Ordering number: EN 1600A

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_{CBO}	(-)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	Tj	150	°C
Storage Temperature	Tstg	-55 to +150	°C

Electrical Characteristics at Ta=25°C

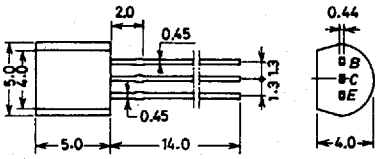
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=(-)40V, I_E=0			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(-)5V, I_C=0			(-)0.1	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=(-)6V, I_C=(-)1mA	100*		800*	
			(100)		(560)	
	$h_{FE(2)}$	V_{CE}=(-)6V, I_C=(-)0.1mA	70			
Gain-Bandwidth Product	f_T	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)



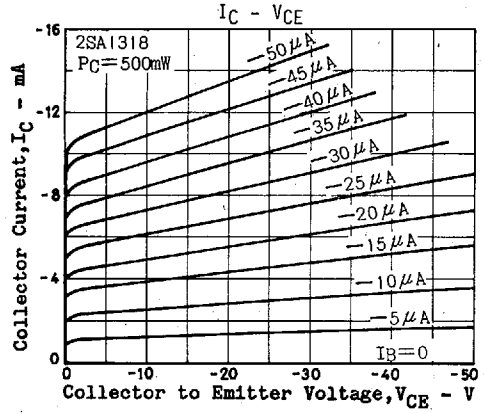
JEDEC: TO-92
EIAJ : SC-43
SANYO: NP

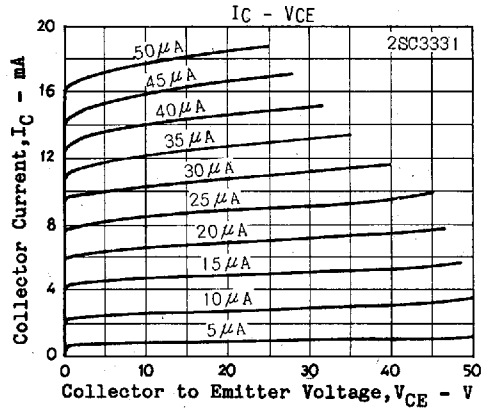
B. Base
C. Collector
E. Emitter

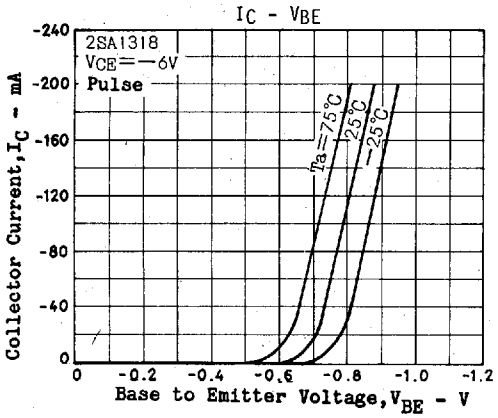
SANYO Electric Co.,Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

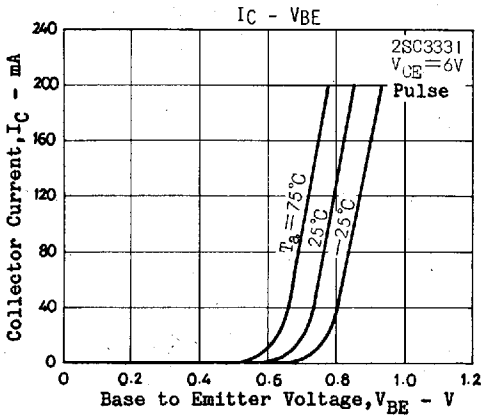
Continued from preceding page.

