

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

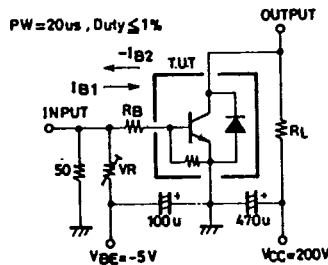
			unit
Collector to Base Voltage	V_{CB0}	1500	V
Collector to Emitter Voltage	V_{CE0}	800	V
Emitter to Base Voltage	V_{EB0}	7	V
Collector Current	I_C	5	A
Peak Collector Current	i_{cp}	16	A
Collector Dissipation	P_C	120	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150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

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

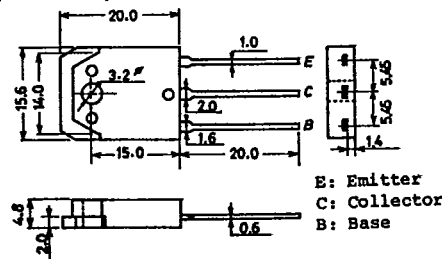
Electrical Characteristics at $T_a=25^\circ\text{C}$

			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	$V_{BE(sat)}$	$I_C=4\text{A}, I_C=0.8\text{A}$			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	$I_C=4\text{A}, I_{B1}=0.8\text{A}, I_{B2}=-1.6\text{A}, V_{CC}=200\text{V}, R_L=50\text{ohm}$			0.4	us

