

# 2SD386,A, 387,A



2010A



2012

NPN Triple Diffused Planar  
Silicon Transistors

T-33-09

## TV Vertical Output Applications

©424D

### Absolute Maximum Ratings at Ta=25°C

|                                                | 2SD386 | 2SD386A | 2SD387 | 2SD387A | unit |
|------------------------------------------------|--------|---------|--------|---------|------|
| Collector to Base Voltage, V <sub>CB0</sub>    | 200    | 200     | 200    | 200     | V    |
| Collector to Emitter Voltage, V <sub>CEO</sub> | 120    | 150     | 120    | 150     | V    |
| Emitter to Base Voltage, V <sub>EB0</sub>      | 6      | 6       | 6      | 6       | V    |
| Collector Current, I <sub>C</sub>              | 3      | 2       | 3      | 2       | A    |
| Peak Collector Current, i <sub>cp</sub>        | 10     | 10      | 10     | 10      | A    |
| Collector Dissipation, P <sub>C</sub>          | 25     | 25      | 25     | 25      | W    |
|                                                | 1.75   | 1.75    | 1.75   | 1.75    | W    |
| Junction Temperature, T <sub>j</sub>           | 150    | 150     | 150    | 150     | °C   |
| Storage Temperature, T <sub>stg</sub>          | →      | →       | →      | →       | °C   |

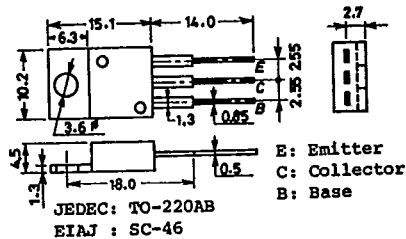
### Electrical Characteristics at Ta=25°C

|                                              |                                           | min | typ | max  | unit |
|----------------------------------------------|-------------------------------------------|-----|-----|------|------|
| Collector Cutoff Current, I <sub>CBO</sub>   | V <sub>CB</sub> =180V, I <sub>E</sub> =0  |     |     | 1.0  | mA   |
| Emitter Cutoff Current, I <sub>EBO</sub>     | V <sub>EB</sub> =5V, I <sub>C</sub> =0    |     |     | 5    | mA   |
| DC Current Gain, h <sub>FE</sub>             | V <sub>CE</sub> =2V, I <sub>C</sub> =0.5A | 40* |     | 320* |      |
| Gain Bandwidth Product, f <sub>T</sub>       | V <sub>CE</sub> =5V, I <sub>C</sub> =0.5A |     | 8   |      | MHz  |
| C-E Saturation Voltage, V <sub>CE(sat)</sub> | I <sub>C</sub> =1A, I <sub>B</sub> =0.1A  |     |     | 1.0  | V    |
|                                              |                                           |     |     | 1.5  | V    |
| B-E Saturation Voltage, V <sub>BE(sat)</sub> | I <sub>C</sub> =1A, I <sub>B</sub> =0.1A  |     |     | 1.8  | V    |

\* The 2SD386, 386A, 387, 387A are classified as follows by h<sub>FE</sub> at 0.5A.

|    |   |    |    |   |     |     |   |     |     |   |     |
|----|---|----|----|---|-----|-----|---|-----|-----|---|-----|
| 40 | C | 80 | 60 | D | 120 | 100 | E | 200 | 160 | F | 320 |
|----|---|----|----|---|-----|-----|---|-----|-----|---|-----|

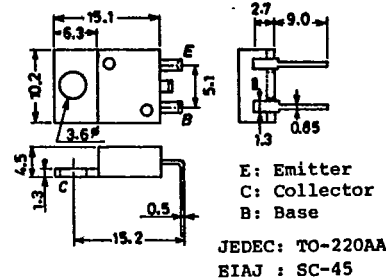
Case Outline 2010A  
(unit:mm)



