

| | | |
|--|----------|------------------------|
| SANYO | No.1600A | 2SA1318/2SC3331 |
| PNP/NPN Epitaxial Planar Silicon Transistors | | |
| AF Amp Applications | | |

Use

. Capable of being used in the low frequency to high frequency range.

Features

. Large current capacity and wide ASO.

(): 2SA1318

Absolute Maximum Ratings at Ta=25°C

| | | | unit |
|------------------------------|------------------|-------------|------|
| Collector to Base Voltage | V _{CB0} | (-)60 | V |
| Collector to Emitter Voltage | V _{CEO} | (-)50 | V |
| Emitter to Base Voltage | V _{EBO} | (-)6 | V |
| Collector Current | I _C | (-)200 | mA |
| Collector Current (Pulse) | I _{CP} | (-)400 | mA |
| Collector Dissipation | P _C | 500 | mW |
| Junction Temperature | T _J | 150 | °C |
| Storage Temperature | T _{stg} | -55 to +150 | °C |

Electrical Characteristics at Ta=25°C

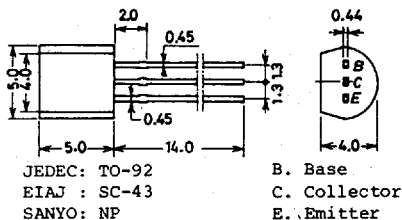
| | | | min | typ | max | unit |
|--------------------------|---------------------|--|-------|-------|--------|------|
| Collector Cutoff Current | I _{CBO} | V _{CB} =(-)40V, I _E =0 | | | (-)0.1 | μA |
| Emitter Cutoff Current | I _{EBO} | V _{EB} =(-)5V, I _C =0 | | | (-)0.1 | μA |
| DC Current Gain | h _{FE} (1) | V _{CE} =(-)6V, I _C =(-)1mA | 100* | | 800* | |
| | | | (100) | | (560) | |
| | h _{FE} (2) | V _{CE} =(-)6V, I _C =(-)0.1mA | | 70 | | |
| Gain-Bandwidth Product | f _T | V _{CE} =(-)6V, I _C =(-)10mA | | 200 | | MHz |
| Output Capacitance | c _{ob} | V _{CB} =(-)6V, f=1MHz | | 3.0 | | pF |
| | | | | (4.5) | | |

Continued on next page.

* The 2SA1318/2SC3331 are classified by 1mA h_{FE} as follows:

| | | | | | |
|---------|-----------|-----------|-----------|-----------|-----------|
| 2SA1318 | 100 R 200 | 140 S 280 | 200 T 400 | 280 U 560 | |
| 2SC3331 | 100 R 200 | 140 S 280 | 200 T 400 | 280 U 560 | 400 V 800 |

Case Outline 2003A
(unit:mm)

