

# 2SA1552, 2SC4027



2044

T-33-17  
T-33-01

PNP/NPN Epitaxial Planar  
Silicon Transistors

## High-Voltage Switching Applications

©2262B

### Applications

- Converters, inverters, color TV audio output

### Features

- Adoption of FBET, MBET processes
- High voltage and large current capacity
- Fast switching time
- Small and slim package permitting 2SA1552/2SC4027-applied sets to be made more compact

( ): 2SA1552

### Absolute Maximum Ratings at Ta=25°C

			unit
Collector to Base Voltage	V <sub>CB0</sub>	(-)180	V
Collector to Emitter Voltage	V <sub>CE0</sub>	(-)160	V
Emitter to Base Voltage	V <sub>EBO</sub>	(-)6	V
Collector Current	I <sub>C</sub>	(-)1.5	A
Peak Collector Current	i <sub>cp</sub>	(-)2.5	A
Collector Dissipation	P <sub>C</sub>	1	W
	P <sub>C</sub>	15	W
	T <sub>j</sub>	150	°C
Junction Temperature	T <sub>j</sub>		
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

### Electrical Characteristics at Ta=25°C

			min	typ	max	unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =(-)120V, I <sub>E</sub> =0			(-)1.0	uA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0			(-)1.0	uA
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)100mA	100*		400*	
	h <sub>FE</sub> (2)	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)10mA	80			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =(-)10V, I <sub>C</sub> =(-)50mA		120		MHz
Output Capacitance	c <sub>ob</sub>	V <sub>CB</sub> =(-)10V, f=1MHz		(22)12		pF

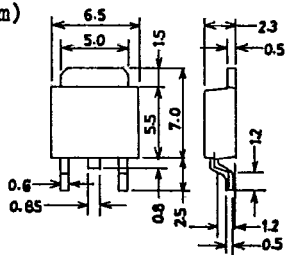
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\*: The 2SA1552/2SC4027 are classified by 100mA h<sub>FE</sub> as follows:

100	R	200	140	S	280	200	T	400
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### Case Outline 2044

(unit:mm)



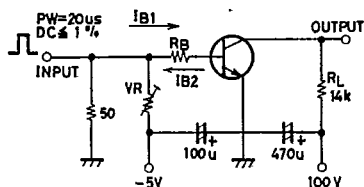
B C E  
B: Base  
C: Collector  
E: Emitter

2.3 2.3 SANYO: TP-FA

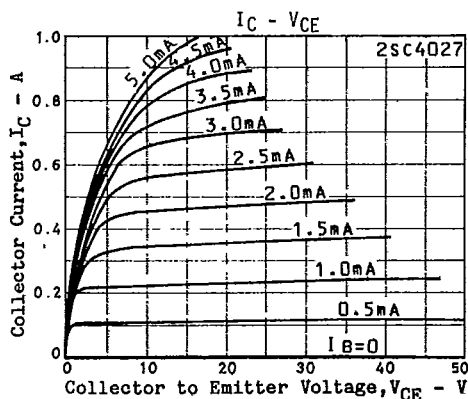
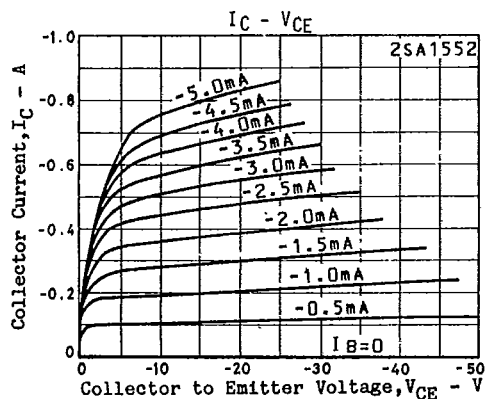
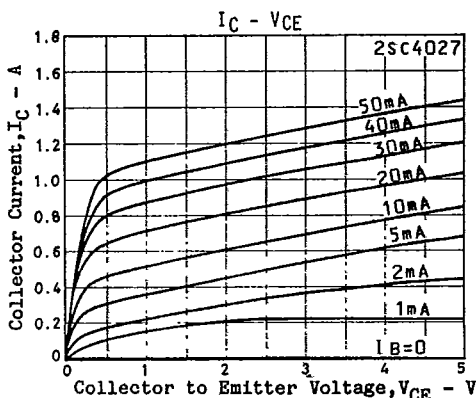
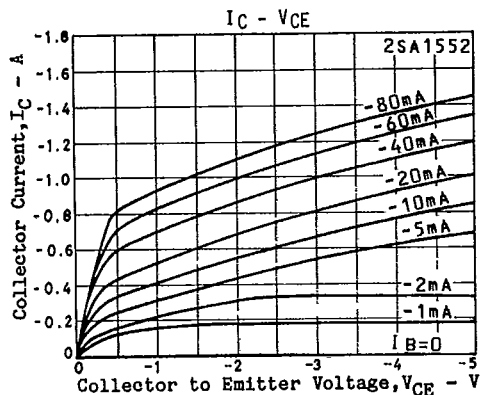
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			min	typ	max	unit
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		(-0.2)	(-0.5)	V
				0.13	0.45	
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		(-)0.85	(-)1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$		(-)180		V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$		(-)160		V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$		(-)6		V
Turn-on Time	$t_{on}$	See specified Test Circuit.		60		ns
Storage Time	$t_{stg}$			(0.7)1.2		us
Fall Time	$t_f$			(50)80		ns

