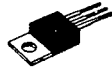


T-33-11

**2SD823**



2010A

NPN Epitaxial Planar Silicon Transistor

# B/W TV Horizontal Output Applications

©542C

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

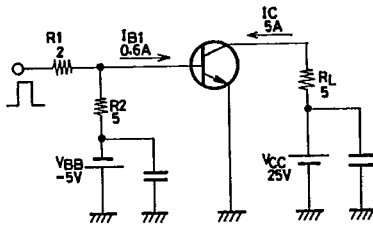
Parameter	Symbol	Value	unit
Collector to Base Voltage	$V_{CBO}$	200	V
Collector to Emitter Voltage	$V_{CEO}$	90	V
Emitter to Base Voltage	$V_{EBO}$	7	V
Collector Current	$I_C$	6	A
Peak Collector Current	$i_{cp}$	10	A
Collector Dissipation	$P_C$	40	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

$T_C=25^\circ\text{C}$

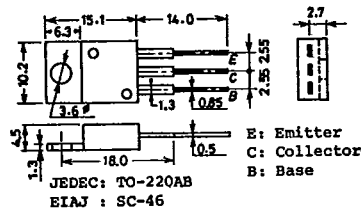
## Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=40\text{V}, I_E=0$			0.1	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			0.1	mA
Collector to Base Voltage	$V_{CBO}$	$I_C=5\text{mA}, I_E=0$	200			V
Collector to Emitter Voltage	$V_{CEO}$	$I_C=5\text{mA}, I_B=0$	90			V
Emitter to Base Voltage	$V_{EBO}$	$I_E=5\text{mA}, I_C=0$	7			V
DC Current Gain	$h_{FE}$	$V_{CE}=5\text{V}, I_C=3\text{V}$	20			
Gain Bandwidth Product	$f_T$	$V_{CE}=5\text{V}, I_C=1\text{A}$		15		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=5\text{A}, I_B=0.5\text{A}$			1.5	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=5\text{A}, I_B=0.5\text{A}$			1.5	V
Fall Time	$t_f$	$I_C=5\text{A}, I_{B1}=0.6\text{A}$			1.0	us

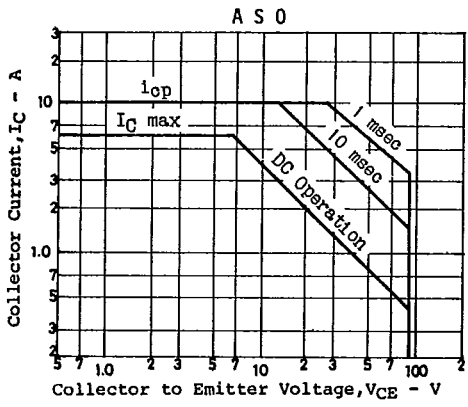
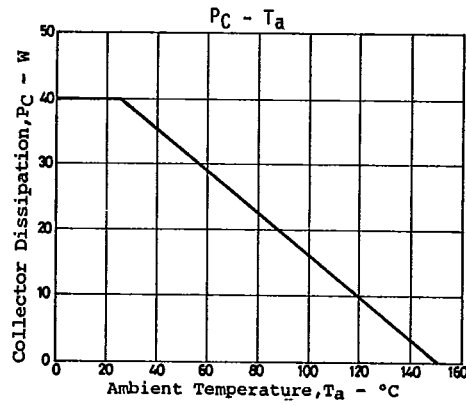
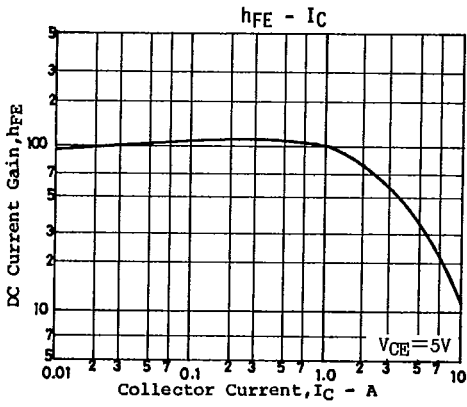
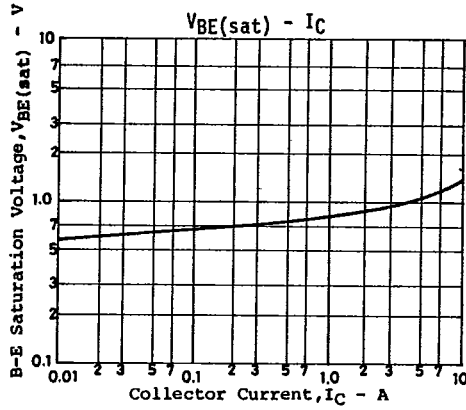
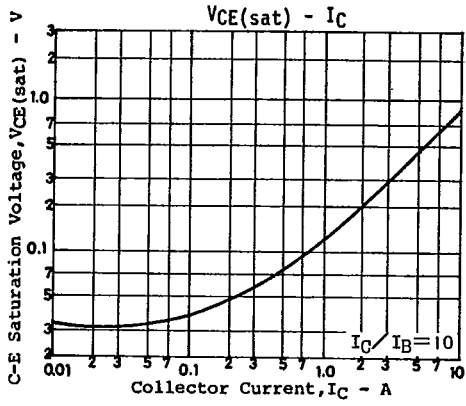
$t_f$  Test Circuit



