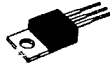


2SC3189

2010A

NPN Epitaxial Planar Silicon Transistor

T-33-11

©1313A

CRT Display Horizontal Deflection Output Applications

Features

- High switching speed.
- Especially suited for high-definition CRT displays.
- Wide ASO and highly resistant to breakdown.

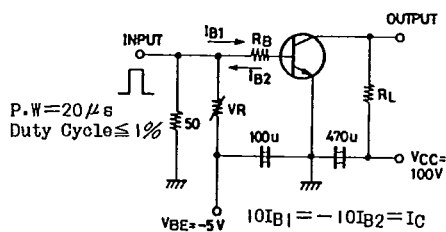
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

			unit
Collector to Base Voltage	V_{CB0}	250	V
Collector to Emitter Voltage	V_{CE0}	100	V
Emitter to Base Voltage	V_{EB0}	6	V
Collector Current	I_C	7.5	A
Peak Collector Current	i_{cp}	15	A
Base Current	I_B	4	A
Collector Dissipation	P_C	50	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

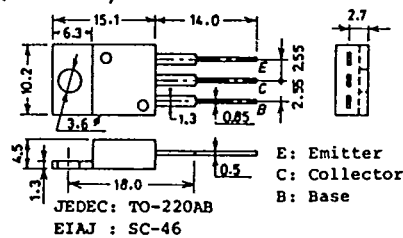
Electrical Characteristics at $T_a=25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=200\text{V}, I_E=0$			100	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			100	μA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=5\text{A}$	15		75	
Gain Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=0.5\text{A}$	10	40		MHz
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=5\text{A}, I_B=0.5\text{A}$			1.2	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=5\text{A}, I_B=0.5\text{A}$			1.2	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}, I_E=0$	250			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	100			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\text{mA}, I_C=0$	6			V
Fall Time	t_f	$I_C=5\text{A}, I_{B1}=-I_{B2}=0.5\text{A}$			0.5	μs