Switching Time Test Circuit

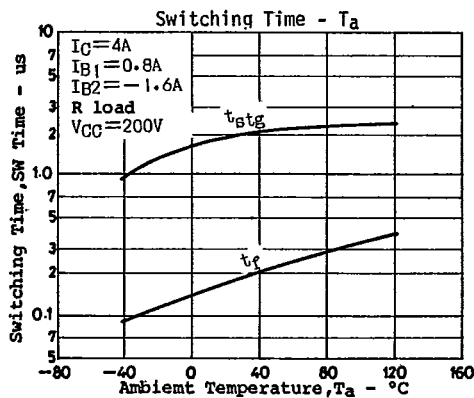
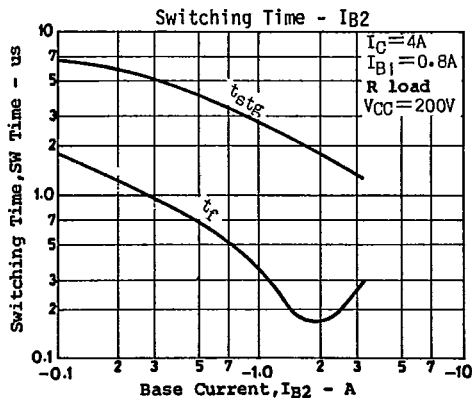
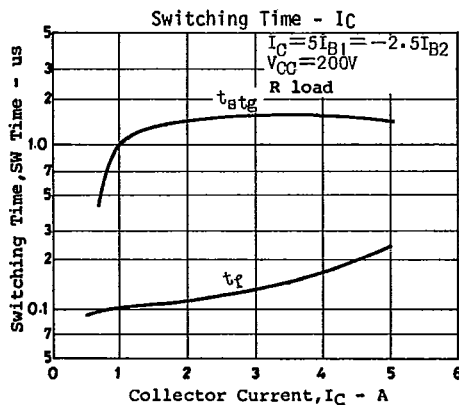
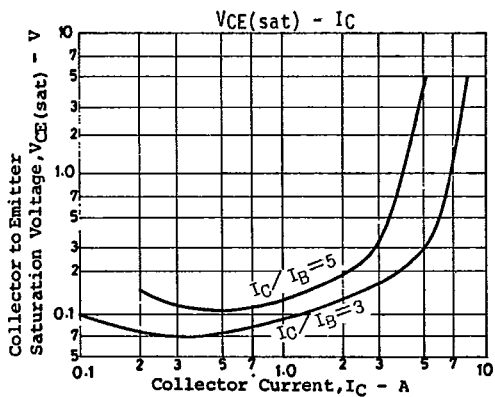
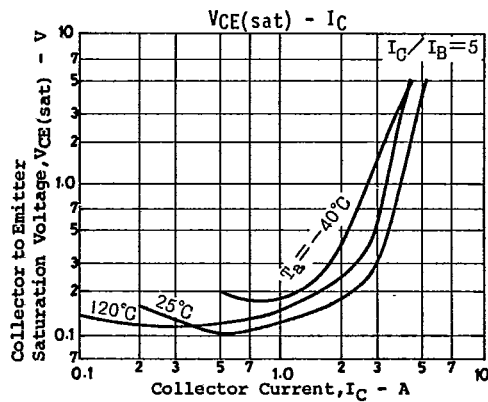
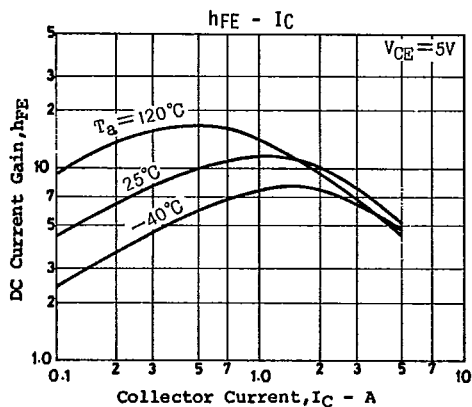