Switching Time Test Circuit



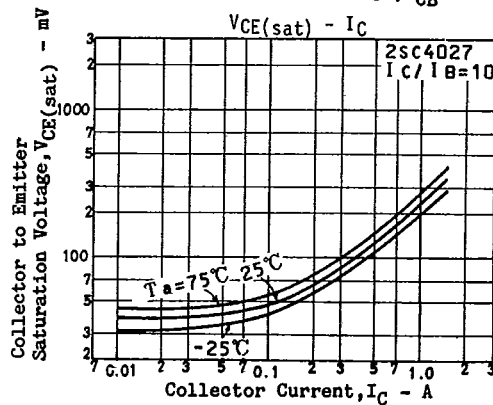
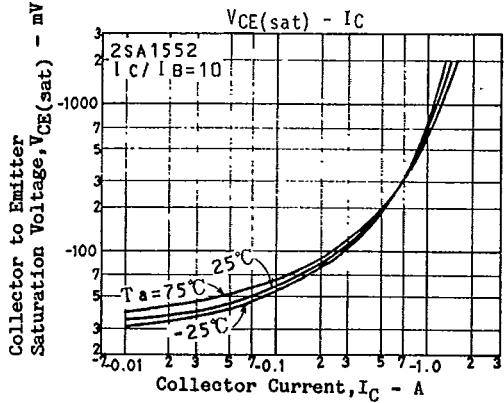
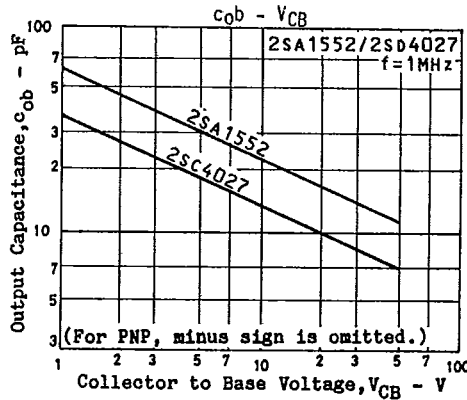
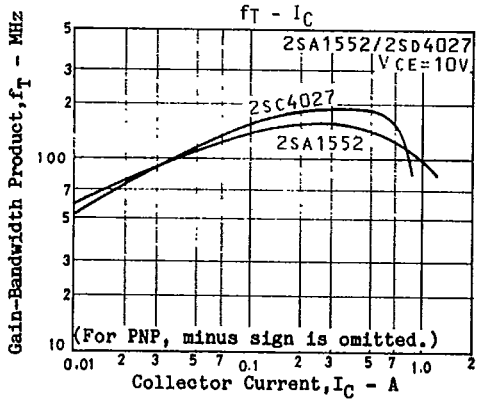
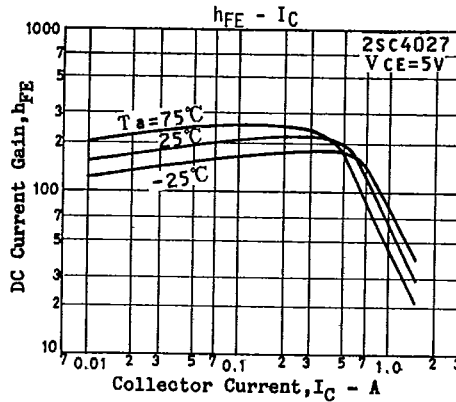
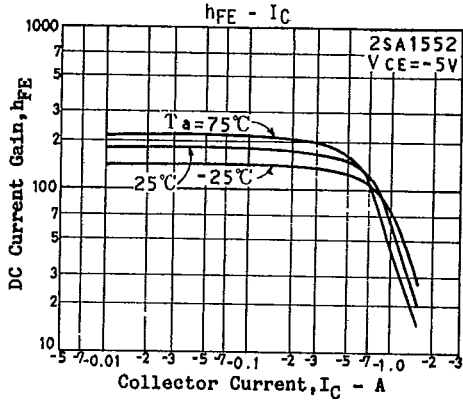
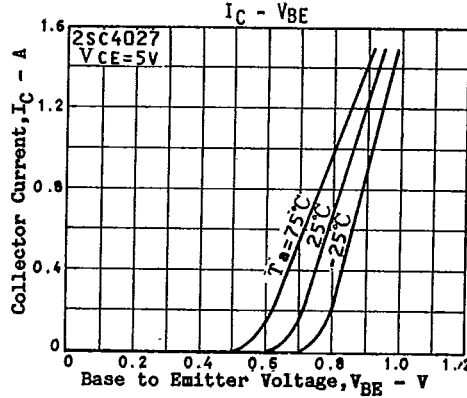
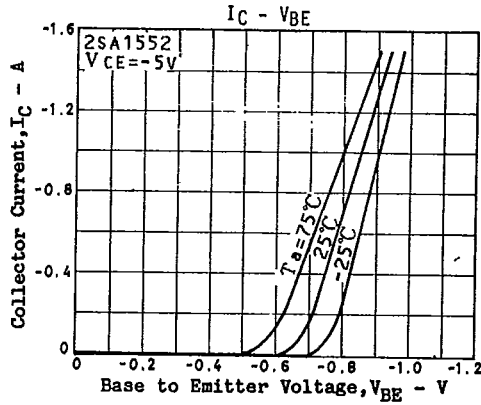
$10I_{B1} = -10I_{B2} = I_C = 0.7A$   
For PNP, the polarity is reversed.



