

查询"2SA1209R"供应商

2SA1209R"供应商



2009A

T-33-07

## NPN/PNP Epitaxial Planar Silicon Transistors

**2SA1210**

## High Voltage Switching, AF 150W Predriver Applications

(E)780C

## Features

- Adoption of FBET process
- High breakdown voltage
- Good linearity of  $h_{FE}$  and small  $c_{ob}$
- Fast switching speed

( ): 2SA1210

**Absolute Maximum Ratings/ $T_a = 25^\circ\text{C}$**

| Absolute Maximum Ratings/ $T_a = 25^\circ\text{C}$ |           |                 | unit             |
|--|-----------|-----------------|------------------|
| Collector to base voltage                          | $V_{CB0}$ | (-) $200$       | V                |
| Collector to emitter voltage                       | $V_{CEO}$ | (-) $200$       | V                |
| Emitter to base voltage                            | $V_{EB0}$ | (-) $5$         | V                |
| Collector current                                  | $I_C$     | (-) $140$       | mA               |
| Peak collector current                             | $i_{cp}$  | (-) $200$       | mA               |
| Collector dissipation                              | $P_C$     | $1$             | W                |
| $T_c = 25^\circ\text{C}$                           |           |                 | $10$ W           |
| Junction temperature                               | $T_j$     | $150$           | $^\circ\text{C}$ |
| Storage temperature                                | $T_{stg}$ | $-55 \sim +150$ | $^\circ\text{C}$ |

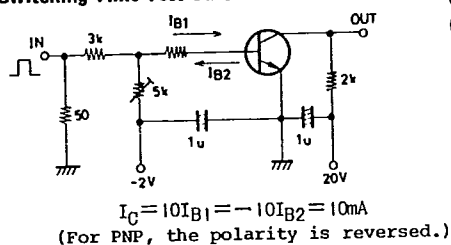
**Electrical Characteristics/ $T_a = 25^\circ\text{C}$**

| Electrical Characteristics/ $T_a = 25^\circ\text{C}$ |               |   | min  | typ     | max    | unit          |
|--|---------------|---|------|---------|--------|---------------|
| Collector cutoff current                             | ICBO          | $V_{CB} = (-)160, I_E = 0$                          |      |         | (-0.1  | $\mu\text{A}$ |
| Emitter cutoff current                               | IEBO          | $V_{EB} = (-)4 \text{ V}, I_C = 0$                  |      |         | (-0.1  | $\mu\text{A}$ |
| Common emitter DC current gain                       | hFE           | $V_{CE} = (-)5 \text{ V}, I_C = (-) 10 \text{ mA}$  | 100* |         | 400*   |               |
| Gain band-width product                              | fT            | $V_{CE} = (-)10 \text{ V}, I_C = (-) 10 \text{ mA}$ |      | 150     |        | MHz           |
| Common base output capacitance                       | cob           | $V_{CB} = (-)10 \text{ V}, f = 1 \text{ MHz}$       |      | (4.0)   |        | pF            |
|  |               |   |      | 3.0     |        |               |
| Collector to emitter saturation voltage              | $V_{CE(sat)}$ | $I_C = (-)50 \text{ mA}, I_B = (-)5 \text{ mA}$     |      | (-0.14) | (-0.4) | V             |
|  |               |   |      | 0.07    | 0.3    |               |
| Turn-on time   | Ton           | At specified test circuit                           |      | 0.1     |        | $\mu\text{s}$ |
| Storage time   | tstg          | At specified test circuit                           |      | 1.5     |        | $\mu\text{s}$ |
| Fall time  | tf            | At specified test circuit                           |      | 0.1     |        | $\mu\text{s}$ |

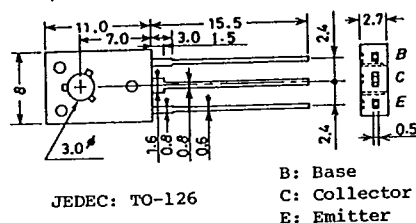
\* : The 2SA1210/2SC2912 are classified by 10 mA hFE as follows:

|           |           |           |
|-----------|-----------|-----------|
| 100 R 200 | 140 S 280 | 200 T 400 |
|-----------|-----------|-----------|

