

2SD1398



2022

NPN Triple Diffused Planar Silicon Transistor

T-33-13

Color TV Horizontal Deflection Output Applications (with Damper Diode)

©1224C

Features

- High breakdown voltage and high reliability.
- High switching speed.
- Capable of being mounted in a variety of methods because of plastic molded package of one-point fixing type.

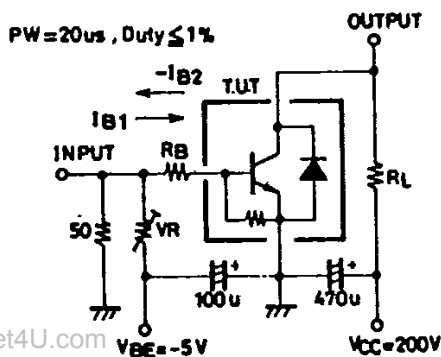
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

			unit
Collector to Base Voltage	V_{CB0}	1500	V
Collector to Emitter Voltage	V_{CE0}	800	V
Emitter to Base Voltage	V_{EB0}	7	V
Collector Current	I_C	5	A
Peak Collector Current	i_{cp}	16	A
Collector Dissipation	P_C	$T_C=25^\circ\text{C}$ 120	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

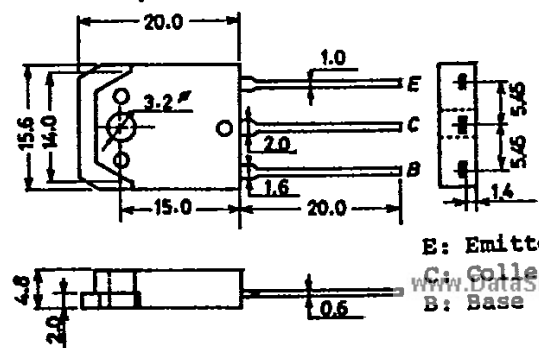
Electrical Characteristics at $T_a=25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=800\text{V}, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$	40		130	mA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=1\text{A}$	8			
Gain Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=1\text{A}$		3		mHz
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=4\text{A}, I_B=0.8\text{A}$			5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=4\text{A}, I_B=0.8\text{A}$			1.5	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=5\text{mA}, I_E=0$	1500			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=100\text{mA}, R_{BE}=\infty$	800			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=200\text{mA}, I_C=0$	7			V
Diode Forward Voltage	V_F	$I_{EC}=5\text{A}$			2	V
Fall Time	t_f	$I_C=4\text{A}, I_{B1}=0.8\text{A}, I_{B2}=-1.6\text{A}, V_{CC}=200\text{V}, R_L=50\Omega$			0.4	μs

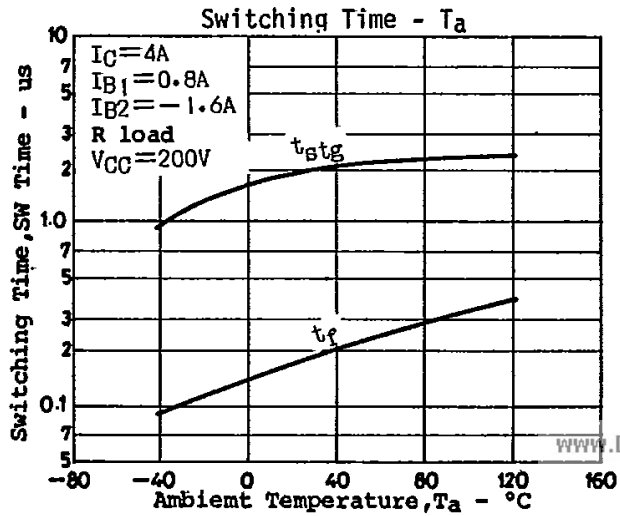
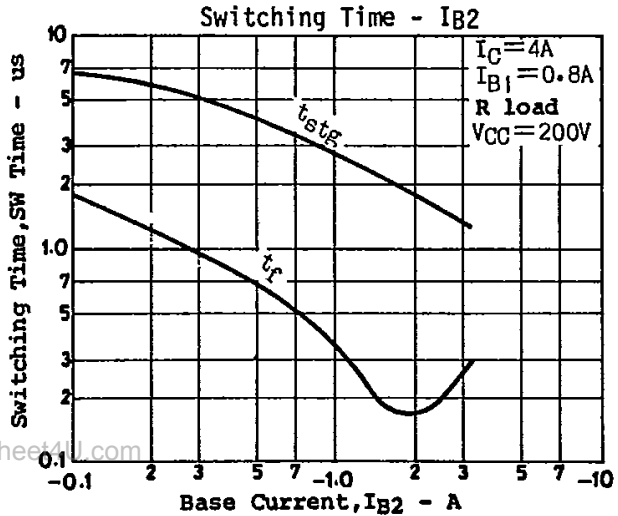
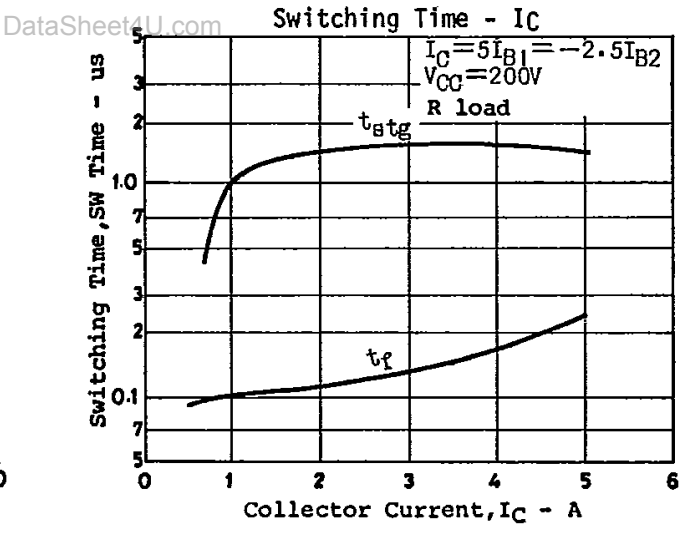
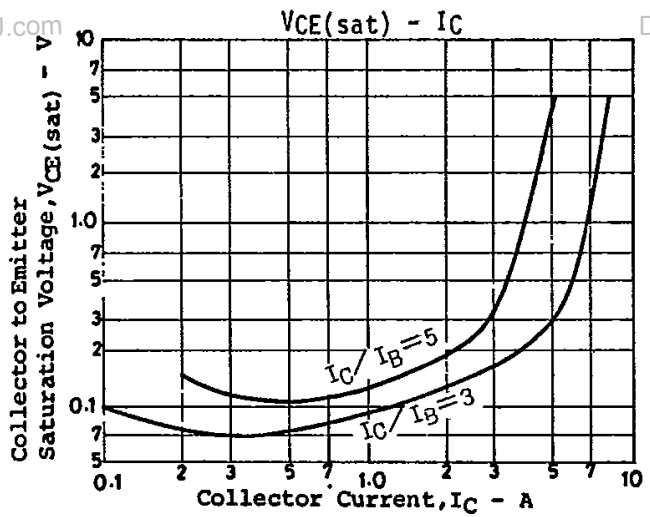
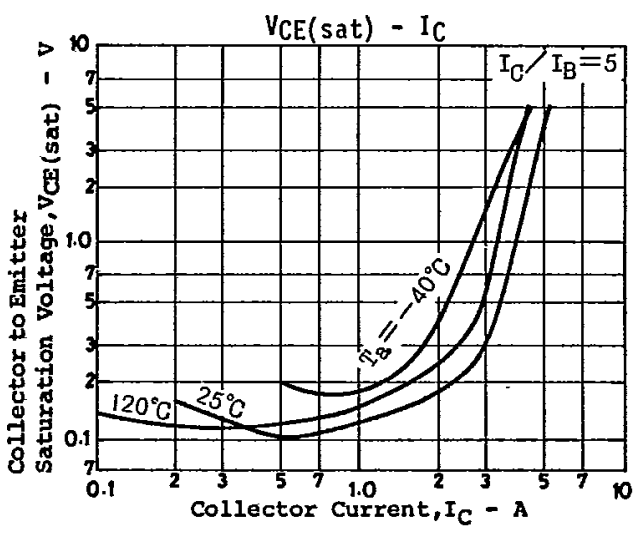
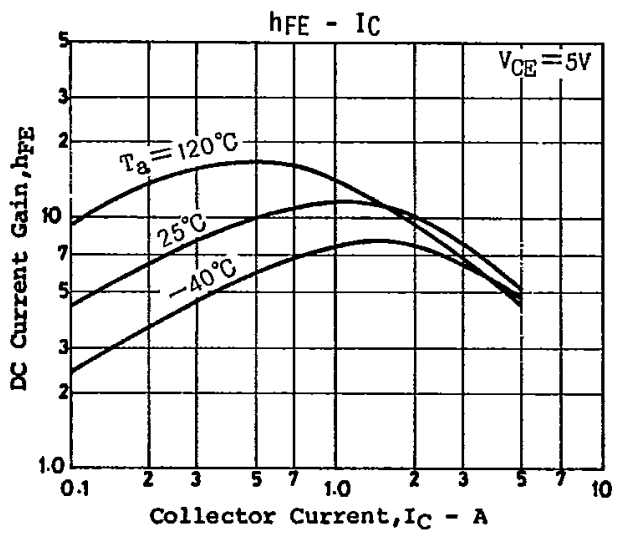
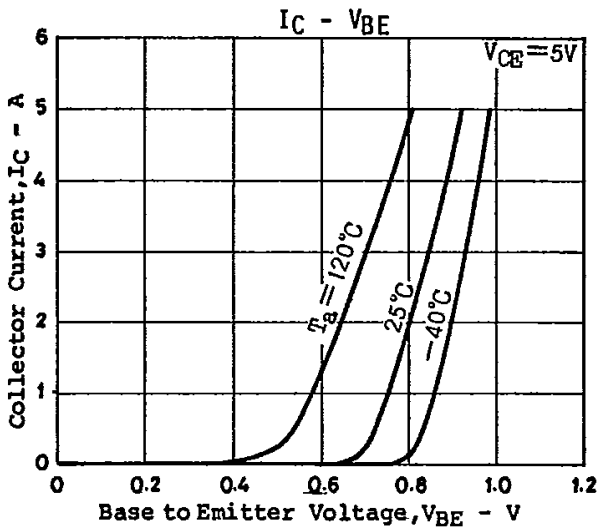
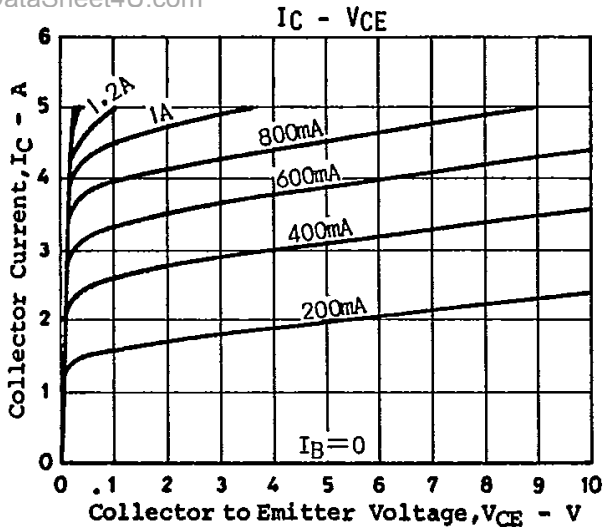
Switching Time Test Circuit