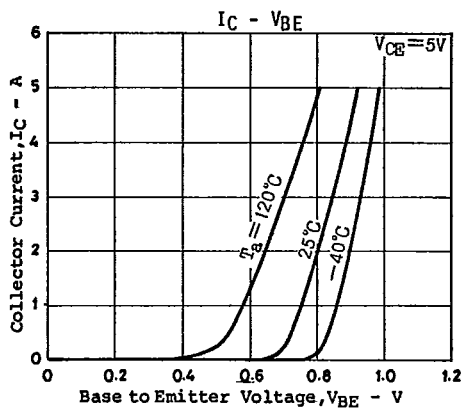
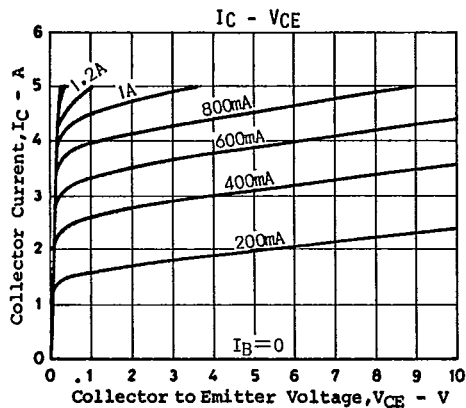


Case Outline 2022 (unit:mm)



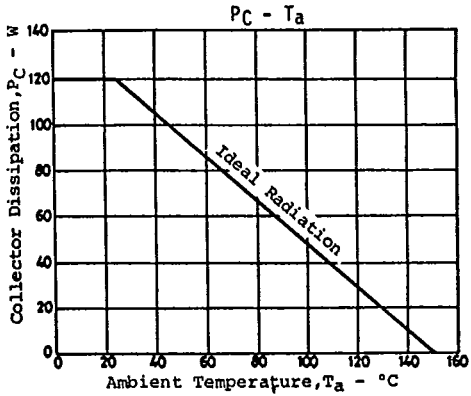
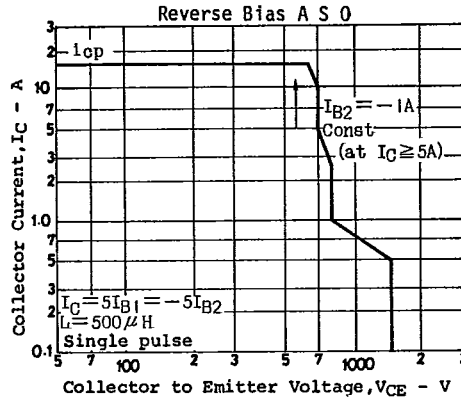
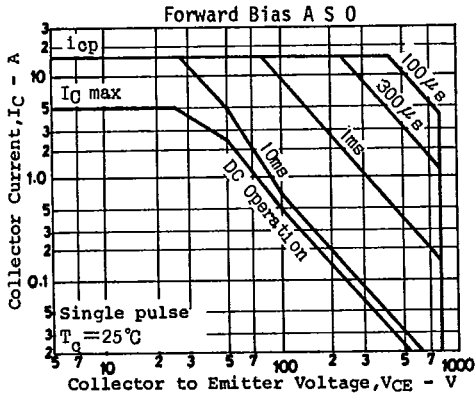
2SD1398