2SD386, 386A

E: Emitter  
C: Collector  
B: Base

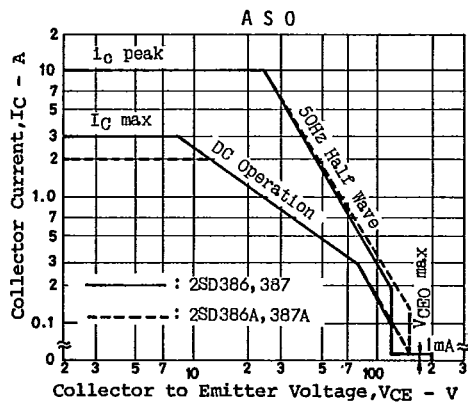
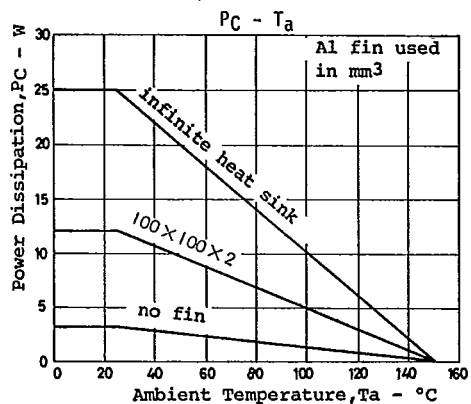
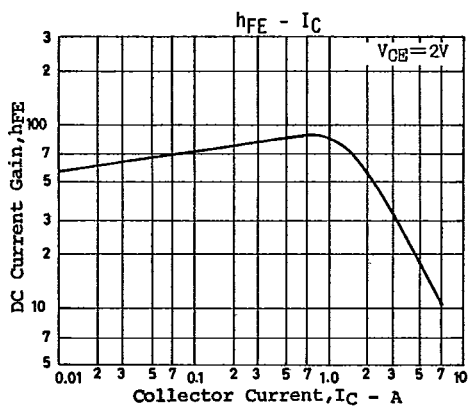
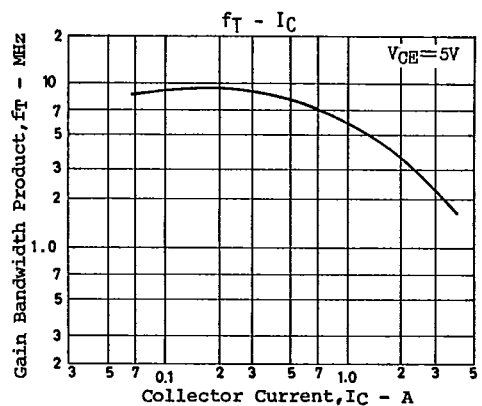
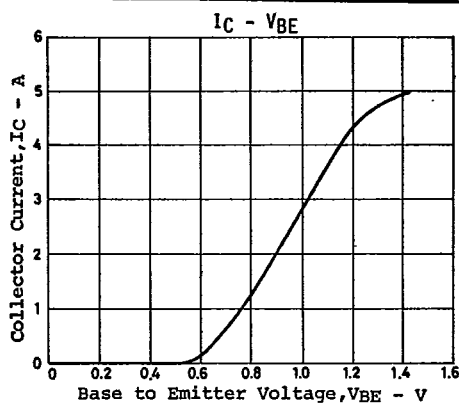
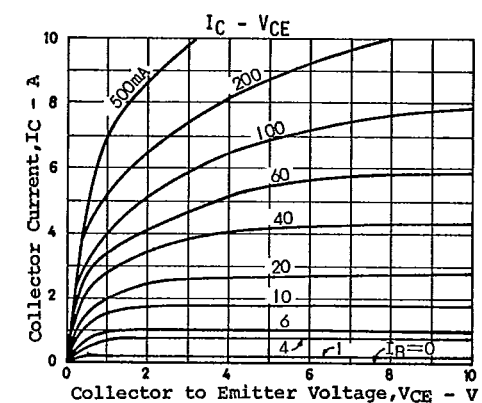
Case Outline 2012  
(unit:mm)



2SD387, 387A

E: Emitter  
C: Collector  
B: Base

The 2SD387, 2SD387A are scheduled to be discontinued soon. Use the 2SD386, 2SD386A, instead of the 2SD387, 2SD387A, in new applications where you are planning to use the 2SD387, 2SD387A.



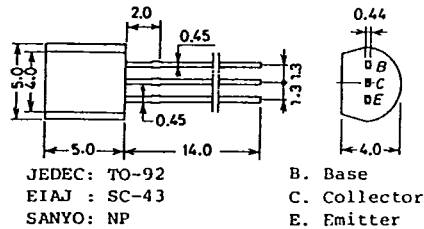
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## CASE OUTLINES AND ATTACHMENTS

- 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.

