

SANYO

No.3512B

2SA1786/2SC4646

2SA1786:PNP Epitaxial Planar Silicon Transistor

2SC4646:NPN Triple Diffused Planar Silicon Transistor

High Voltage Driver Applications**Features**

- Large current capacity ($I_C = 2A$)
- High breakdown voltage ($V_{CEO} \geq 400V$)

(): 2SA1786

Absolute Maximum Ratings at $T_a = 25^\circ C$

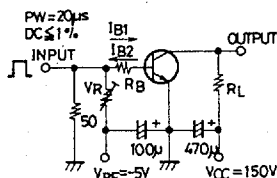
			unit
Collector to Base Voltage	V_{CBO}	(-)400	V
Collector to Emitter Voltage	V_{CEO}	(-)400	V
Emitter to Base Voltage	V_{EBO}	(-)5	V
Collector Current	I_C	(-)2	A
Collector Current(Pulse)	I_{CP}	(-)4	A
Collector Dissipation	P_C	1	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

Electrical Characteristics at $T_a = 25^\circ C$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)300V, I_E = 0$			(-)1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4V, I_C = 0$			(-)1.0	μA
DC Current Gain	h_{FE}	$V_{CE} = (-)10V, I_C = (-)100mA$	40*		200*	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10V, I_C = (-)100mA$		(40)60		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)500mA, I_B = (-)50mA$			(-)1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)500mA, I_B = (-)50mA$			(-)1.0	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)400			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)400			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)5			V
Output Capacitance	C_{ob}	$V_{CB} = (-)30V, f = 1MHz$		(25)15		pF
Turn-ON Time	t_{on}	See specified Test Circuit.	(0.12)0.085			μs
Storage Time	t_{stg}	"	(3.0)4.0			μs
Fall Time	t_f	"	(0.3)0.6			μs

*: The 2SA1786/2SC4646 are classified by 100mA h_{FE} as follows:

40 C 80	60 D 120	100 E 200
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Switching Time Test Circuit

$10I_{B1} = -10I_{B2} = I_C = 500mA$
 $R_L = 300\Omega, R_B = 20\Omega, \text{ at } I_C = 500mA$
 (For PNP, the polarity is reversed.)

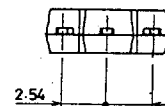
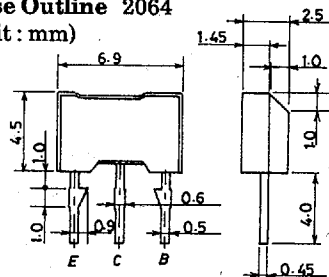
Unit(Resistance : Ω , Capacitance : F)

Specifications and information herein are subject to change without notice.

