

T-29-15

2003A NPN Epitaxial Planar Silicon Transistor

# Low-Noise Amp Applications

©431E

The 2SC1570 is developed as very low-noise transistor and is especially suited for use in equalizer first stage of high-grade type stereo sets.

### Absolute Maximum Ratings at Ta = 25°C

		unit
Collector to Base Voltage	V <sub>CB0</sub>	55 V
Collector to Emitter Voltage	V <sub>CEO</sub>	50 V
Emitter to Base Voltage	V <sub>EBO</sub>	5 V
Collector Current	I <sub>C</sub>	100 mA
Peak Collector Current	i <sub>cp</sub>	200 mA
Base Current	I <sub>B</sub>	20 mA
Collector Dissipation	P <sub>C</sub>	200 mW
Junction Temperature	T <sub>j</sub>	125 °C
Storage Temperature	T <sub>stg</sub>	-55 to +125 °C

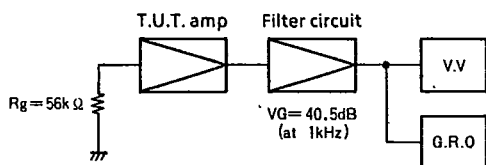
### Electrical Characteristics at Ta = 25°C

		min	typ	max	unit
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> = 18V, I <sub>E</sub> = 0		0.1	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> = 3V, I <sub>C</sub> = 0		0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 6V, I <sub>C</sub> = 1mA	160*	960*	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 6V, I <sub>C</sub> = 1mA		100	MHz
Output Capacitance	c <sub>ob</sub>	V <sub>CB</sub> = 6V, f = 1MHz		3	pF
C-E Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 50mA, I <sub>B</sub> = 5mA		0.5	V
Base to Emitter Voltage	V <sub>BE</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 1mA	0.58	0.80	V
C-B Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> = 0	55		V
C-E Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 1mA, R <sub>BE</sub> = ∞	50		V
E-B Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> = 0	5		V
Noise Level	V <sub>NO(ave)</sub>	See specified Test Circuit. V <sub>CC</sub> = 30V, I <sub>C</sub> = 1mA R <sub>g</sub> = 56kΩ, V <sub>G</sub> = 77dB (at 1kHz)		40	mV
Noise Peak Level	V <sub>NO(peak)</sub>	"		280	mV

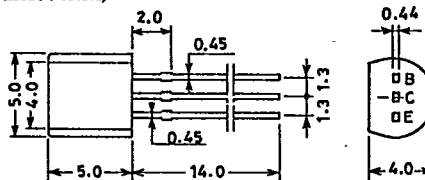
\* : The 2SC1570 is classified by 1mA h<sub>FE</sub> as follows :