Switching Time Test Circuit

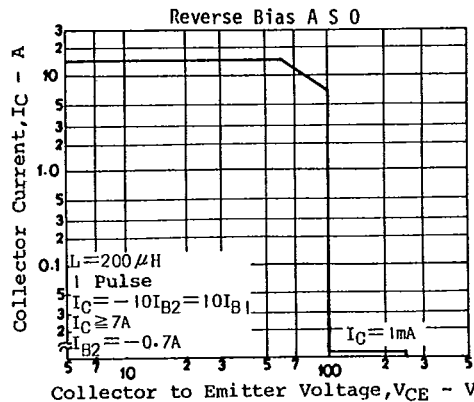
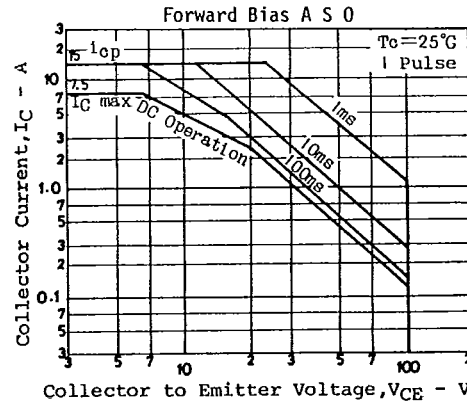
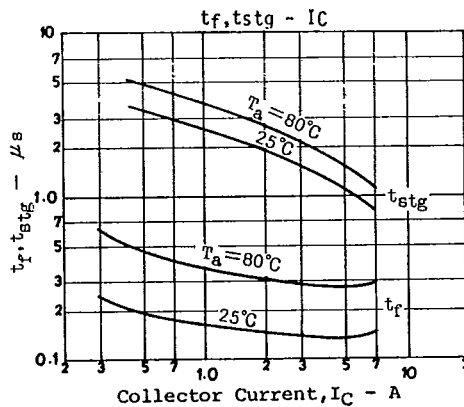
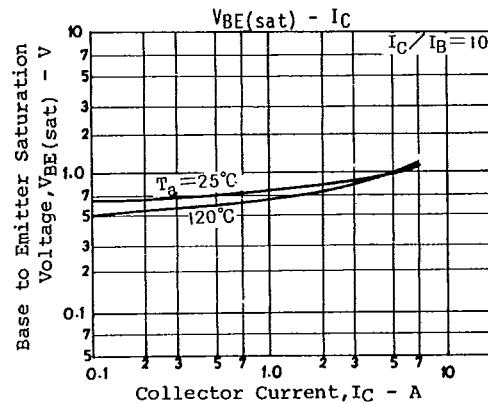
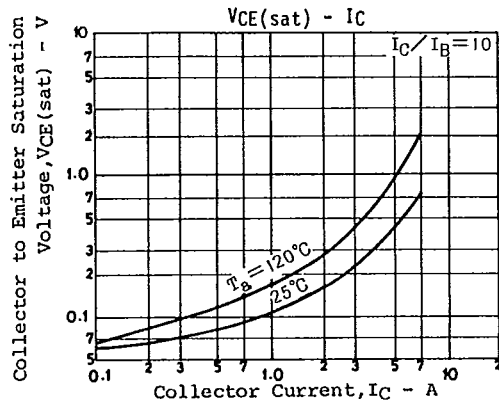
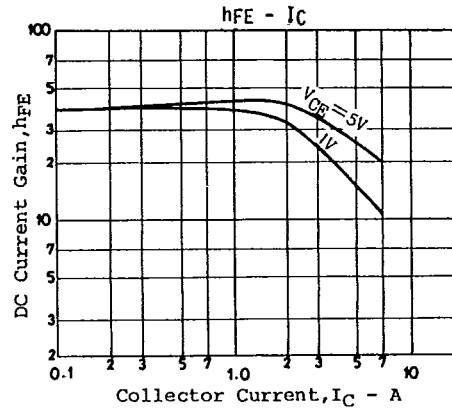
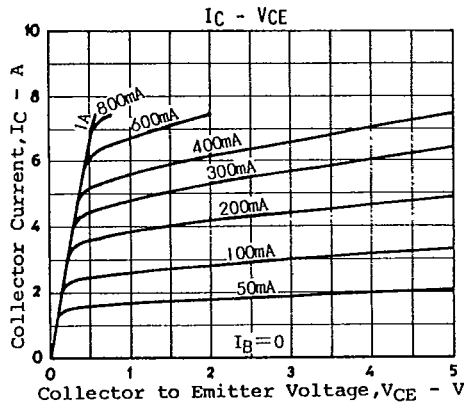


Case Outline 2010A (unit:mm)



2SC3189

T-33-11



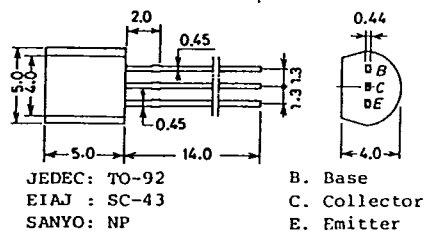
T-91-20

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.

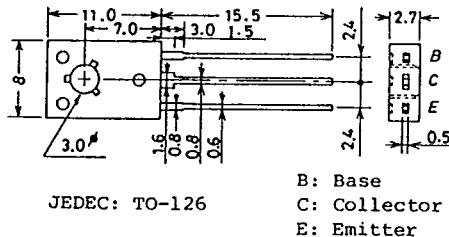
Case Outline—[2003A]

unit:mm



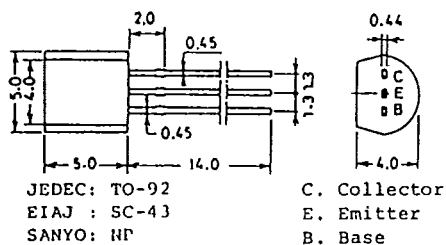
Case Outline—[2009A]

unit:mm



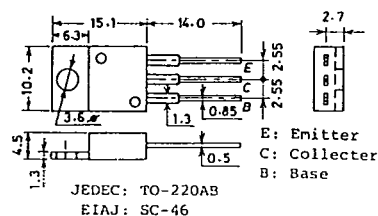
Case Outline—[2004A]