### Switching Time Test Curcuit



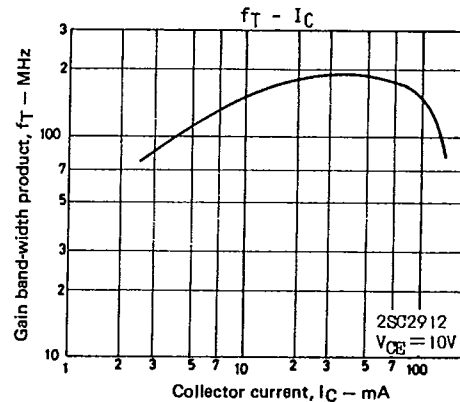
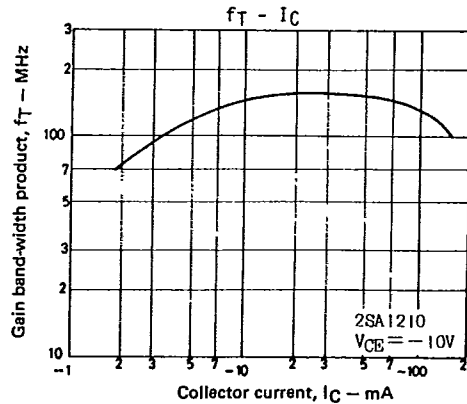
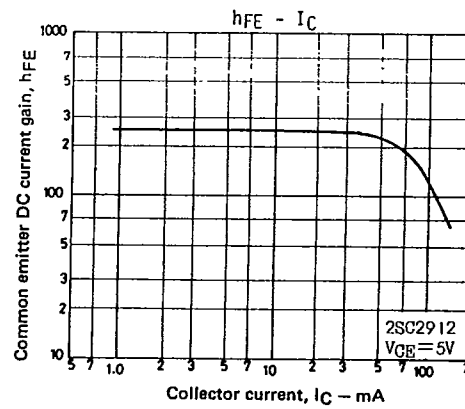
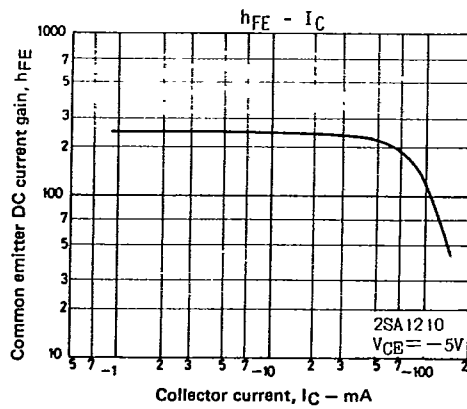
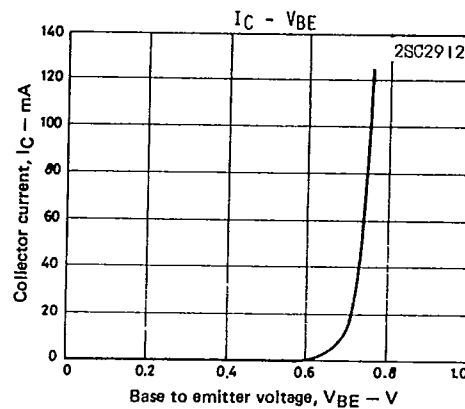
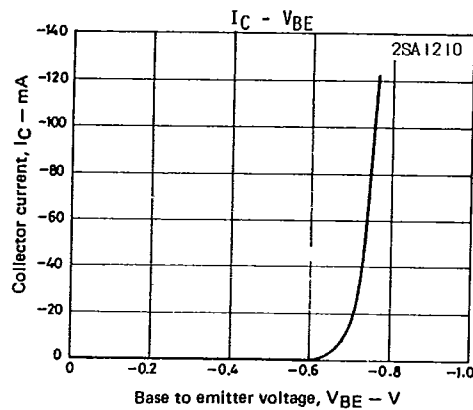
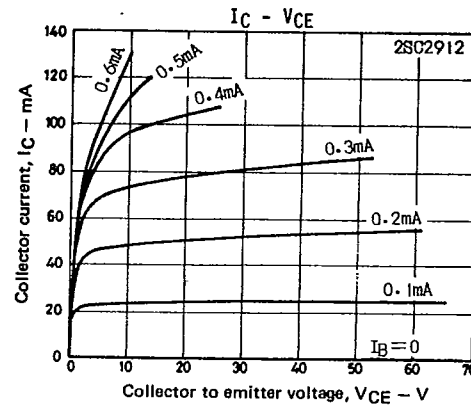
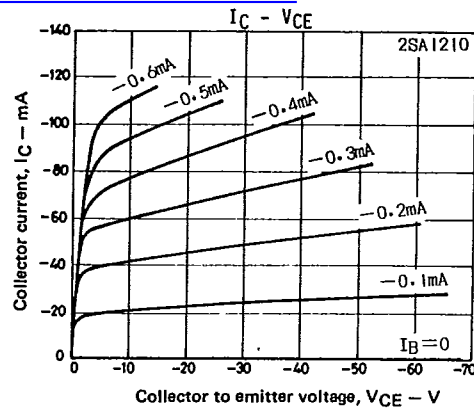
Case Outline 2009A  
(unit: mm)



