

**2SK493**

2005A

N-Channel Junction  
Silicon Field-Effect Transistor

T-31-25

**Video Camera Applications**

©1406A

**Use**

- Video Camera

**Features**

- Large  $|y_{fs}|$
- Very low noise figure
- Small  $c_{iss}$

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

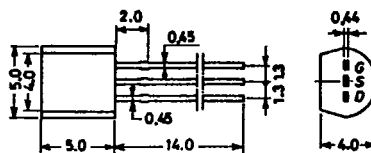
|                         |           |            |                  |
|-------------------------|-----------|------------|------------------|
| Drain to source voltage | $V_{DS}$  | 15         | unit             |
| Gate to drain voltage   | $V_{GDS}$ | -15        | V                |
| Gate current            | $I_G$     | 10         | mA               |
| Drain current           | $I_D$     | 50         | mA               |
| Power dissipation       | $P_D$     | 300        | mW               |
| Junction temperature    | $T_j$     | 125        | $^\circ\text{C}$ |
| Storage temperature     | $T_{stg}$ | -55 ~ +125 | $^\circ\text{C}$ |

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

|                                     |               |                                                                                | min  | typ  | max   | unit |
|-------------------------------------|---------------|--------------------------------------------------------------------------------|------|------|-------|------|
| Gate to drain breakdown voltage     | $V_{(BR)GDS}$ | $I_G = -10\mu\text{A}, V_{DS} = 0\text{V}$                                     | -15  |      |       | V    |
| Common source gate cutoff current   | $I_{GSS}$     | $V_{GS} = -10\text{V}, V_{DS} = 0\text{V}$                                     |      |      | -1.0  | nA   |
| Gate to source cutoff voltage       | $V_{GS(off)}$ | $V_{DS} = 5\text{V}, I_D = 100\mu\text{A}$                                     |      | -0.8 | -2.2  | V    |
| Drain current (gate-source shorted) | $I_{DSS}$     | $V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$                                       | 5.0* |      | 38.0* | mA   |
| Forward transfer admittance         | $ y_{fs} $    | $V_{DS} = 5\text{V}, V_{GS} = 0\text{V}, f = 1\text{kHz}$                      | 15   | 27   |       | mS   |
| Input capacitance                   | $c_{iss}$     | $V_{DS} = 5\text{V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$                      |      | 7.0  |       | pF   |
| Feedback capacitance                | $c_{rss}$     | $V_{DS} = 5\text{V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$                      |      | 2.0  |       | pF   |
| Noise figure                        | NF            | $V_{DS} = 5\text{V}, R_g = 1\text{k}\Omega, I_D = 1\text{mA}, f = 1\text{kHz}$ |      | 1.5  |       | dB   |

\*The 2SK493 is classified by  $I_{DSS}$  as follows (unit: mA):

|     |   |      |      |   |      |      |   |      |
|-----|---|------|------|---|------|------|---|------|
| 5.0 | F | 12.0 | 10.0 | G | 24.0 | 16.0 | H | 38.0 |
|-----|---|------|------|---|------|------|---|------|

Case Outline 2005A  
(unit: mm)