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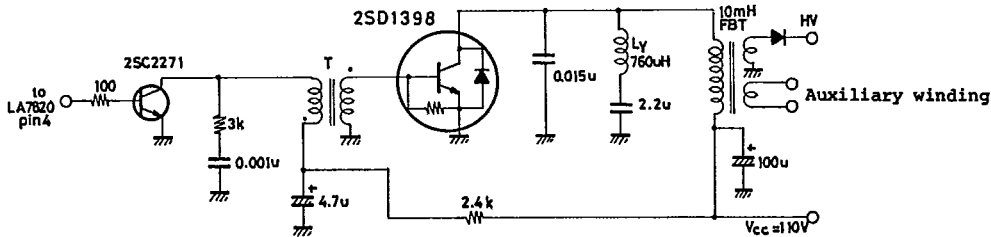


2SD1398

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Sample Application Circuit



T : C5163 (Tokyo Parts Kogyo-made)
 NP=1025T
 NS=48 3/4 T
 Core DR8X11

$I_{B1} = 0.8A$
 $-I_{B2} = 0.9 \sim 1.6A$
 $I_C = 4A$

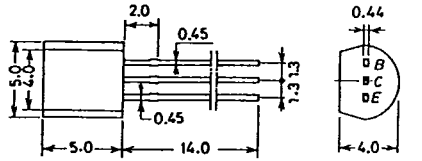
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CASE OUTLINES AND ATTACHMENTS

- 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

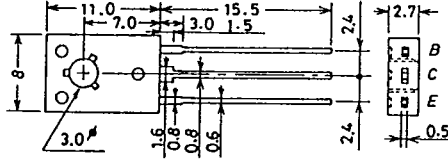


JEDEC: TO-92
EIAJ: SC-43
SANYO: NP

B. Base
C. Collector
E. Emitter

Case Outline-[2009A]

unit:mm

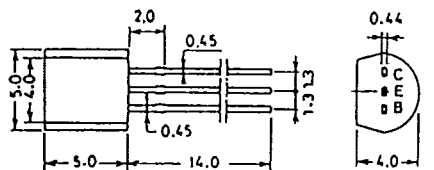


JEDEC: TO-126

B: Base
C: Collector
E: Emitter

Case Outline-[2004A]

unit:mm

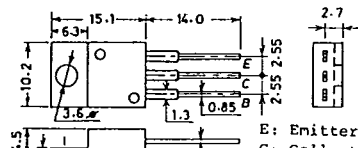


JEDEC: TO-92
EIAJ: SC-43
SANYO: NP

C. Collector
E. Emitter
B. Base

Case Outline-[2010A]

unit:mm

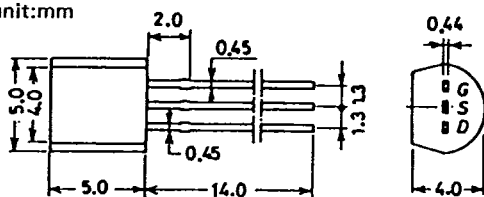


JEDEC: TO-220AB
EIAJ: SC-46

E: Emitter
C: Collector
B: Base

Case Outline-[2005A]

