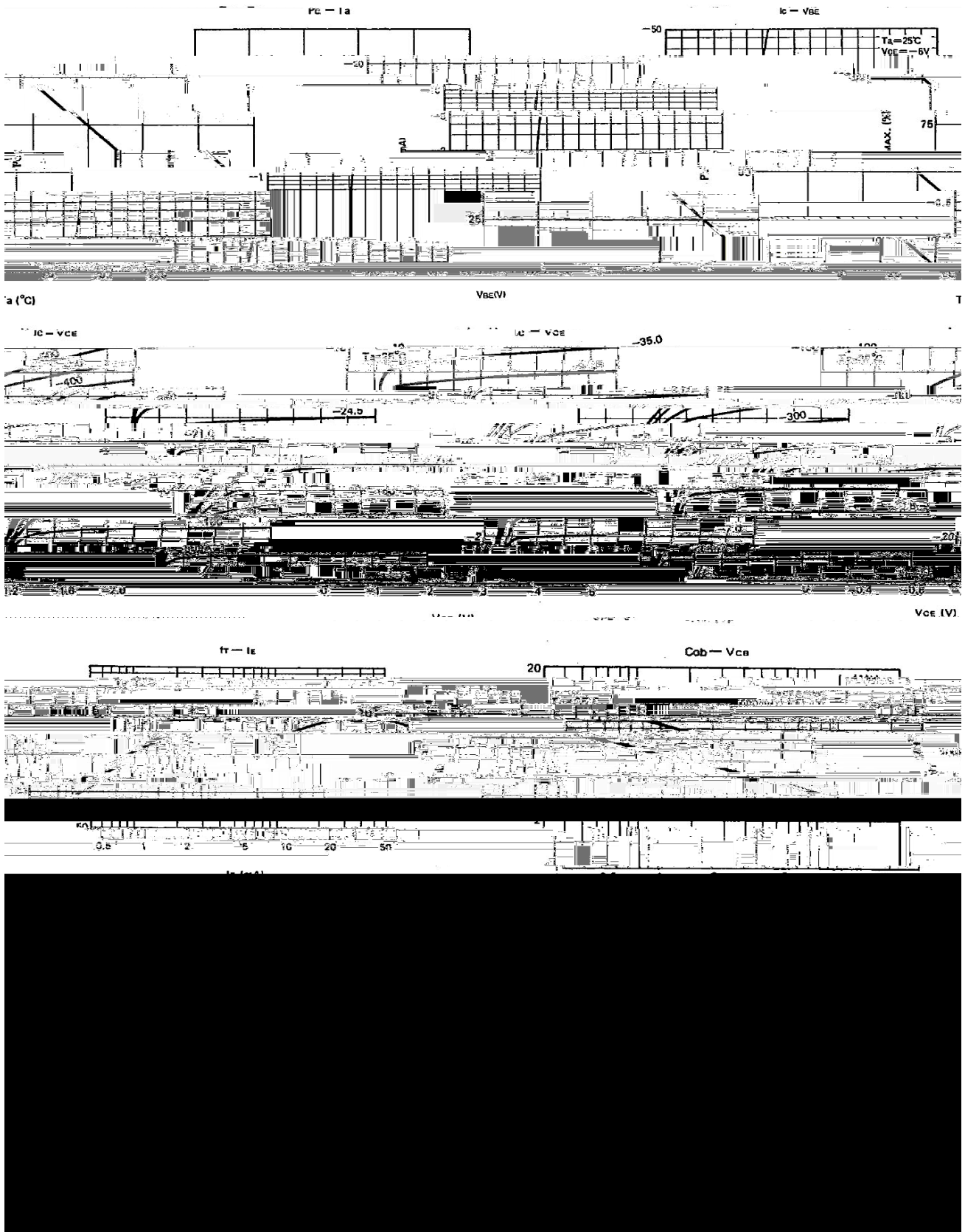
**/ hFE Classifications & Marking**

h <sub>FE</sub> Classifications Symbol	Q	R	S
h <sub>FE</sub> Range	120~270	180~390	270~560