JEDEC: TO-92

EIAJ: SC-43

SANYO: NP

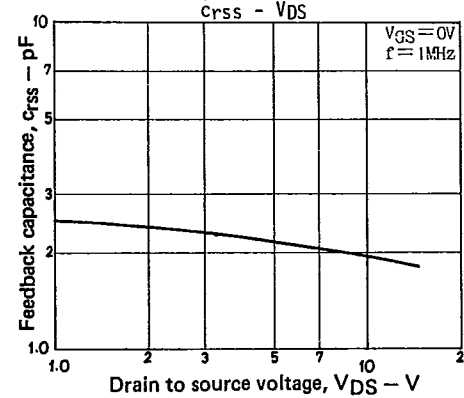
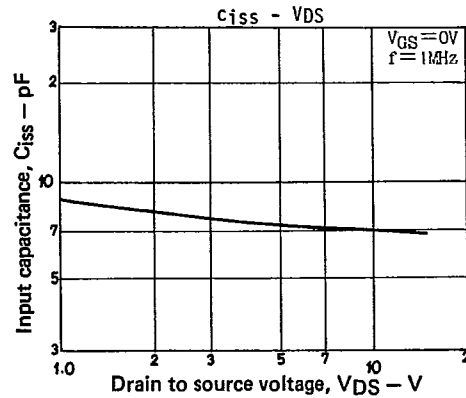
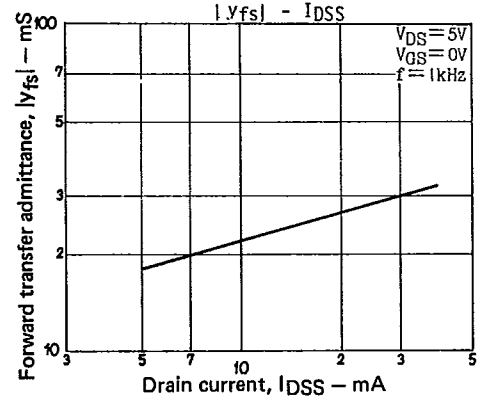
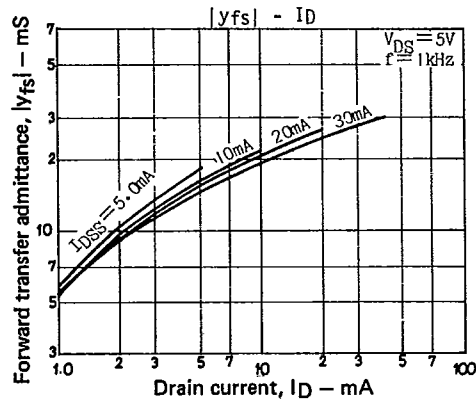
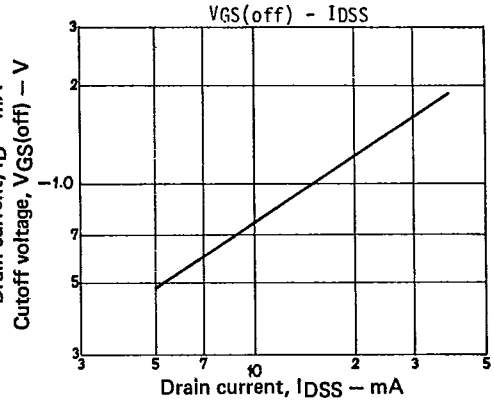
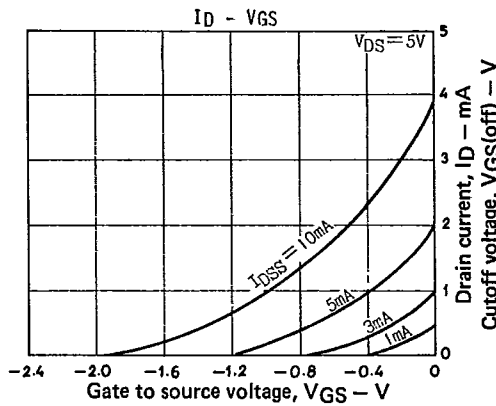
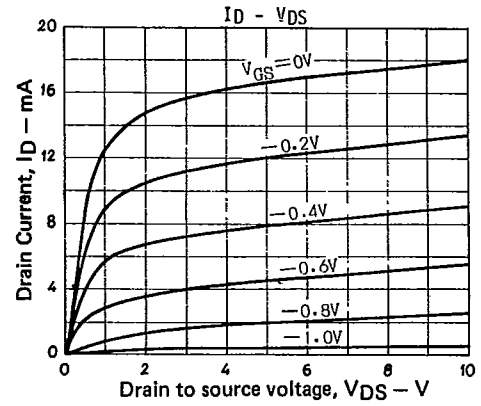
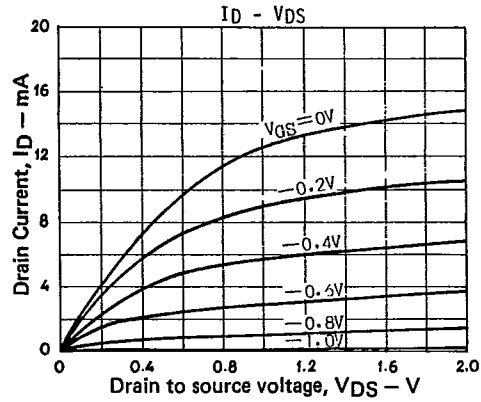
G: Gate