unit:mm



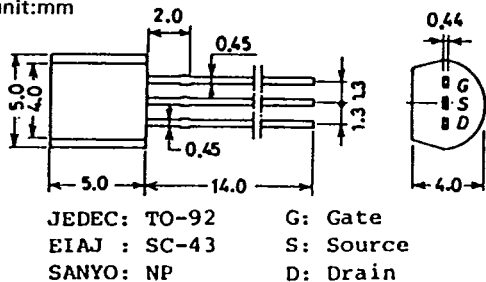
Case Outline—[2010A]

unit:mm



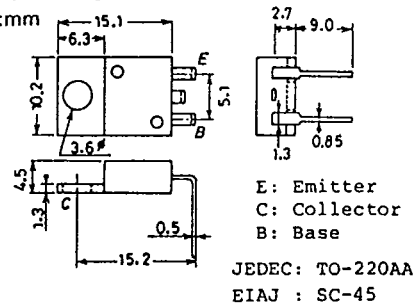
Case Outline—[2005A]

unit:mm



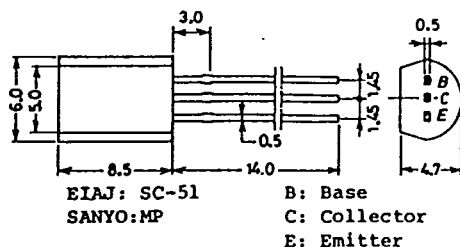
Case Outline—[2012]

unit:mm



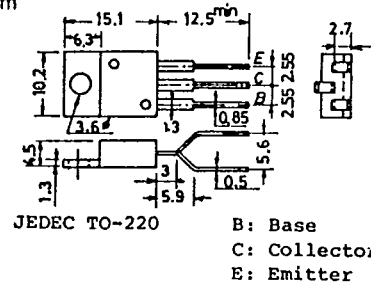
Case Outline—[2006A]

unit:mm



Case Outline—[2013]

unit:mm



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: DP6B

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

E: Emitter
C: Collector
B: Base
SANYO:DP6A

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

E: Emitter
C: Collector
B: Base

G1: Cat1
\$: Source
D: 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

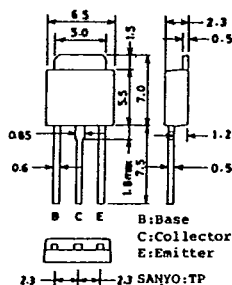
T-91-20

SANYO: TO126LP



SANYO : CP

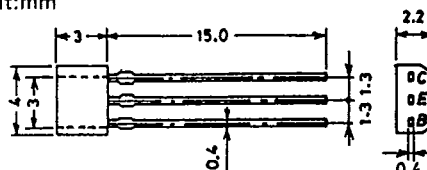
unit:mm



B:Base
C:Collector
E:Emitter

SANYO:TP

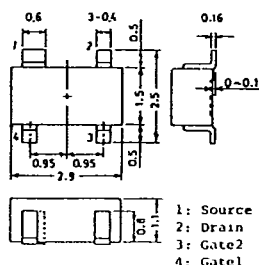
unit:mm



C : Collector
E : Emitter
B : Base

SANYO: SPA

unit:mm

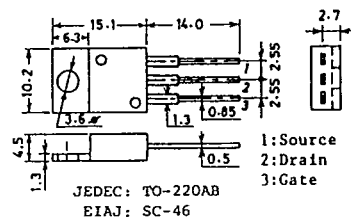


```

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

