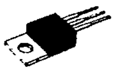
2SK778

T-39-07



2052A

N-Channel MOS
Silicon Field-Effect Transistor

Very High Speed Switching Applications

Ⓔ2562

Features

- Low ON resistance, very high-speed switching

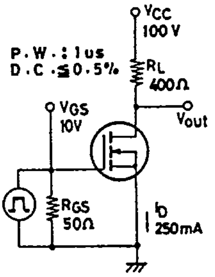
Absolute Maximum Ratings at Ta=25°C

				unit
Drain to Source Voltage	V_{DSS}		250	V
Gate to Source Voltage	V_{GSS}		±20	V
Drain Current (D.C)	I_D		500	mA
Drain Current (pulse)	I_D peak		1	A
Allowable Power Dissipation	P_D	Tc=25°C	10	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

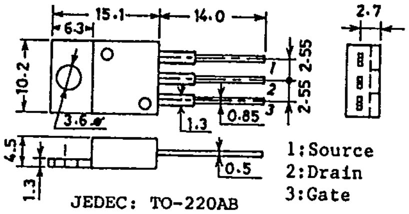
Electrical Characteristics at Ta=25°C

			min	typ	max	unit
D-S Breakdown Voltage	V_{DSS}	I_D=1mA,V_{GS}=0	250			V
D-S Cutoff Current	I_{DSS}	V_{DS}=250V,V_{GS}=0			100	uA
G-S Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0			±100	nA
G-S Cutoff Current	$I_{GS(off)}$	V_{DS}=10V,I_D=1mA	1.5		4.0	V
Forward Transfer Admittance	$\|Y_{fs}\|$	V_{DS}=10V,I_D=250mA	100	250		mS
Saturation Resistance	$R_{DS(on)}$	I_D=250mA,V_{GS}=10V		6	9	ohm
Input Capacitance	c_{iss}	V_{DS}=20V,f=1MHz		60		pF
Output Capacitance	c_{oss}	V_{DS}=20V,f=1MHz		20		pF
Reverse Transfer Capacitance	c_{rss}	V_{DS}=20V,f=1MHz		4		pF
Turn-on Delay Time	t_{on}	I_D=250mA,V_{GS}=10V		25		ns
Turn-off Delay Time	t_{off}	T_D=250mA,V_{GS}=10V		60		ns

Switching Time Test Circuit



Case Outline 2052A
(unit:mm)



1:Source
2:Drain
3:Gate

JEDEC: TO-220AB
EIAJ: SC-46

Note: Be carefull in handling the 2SK778 because it has no protect diode between gate and source.

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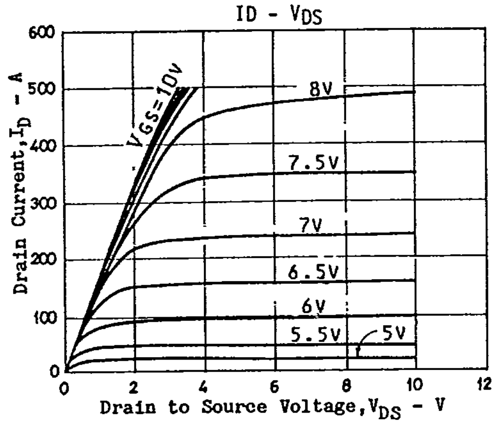
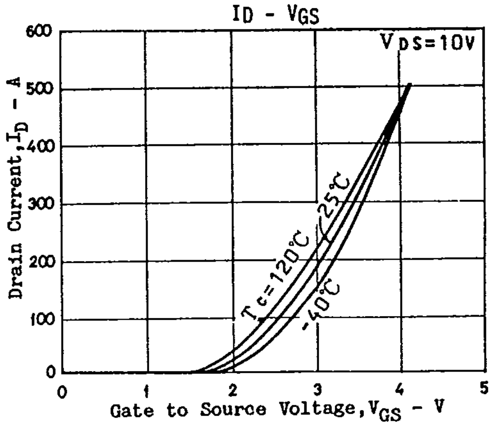
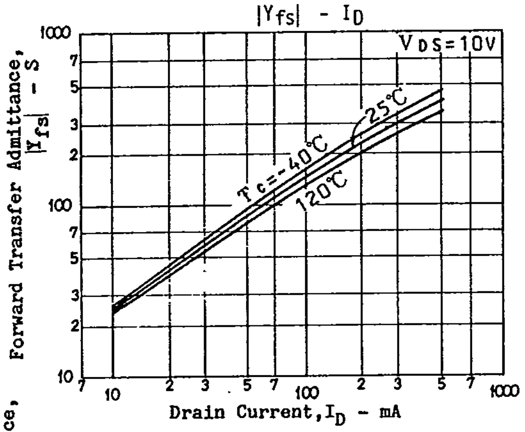
ID - VDS