SANYO Electric Co., Ltd. Semiconductor Business Headquarters

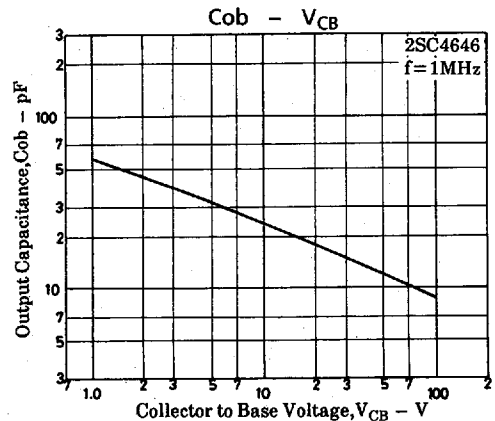
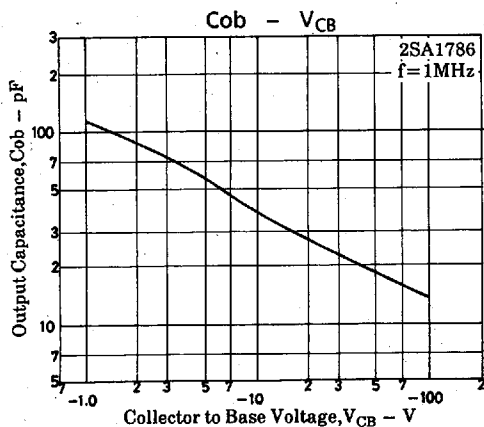
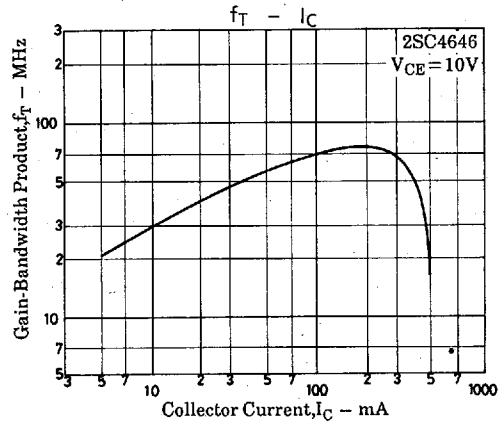
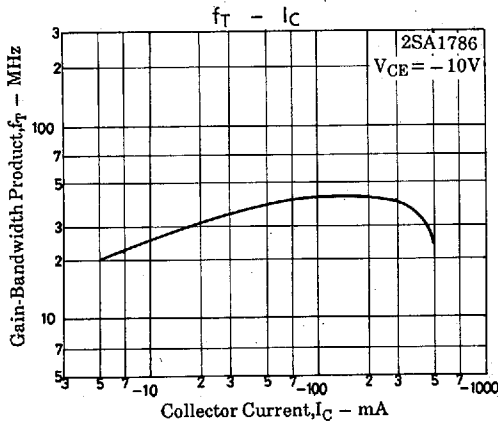
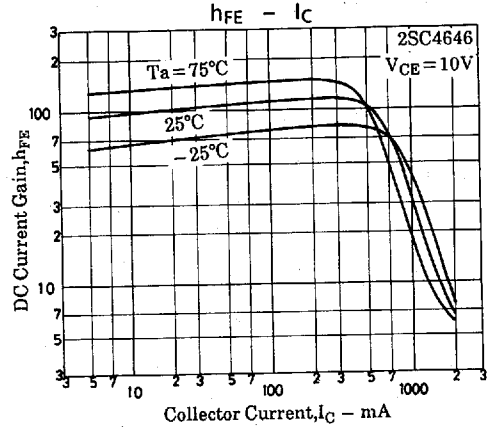
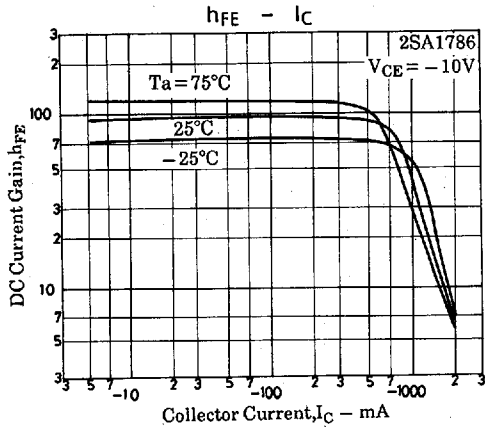
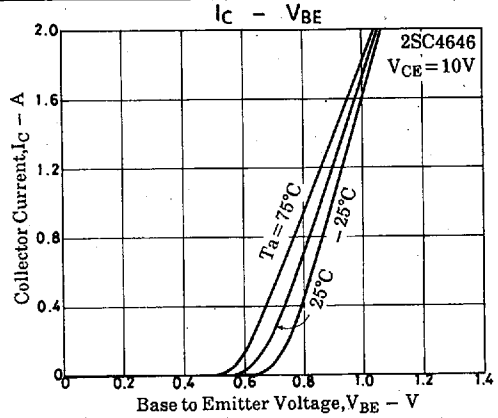
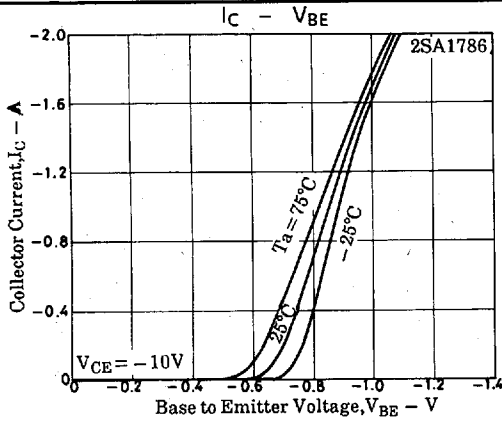
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