unit:mm

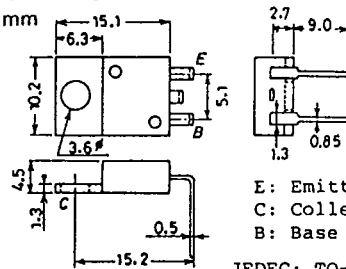


JEDEC: TO-92
EIAJ: SC-43
SANYO: NP

G: Gate
S: Source
D: Drain
B: Base
C: Collector

Case Outline-[2012]

unit:mm

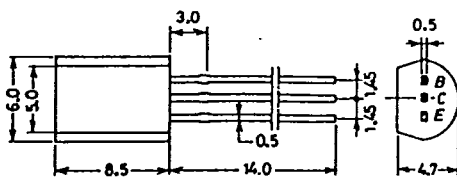


JEDEC: TO-220AA
EIAJ: SC-45

E: Emitter
C: Collector
B: Base

Case Outline-[2006A]

unit:mm

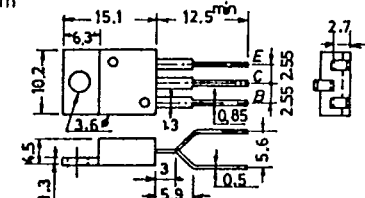


EIAJ: SC-51
SANYO: MP

B: Base
C: Collector
E: Emitter