3187AT/3135KI/0193KI, TS # No. 780-1/3

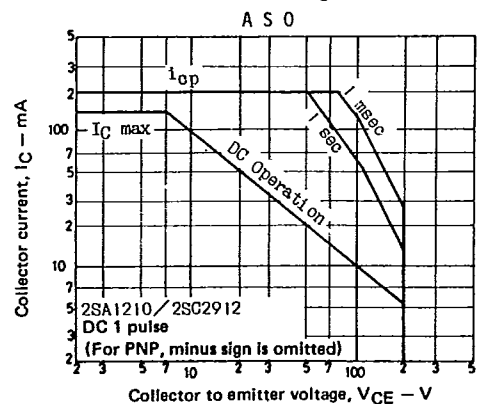
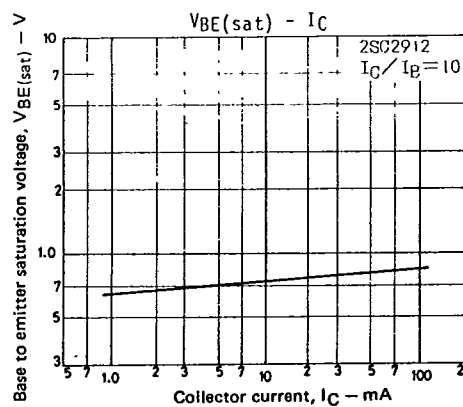
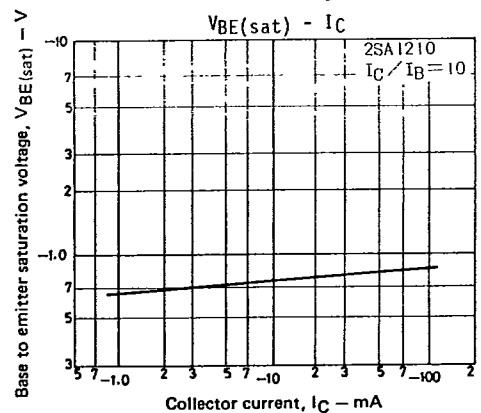
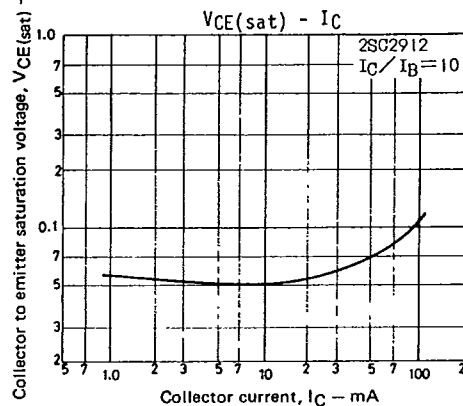
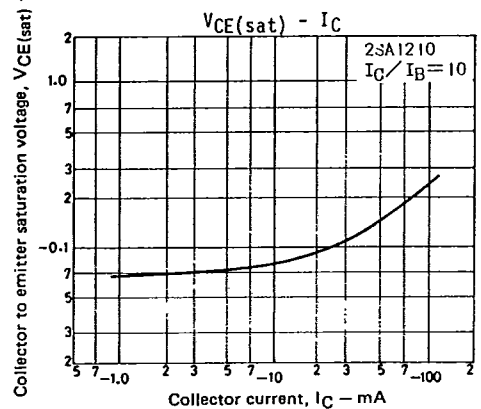
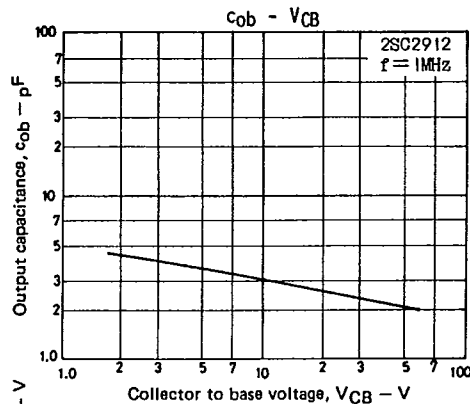
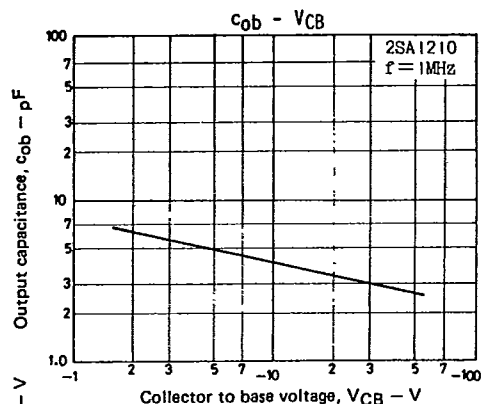
2SC2912/2SA1210