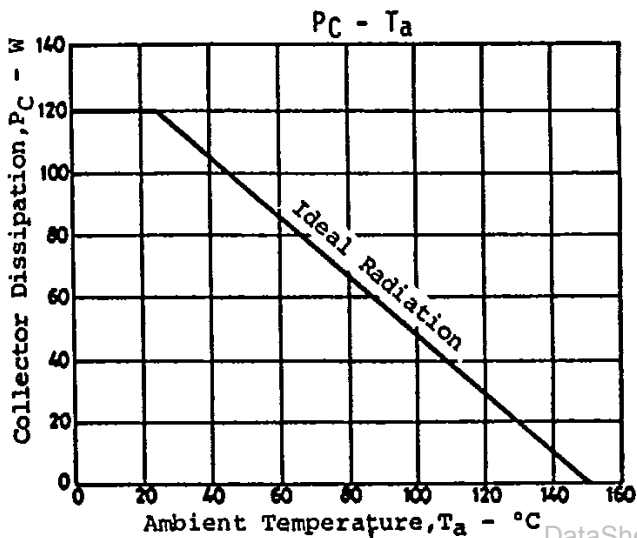
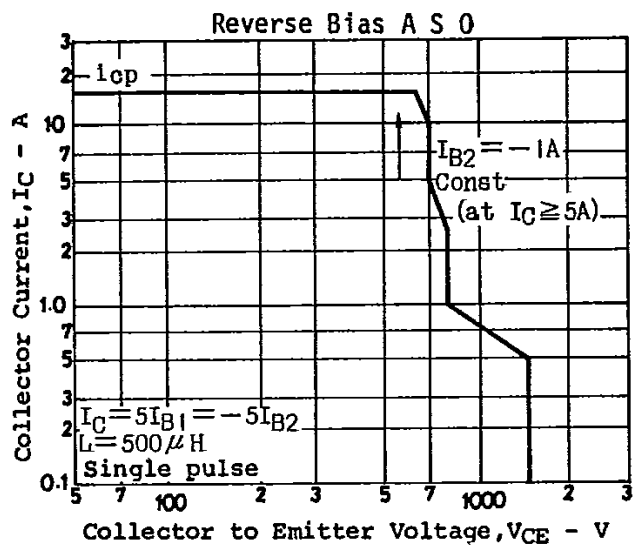
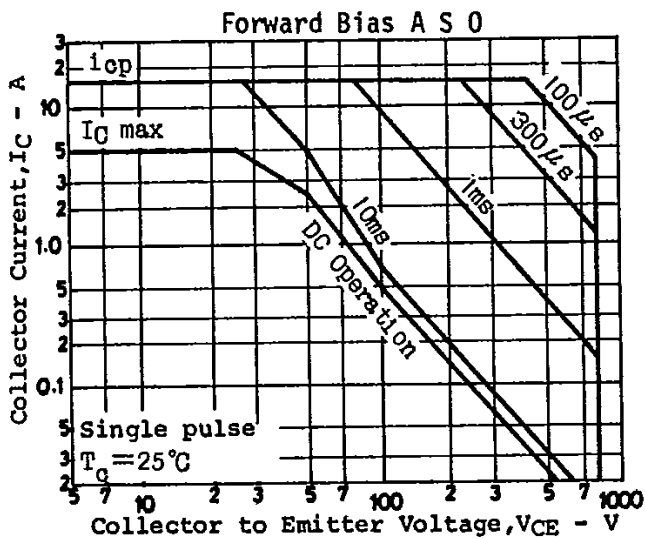


Case Outline 2022 (unit:mm)