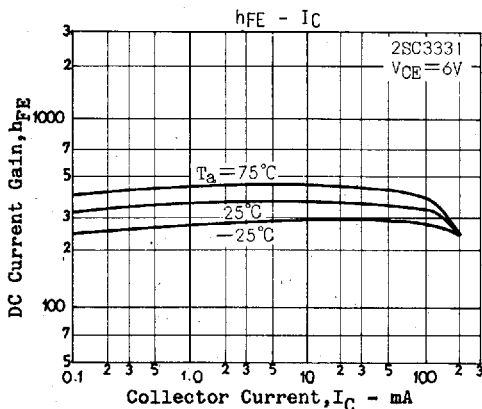
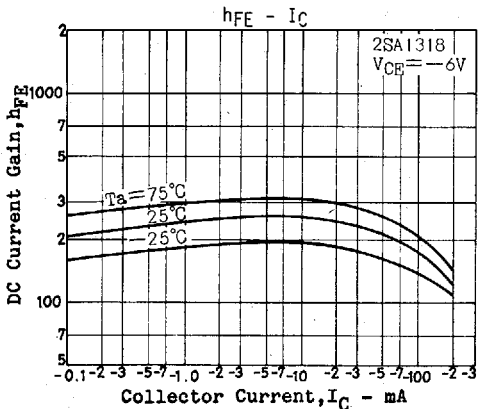
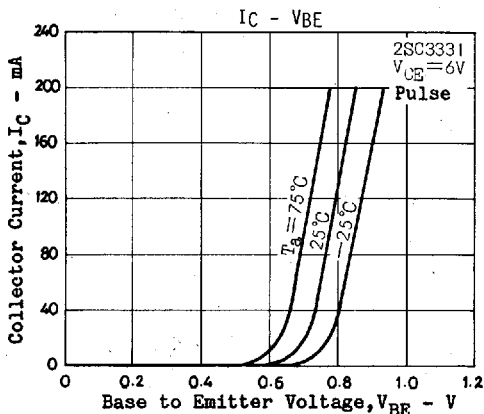
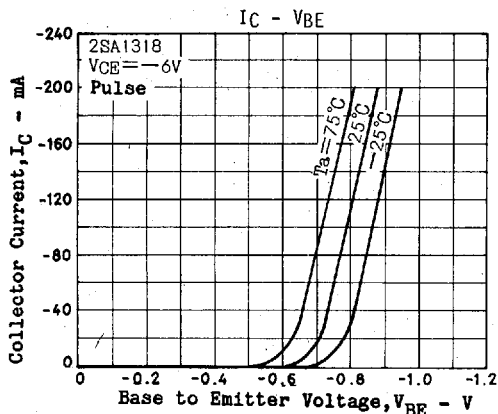
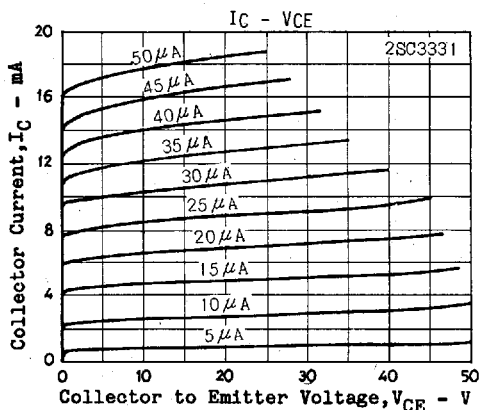
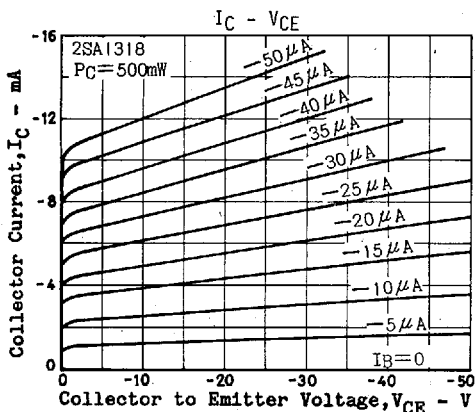