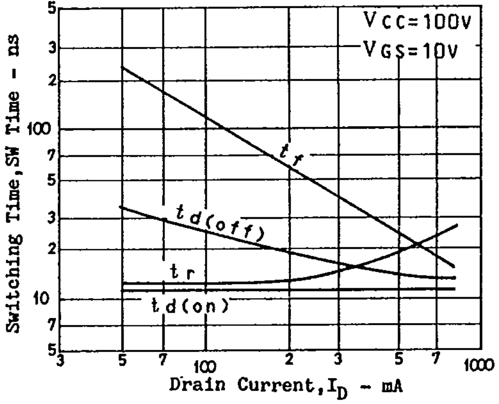
ID - VGS



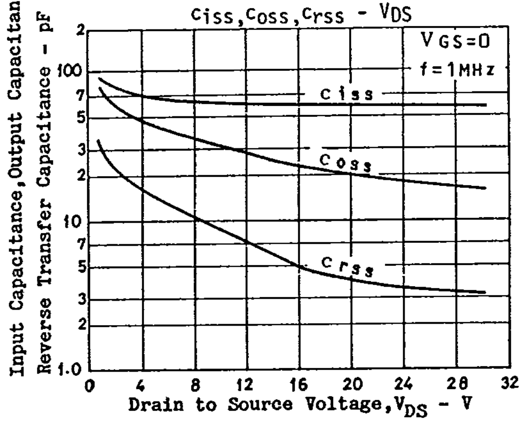
|Yfs| - ID



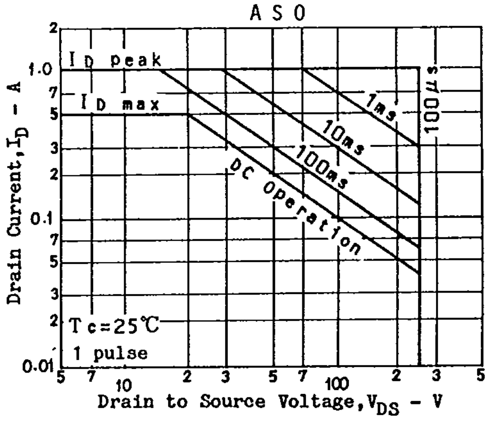
SW time - ID



Ciss,Coss,Crss - VDS



A S O

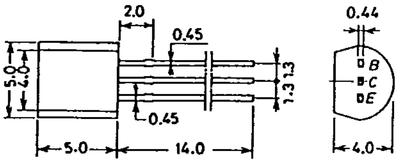


T-91-20

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.