S: Source

D: Drain

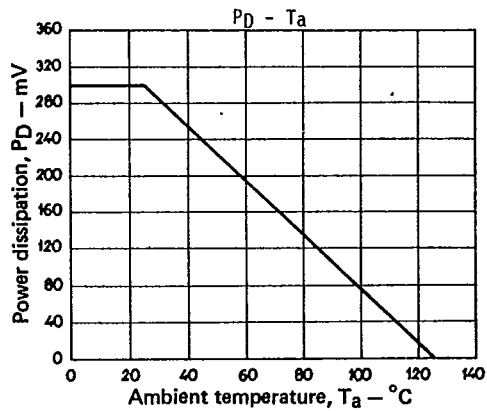
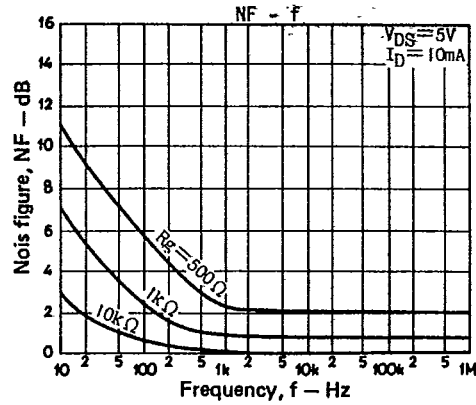
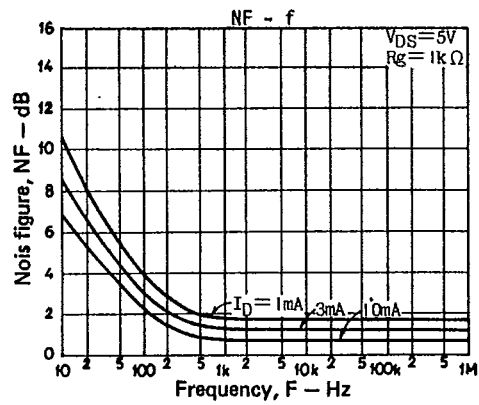
2SK493

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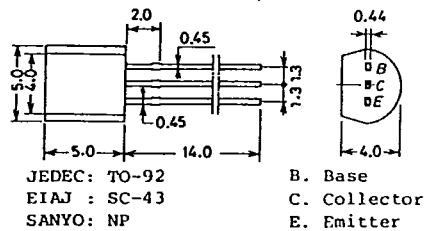
T-91-20

## 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.

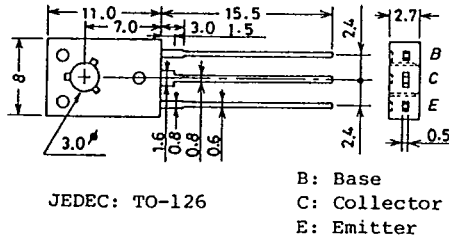
Case Outline—[2003A]

unit:mm



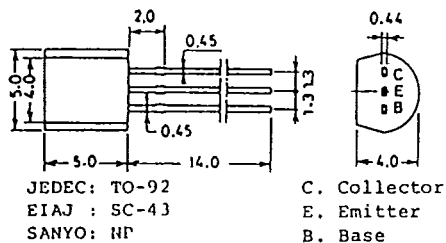
Case Outline—[2009A]

unit:mm



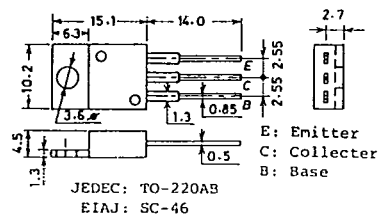
Case Outline—[2004A]