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	-50	V
Collector to Emitter Voltage	$V_{CEO}$	-40	V
Emitter to Base Voltage	$V_{EBO}$	-5.0	V
Collector Current - Continuous	$I_C$	-100	mA
Collector Power Dissipation	$P_C$	300	mW
Junction Temperature	$T_j$	150	
Storage Temperature Range	$T_{stg}$	-55 150	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	$V_{CBO}$	$I_C = -50\mu A$ $I_E = 0$	-50			V
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C = -1.0mA$ $I_B = 0$	-40			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E = -50\mu A$ $I_C = 0$	-5.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB} = -30V$ $I_E = 0$			-0.5	$\mu A$
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB} = -4.0V$ $I_C = 0$			-0.5	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE} = -6.0V$ $I_C = -1.0mA$	120		560	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -50mA$ $I_B = -5.0mA$		-0.1	-0.5	V
Transition Frequency	$f_T$	$V_{CE} = -12V$ $I_C = -2.0mA$		140		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = -12V$ $I_E = 0$ $f = 1.0MHz$		4.0	5.0	pF

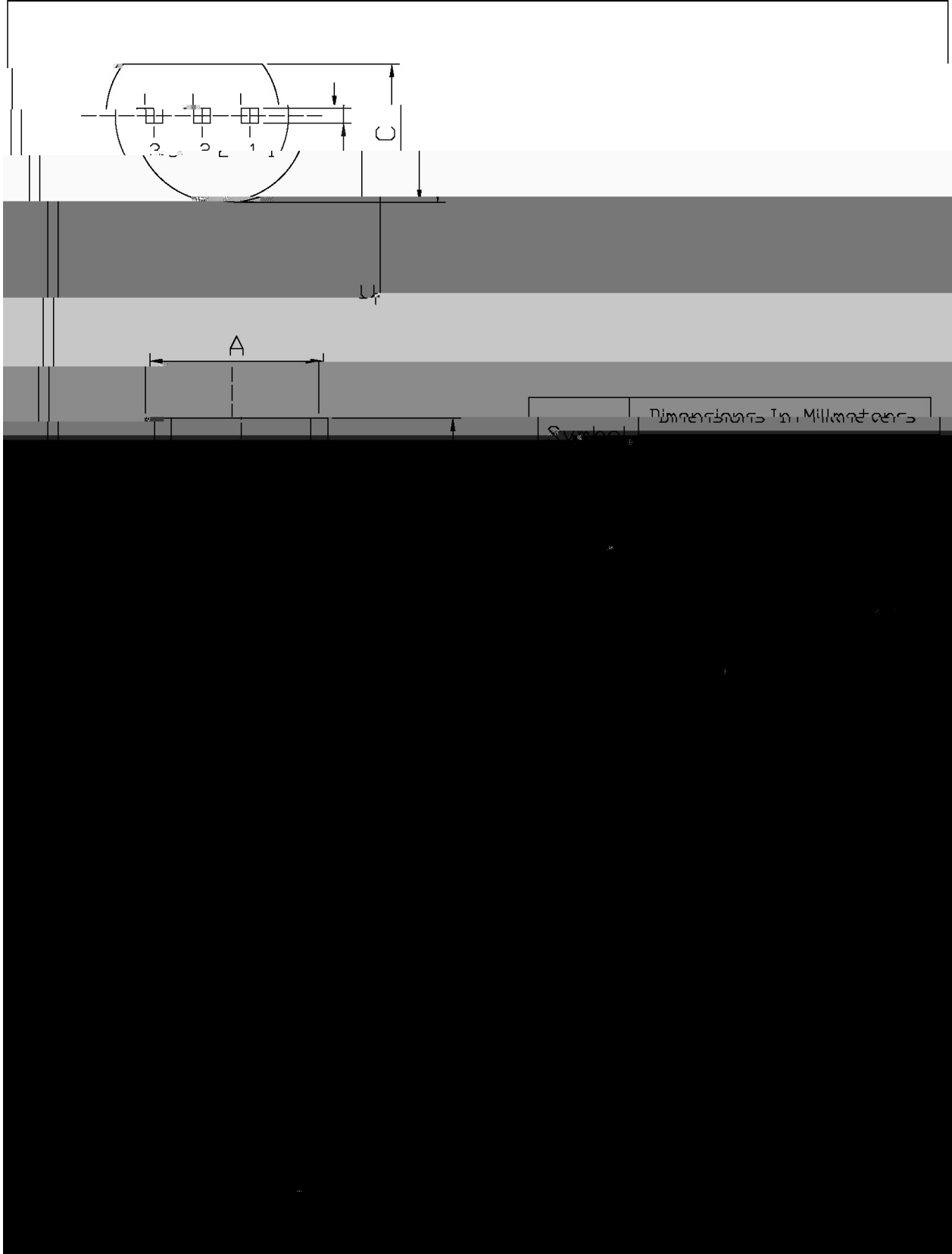
/ Electrical Characteristic Curve



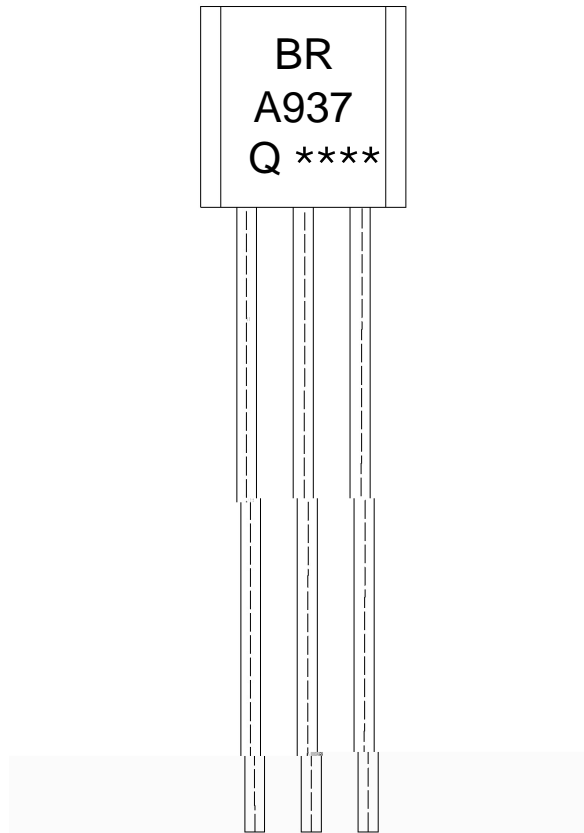
/ Package Dimensions

T0-92

Unit: mm



/ Marking Instructions



BR:

A937

Q:  $h_{FE}$

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Note:

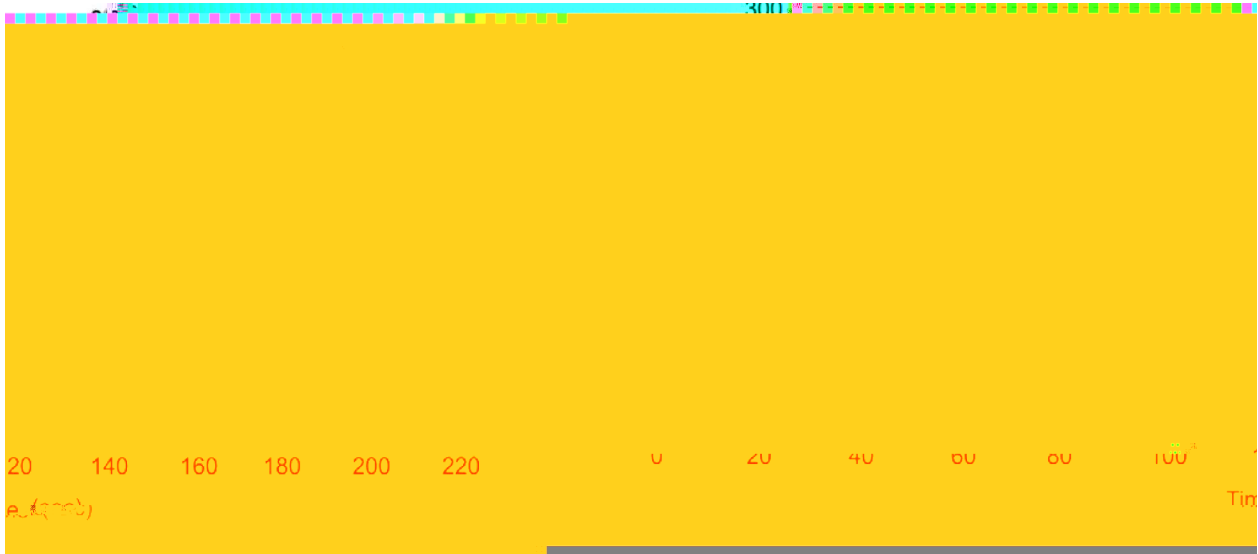
BR: Company Code.

A937: Product Type.

Q:  $h_{FE}$  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	Units					Dimension (unit mm3)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
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

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