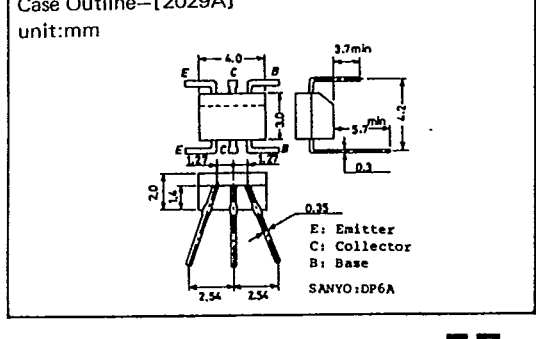
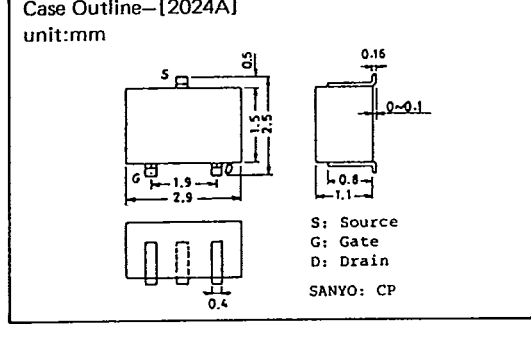
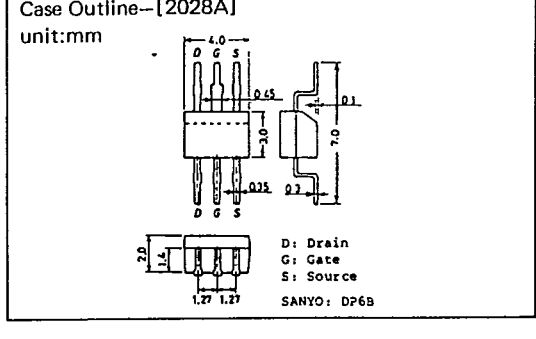
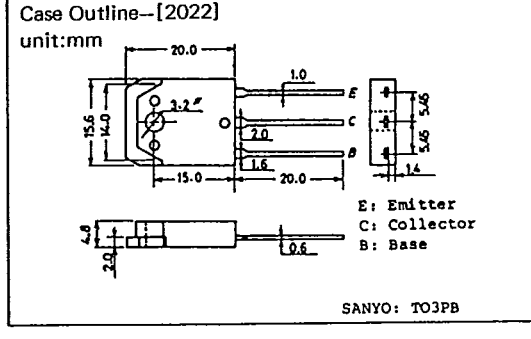
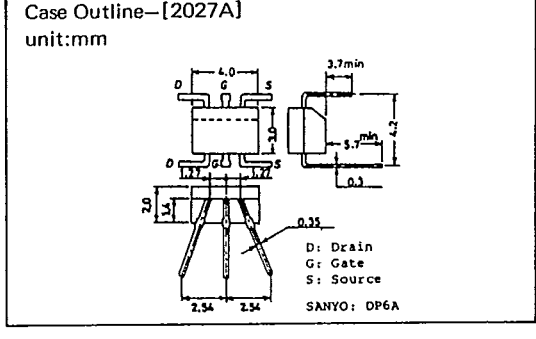
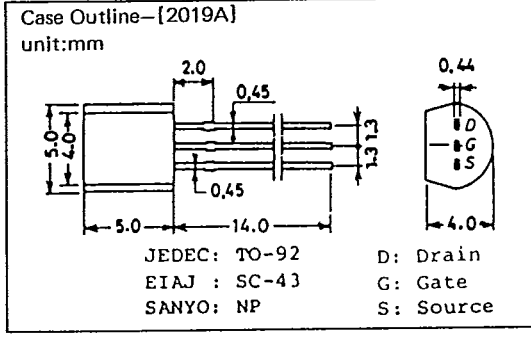
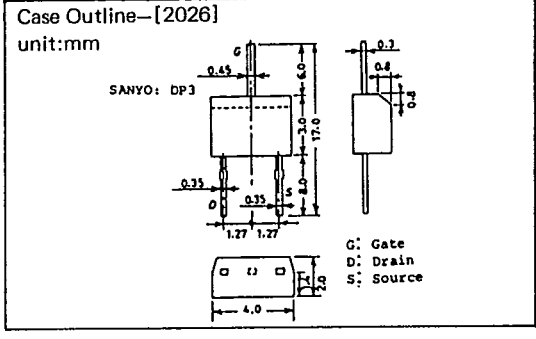
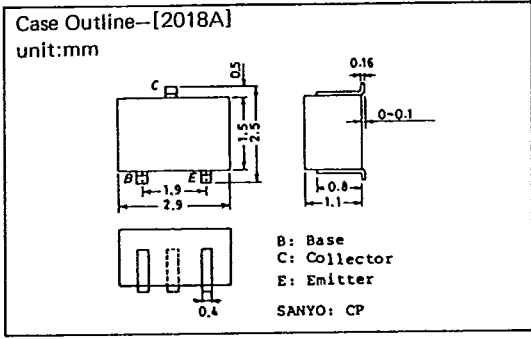
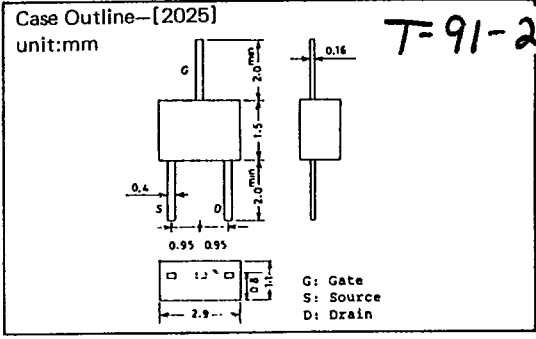
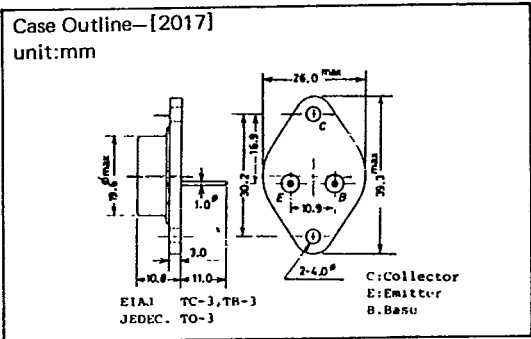
Case Outline-[2013]