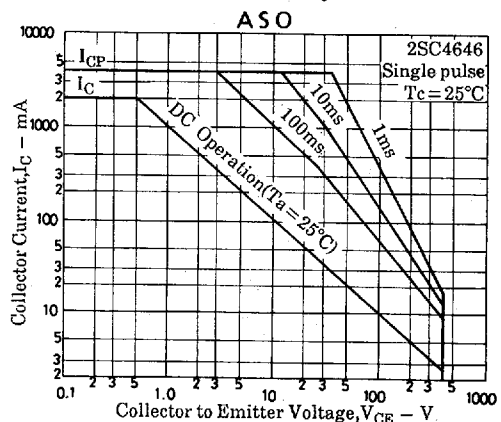
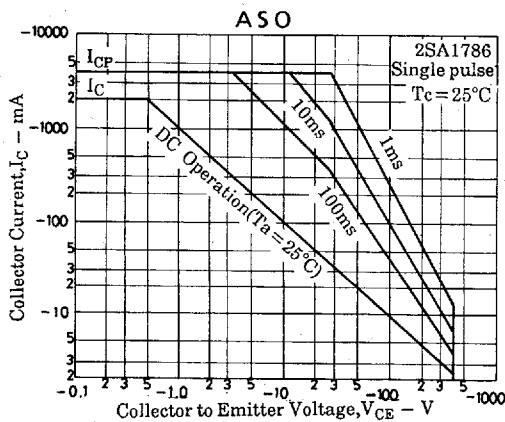
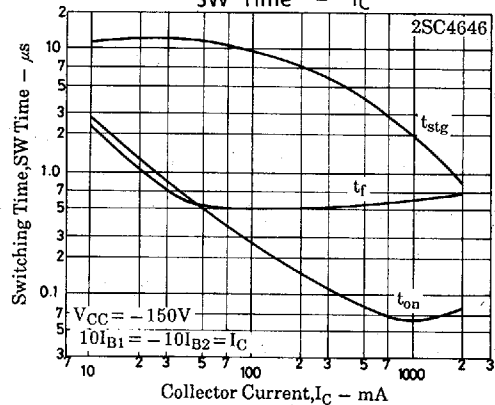
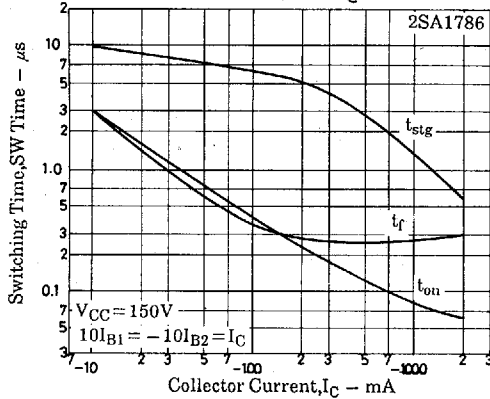
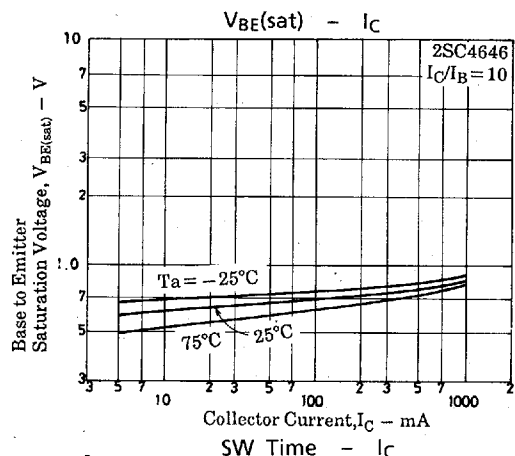
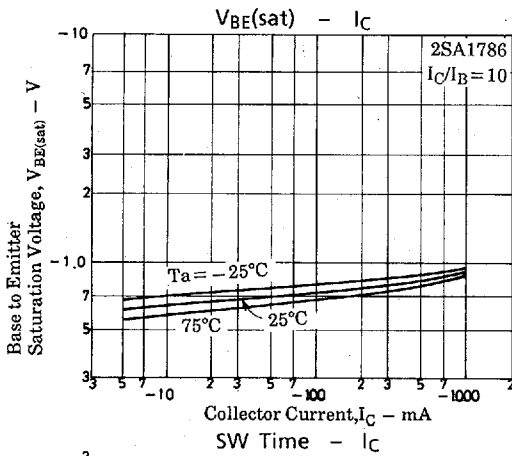
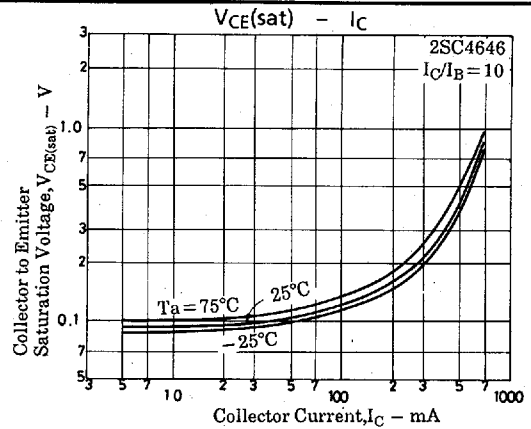
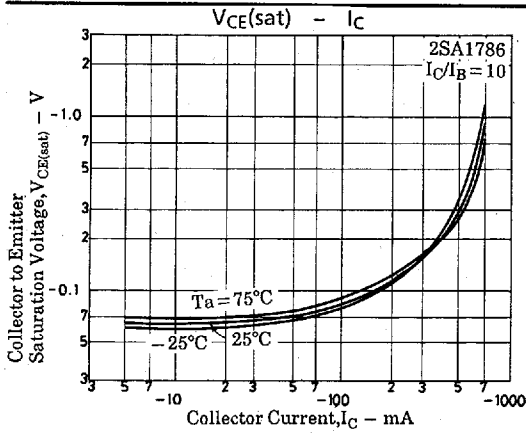
12894TH AX-8287/4231MH/5180TA(KOTO) X-6912 No.3512-1/4