Case Outline 2010A (unit:mm)



E: Emitter  
C: Collector  
B: Base



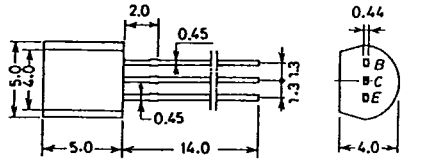
T-91-20

# 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

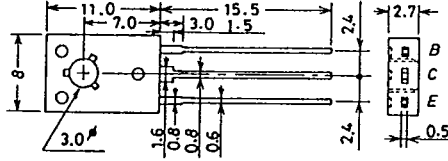


JEDEC: TO-92  
EIAJ: SC-43  
SANYO: NP

B. Base  
C. Collector  
E. Emitter

Case Outline-[2009A]

unit:mm

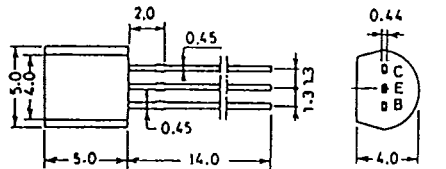


JEDEC: TO-126

B: Base  
C: Collector  
E: Emitter

Case Outline-[2004A]

unit:mm

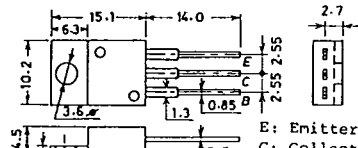


JEDEC: TO-92  
EIAJ: SC-43  
SANYO: NP

C. Collector  
E. Emitter  
B. Base

Case Outline-[2010A]

unit:mm

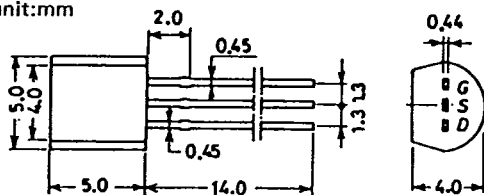


JEDEC: TO-220AB  
EIAJ: SC-46

E: Emitter  
C: Collector  
B: Base

Case Outline-[2005A]

unit:mm

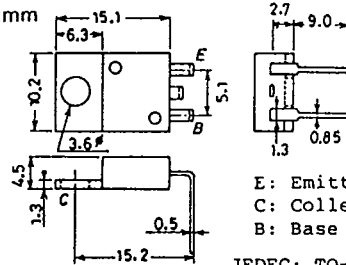


JEDEC: TO-92  
EIAJ: SC-43  
SANYO: NP

G: Gate  
S: Source  
D: Drain

Case Outline-[2012]