unit:mm

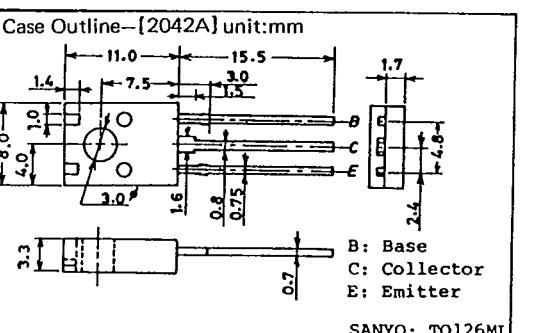
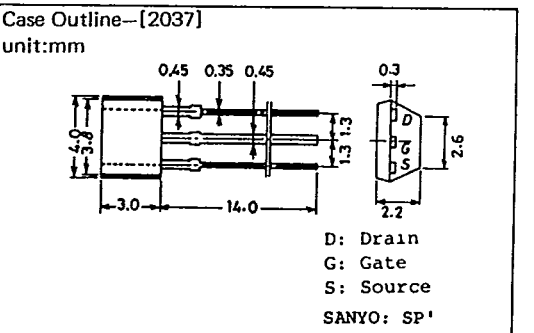
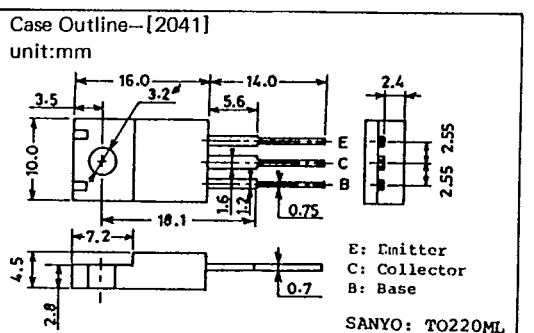
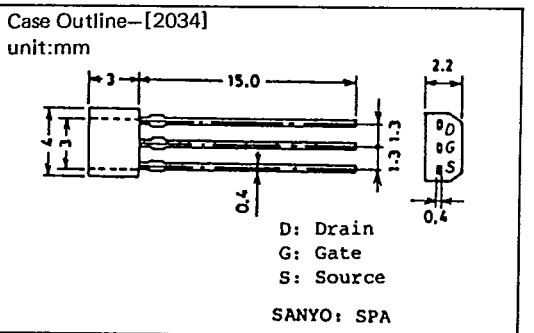
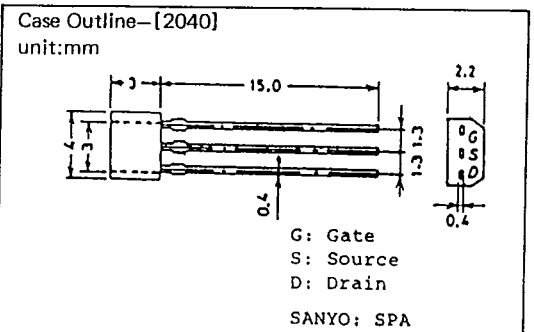
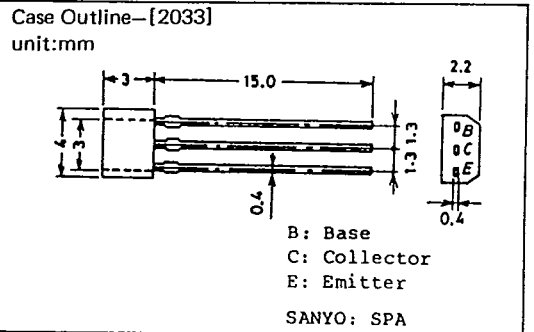
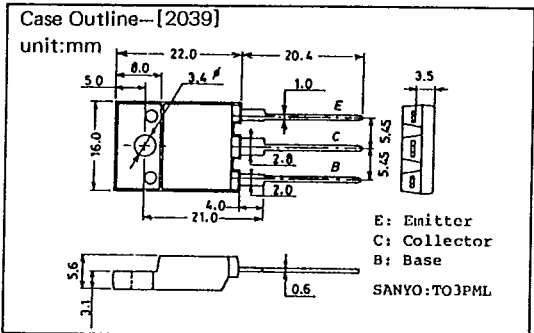
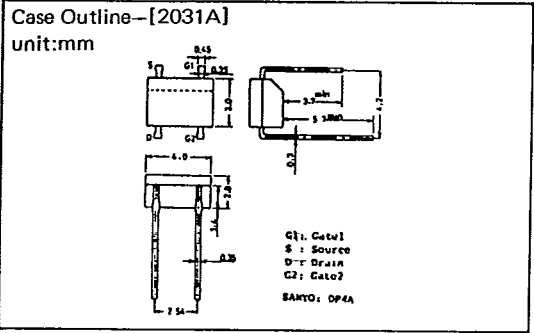
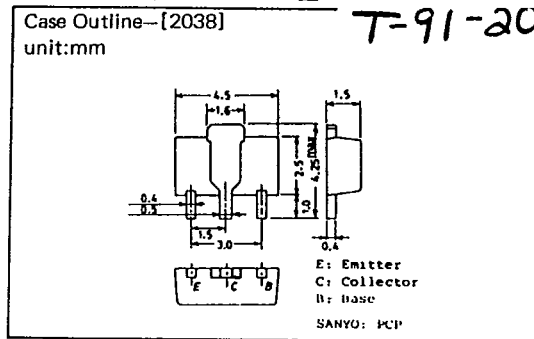
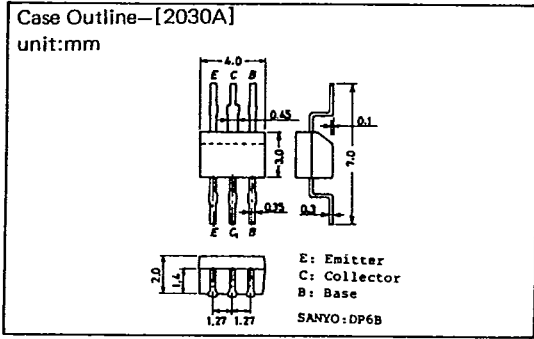