unit:mm



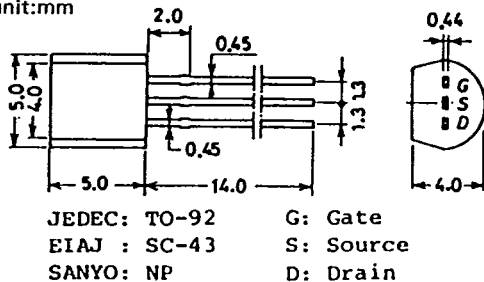
Case Outline—[2010A]

unit:mm



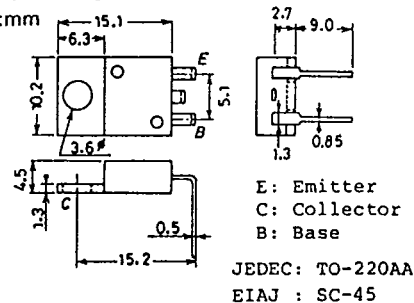
Case Outline—[2005A]

unit:mm



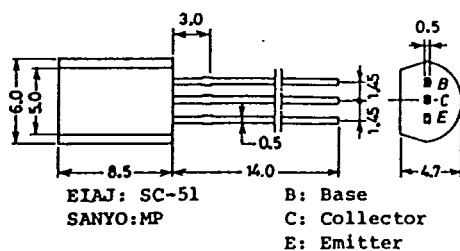
Case Outline—[2012]

unit:mm



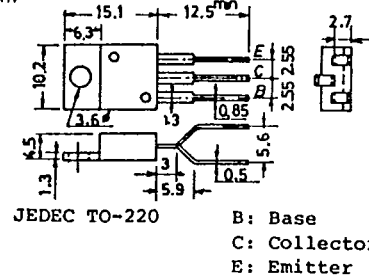
Case Outline—[2006A]

unit:mm

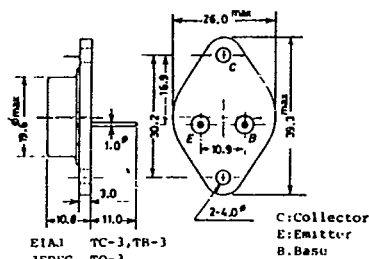


Case Outline—[2013]

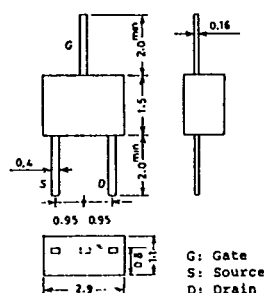
unit:mm



unit:mm

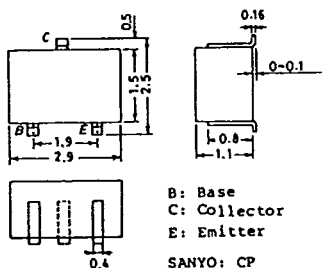


unit:mm

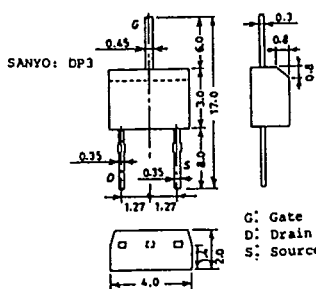


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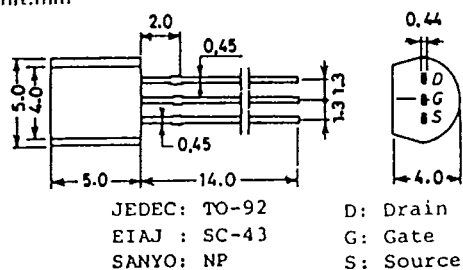
unit:mm