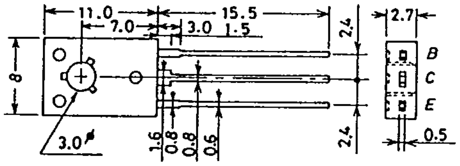
Case Outline—[2003A]
unit:mm



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

B. Base
C. Collector
E. Emitter

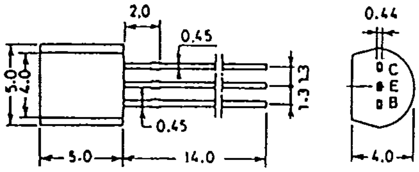
Case Outline—[2009A]
unit:mm



JEDEC: TO-126

B: Base
C: Collector
E: Emitter

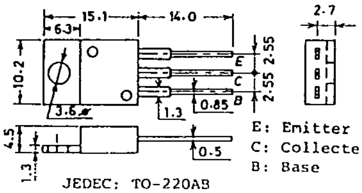
Case Outline—[2004A]
unit:mm



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

C. Collector
E. Emitter
B. Base

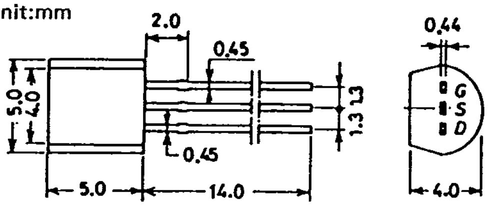
Case Outline—[2010A]
unit:mm



E: Emitter
C: Collecter
B: Base

JEDEC: TO-220AB
EIAJ: SC-46

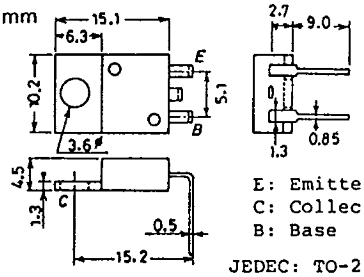
Case Outline—[2005A]
unit:mm



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

G: Gate
S: Source
D: Drain

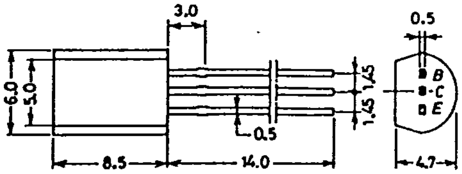
Case Outline—[2012]
unit:mm



E: Emitter
C: Collector
B: Base

JEDEC: TO-220AA
EIAJ : SC-45

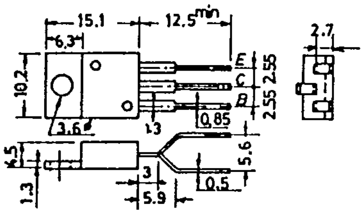
Case Outline—[2006A]
unit:mm



EIAJ: SC-51
SANYO: MP

B: Base
C: Collector
E: Emitter

Case Outline—[2013]
unit:mm



JEDEC TO-220

B: Base
C: Collector
E: Emitter

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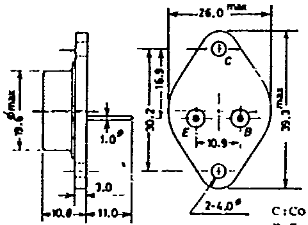
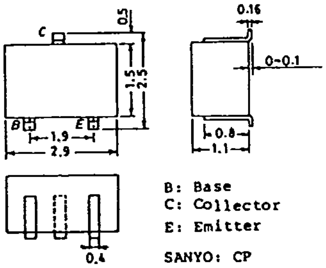
Case Outline—[2017]
unit:mm