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ZSC2912/2SA1210

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T-91-20

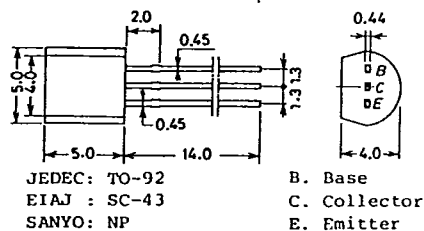
# CASE OUTLINES AND ATTACHMENTS

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- All of Sanyo 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.

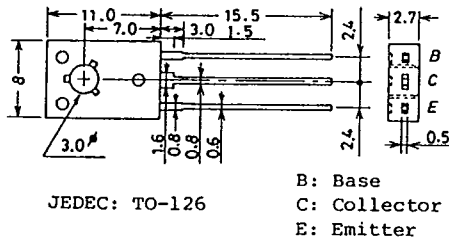
Case Outline—[2003A]

unit:mm



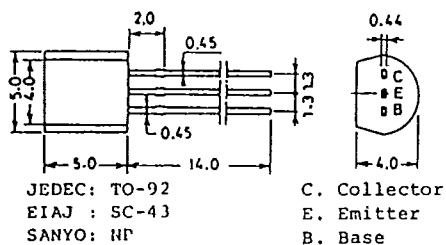
Case Outline—[2009A]

unit:mm



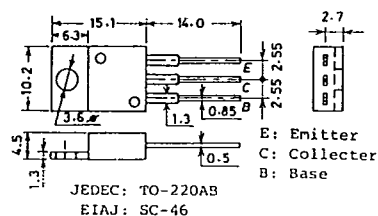
Case Outline—[2004A]

unit:mm



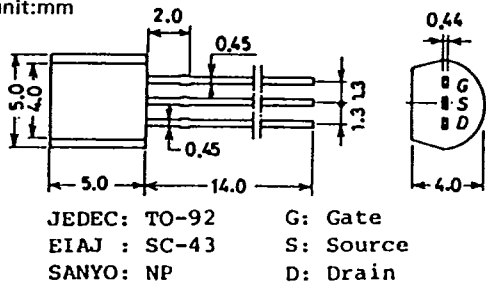
Case Outline—[2010A]