JEDEC TO-220

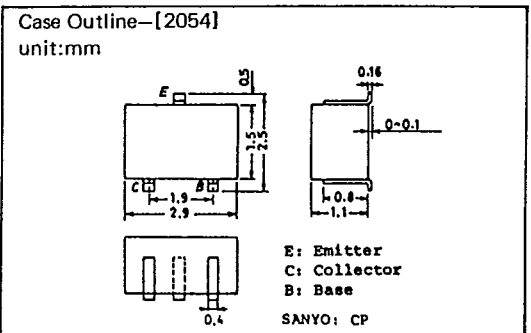
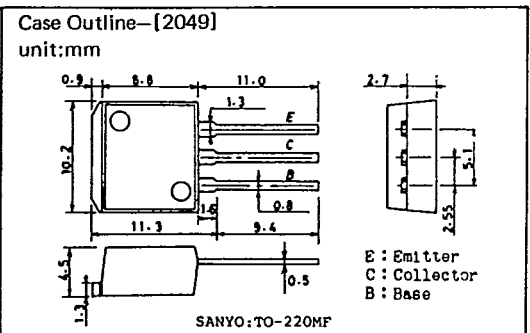
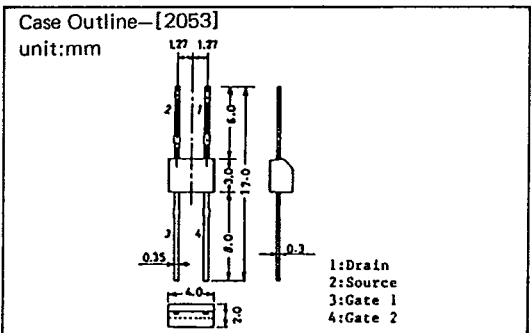
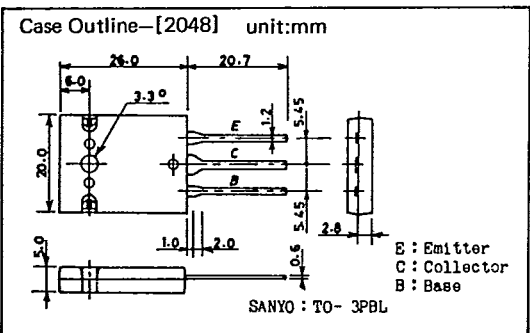
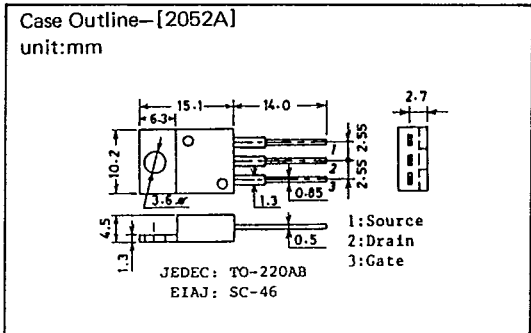
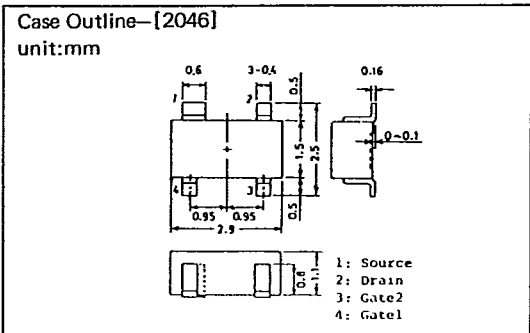
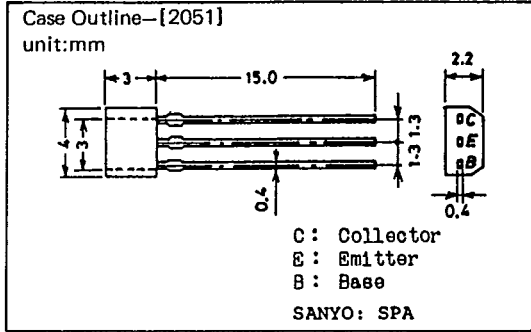
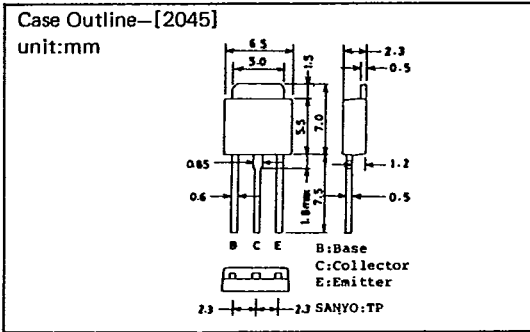
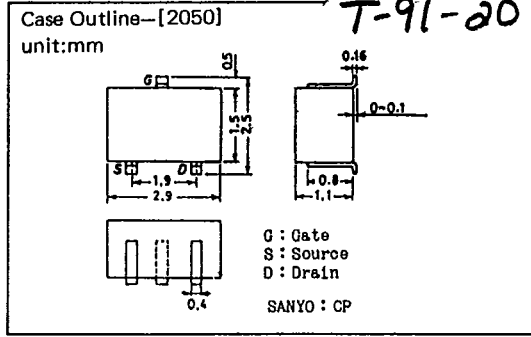
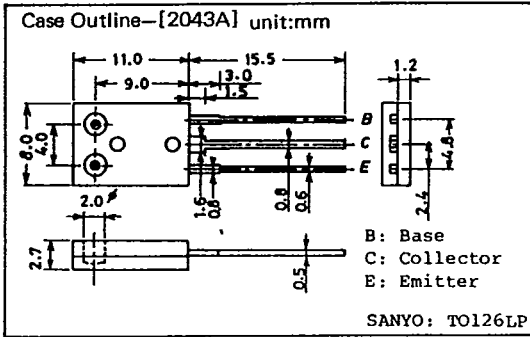
B: Base
C: Collector
E: Emitter



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