

No.465G

**2SA984/2SC2274**

PNP/NPN Epitaxial Planar Silicon Transistors

**AF Power Amp Applications**

**Features**

- High breakdown voltage ( $V_{CE0} \geq 50V$ ).
- High current ( $I_C = 500mA$ ).
- Low saturation voltage.

( ) : 2SA984

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

			unit
Collector-to-Base Voltage	$V_{CB0}$	(-)60	V
Collector-to-Emitter Voltage	$V_{CE0}$	(-)50	V
Emitter-to-Base Voltage	$V_{EB0}$	(-)5	V
Collector Current	$I_C$	(-)500	mA
Collector Current(Pulse)	$I_{CP}$	(-)800	mA
Collector Dissipation	$P_C$	600	mW
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ C$

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

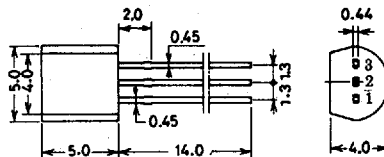
			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)40V, I_E = 0$			(-)1.0	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4V, I_C = 0$			(-)1.0	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE} = (-)5V, I_C = (-)50mA$	60*		320*	
	$h_{FE(2)}$	$V_{CE} = (-)5V, I_C = (-)400mA$ , (pulse)	35			
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)10V, I_C = (-)10mA$		120		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = (-)10V, f = 1MHz$		(9)		pF
				5		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)400mA$ , $I_B = (-)40mA$	(-0.25)		(-0.6)	V
				0.2	0.6	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)400mA, I_B = (-)40mA$	(-)0.9		(-)1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)5			V

\* : The 2SA984/2SC2274 are classified by 50mA  $h_{FE}$  as follows:

60	D	120	100	E	200	160	F	320
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**Case Outline 2003B**

(unit : mm)