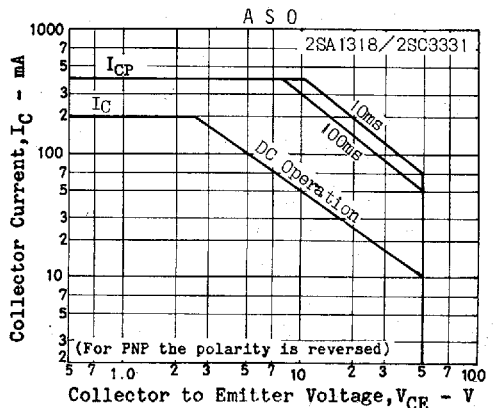
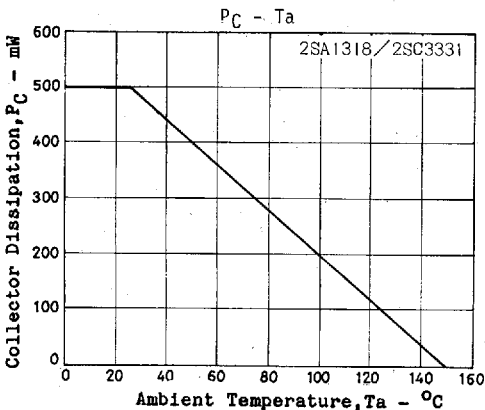
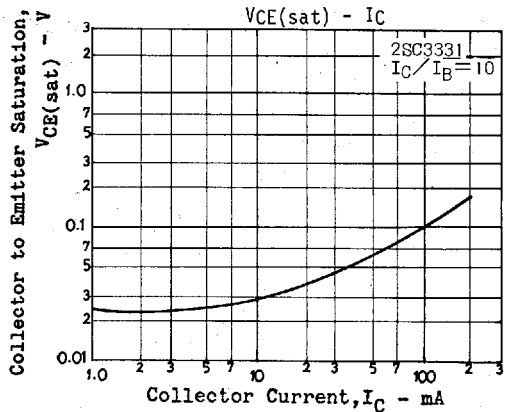
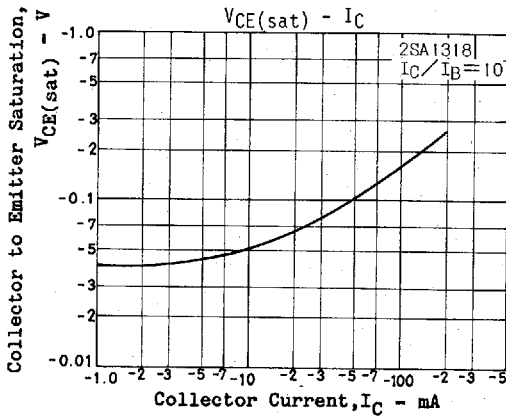
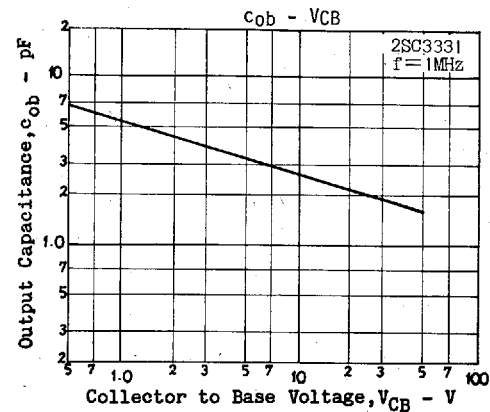
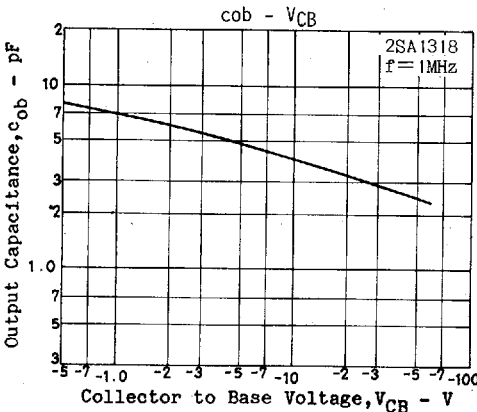
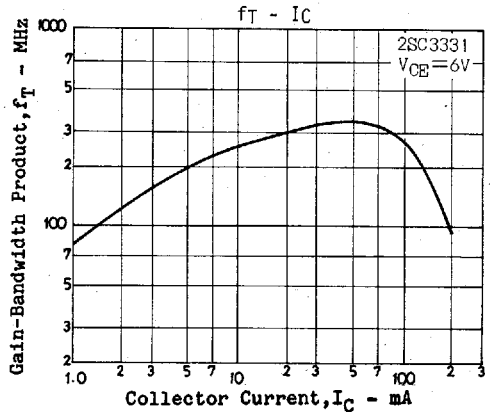
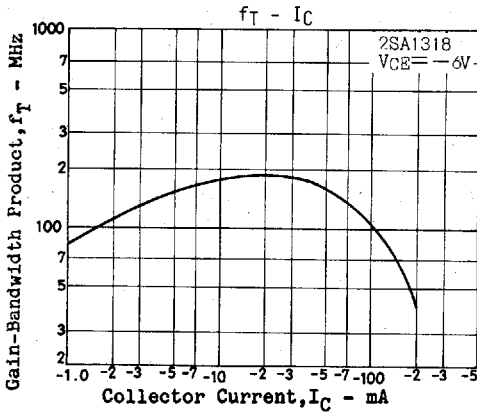
Specifications and information herein are subject to change without notice.

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| | | $I_C = (-)100\text{mA}$, $I_B = (-)10\text{mA}$ | min | typ | max | unit |
|---|---------------|---|----------|-----|-----------|------|
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | | | | (-) 0.3 | V |
| Base to Emitter Saturation Voltage | $V_{BE(sat)}$ | | | | (-) 1.0 | V |
| Collector to Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = (-)10\mu\text{A}, I_E = 0$ | (-) 60 | | | V |
| Collector to Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = (-)1\text{mA}, R_{BE} = \infty$ | (-) 50 | | | V |
| Emitter to Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = (-)10\mu\text{A}, I_C = 0$ | (-) 6 | | | V |

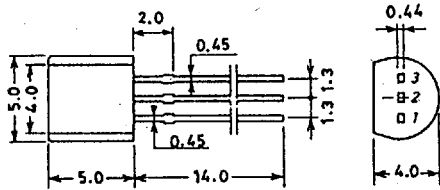




CASE OUTLINES OF LEAD FORMED SMALL SIGNAL TRANSISTORS

- 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.