C:Collector
E:Emitter
B.Base

EIAJ TC-3,TB-3
JEDEC. TO-3

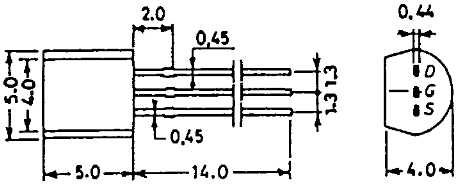
Case Outline—[2018A]
unit:mm



B: Base
C: Collector
E: Emitter

SANYO: CP

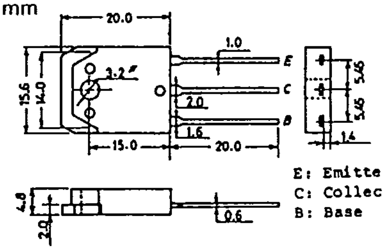
Case Outline—[2019A]
unit:mm



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

D: Drain
G: Gate
S: Source

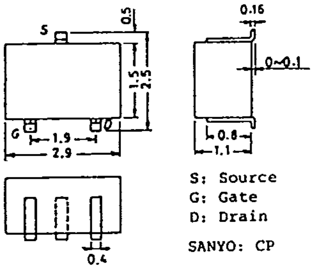
Case Outline—[2022]
unit:mm



E: Emitter
C: Collector
B: Base

SANYO: TO3PB

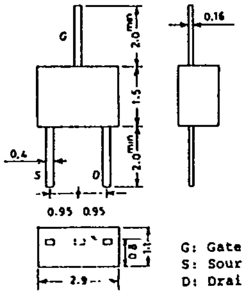
Case Outline—[2024A]
unit:mm



S: Source
G: Gate
D: Drain

SANYO: CP

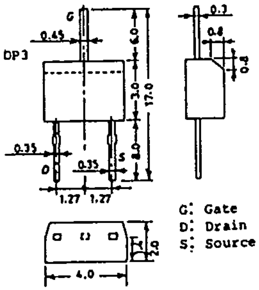
Case Outline—[2025]
unit:mm



G: Gate
S: Source
D: Drain

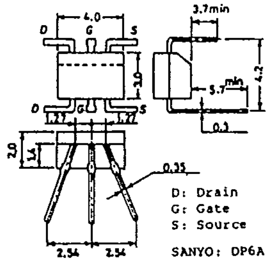
Case Outline—[2026]
unit:mm

SANYO: DP3



G: Gate
D: Drain
S: Source

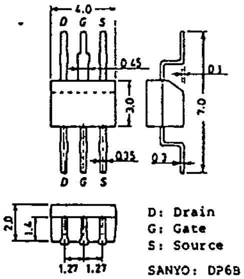
Case Outline—[2027A]
unit:mm



D: Drain
G: Gate
S: Source

SANYO: DP6A

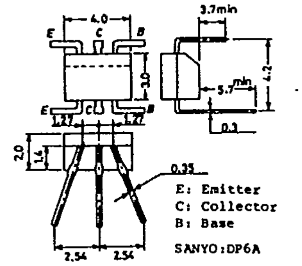
Case Outline—[2028A]
unit:mm



D: Drain
G: Gate
S: Source

SANYO: DP6B

Case Outline—[2029A]
unit:mm



E: Emitter
C: Collector
B: Base

SANYO:DP6A

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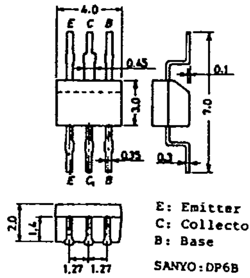
Case Outline–[2030A]

unit:mm

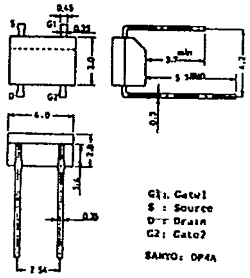


E: Emitter
C: Collector
B: Base

SANYO: DP6B

Case Outline–[2031A]

unit:mm

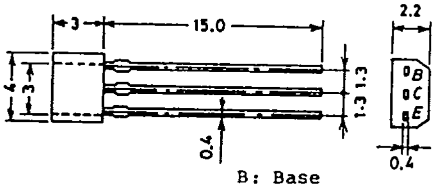


G1: Gate1
S : Source
D : Drain
G2: Gate2

SANYO: DP4A

Case Outline–[2033]

unit:mm

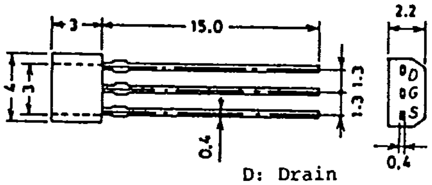


B: Base
C: Collector
E: Emitter

SANYO: SPA

Case Outline–[2034]

unit:mm

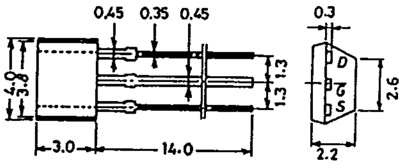


D: Drain
G: Gate
S: Source

SANYO: SPA

Case Outline–[2037]

unit:mm

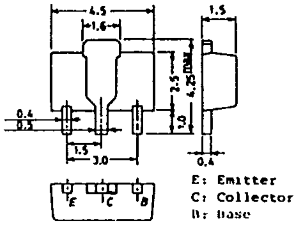


D: Drain
G: Gate
S: Source

SANYO: SP'

Case Outline–[2038]

unit:mm

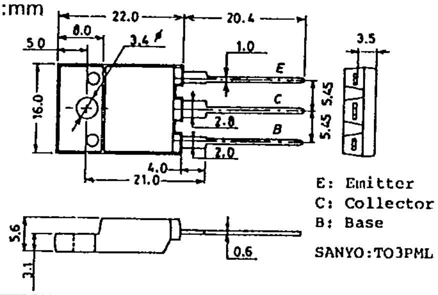


E: Emitter
C: Collector
B: Base

SANYO: PCP

Case Outline–[2039]