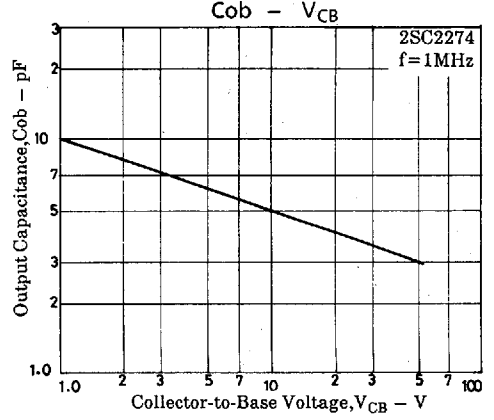
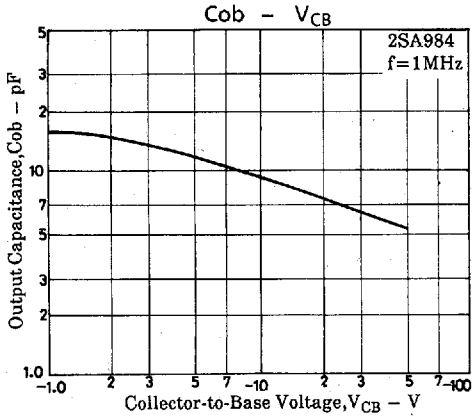
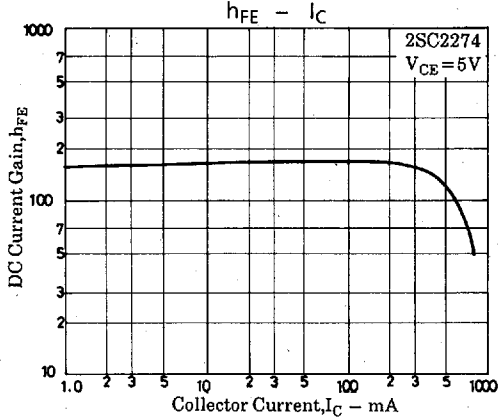
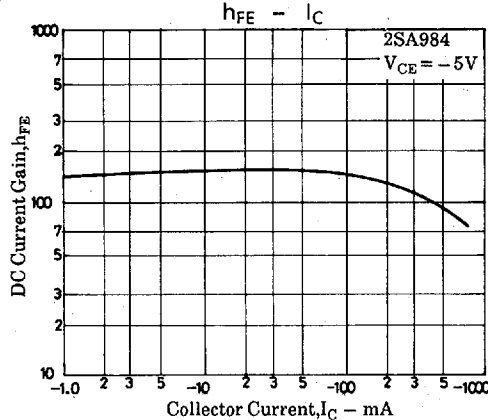
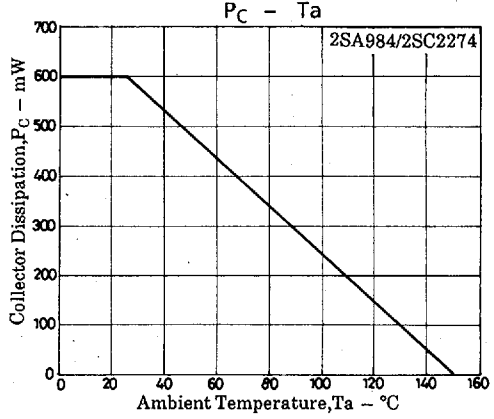
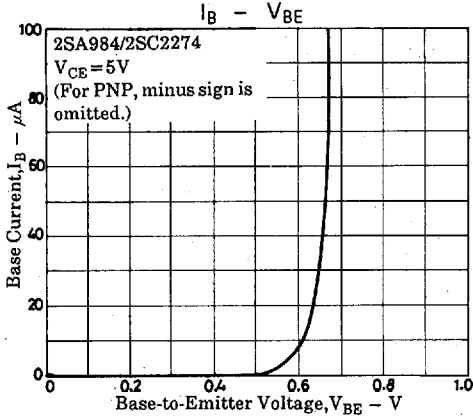
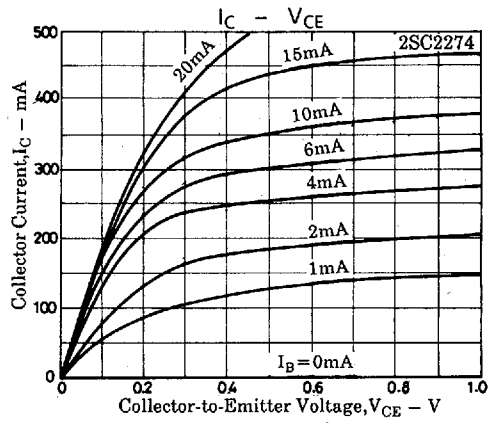
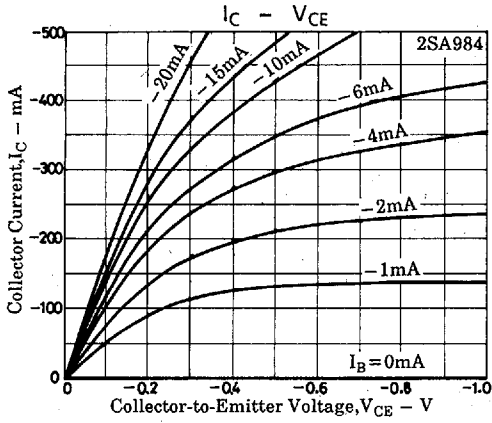
JEDEC: TO-92  
EIAJ : SC-43  
SANYO: NP