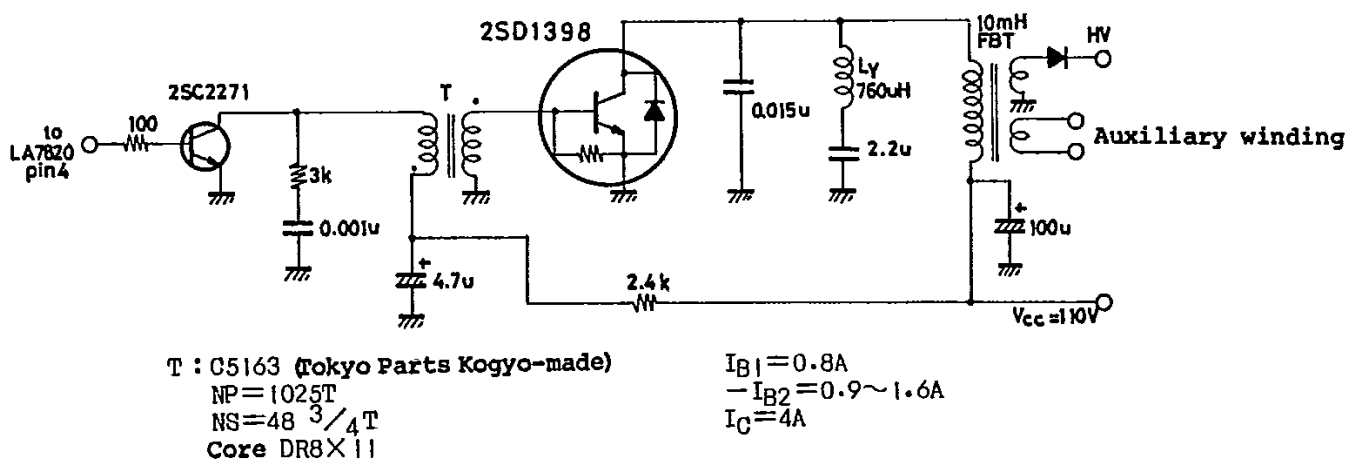


E: Emitter
C: Collector
B: Base





Sample Application Circuit

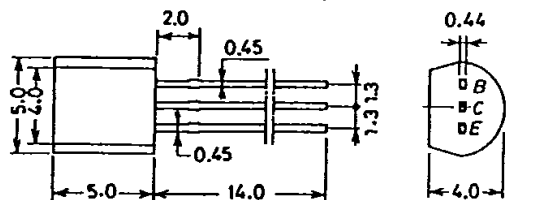


CASE OUTLINES AND ATTACHMENTS

- 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

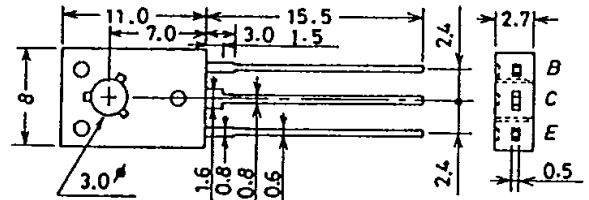


JEDEC: TO-92
EIAJ : SC-43
SANYO: NP

B. Base
C. Collector
E. Emitter

Case Outline—[2009A]

unit:mm

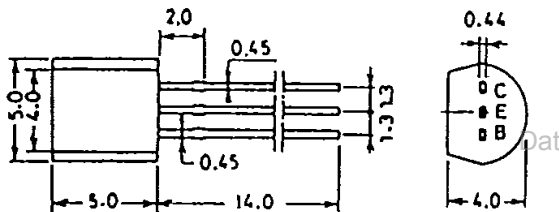


JEDEC: TO-126

B: Base
C: Collector
E: Emitter

Case Outline—[2004A]

unit:mm

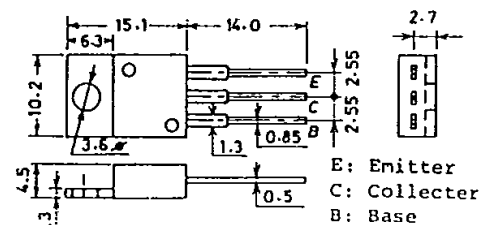


JEDEC: TO-92
EIAJ : SC-43
SANYO: NP

C. Collector
E. Emitter
B. Base

Case Outline—[2010A]

unit:mm

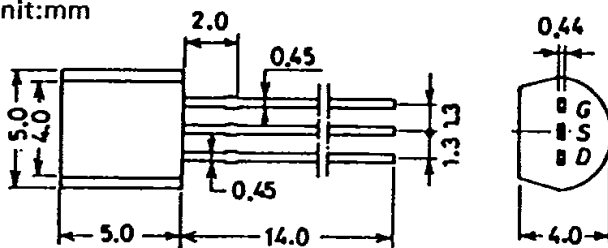


JEDEC: TO-220AB
EIAJ: SC-46

E: Emitter
C: Collector
B: Base

Case Outline—[2005A]

unit:mm

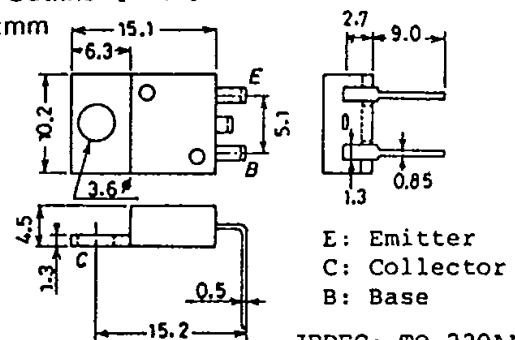


JEDEC: TO-92
EIAJ : SC-43
SANYO: NP

G: Gate
S: Source
D: Drain

Case Outline—[2012]

unit:mm

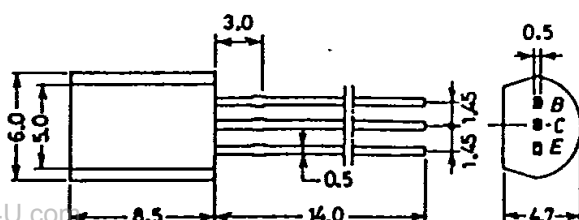


JEDEC: TO-220AA
EIAJ : SC-45

E: Emitter
C: Collector
B: Base

Case Outline—[2006A]

unit:mm

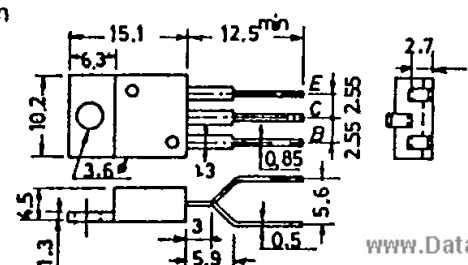


EIAJ: SC-51
SANYO:MP

B: Base
C: Collector
E: Emitter

Case Outline—[2013]

unit:mm

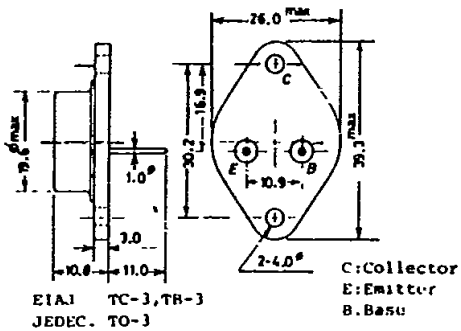


JEDEC TO-220

B: Base
C: Collector
E: Emitter

Case Outline-[2017]

unit:mm



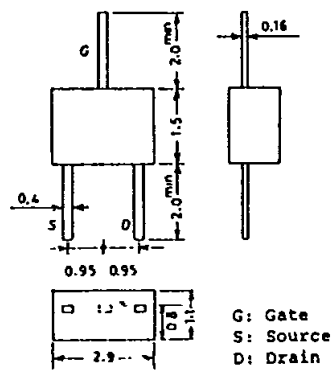
EIAJ TC-3, TR-3
JEDEC: TO-3

C:Collector
E:Emitter
B:Basu

Case Outline-[2025]

unit:mm

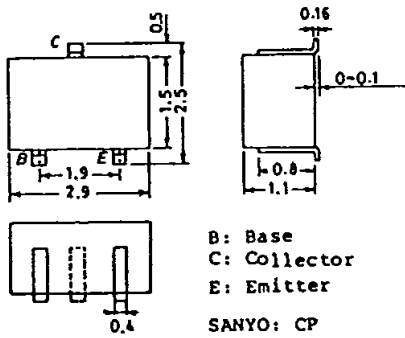
T=91-20



G: Gate
S: Source
D: Drain

Case Outline-[2018A]