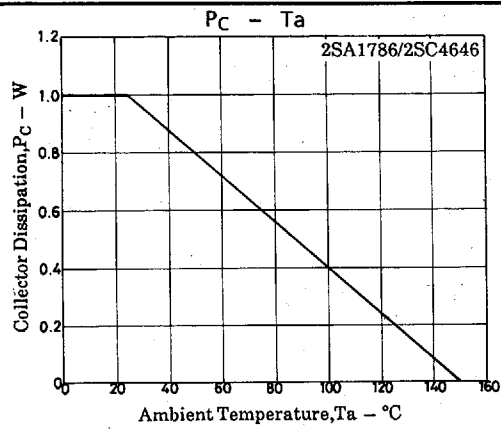
Case Outline 2064
(unit : mm)

E: Emitter
 C: Collector
 B: Base

SANYO: NMP



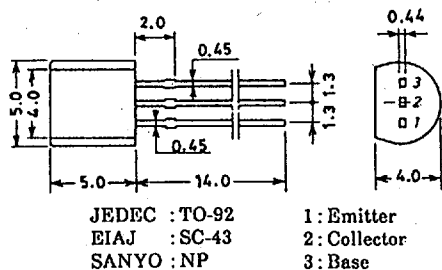




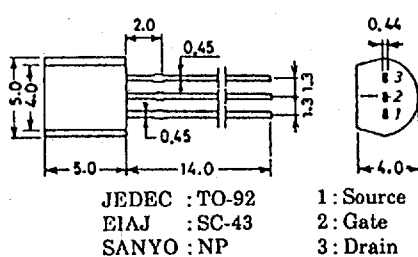
CASE OUTLINES OF LEAD FORMED SMALL SIGNAL TRANSISTORS

- 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.