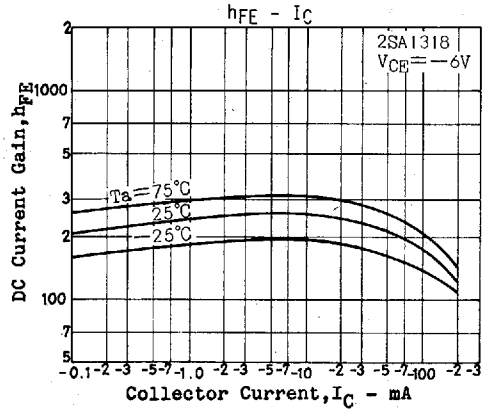
			min	typ	max	unit
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(-)100mA, I_B=(-)10mA			(-)0.3	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(-)100mA, I_B=(-)10mA			(-)1.0	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)10μA, I_E=0	(-)60			V
Collector to Emitter Breakdown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

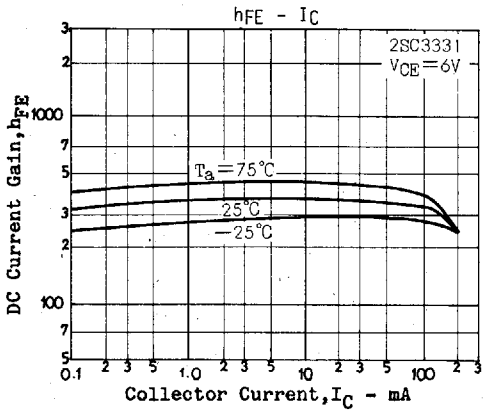


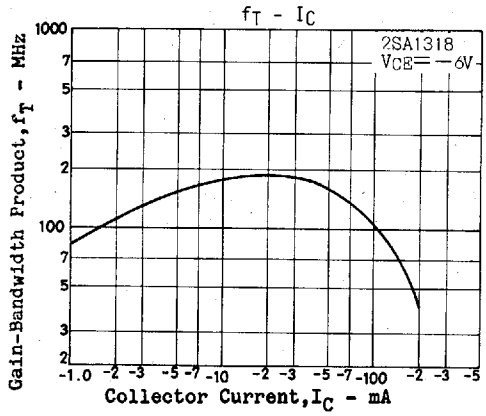


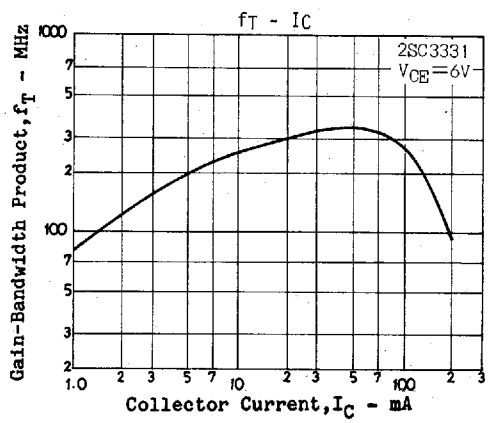


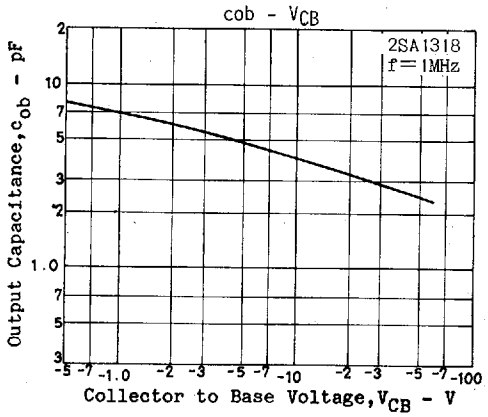


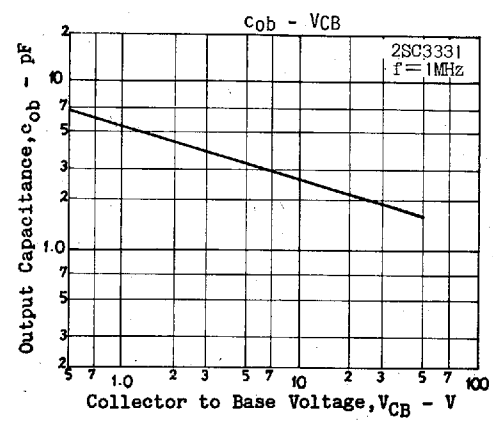


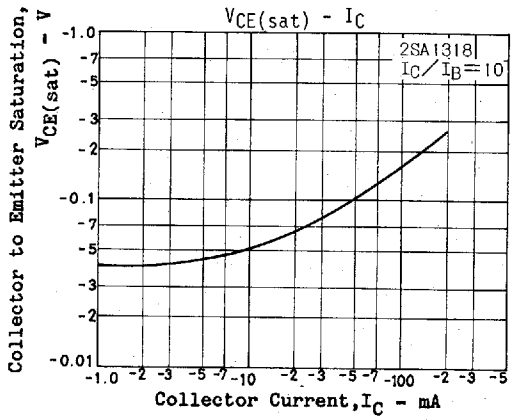


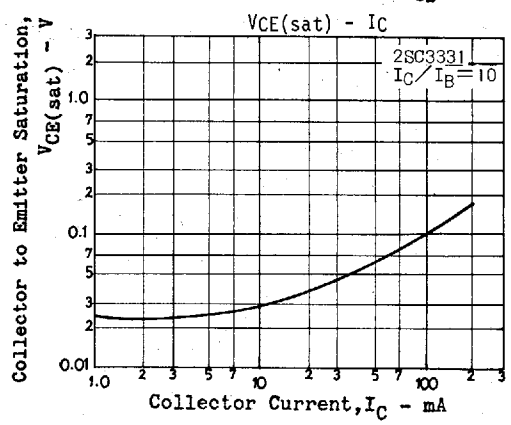

f_T - I_C
2SA1318
V_{CE}=−6V
Gain-Bandwidth Product, f_T - MHz
Collector Current, I_C - mA

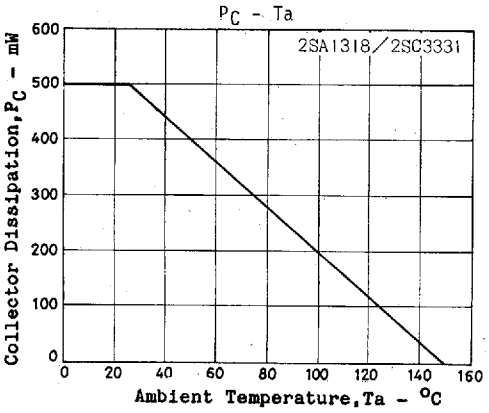

f_T - I_C
2SC3331
V_{CE}=6V
Gain-Bandwidth Product, f_T - MHz