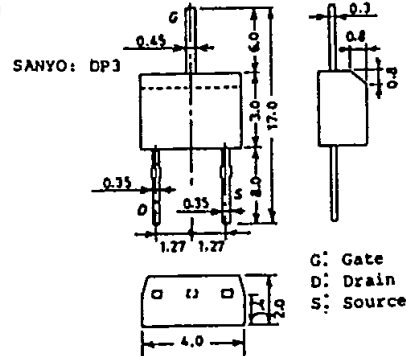
unit:mm



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

Case Outline-[2026]

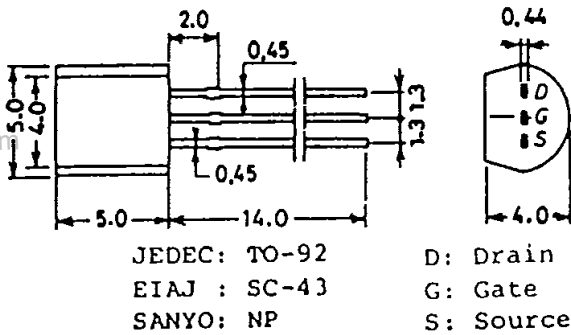
unit:mm



G: Gate
D: Drain
S: Source

Case Outline-[2019A]

unit:mm

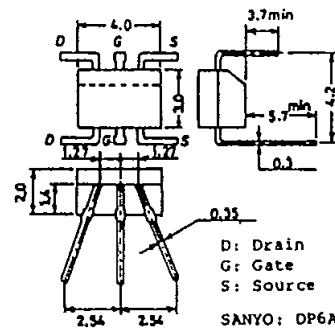


JEDEC: TO-92
EIAJ : SC-43
SANYO: NP

D: Drain
G: Gate
S: Source

Case Outline-[2027A]

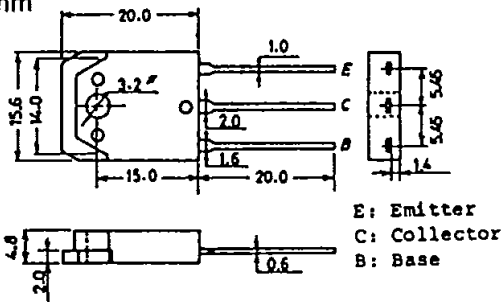
unit:mm



D: Drain
G: Gate
S: Source
SANYO: DP6A

Case Outline-[2022]

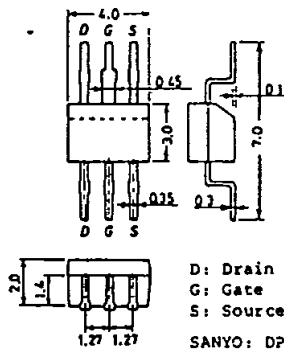
unit:mm



SANYO: TO3PB

Case Outline-[2028A]

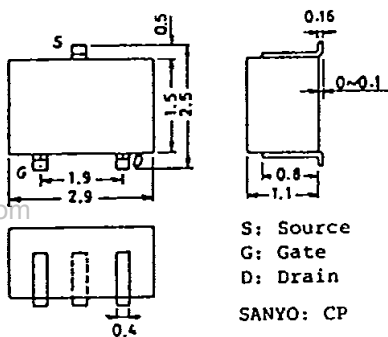
unit:mm



D: Drain
G: Gate
S: Source
SANYO: DP6B

Case Outline-[2024A]