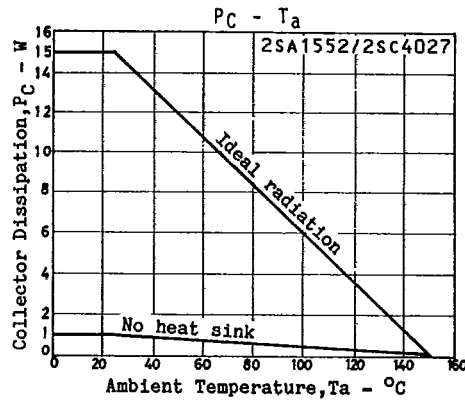
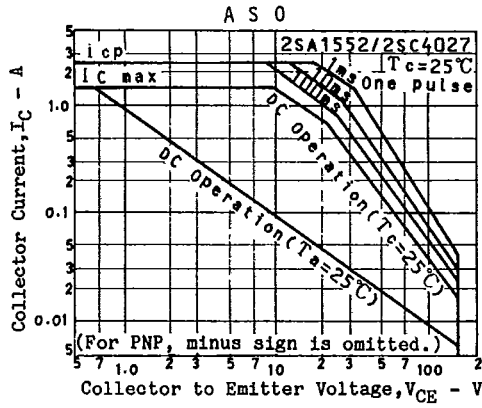
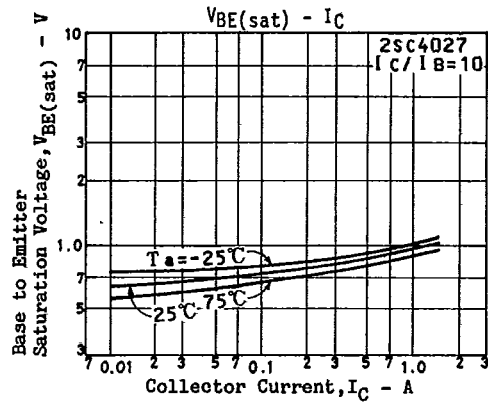
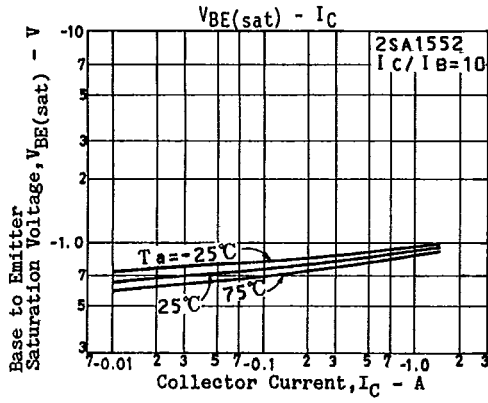
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T-33-07