unit:mm

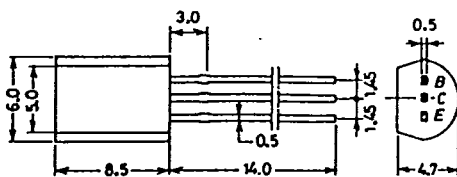


JEDEC: TO-220AA  
EIAJ: SC-45

E: Emitter  
C: Collector  
B: Base

Case Outline-[2006A]

unit:mm

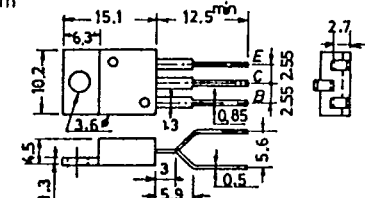


EIAJ: SC-51  
SANYO: MP

B: Base  
C: Collector  
E: Emitter

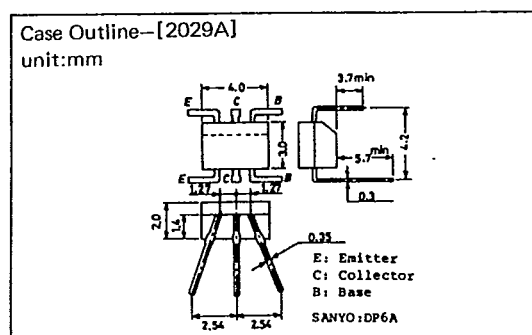
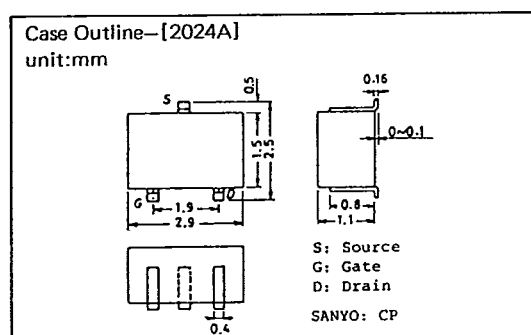