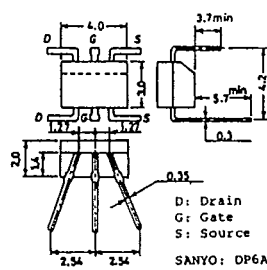
unit:mm



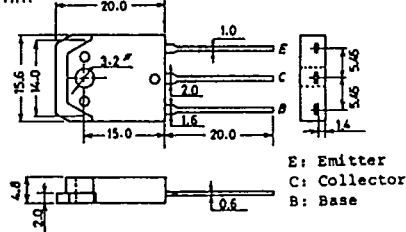
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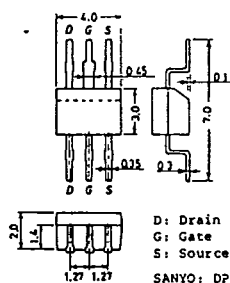
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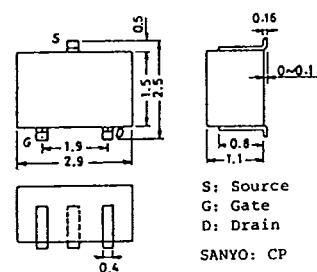
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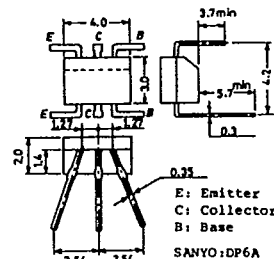
unit:mm



unit:mm



unit:mm



E: Emitter  
C: Collector  
B: Base

SANYO:DP6B

E: Emitter  
C: Collector  
B: Base

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

E: Emitter  
C: Collector  
B: Base

SANYO:TO3PML

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

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

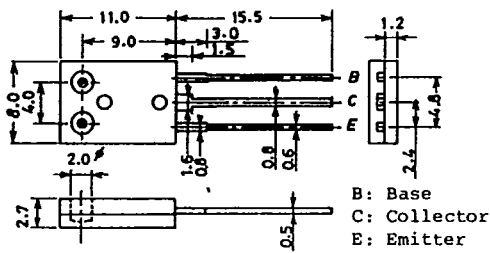
D: Drain  
G: Gate  
S: Source  
SANYO: SPA

SANYO: TO220ML

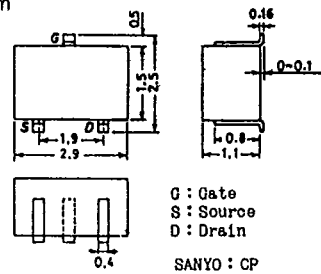
D: Drain  
G: Gate  
S: Source  
SANYO: SP'

SANYO: TO126ML

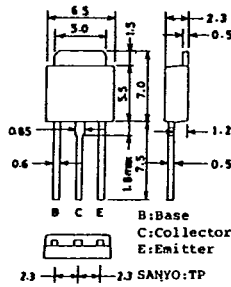
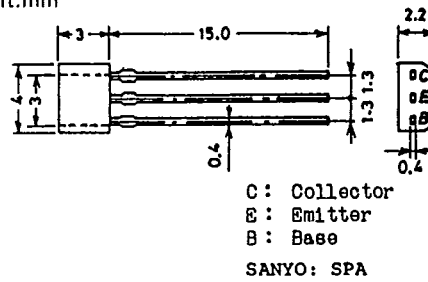
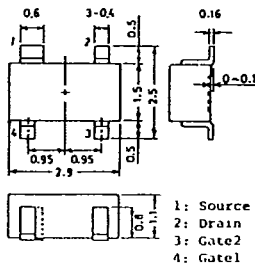
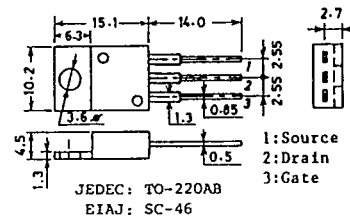
Case Outline—[2043A] unit:mm