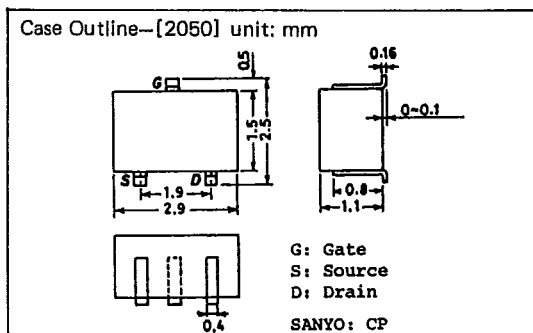
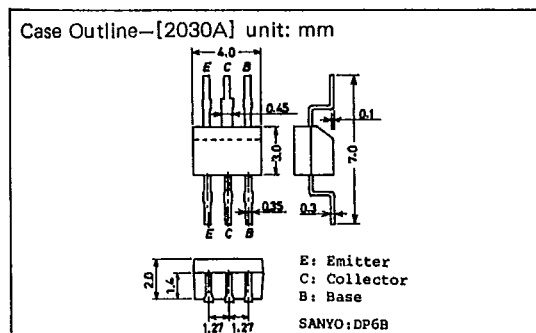
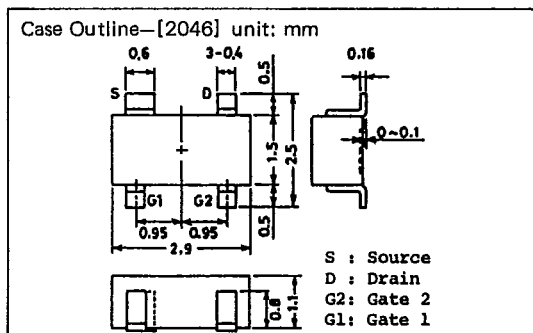
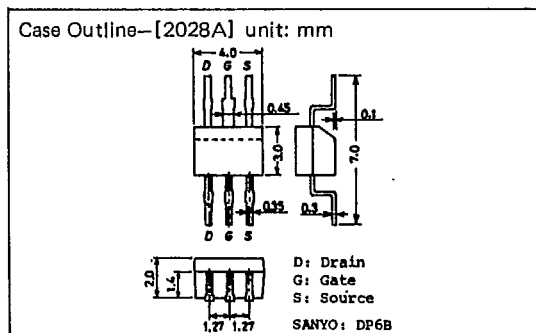
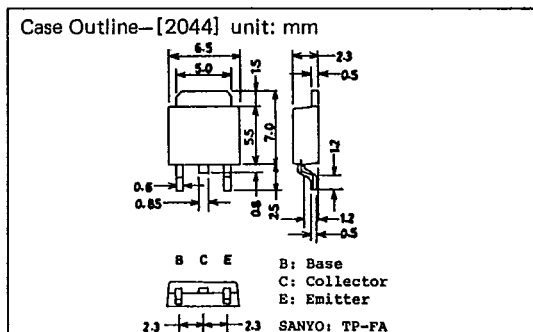
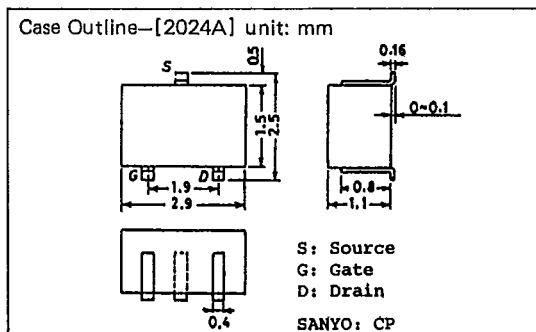
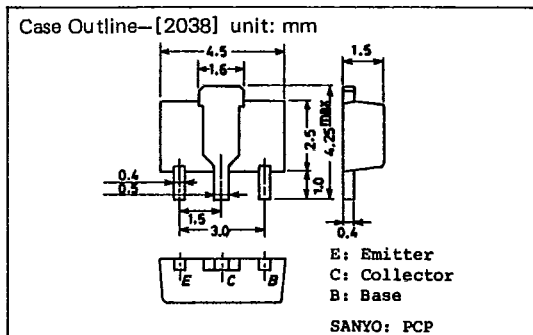
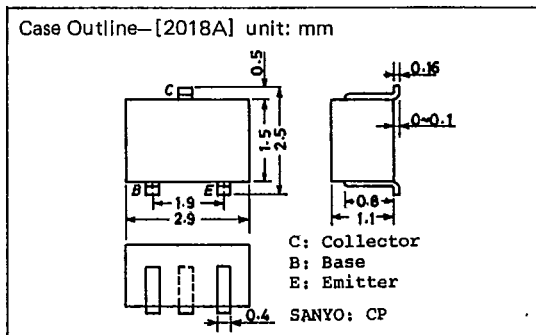
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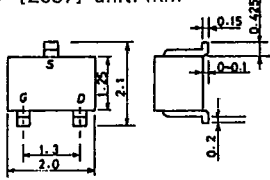
# CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- All of Sanyo surface mount 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.