Collector Current, I_C - mA

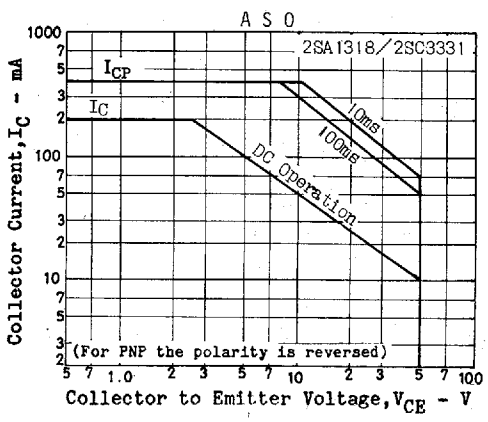

cob - V_{CB}
2SA1318
f=1MHz
Output Capacitance, C_{ob} - pF
Collector to Base Voltage, V_{CB} - V


C_{ob} - V_{CB}
2SC3331
f=1MHz
Output Capacitance, C_{ob} - pF
Collector to Base Voltage, V_{CB} - V


$V_{CE(sat)}$ - I_C
2SA1318
I_C/I_B=10
Collector to Emitter Saturation, $V_{CE(sat)}$ - V
Collector Current, I_C - mA


$V_{CE(sat)}$ - I_C
2SC3331
I_C/I_B=10
Collector to Emitter Saturation, $V_{CE(sat)}$ - V
Collector Current, I_C - mA

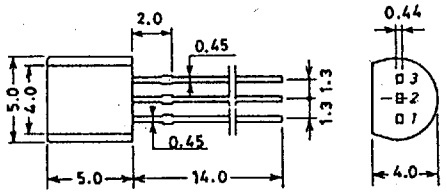

P_C - Ta
2SA1318/2SC3331
Collector Dissipation, P_C - mW
Ambient Temperature, Ta - °C


A S O
2SA1318/2SC3331
I_{CP}
I_C
10ms
100ms
DC Operation
(For PNP the polarity is reversed)
Collector Current, I_C - mA
Collector to Emitter Voltage, V_{CE} - 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.