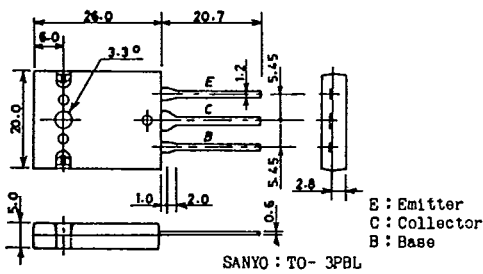
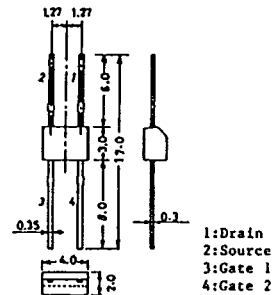
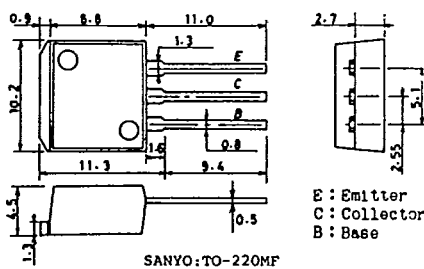
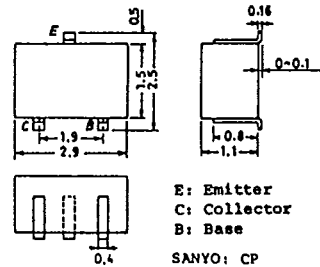
SANYO: TO126LP

Case Outline—[2050]  
unit:mm

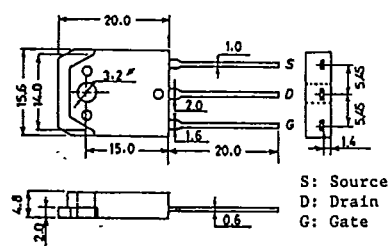
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Case Outline—[2045]  
unit:mmCase Outline—[2051]  
unit:mmCase Outline—[2046]  
unit:mmCase Outline—[2052A]  
unit:mm

Case Outline—[2048] unit:mm

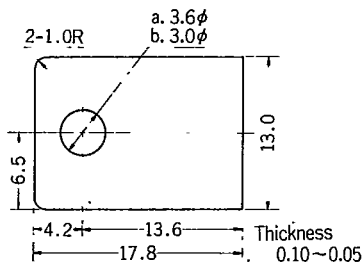
Case Outline—[2053]  
unit:mmCase Outline—[2049]  
unit:mmCase Outline—[2054]  
unit:mm