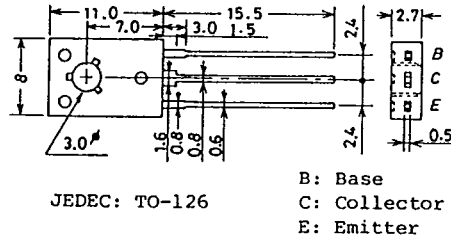
Case Outline—[2003A]

unit:mm



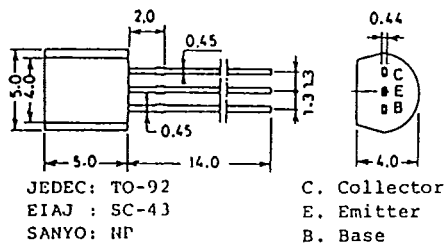
Case Outline—[2009A]

unit:mm



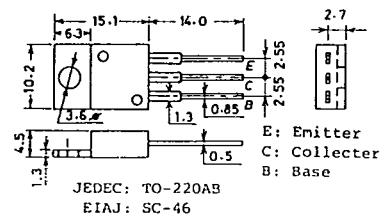
Case Outline—[2004A]

unit:mm



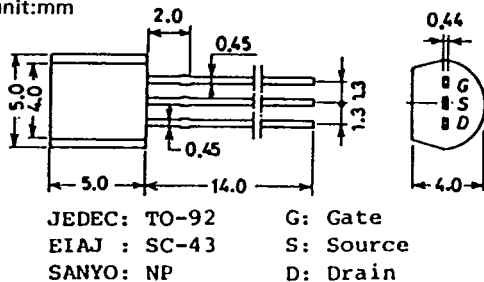
Case Outline—[2010A]

unit:mm



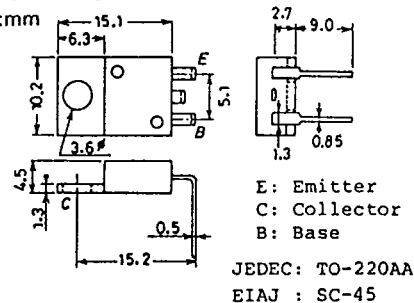
Case Outline—[2005A]

unit:mm



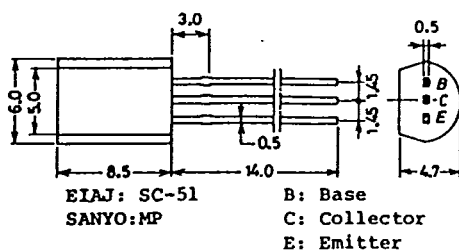
Case Outline—[2012]

unit:mm



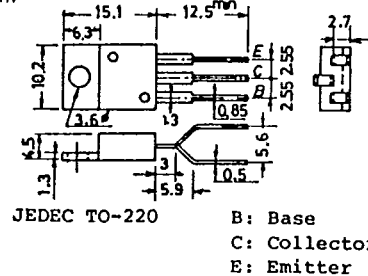
Case Outline—[2006A]

unit:mm

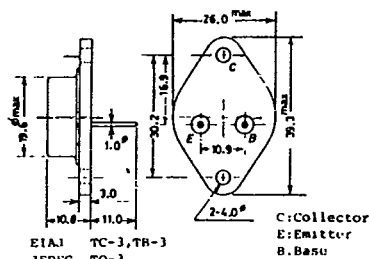


Case Outline—[2013]

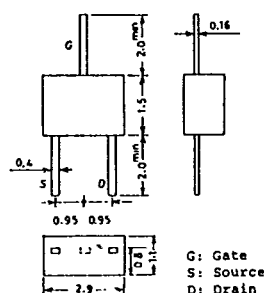
unit:mm



unit:mm

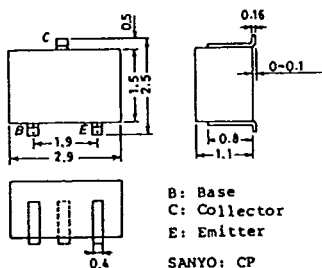


unit:mm

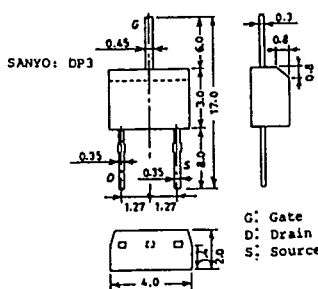


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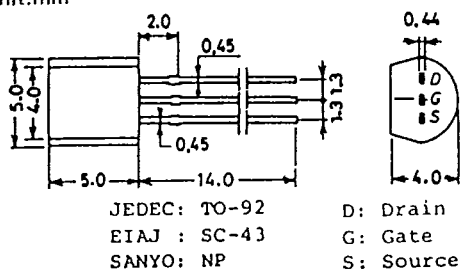
unit:mm