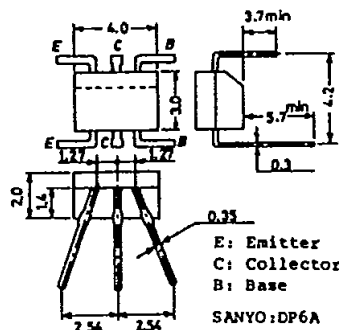
unit:mm



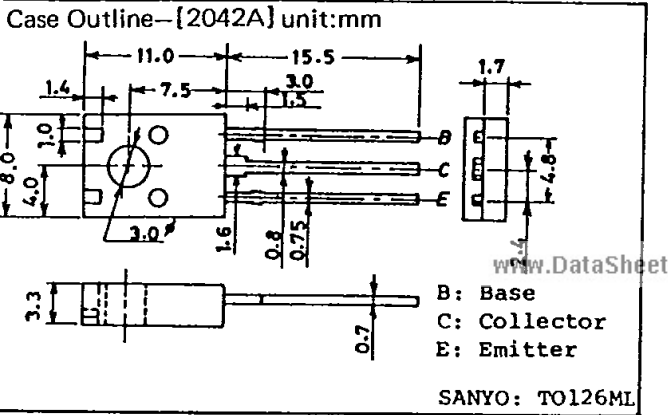
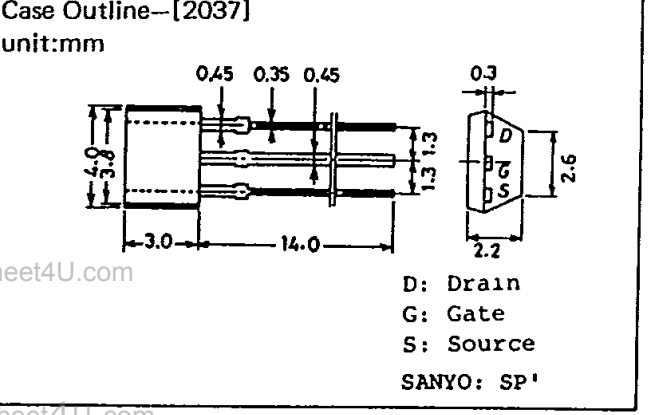
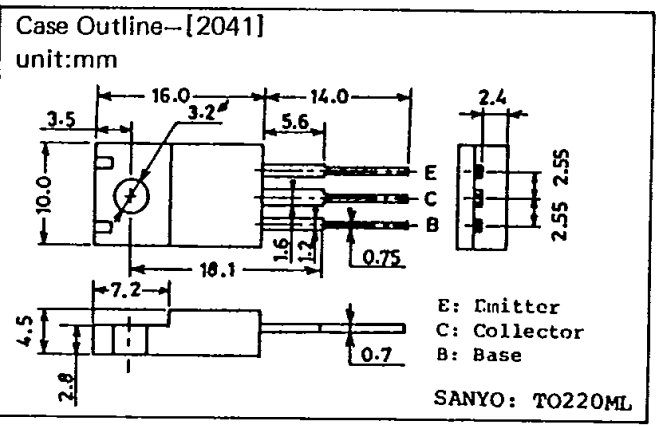
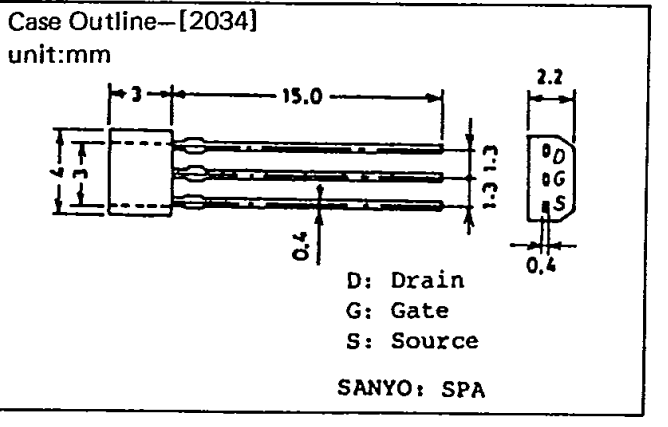
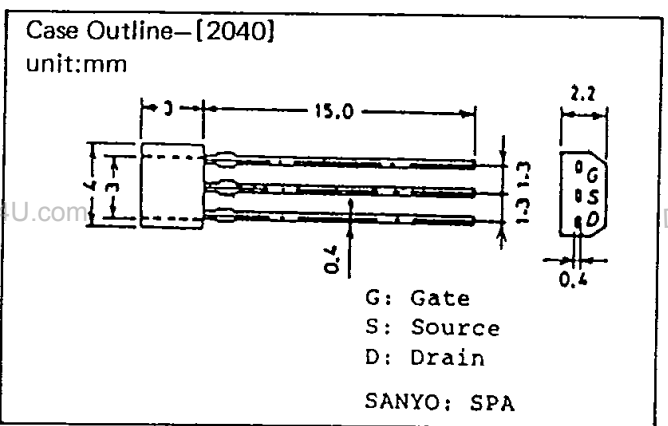
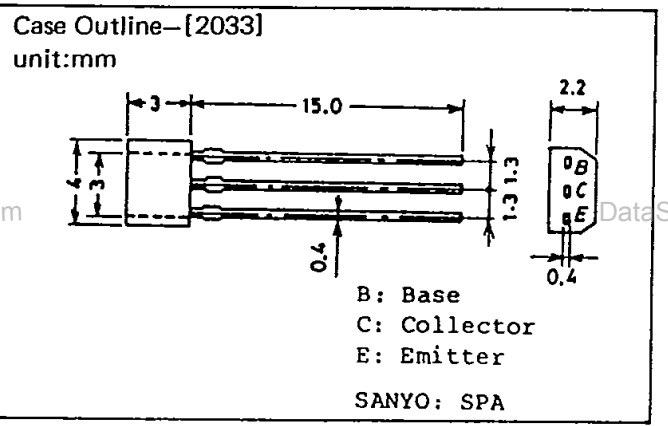
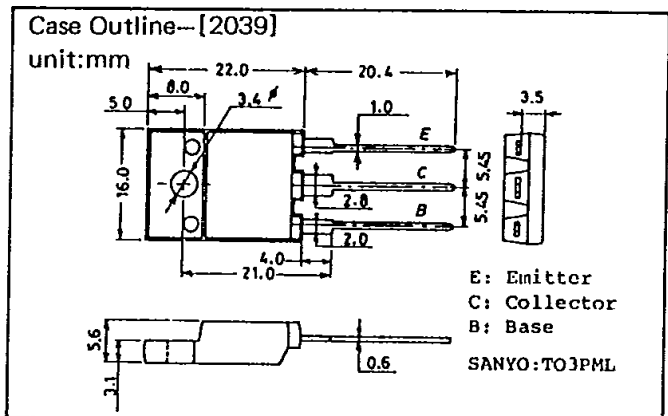
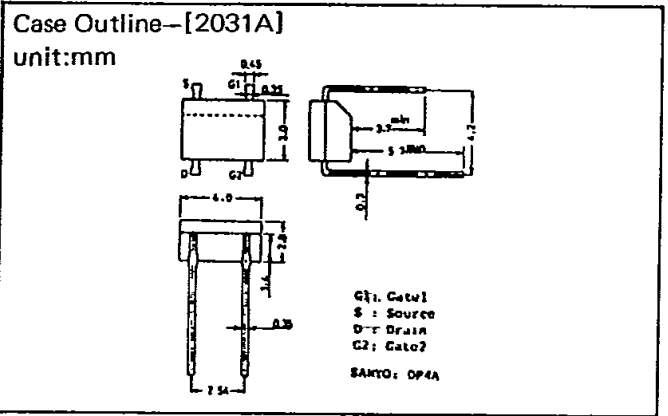
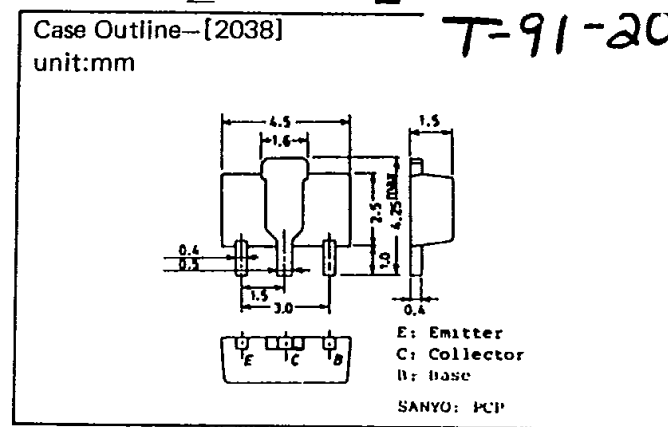
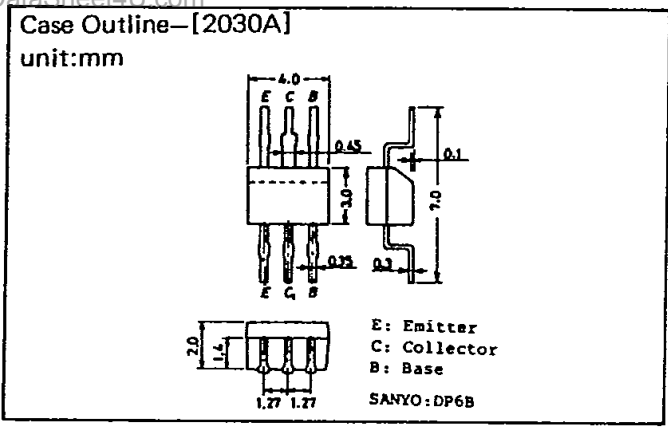
S: Source
G: Gate
D: Drain
SANYO: CP