```

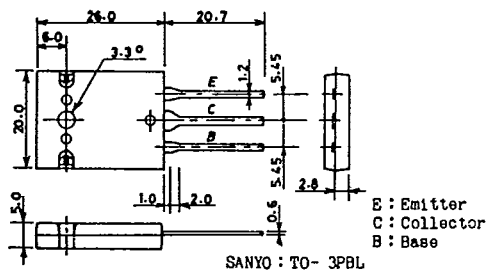
unit:mm



1:Source
2:Drain
3:Gate

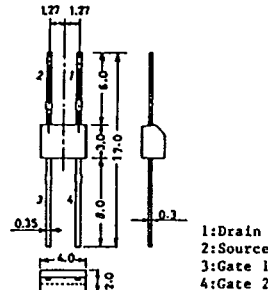
JEDEC: TO-220AB
EIAJ: SC-46

unit:mm



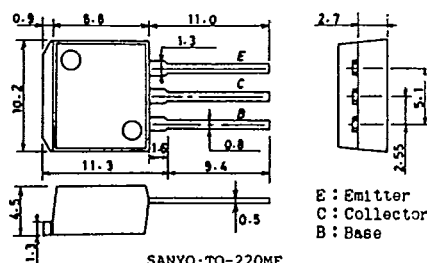
SANYO : TO- 3PBL

unit:mm



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

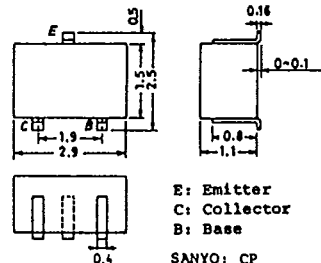
unit:mm



E : Emitter
C : Collector
B : Base

SANYO:TO-220MF

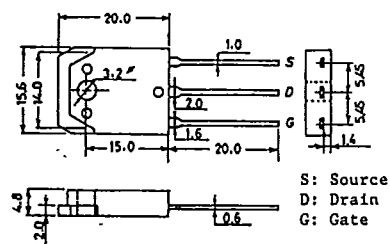
unit:mm



E: Emitter
C: Collector
B: Base

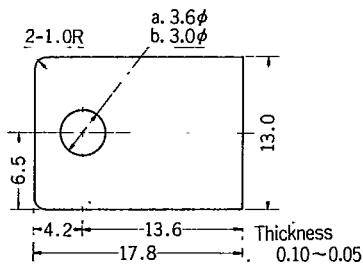
SANYO: CP

Case Outline—[2056] unit:mm



SANYO: TO3PB

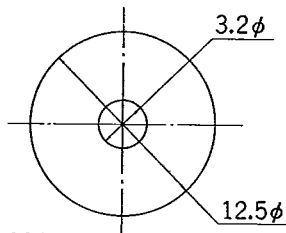
Case Outline—[0008] unit:mm

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

SANYO

Case Outline—[0004] unit:mm

unit:mm

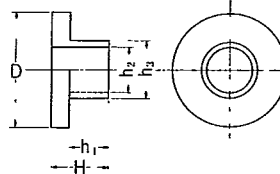


SANYO IS-126

Thickness : 0.075

Case Outline—[0009] unit:mm

unit:mm

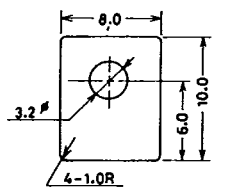


SANYO Bush

Bush	D	H	h 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

Case Outline—[0005] unit:mm

unit:mm

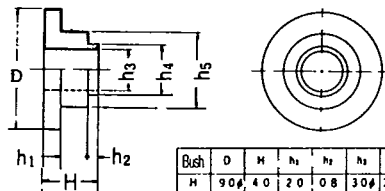


Thickness : 0.075

SANYO IS-126A Mica

Case Outline—[0010] unit:mm

unit:mm

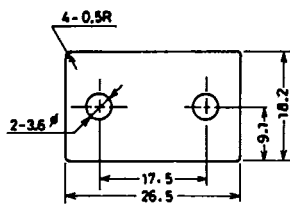


SANYO Bush

Bush	D	H	h 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

Case Outline—[0006] unit:mm