unit:mm

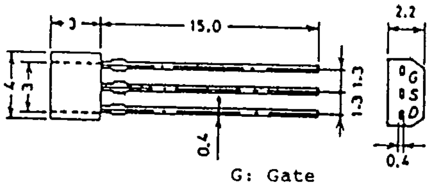


E: Emitter
C: Collector
B: Base

SANYO: TO3PML

Case Outline–[2040]

unit:mm

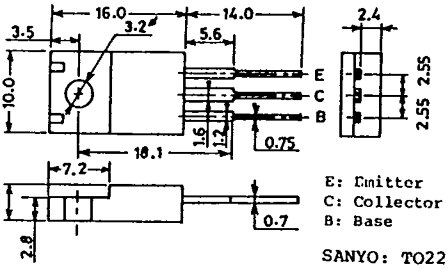


G: Gate
S: Source
D: Drain

SANYO: SPA

Case Outline–[2041]

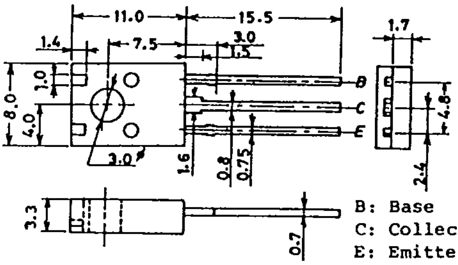
unit:mm



E: Emitter
C: Collector
B: Base

SANYO: TO220ML

Case Outline–[2042A] unit:mm



B: Base
C: Collector
E: Emitter

SANYO: TO126ML

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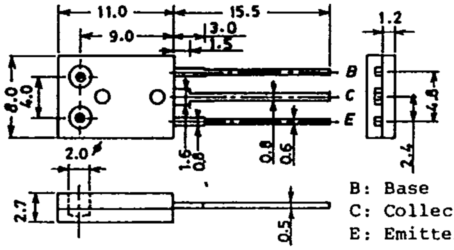
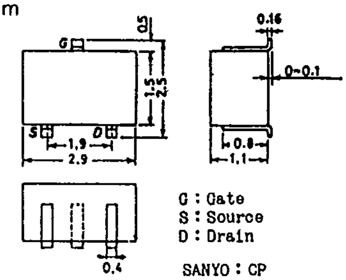
Case Outline–[2043A] unit:mm