160	F	320	280	G	560	480	H	960
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### Noise Test Circuit

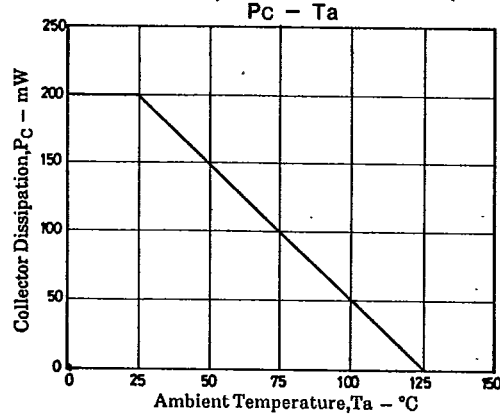
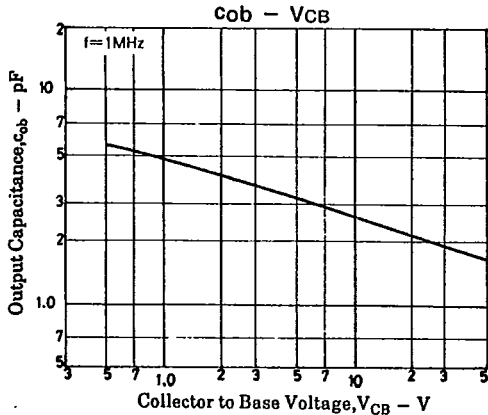
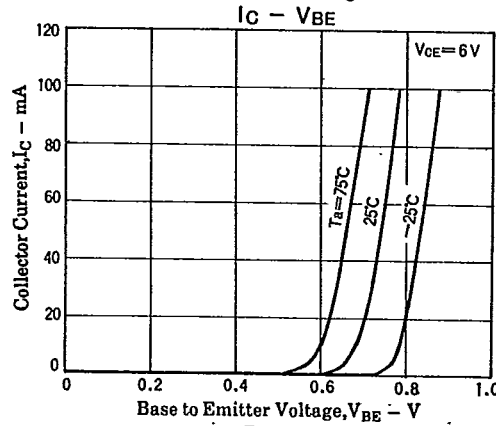
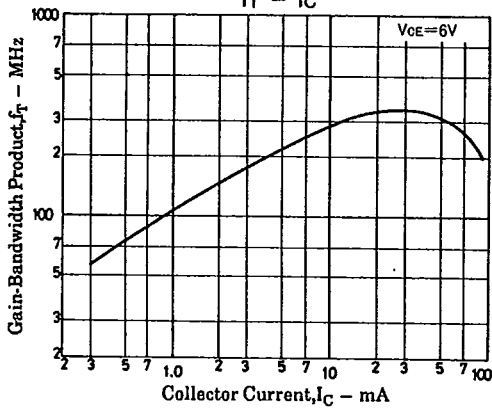
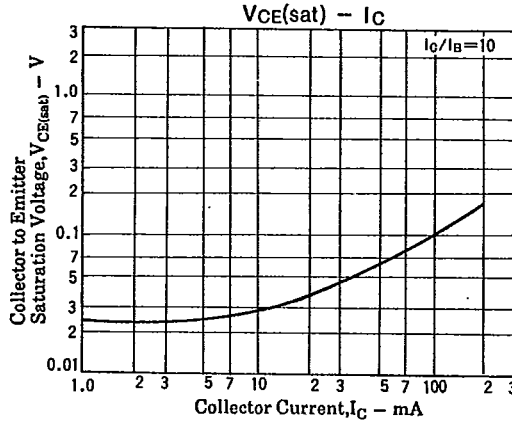
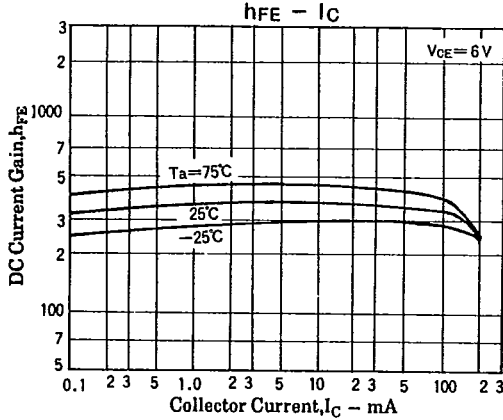
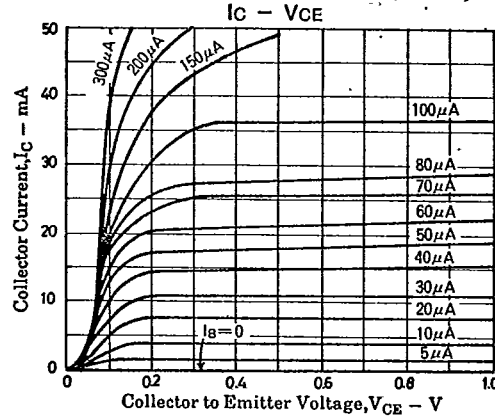
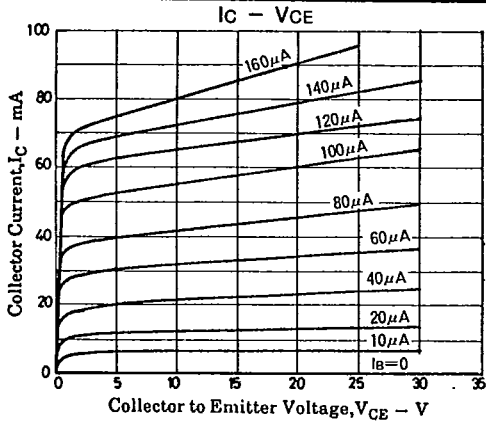


### Case Outline 2003A (unit : mm)

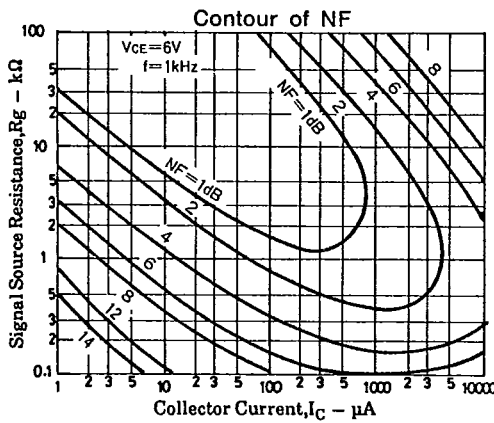
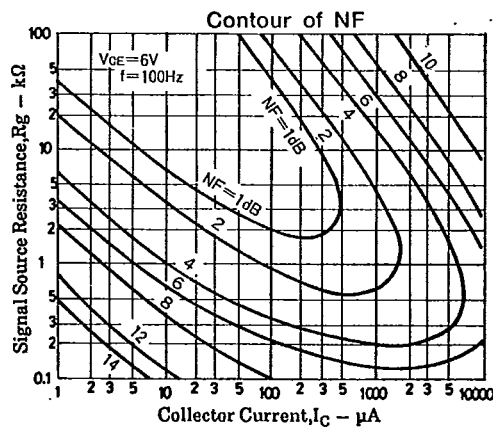
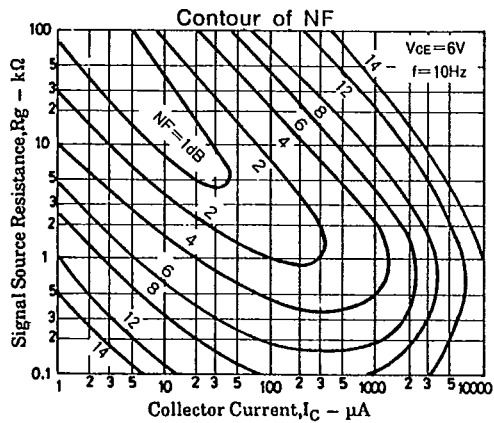