unit:mm

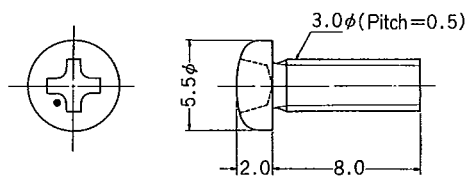


Thickness : 0.05~0.1

SANYO IS-20MA Mica

Case Outline—[0011] unit:mm

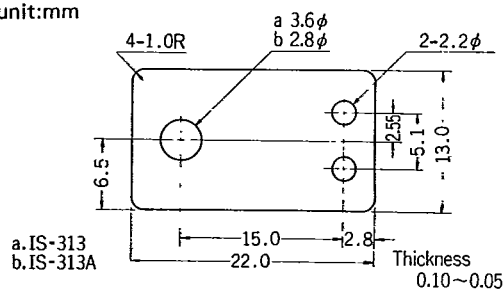
unit:mm



JIS No. B1111 M3×0.5

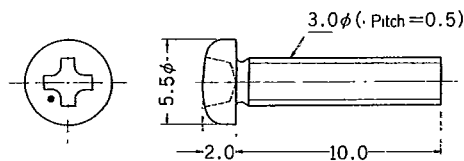
Case Outline—[0007] unit:mm

unit:mm



Case Outline—[0012] unit:mm

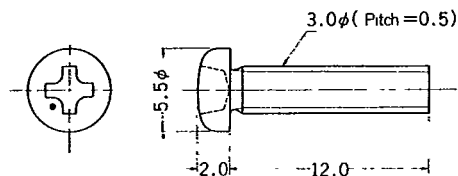
unit:mm



JIS No. B1111 M3×0.5

Case Outline—[0013]

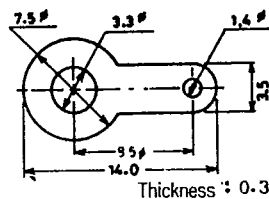
unit:mm



JIS No. B1111 M3×0.5

Case Outline—[0018]

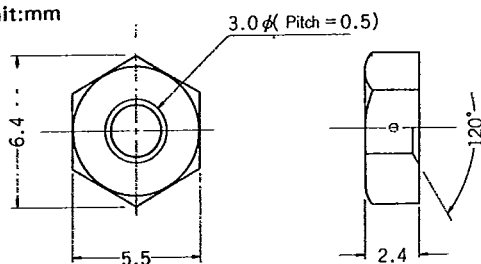
unit:mm



SANYO Lug 1.4

Case Outline—[0014]

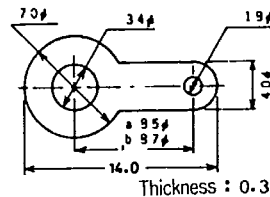
unit:mm



JIS No. B1181 M3×0.5

Case Outline—[0019]

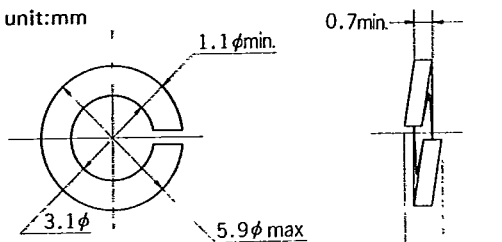
unit:mm



SANYO Lug 1.8

Case Outline—[0015]

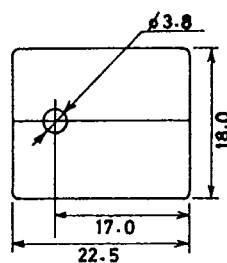
unit:mm



JIS No. B 1251 Spring washer (M3)

Case Outline—[0020]

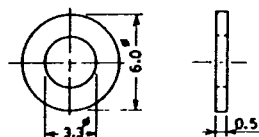
unit:mm



SANYO IS-3MP Mica

Case Outline—[0016]

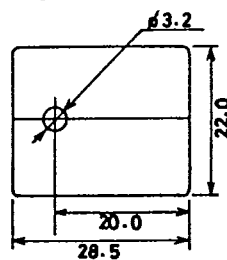
unit:mm



JIS No. B1252 Flat washer

Case Outline—[0021]

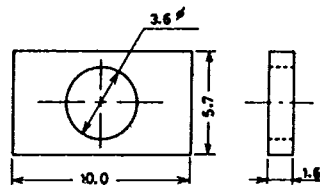
unit:mm



SANYO IS-MPC Mica

Case Outline—[0017]

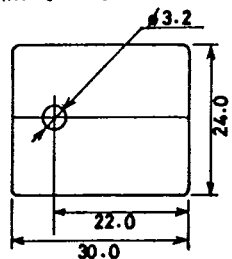
unit:mm



JIS No. G3141 Rectangular washer

Case Outline—[0022]

unit:mm



SANYO IS-3PBL Mica