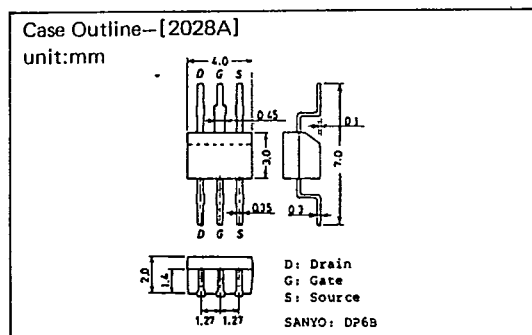
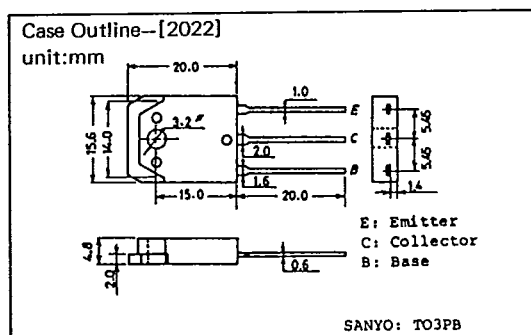
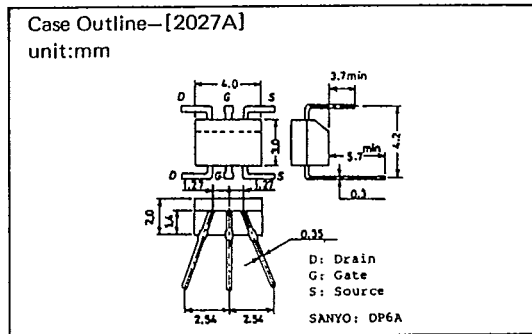
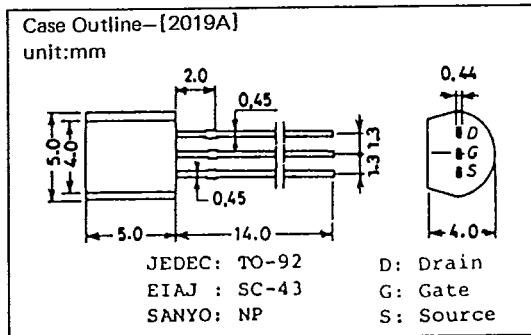
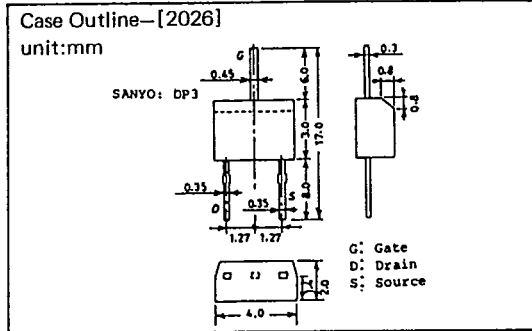
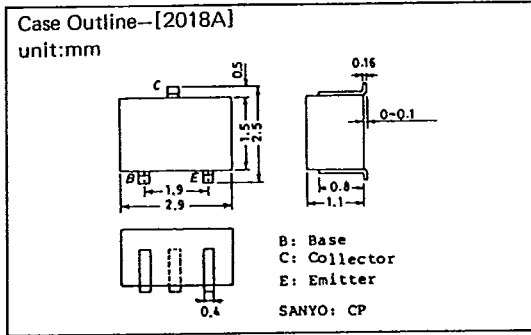
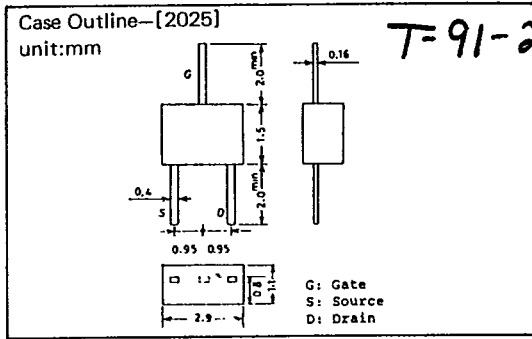
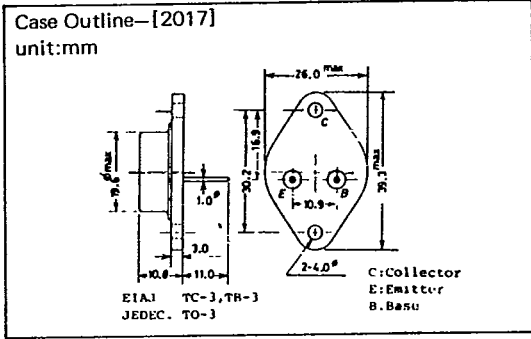
Case Outline-[2013]