Case Outline—[2056] unit:mm



SANYO: TO3PB

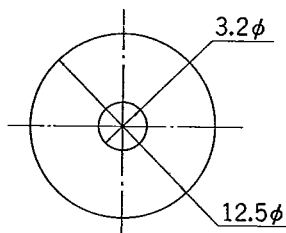
Case Outline—[0008] unit:mm

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

SANYO

Case Outline—[0004] unit:mm

unit:mm

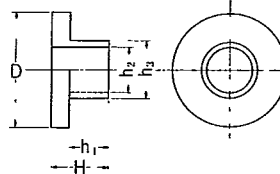


SANYO IS-126

Thickness : 0.075

Case Outline—[0009] unit:mm

unit:mm

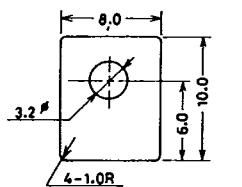


SANYO Bush

| 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

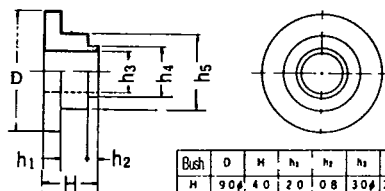


Thickness : 0.075

SANYO IS-126A Mica

Case Outline—[0010] unit:mm

unit:mm

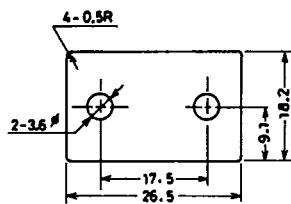


SANYO Bush

| 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

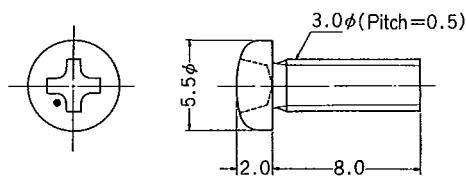


Thickness : 0.05~0.1

SANYO IS-20MA Mica

Case Outline—[0011] unit:mm

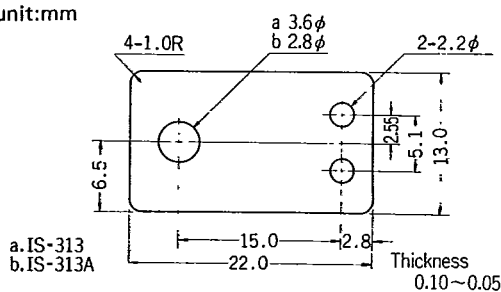
unit:mm



JIS No. B1111 M3×0.5

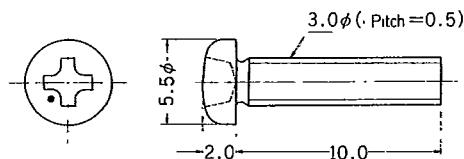
Case Outline—[0007] unit:mm

unit:mm



Case Outline—[0012] unit:mm

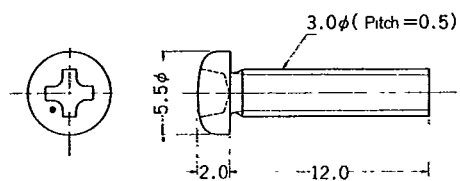
unit:mm



JIS No. B1111 M3×0.5

Case Outline—[0013]

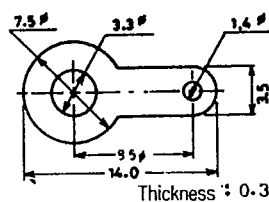
unit:mm



JIS No. B1111 M3×0.5

Case Outline—[0018]

unit:mm

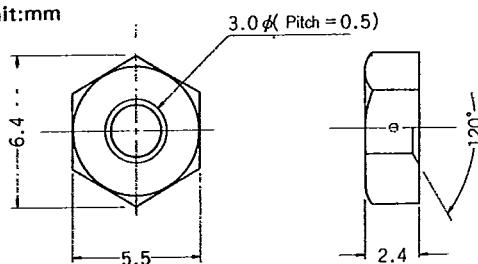


SANYO Lug 1.4

T=91-20

Case Outline—[0014]

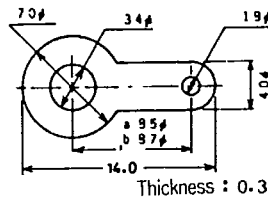
unit:mm



JIS No. B1181 M3×0.5

Case Outline—[0019]

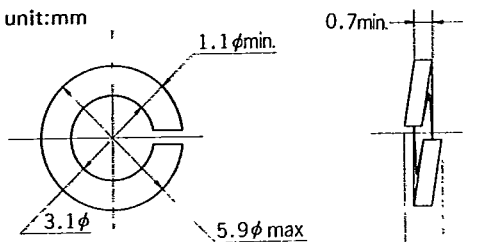
unit:mm



SANYO Lug 1.8φ

Case Outline—[0015]

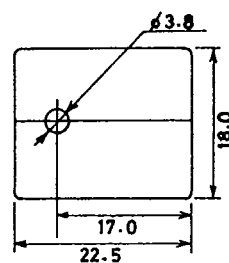
unit:mm



JIS No. B 1251 Spring washer (M3)

Case Outline—[0020]

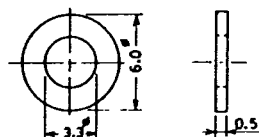
unit:mm



SANYO IS-3MP Mica

Case Outline—[0016]

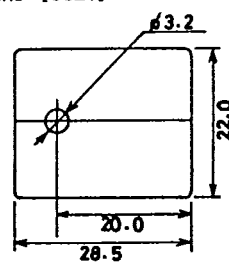
unit:mm



JIS No. B1252 Flat washer

Case Outline—[0021]

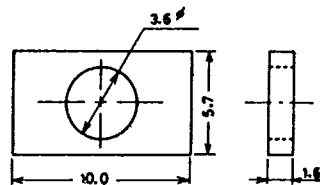
unit:mm



SANYO IS-MPC Mica

Case Outline—[0017]

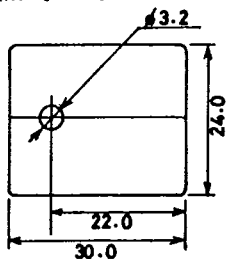
unit:mm



JIS No. G3141 Rectangular washer

Case Outline—[0022]

unit:mm



SANYO IS-3PBL Mica