unit:mm



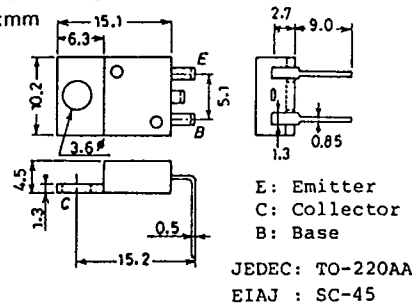
Case Outline—[2005A]

unit:mm



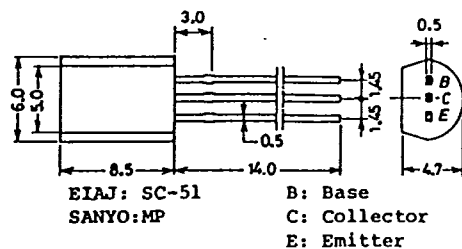
Case Outline—[2012]

unit:mm



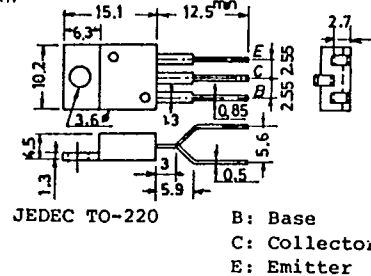
Case Outline—[2006A]

unit:mm



Case Outline—[2013]

unit:mm



C:Collector  
E:Emitter  
B:Base

G: Gate  
S: Source  
D: Drain

B: Base  
C: Collector  
E: Emitter  
SANYO: CP

G: Gate  
D: Drain  
S: Source

D: Drain  
G: Gate  
S: Source

D: Drain  
G: Gate  
S: Source

SANYO: DP6A

SANYO: TO3PB

D: Drain  
G: Gate  
S: Source

SANYO: D26B

S: Source  
G: Gate  
D: Drain  
SANYO: CP

**SANYO:DP6A**

E: Emitter  
C: Collector  
B: Base

SANYO: DP6B

E: Emitter  
C: Collector  
B: Base  
SANYO: PNP

G1: Catw1  
\$ : Source  
D-r Drain  
G2: Gate2  
SANYO: Osaka

E: Emitter  
C: Collector  
B: Base

SANYO:TO3PML

B: Base  
C: Collector  
E: Emitter  
SANYO: SPA

G: Gate  
S: Source  
D: Drain  
SANYO: SPA

D: Drain  
G: Gate  
S: Source  
SANYO: SPA

E: Emitter  
C: Collector  
B: Base

SANYO: TO22

D: Drain  
G: Gate  
S: Source  
SANYO: SP'