JEDEC: TO-92 B: Base  
EIAJ: SC-43 C: Collector  
SANYO: NP E: Emitter

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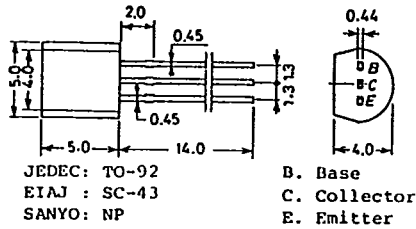


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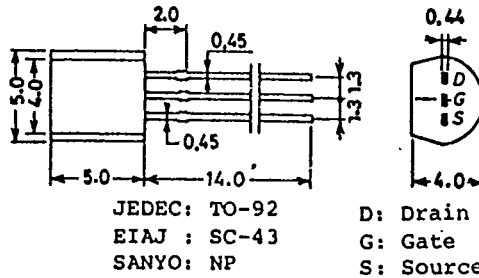
# CASE OUTLINES OF LEAD FORMED SMALL SIGNAL TRANSISTORS

- All of Sanyo lead formed small signal transistor case outlines are illustrated below.
- All dimensions are in mm, and dimensions which are not followed by min. or max. are represented by typical values.
- No marking is indicated.

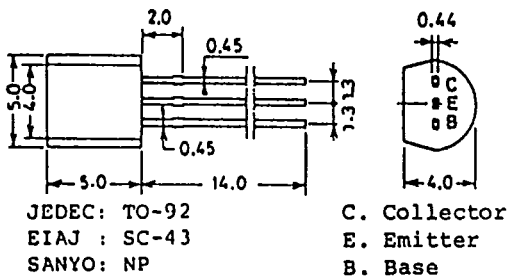
Case Outline-[2003A] unit: mm



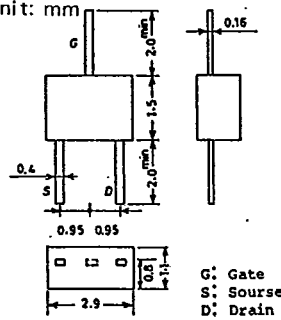
Case Outline-[2019A] unit: mm



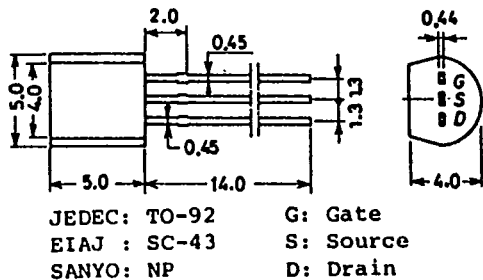
Case Outline-[2004A] unit: mm



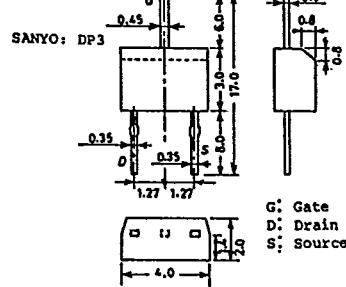
Case Outline-[2025] unit: mm



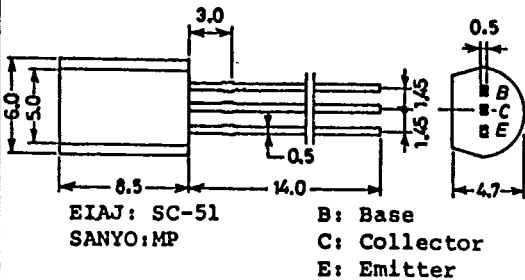
Case Outline-[2005A] unit: mm



Case Outline-[2026] unit: mm



Case Outline-[2006A] unit: mm



Case Outline-[2027A] unit: mm