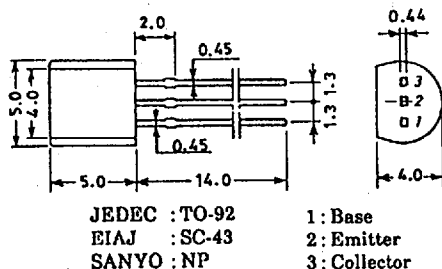
Case Outline 2003A/2003B (unit : mm)



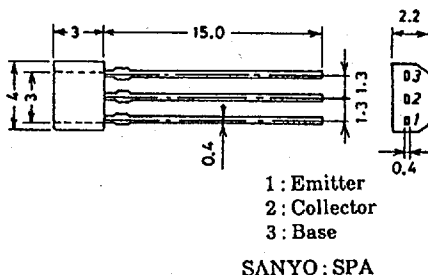
Case Outline 2019A/2019B (unit : mm)



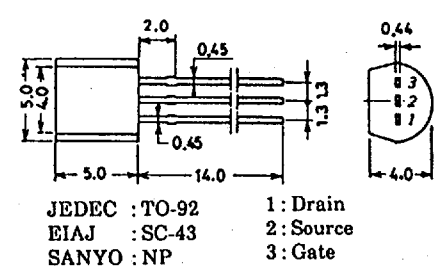
Case Outline 2004A (unit : mm)



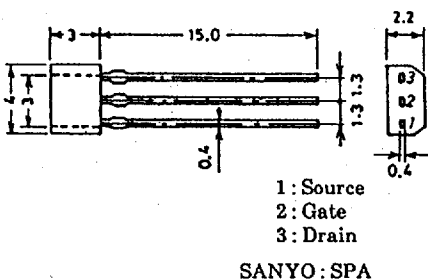
Case Outline 2033 (unit : mm)



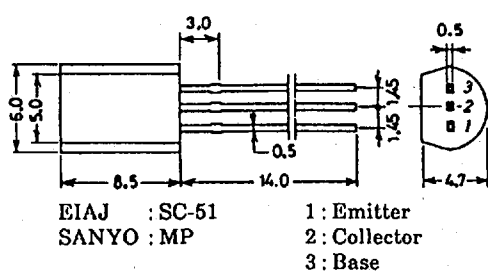
Case Outline 2005A (unit : mm)



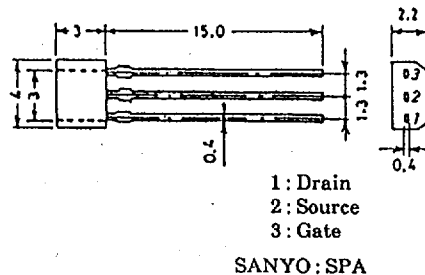
Case Outline 2034/2034A (unit : mm)



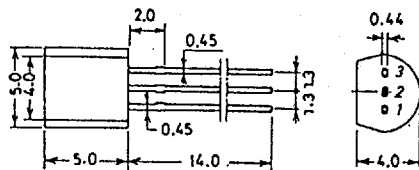
Case Outline 2006A (unit : mm)



Case Outline 2040 (unit : mm)



Case Outline 2061 (unit : mm)



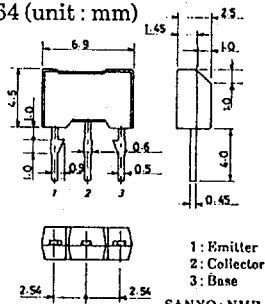
JEDEC : TO-92

EIAJ : SC-43

SANYO : NP

- 1: Emitter
- 2: Base
- 3: Collector

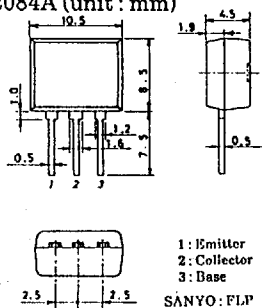
Case Outline 2064 (unit : mm)



SANYO : NMP

- 1: Emitter
- 2: Collector
- 3: Base

Case Outline 2084A (unit : mm)



SANYO : FLP

- 1: Emitter
- 2: Collector
- 3: Base