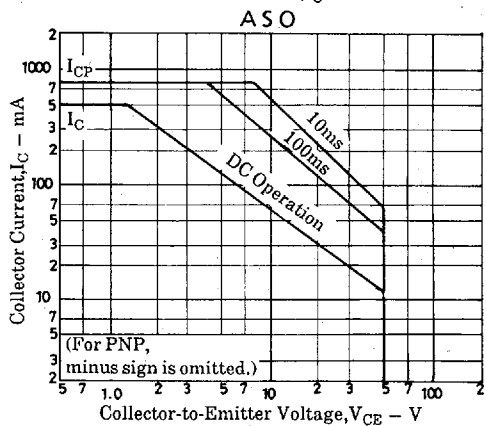
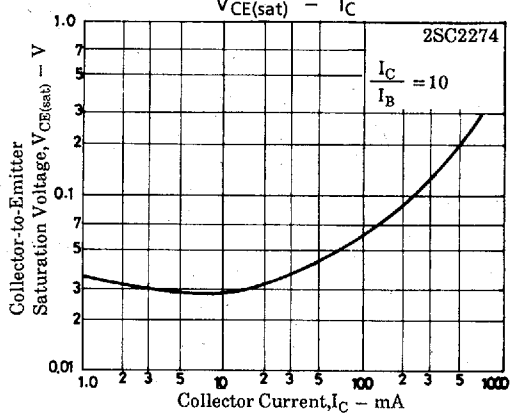
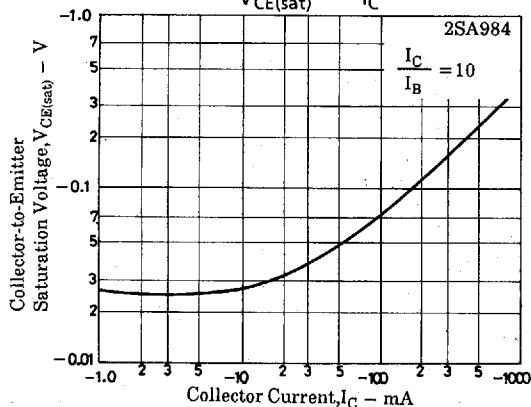
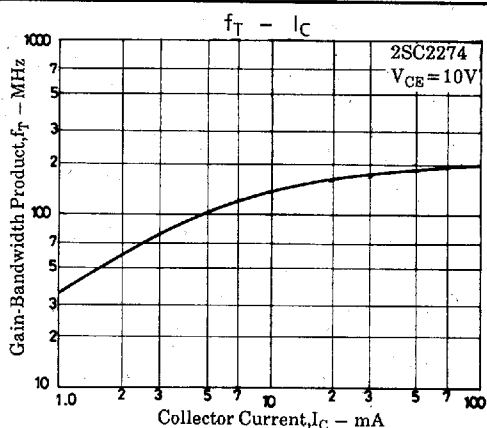
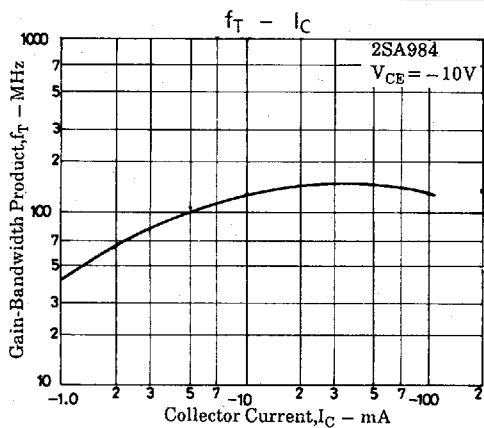
1: Emitter  
2: Collector  
3: Base

Specifications and information herein are subject to change without notice.

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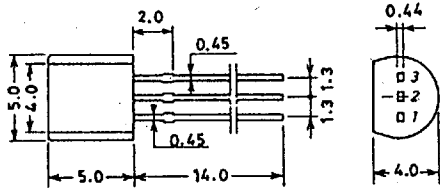




# CASE OUTLINES OF LEAD FORMED SMALL SIGNAL TRANSISTORS

- 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.