B: Base
C: Collector
E: Emitter

SANYO: TO126LP

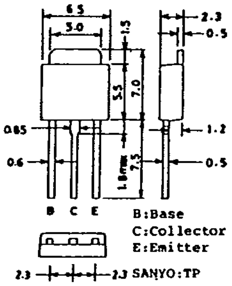
Case Outline–[2050]
unit:mm



G : Gate
S : Source
D : Drain

SANYO : CP

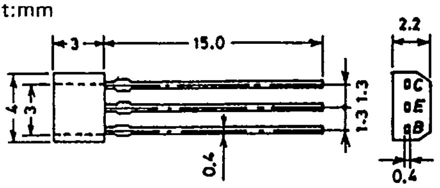
Case Outline–[2045]
unit:mm



B:Base
C:Collector
E:Emitter

SANYO:TP

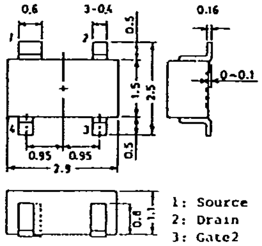
Case Outline–[2051]
unit:mm



C: Collector
E: Emitter
B: Base

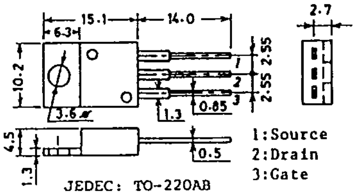
SANYO: SPA

Case Outline–[2046]
unit:mm



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

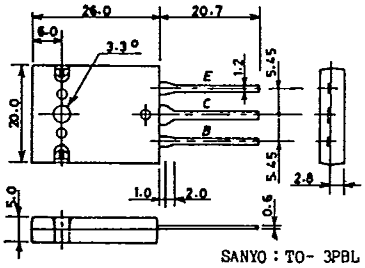
Case Outline–[2052A]
unit:mm



1:Source
2:Drain
3:Gate

JEDEC: TO-220AB
EIAJ: SC-46

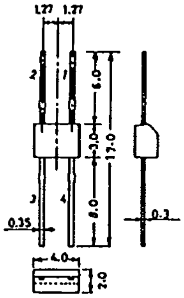
Case Outline–[2048] unit:mm



E : Emitter
C : Collector
B : Base

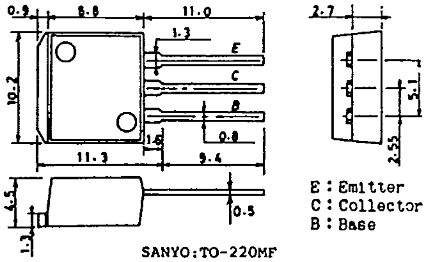
SANYO : TO- 3PBL

Case Outline–[2053]
unit:mm



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

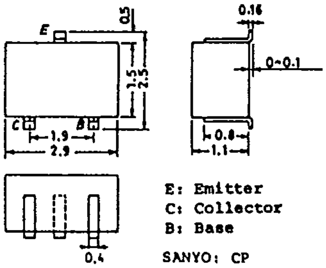
Case Outline–[2049]
unit:mm



E : Emitter
C : Collector
B : Base

SANYO:TO-220MF

Case Outline–[2054]
unit:mm



E: Emitter
C: Collector
B: Base

SANYO: CP

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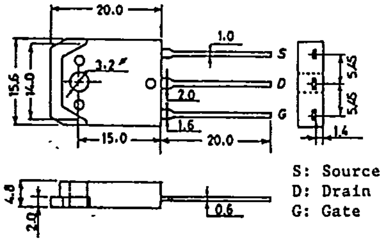
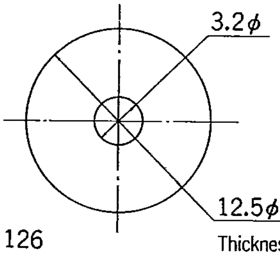
Case Outline—[2056] unit:mm



S: Source
D: Drain
G: Gate

SANYO: TO3PB

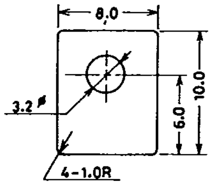
Case Outline—[0004]
unit:mm



SANYO IS-126

Thickness : 0.075

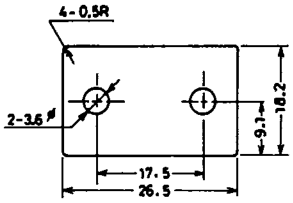
Case Outline—[0005]
unit:mm



Thickness : 0.075

SANYO IS-126A Mica

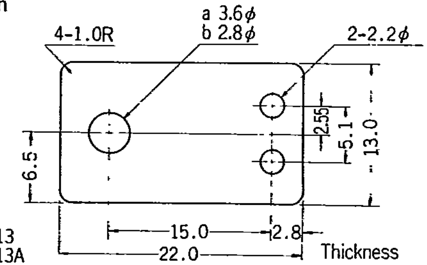
Case Outline—[0006]
unit:mm



Thickness : 0.05~0.1

SANYO IS-20MA Mica

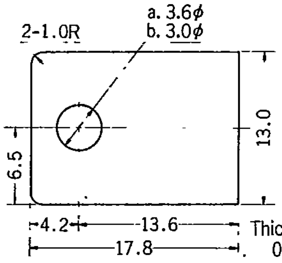
Case Outline—[0007]
unit:mm



a. IS-313
b. IS-313A

Thickness
0.10~0.05

Case Outline—[0008]
unit:mm

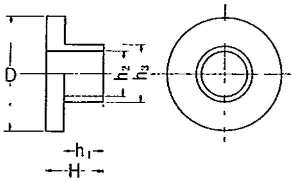


a. IS-313B
b. IS-313D

Thickness
0.10~0.05

SANYO

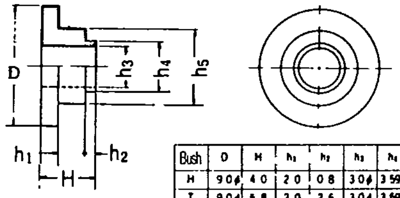
Case Outline—[0009]
unit:mm



Bush	D	H	h_1	h_2	h_3
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

SANYO Bush

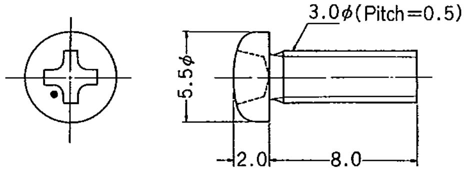
Case Outline—[0010]
unit:mm



Bush	D	H	h_1	h_2	h_3	h_4	h_5
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