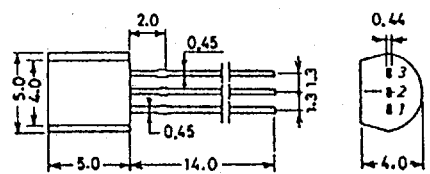
Case Outline 2003A/2003B (unit : mm)



JEDEC : TO-92
EIAJ : SC-43
SANYO : NP

1 : Emitter
2 : Collector
3 : Base

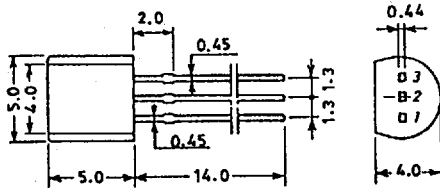
Case Outline 2019A/2019B (unit : mm)



JEDEC : TO-92
EIAJ : SC-43
SANYO : NP

1 : Source
2 : Gate
3 : Drain

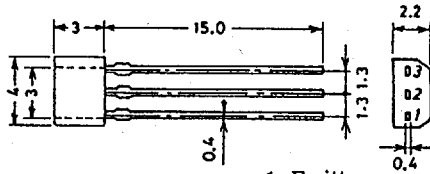
Case Outline 2004A (unit : mm)



JEDEC : TO-92
EIAJ : SC-43
SANYO : NP

1 : Base
2 : Emitter
3 : Collector

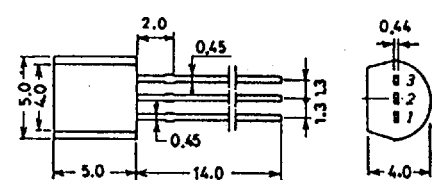
Case Outline 2033 (unit : mm)



1 : Emitter
2 : Collector
3 : Base

SANYO : SPA

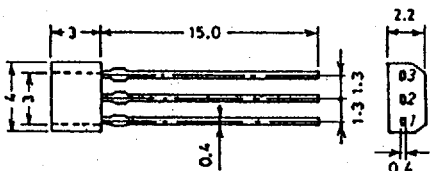
Case Outline 2005A (unit : mm)



JEDEC : TO-92
EIAJ : SC-43
SANYO : NP

1 : Drain
2 : Source
3 : Gate

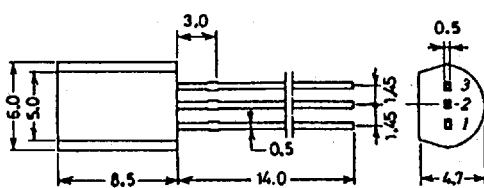
Case Outline 2034/2034A (unit : mm)



1 : Source
2 : Gate
3 : Drain

SANYO : SPA

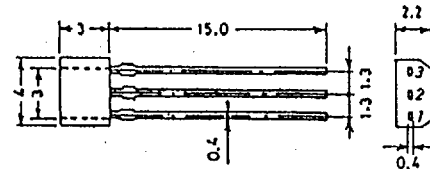
Case Outline 2006A (unit : mm)



EIAJ : SC-51
SANYO : MP

1 : Emitter
2 : Collector
3 : Base

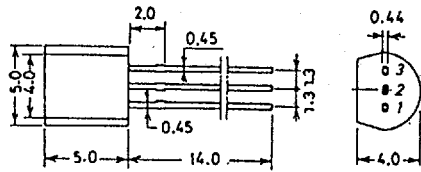
Case Outline 2040 (unit : mm)



1 : Drain
2 : Source
3 : Gate

SANYO : SPA

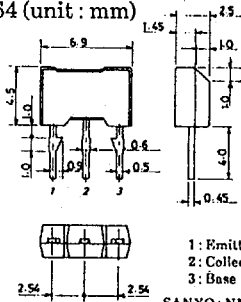
Case Outline 2061 (unit : mm)



JEDEC : TO-92
EIAJ : SC-43
SANYO : NP

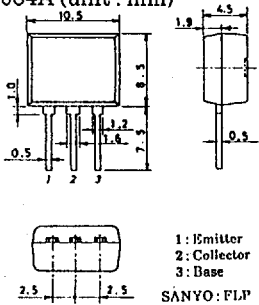
1 : Emitter
2 : Base
3 : Collector

Case Outline 2064 (unit : mm)



1 : Emitter
2 : Collector
3 : Base
SANYO : NMP

Case Outline 2084A (unit : mm)



1 : Emitter
2 : Collector
3 : Base
SANYO : FLP