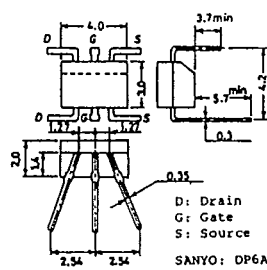
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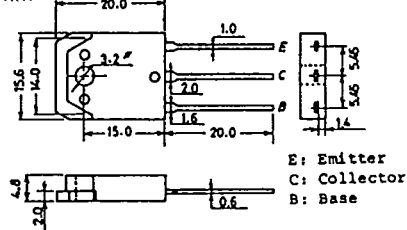
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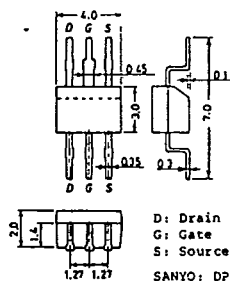
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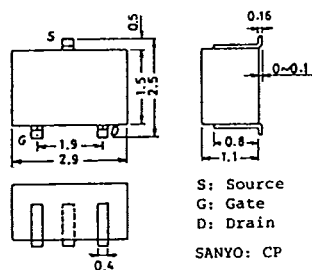
unit:mm



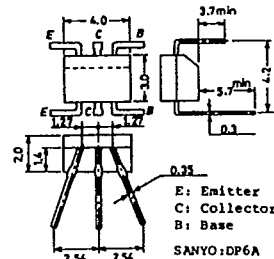
unit:mm



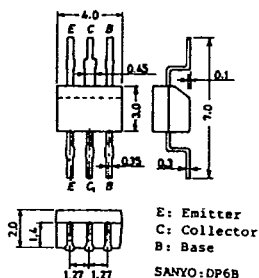
unit:mm



unit:mm

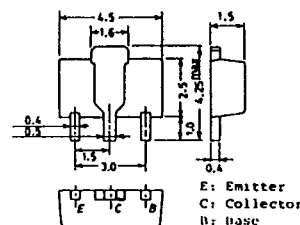


unit:mm



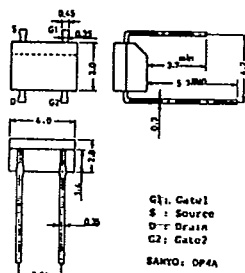
E: Emitter  
C: Collector  
B: Base  
SANYO: DP6B