SANYO: TO126ML

SANYO: TO126LP

2.3 ~~-----~~ 2.3 SANYO:TP

```

1: Source
2: Drain
3: Gate2
4: Gate1

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SANYO : TO- 3PBL

**SANYO:TO-220MF**

SANYO : CP

SANYO: SPA

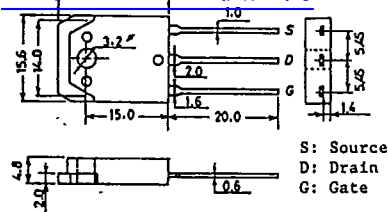
JEDEC: TO-220AB  
EIAJ: SC-46

1: Drain  
2: Source  
3: Gate 1  
4: Gate 2

SANYO: CP

Case Outline—[2056] unit:mm

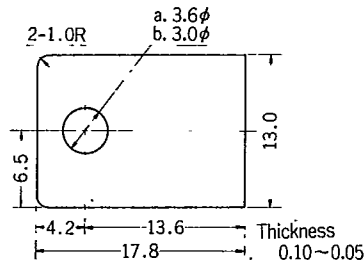
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SANYO: TO3PB

Case Outline—[0008] unit:mm

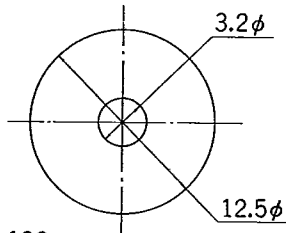
unit:mm

a. IS-313B  
b. IS-313D

SANYO

Case Outline—[0004] unit:mm

unit:mm

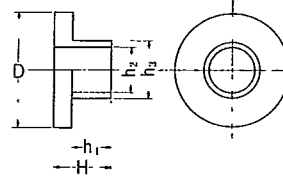


SANYO IS-126

Thickness : 0.075

Case Outline—[0009] unit:mm

unit:mm

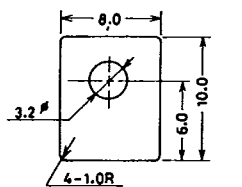


SANYO Bush

| Bush | D     | H   | h <sub>1</sub> | h <sub>2</sub> | h <sub>3</sub> |
|------|-------|-----|----------------|----------------|----------------|
| A    | 8.0φ  | 4.0 | 2.8            | 3.1φ           | 3.89φ          |
| B    | 8.0φ  | 3.0 | 1.8            | 3.1φ           | 3.89φ          |
| C    | 8.0φ  | 5.7 | 4.5            | 3.1φ           | 3.89φ          |
| D    | 8.0φ  | 2.7 | 1.5            | 3.1φ           | 3.89φ          |
| E    | 8.0φ  | 3.4 | 2.2            | 3.1φ           | 3.89φ          |
| F    | 8.0φ  | 4.0 | 2.8            | 3.0φ           | 3.59φ          |
| K    | 16.0φ | 3.4 | 1.4            | 3.1φ           | 6.0φ           |
| L    | 6.0φ  | 3.1 | 1.5            | 2.6φ           | 3.5φ           |
| M    | 6.0φ  | 3.1 | 1.5            | 3.0φ           | 3.59φ          |
| P    | 6.0φ  | 2.3 | 1.1            | 3.0φ           | 3.59φ          |

Case Outline—[0005] unit:mm

unit:mm

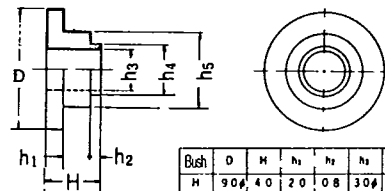


Thickness : 0.075

SANYO IS-126A Mica

Case Outline—[0010] unit:mm

unit:mm

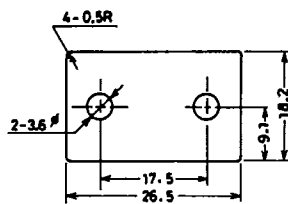


SANYO Bush