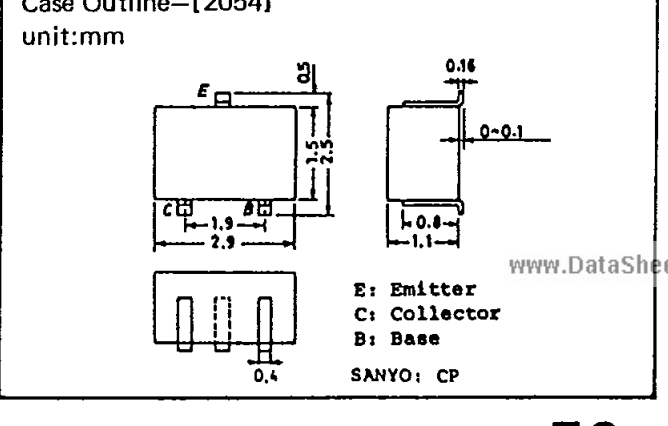
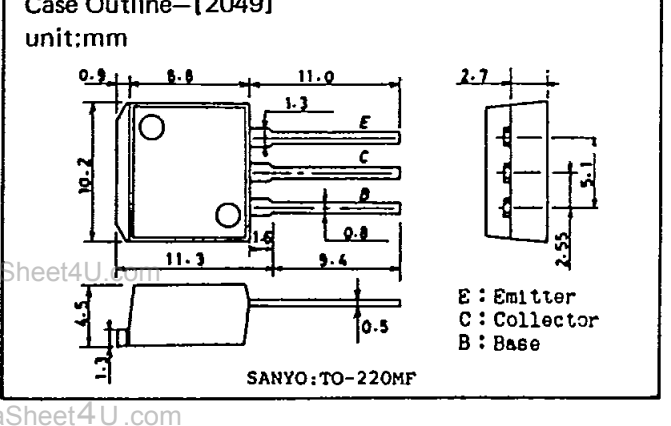
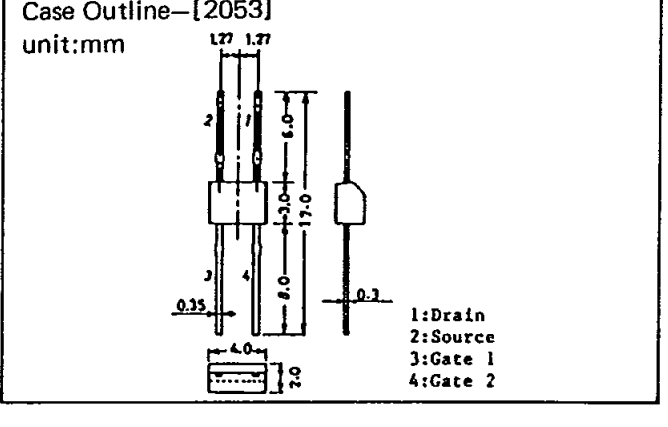
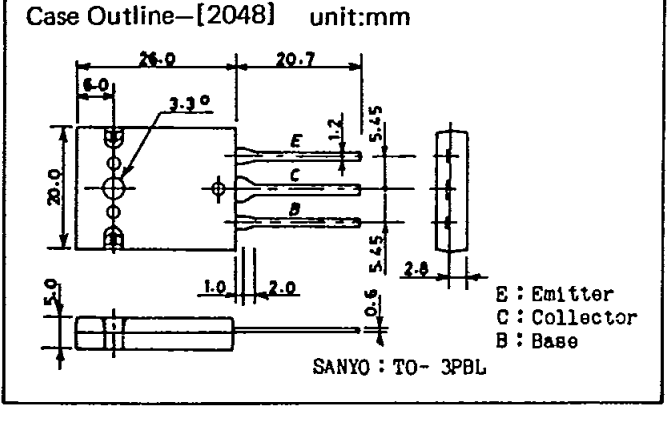
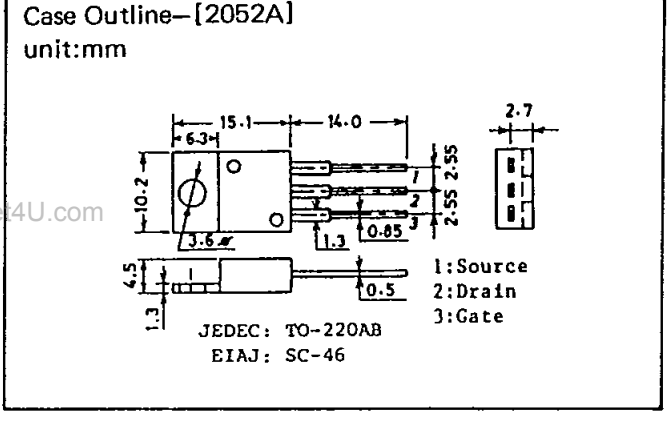
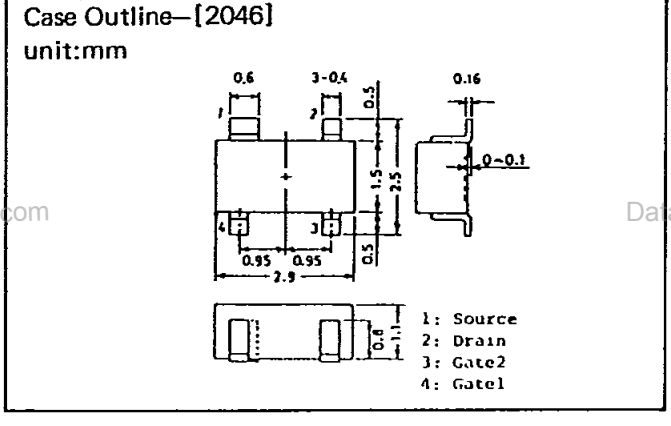
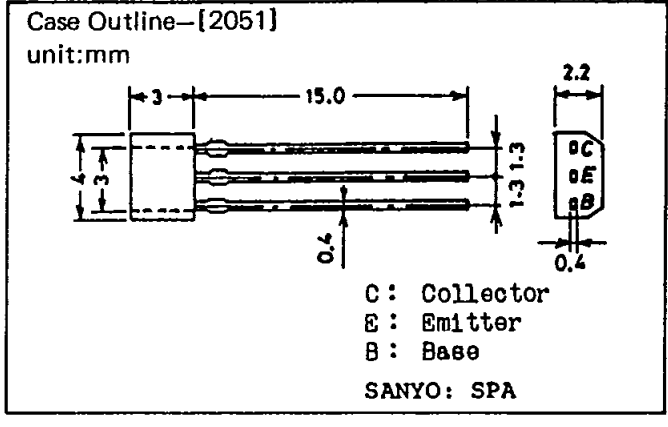
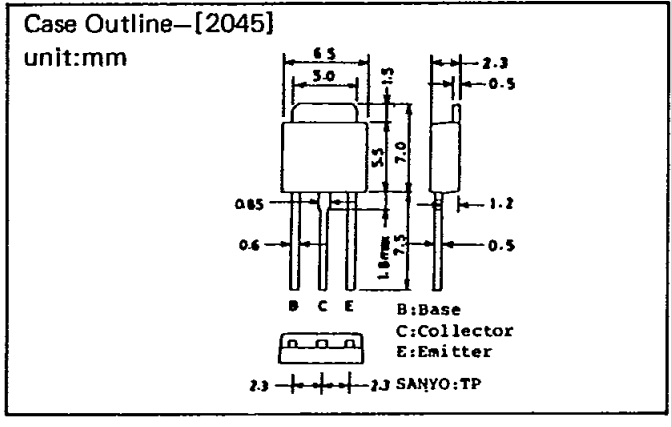
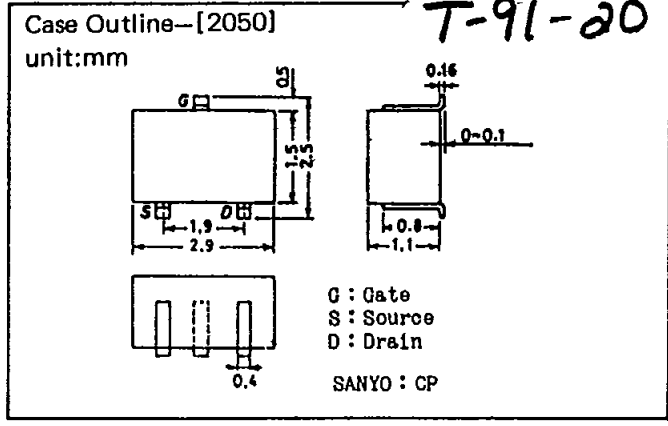
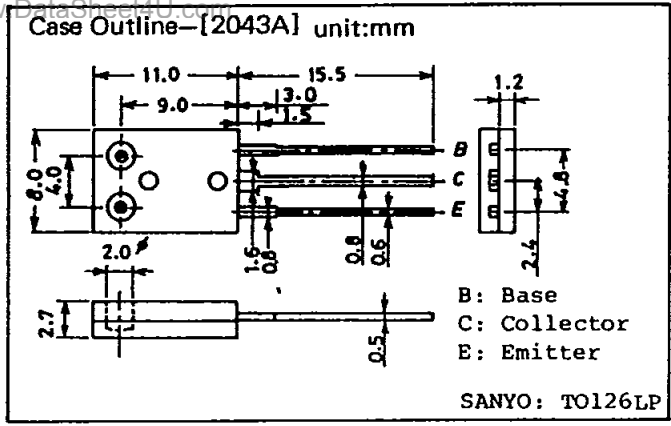
Case Outline-[2029A]