unit:mm



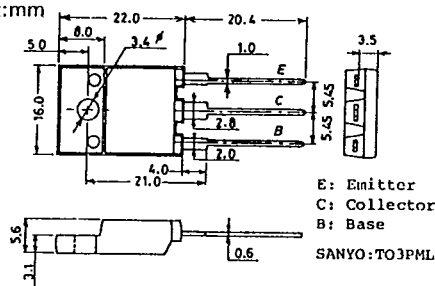
E: Emitter  
C: Collector  
B: Base

unit:mm



G1: Catw1  
\$ : Source  
D-r Drain  
G2: Gate2  
SANYO: OP4A

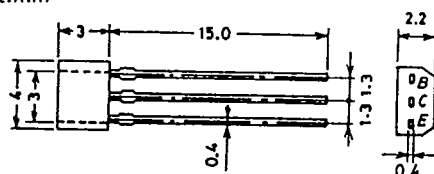
unit:mm



E: Emitter  
C: Collector  
B: Base

SANYO:TO3PML

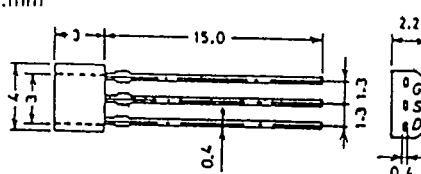
unit:mm



B: Base  
C: Collector  
E: Emitter

SANYO: SPA

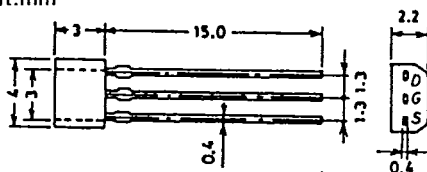
unit:mm



G: Gate  
S: Source  
D: Drain

SANYO: SPA

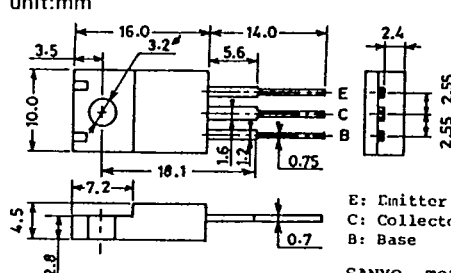
**unit:mm**



D: Drain  
G: Gate  
S: Source

**SANYO: SPA**

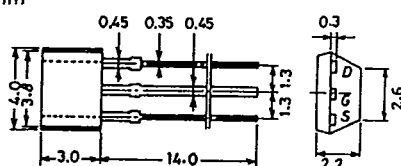
unit:mm



E: Emitter  
C: Collector  
B: Base

SANYO: TO220ML

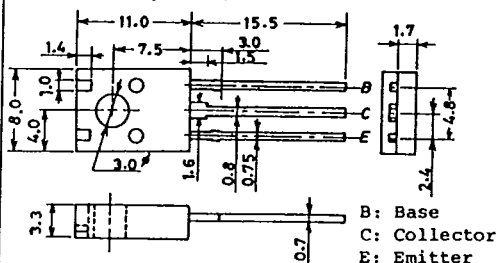
unit:mm



D: Drain  
G: Gate  
S: Source

SANYO: SP'

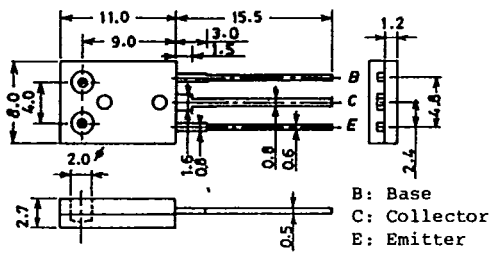
11.0 + 15.5 = 26.5



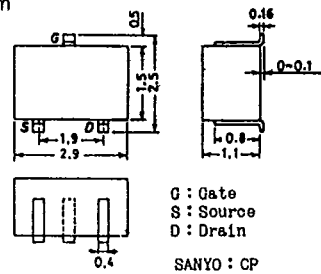
B: Base  
C: Collector  
E: Emitter

SANYO: TO126ML

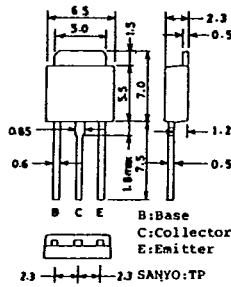
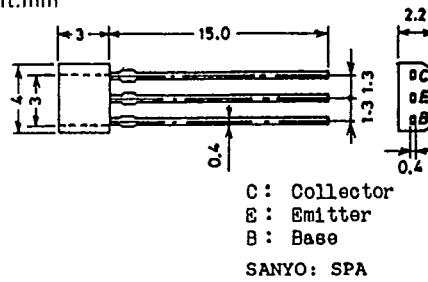
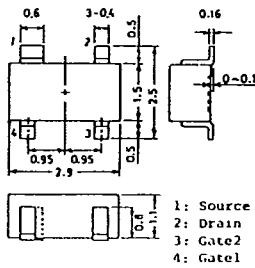
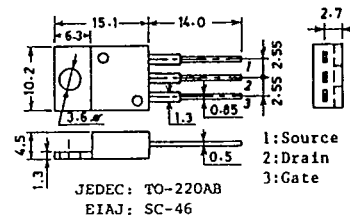
Case Outline—[2043A] unit:mm