| Bush | D     | H   | h <sub>1</sub> | h <sub>2</sub> | h <sub>3</sub> | h <sub>4</sub> | h <sub>5</sub> |
|------|-------|-----|----------------|----------------|----------------|----------------|----------------|
| H    | 9.0φ  | 4.0 | 2.0            | 0.8            | 3.0φ           | 3.59φ          | 5.6φ           |
| T    | 9.0φ  | 5.8 | 2.0            | 2.6            | 3.0φ           | 3.59φ          | 5.6φ           |
| UB   | 16.0φ | 6.8 | 1.5            | 3.3            | 3.0φ           | 3.89φ          | 8.0φ           |

Case Outline—[0006] unit:mm

unit:mm

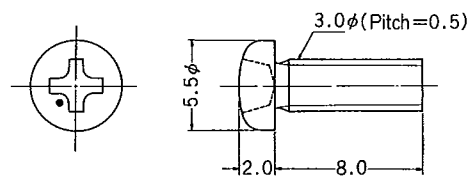


Thickness : 0.05~0.1

SANYO IS-20MA Mica

Case Outline—[0011] unit:mm

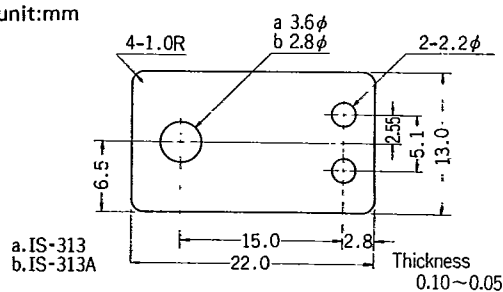
unit:mm



JIS No. B1111 M3×0.5

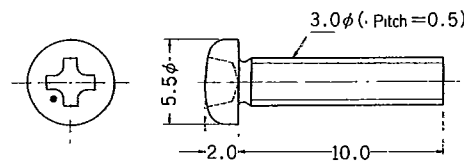
Case Outline—[0007] unit:mm

unit:mm

Thickness  
0.10~0.05

Case Outline—[0012] unit:mm

unit:mm

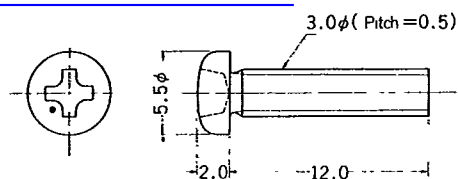


JIS No. B1111 M3×0.5



## Case Outline—[0013]

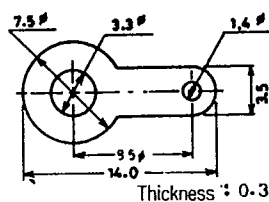
unit:mm

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JIS No. B1111 M3×0.5

## Case Outline—[0018]

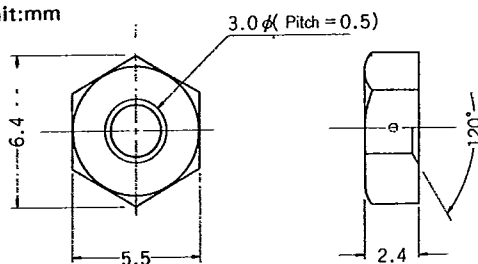
unit:mm



SANYO Lug 1.4

## Case Outline—[0014]

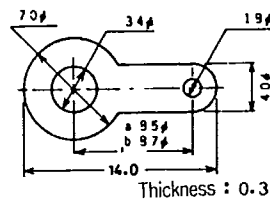
unit:mm



JIS No. B1181 M3×0.5

## Case Outline—[0019]

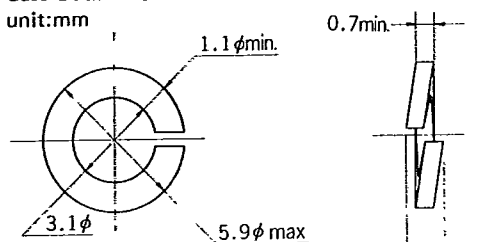
unit:mm



SANYO Lug 1.8φ

## Case Outline—[0015]

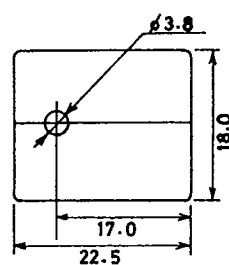
unit:mm



JIS No. B 1251 Spring washer (M3)

## Case Outline—[0020]

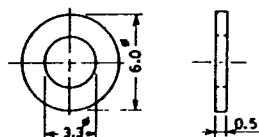
unit:mm



SANYO IS-3MP Mica

## Case Outline—[0016]

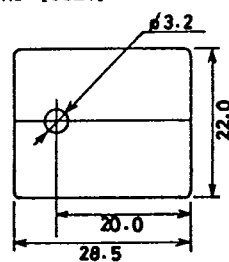
unit:mm



JIS No. B1252 Flat washer

## Case Outline—[0021]

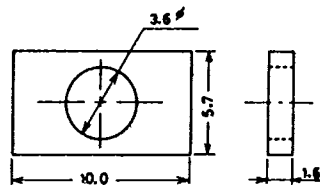
unit:mm



SANYO IS-MPC Mica

## Case Outline—[0017]

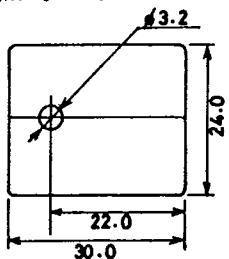
unit:mm



JIS No. G3141 Rectangular washer

## Case Outline—[0022]

unit:mm



SANYO IS-3PBL Mica