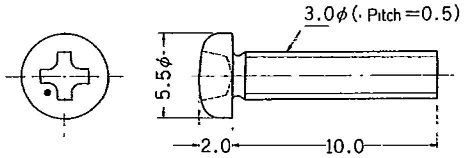
SANYO Bush

Case Outline—[0011]
unit:mm



JIS No.B1111 M3×0.5

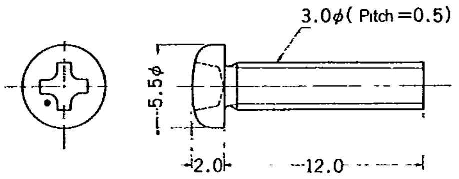
Case Outline—[0012]
unit:mm



JIS No.B1111 M3×0.5

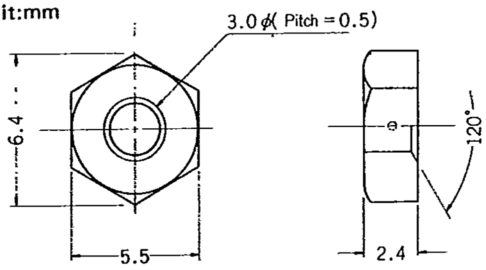
T-91-20

Case Outline—[0013]
unit:mm



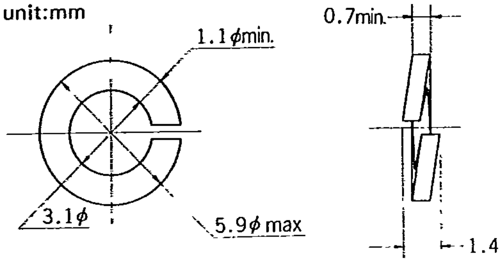
JIS No.B1111 M3×0.5

Case Outline—[0014]
unit:mm



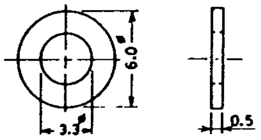
JIS No. B1181 M3×0.5

Case Outline—[0015]
unit:mm



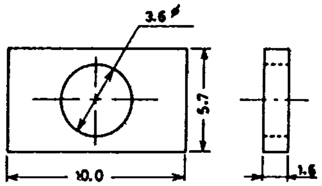
JIS No. B 1251 Spring washer (M3)

Case Outline—[0016]
unit:mm



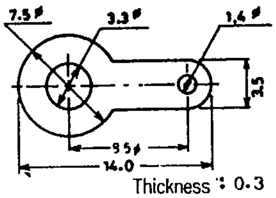
JIS No.B1252 Flat washer

Case Outline—[0017]
unit:mm



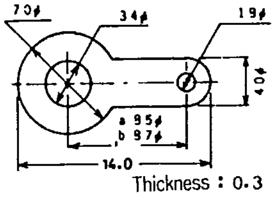
JIS No.G3141 Rectangular washer

Case Outline—[0018]
unit:mm



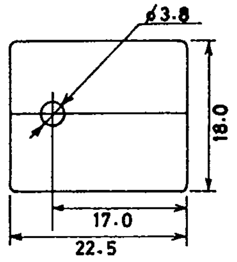
SANYO Lug 1.4

Case Outline—[0019]
unit:mm



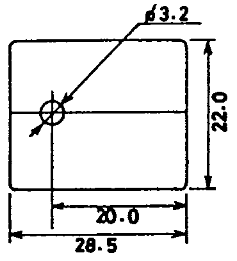
SANYO Lug 1.8ϕ

Case Outline—[0020]
unit:mm



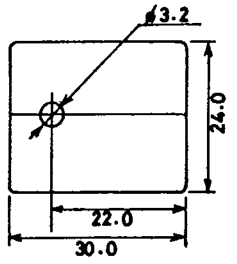
SANYO IS-3MP Mica

Case Outline—[0021]
unit:mm



SANYO IS-MPC Mica

Case Outline—[0022]
unit:mm



SANYO IS-3PBL Mica