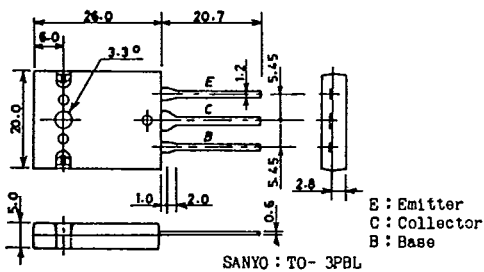
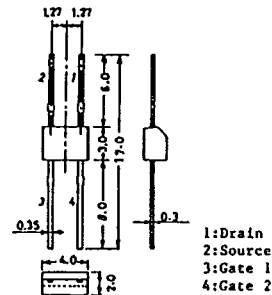
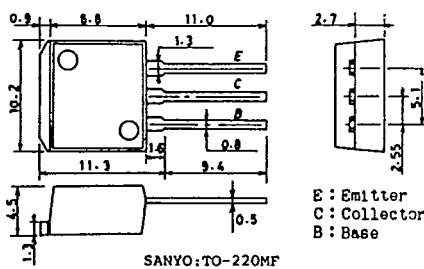
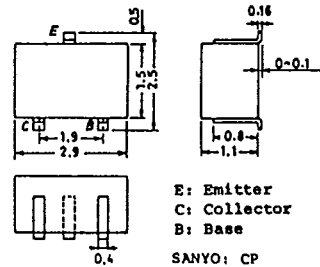
SANYO: TO126LP

Case Outline—[2050]  
unit:mm

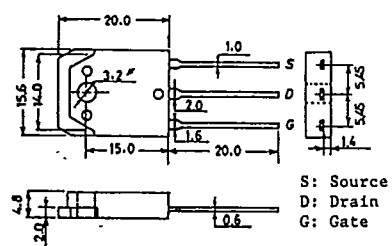
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Case Outline—[2045]  
unit:mmCase Outline—[2051]  
unit:mmCase Outline—[2046]  
unit:mmCase Outline—[2052A]  
unit:mm

Case Outline—[2048] unit:mm

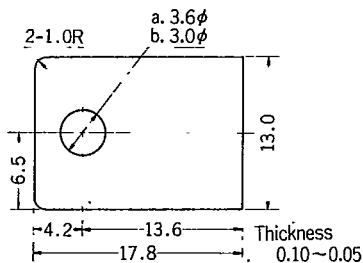
Case Outline—[2053]  
unit:mmCase Outline—[2049]  
unit:mmCase Outline—[2054]  
unit:mm