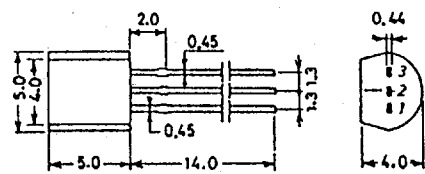
Case Outline 2003A/2003B (unit : mm)



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

1 : Emitter  
2 : Collector  
3 : Base

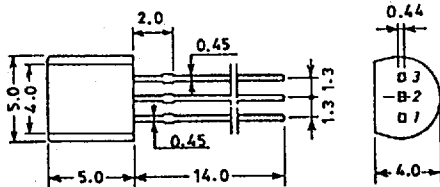
Case Outline 2019A/2019B (unit : mm)



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

1 : Source  
2 : Gate  
3 : Drain

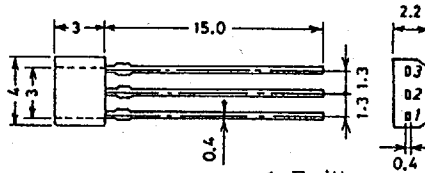
Case Outline 2004A (unit : mm)



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

1 : Base  
2 : Emitter  
3 : Collector

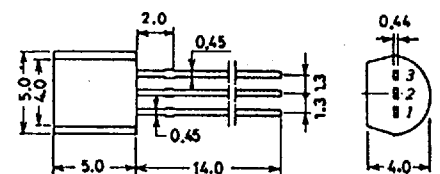
Case Outline 2033 (unit : mm)



1 : Emitter  
2 : Collector  
3 : Base

SANYO : SPA

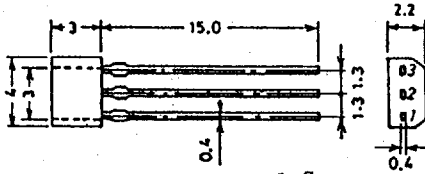
Case Outline 2005A (unit : mm)



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

1 : Drain  
2 : Source  
3 : Gate

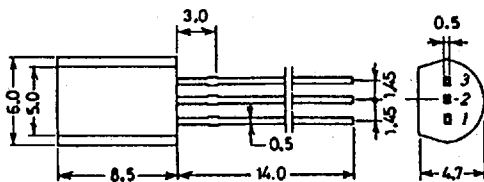
Case Outline 2034/2034A (unit : mm)



1 : Source  
2 : Gate  
3 : Drain

SANYO : SPA

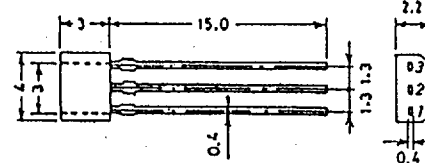
Case Outline 2006A (unit : mm)



EIAJ : SC-51  
SANYO : MP

1 : Emitter  
2 : Collector  
3 : Base

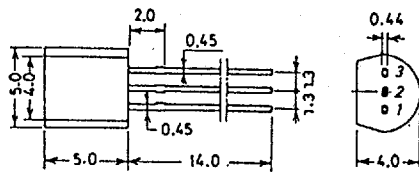
Case Outline 2040 (unit : mm)



1 : Drain  
2 : Source  
3 : Gate

SANYO : SPA

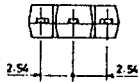
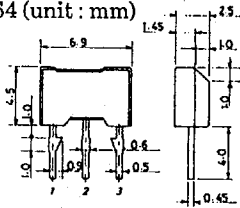
Case Outline 2061 (unit : mm)



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

1: Emitter  
2: Base  
3: Collector

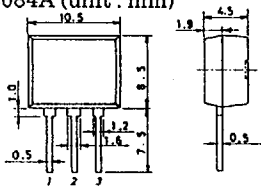
Case Outline 2064 (unit : mm)



1: Emitter  
2: Collector  
3: Base

SANYO : NMP

Case Outline 2084A (unit : mm)



1: Emitter  
2: Collector  
3: Base

SANYO : FLP