unit:mm



JEDEC TO-220

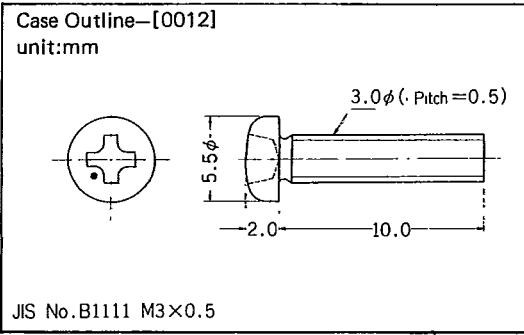
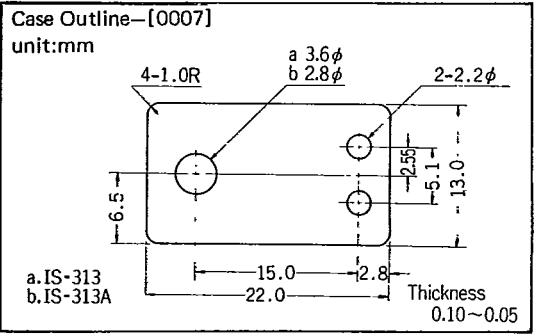
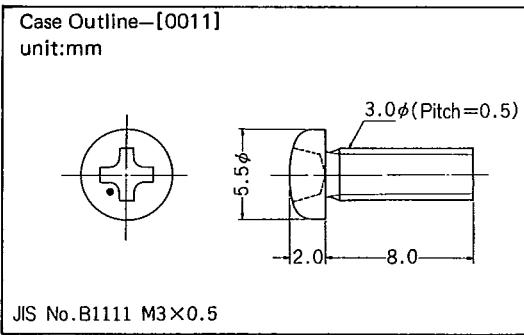
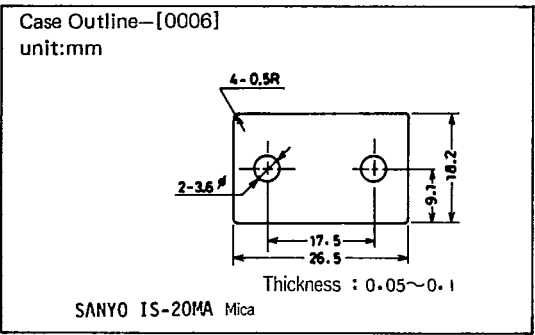
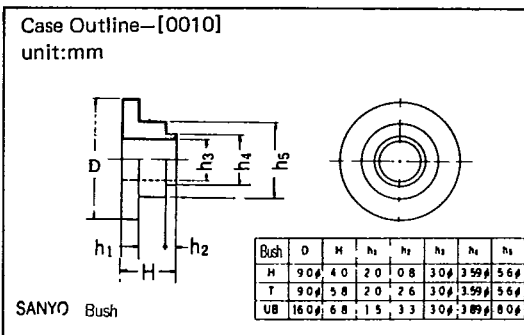
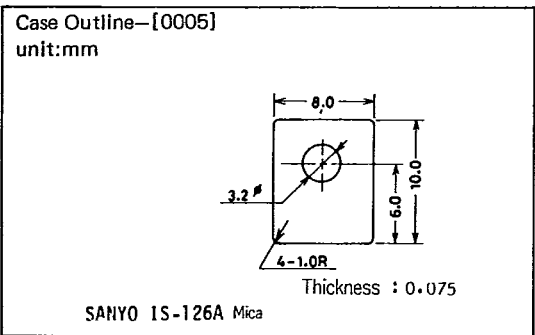
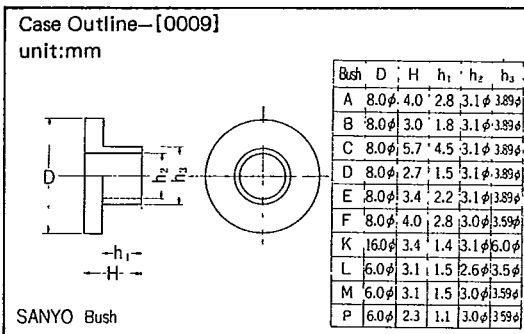
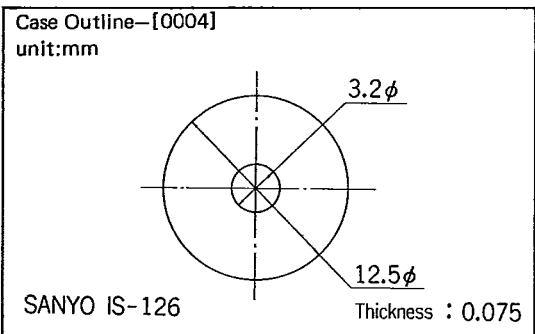
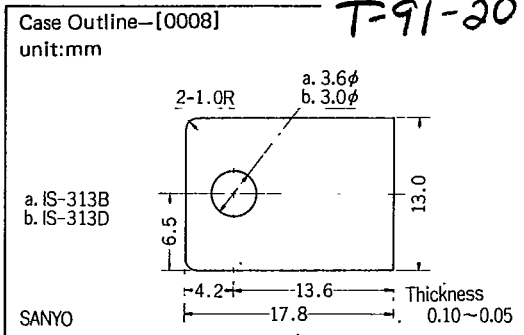
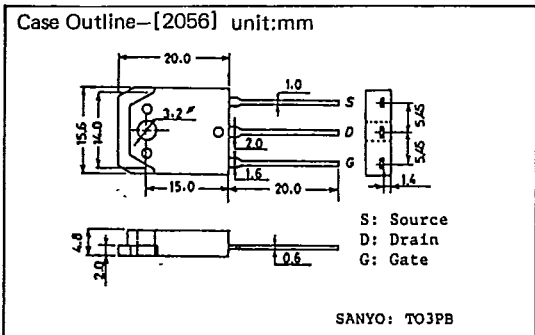
B: Base  
C: Collector  
E: Emitter