Case Outline—[2056] unit:mm



SANYO: TO3PB

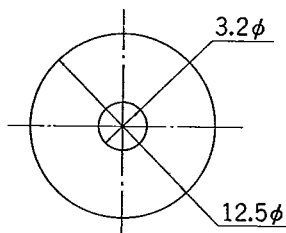
Case Outline—[0008] unit:mm

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

SANYO

Case Outline—[0004] unit:mm

unit:mm

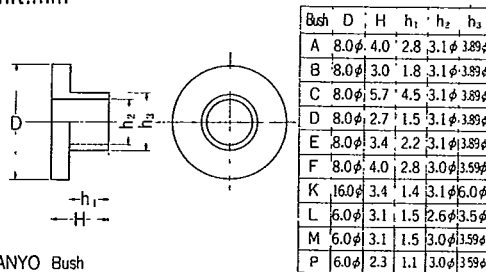


SANYO IS-126

Thickness : 0.075

Case Outline—[0009] unit:mm

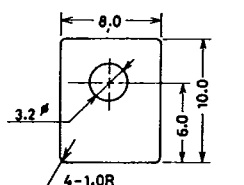
unit:mm



SANYO Bush

Case Outline—[0005] unit:mm

unit:mm

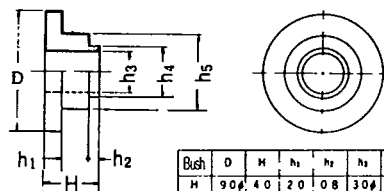


Thickness : 0.075

SANYO IS-126A Mica

Case Outline—[0010] unit:mm

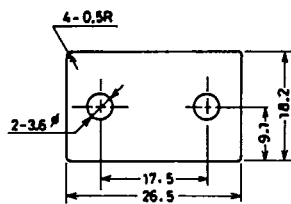
unit:mm



SANYO Bush

Case Outline—[0006] unit:mm

unit:mm

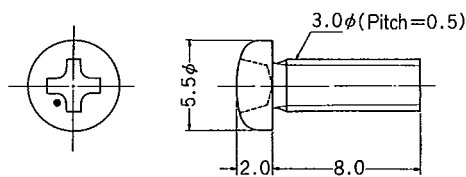


Thickness : 0.05~0.1

SANYO IS-20MA Mica

Case Outline—[0011] unit:mm

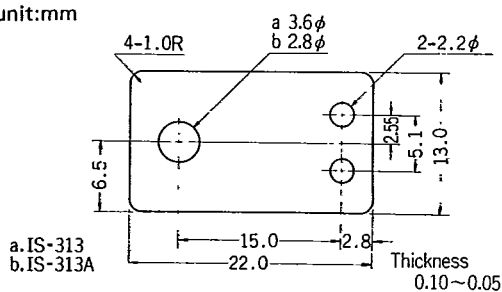
unit:mm



JIS No. B1111 M3×0.5

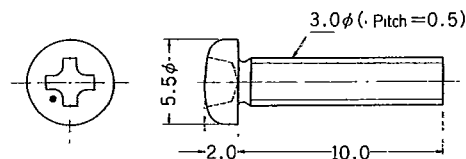
Case Outline—[0007] unit:mm

unit:mm



Case Outline—[0012] unit:mm

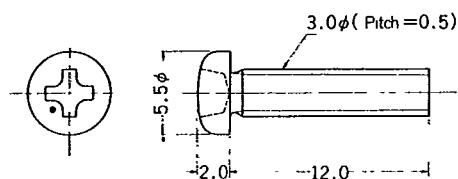
unit:mm



JIS No. B1111 M3×0.5

Case Outline—[0013]

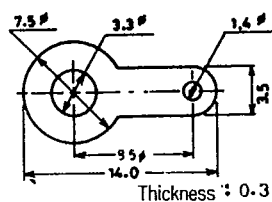
unit:mm



JIS No. B1111 M3×0.5

Case Outline—[0018]

unit:mm

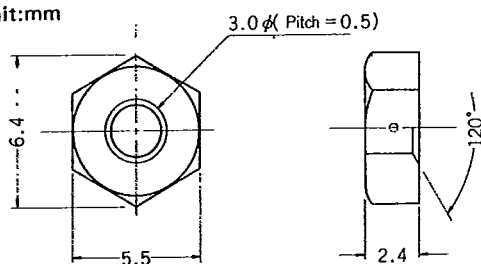


SANYO Lug 1.4

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Case Outline—[0014]

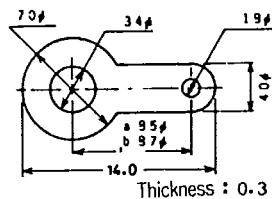
unit:mm



JIS No. B1181 M3×0.5

Case Outline—[0019]

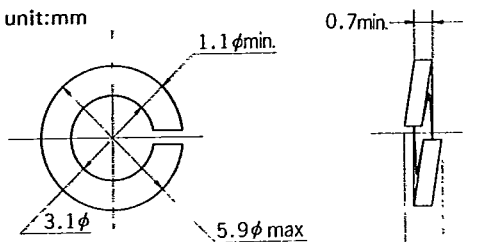
unit:mm



SANYO Lug 1.8φ

Case Outline—[0015]

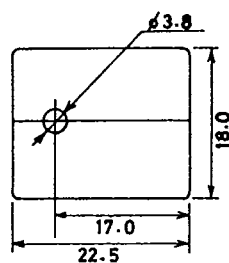
unit:mm



JIS No. B 1251 Spring washer (M3)

Case Outline—[0020]

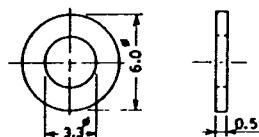
unit:mm



SANYO IS-3MP Mica

Case Outline—[0016]

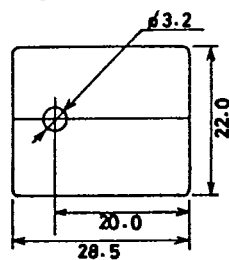
unit:mm



JIS No. B1252 Flat washer

Case Outline—[0021]

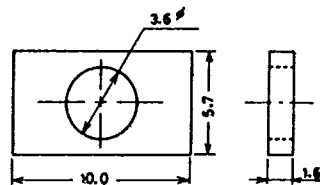
unit:mm



SANYO IS-MPC Mica

Case Outline—[0017]

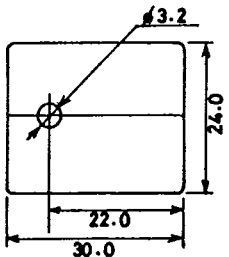
unit:mm



JIS No. G3141 Rectangular washer

Case Outline—[0022]

unit:mm



SANYO IS-3PBL Mica