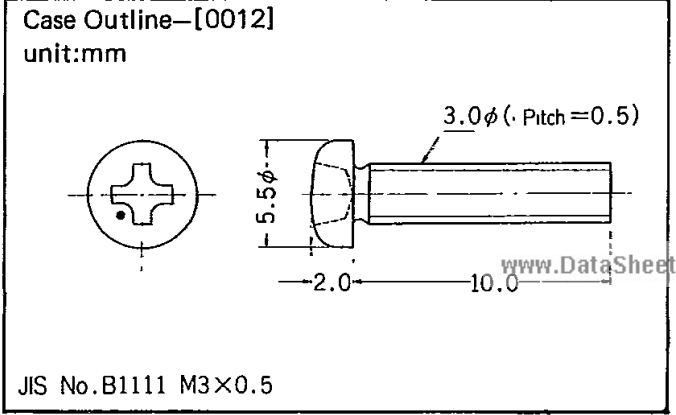
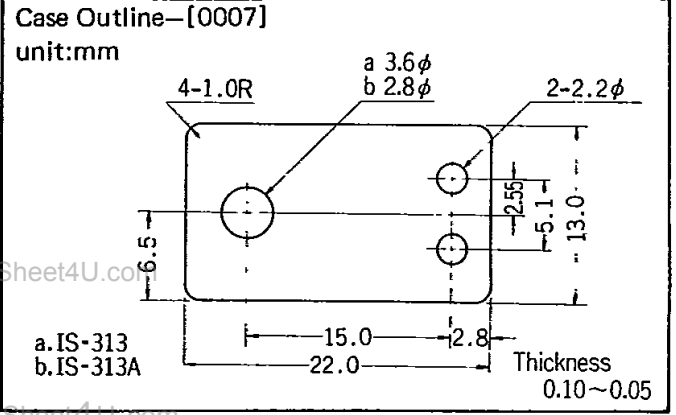
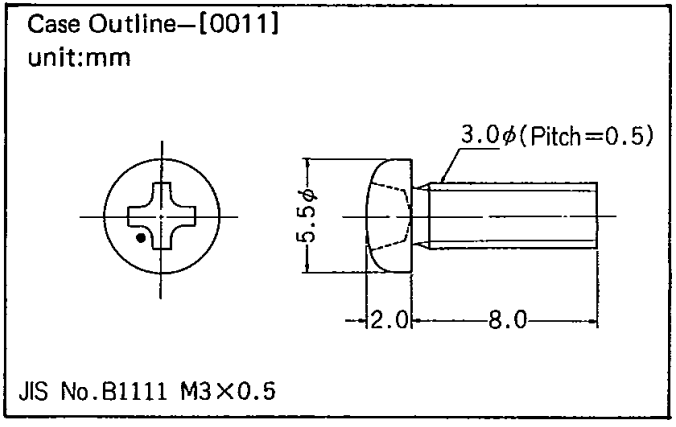
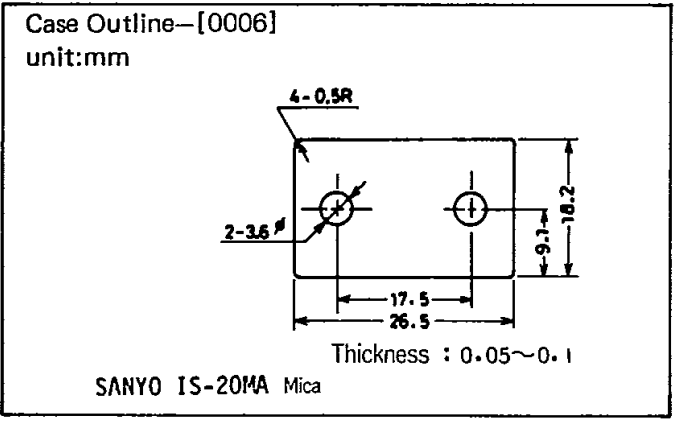
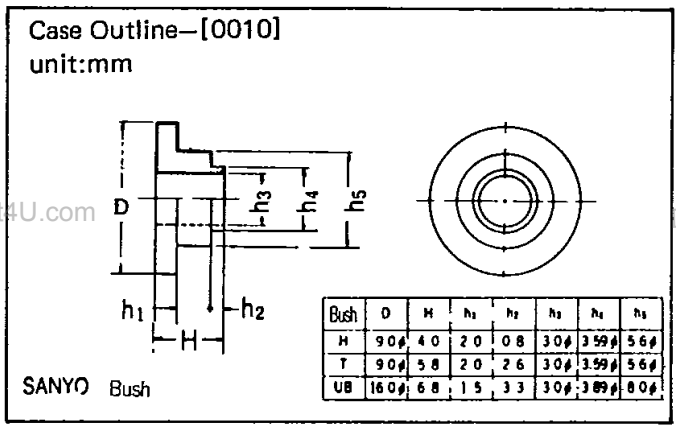
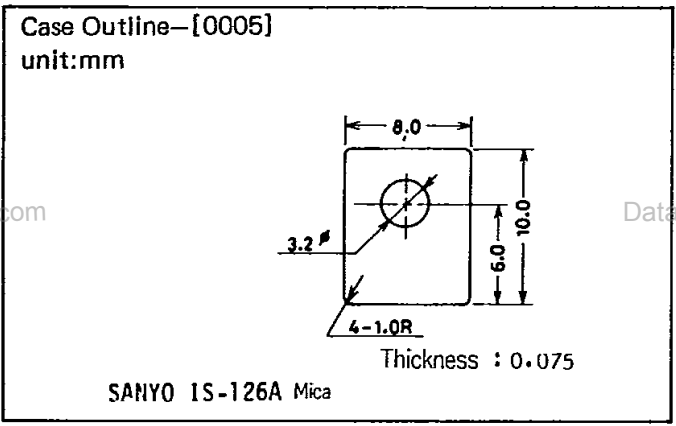
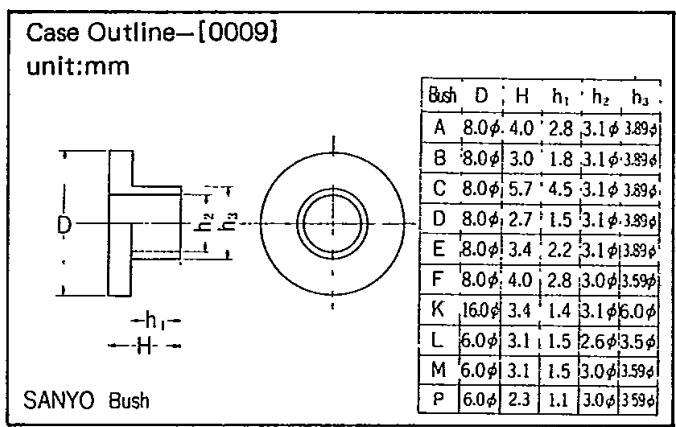
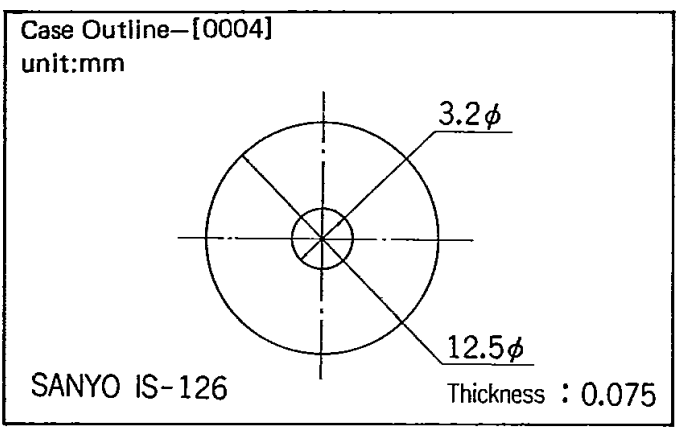
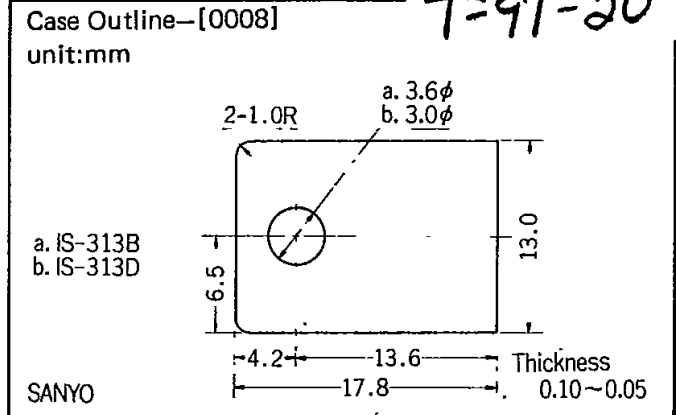
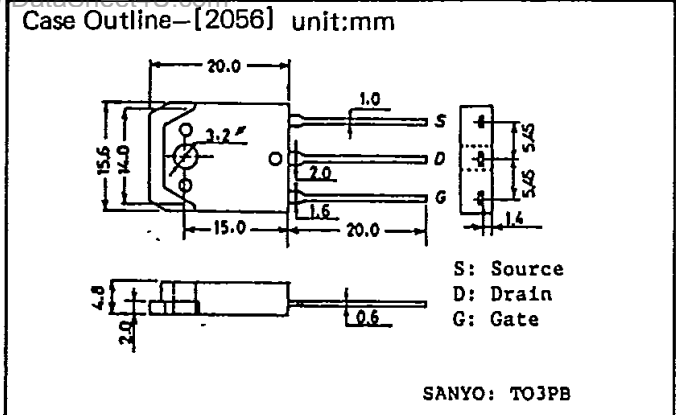
unit:mm