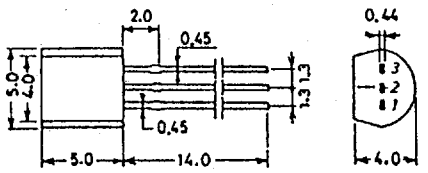
Case Outline 2003A/2003B (unit : mm)



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

1 : Emitter
2 : Collector
3 : Base

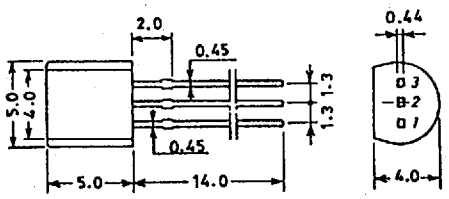
Case Outline 2019A/2019B (unit : mm)



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

1 : Source
2 : Gate
3 : Drain

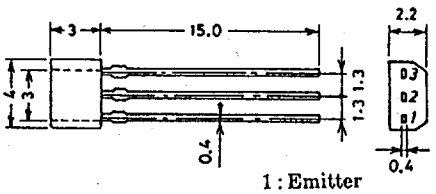
Case Outline 2004A (unit : mm)



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

1 : Base
2 : Emitter
3 : Collector

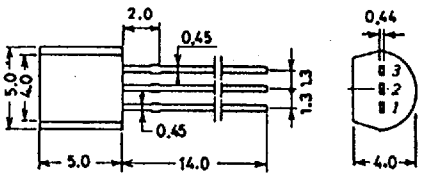
Case Outline 2033 (unit : mm)



1 : Emitter
2 : Collector
3 : Base

SANYO : SPA

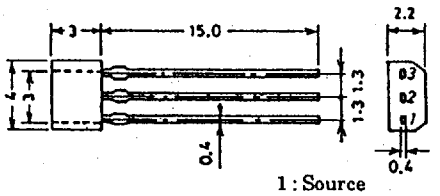
Case Outline 2005A (unit : mm)



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

1 : Drain
2 : Source
3 : Gate

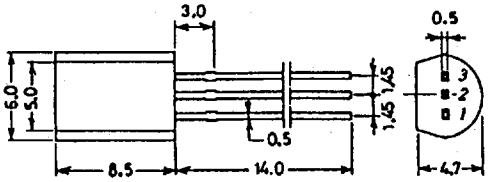
Case Outline 2034/2034A (unit : mm)



1 : Source
2 : Gate
3 : Drain

SANYO : SPA

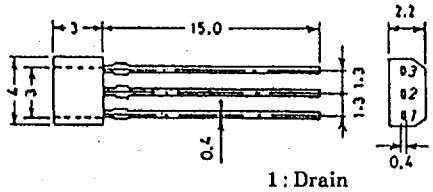
Case Outline 2006A (unit : mm)



EIAJ : SC-51
SANYO : MP

1 : Emitter
2 : Collector
3 : Base

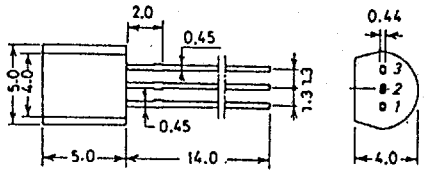
Case Outline 2040 (unit : mm)



1 : Drain
2 : Source
3 : Gate

SANYO : SPA

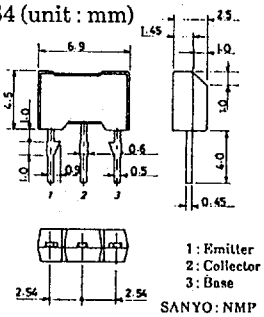
Case Outline 2061 (unit : mm)



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

1 : Emitter
2 : Base
3 : Collector

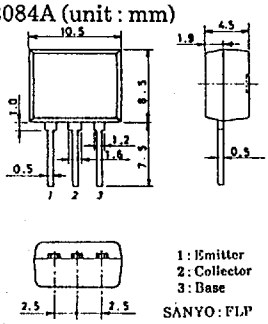
Case Outline 2064 (unit : mm)



1 : Emitter
2 : Collector
3 : Base

SANYO : NMP

Case Outline 2084A (unit : mm)



1 : Emitter
2 : Collector
3 : Base

SANYO : FLP