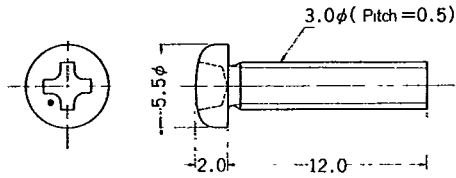




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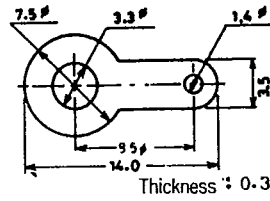


Case Outline-[0013]  
unit:mm



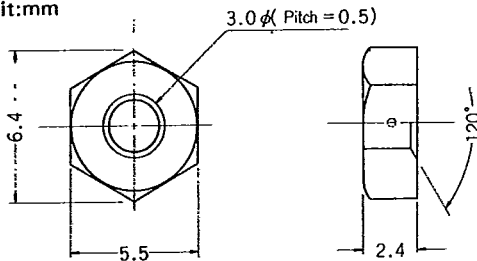
JIS No. B1111 M3×0.5

Case Outline-[0018]  
unit:mm



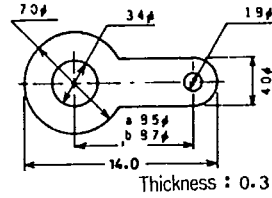
SANYO Lug 1.4

Case Outline-[0014]  
unit:mm



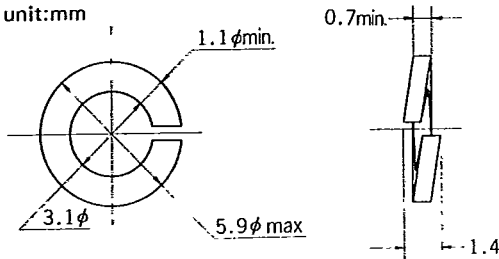
JIS No. B1181 M3×0.5

Case Outline-[0019]  
unit:mm



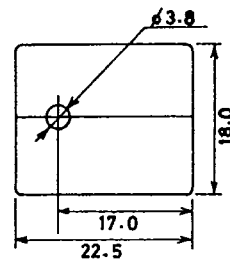
SANYO Lug 1.8φ

Case Outline-[0015]  
unit:mm



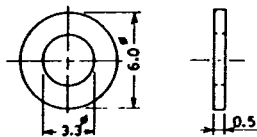
JIS No. B 1251 Spring washer (M3)

Case Outline-[0020]  
unit:mm



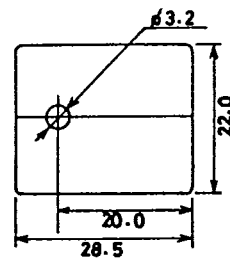
SANYO IS-3MP Mica

Case Outline-[0016]  
unit:mm



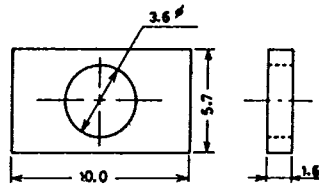
JIS No. B1252 Flat washer

Case Outline-[0021]  
unit:mm



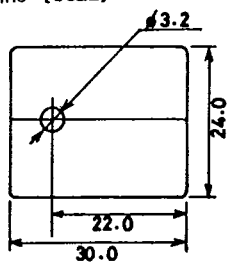
SANYO IS-MPC Mica

Case Outline-[0017]  
unit:mm



JIS No. G3141 Rectangular washer

Case Outline-[0022]  
unit:mm



SANYO IS-3PBL Mica