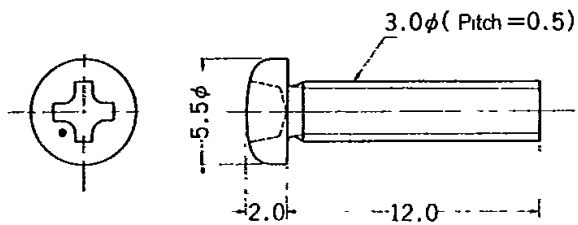
E: Emitter
C: Collector
B: Base
SANYO: DP6A







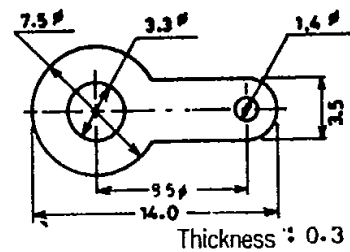
Case Outline-[0013]
unit:mm



JIS No. B1111 M3x0.5

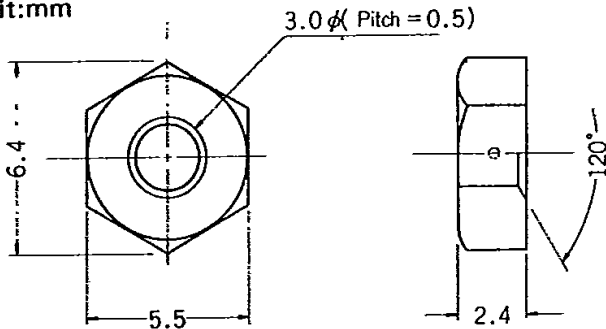
Case Outline-[0018]
unit:mm

T=91-20



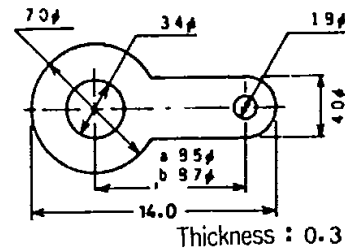
SANYO Lug 1.4

Case Outline-[0014]
unit:mm



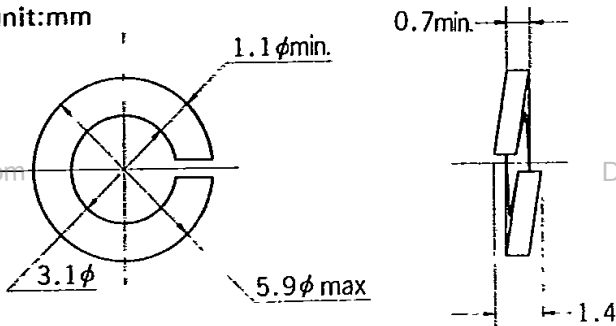
JIS No. B1181 M3x0.5

Case Outline-[0019]
unit:mm



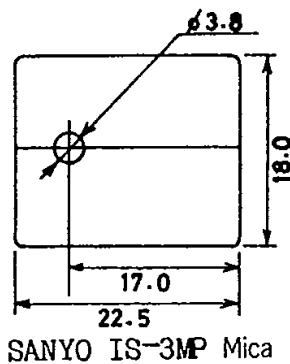
SANYO Lug 1.8φ

Case Outline-[0015]
unit:mm



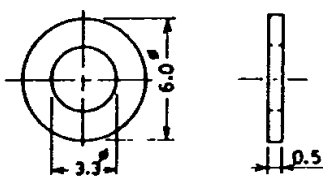
JIS No. B 1251 Spring washer (M3)

Case Outline-[0020]
unit:mm



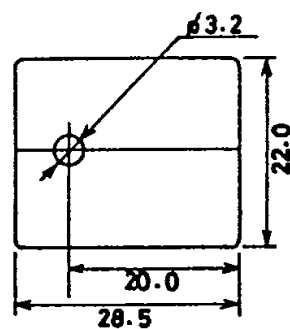
SANYO IS-3MP Mica

Case Outline-[0016]
unit:mm



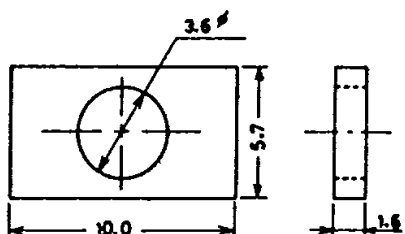
JIS No. B1252 Flat washer

Case Outline-[0021]
unit:mm



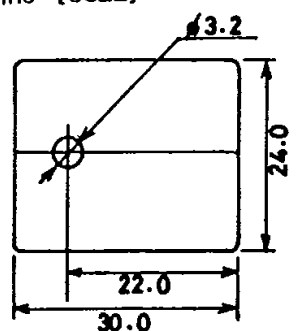
SANYO IS-MPC Mica

Case Outline-[0017]
unit:mm



JIS No. G3141 Rectangular washer

Case Outline-[0022]
unit:mm



SANYO IS-3PBL Mica