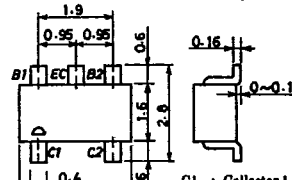
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Case Outline—[2057] unit: mm



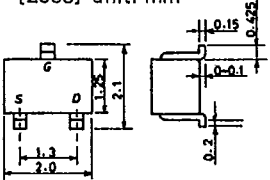
S: Source  
G: Gate  
D: Drain  
SANYO: MCP

Case Outline—[2066] unit: mm



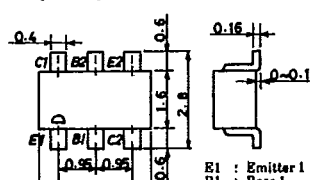
C1 : Collector 1  
C2 : Collector 2  
B2 : Base 2  
EC : Emitter Common  
B1 : Base 1  
SANYO : CP6

Case Outline—[2058] unit: mm



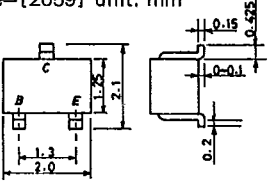
G: Gate  
S: Source  
D: Drain  
SANYO: MCP

Case Outline—[2067] unit: mm



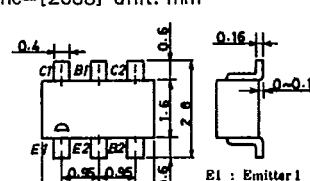
E1 : Emitter 1  
B1 : Base 1  
C2 : Collector 2  
E2 : Emitter 2  
B2 : Base 2  
C1 : Collector 1  
SANYO : CP6

Case Outline—[2059] unit: mm



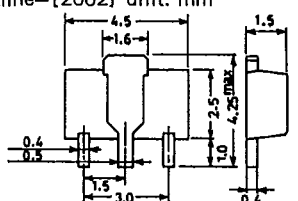
B: Base  
C: Collector  
E: Emitter  
SANYO: MCP

Case Outline—[2068] unit: mm



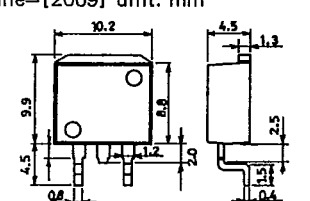
B1 : Emitter 1  
E2 : Emitter 2  
B2 : Base 2  
C2 : Collector 2  
B1 : Base 1  
C1 : Collector 1  
SANYO : CP6

Case Outline—[2062] unit: mm



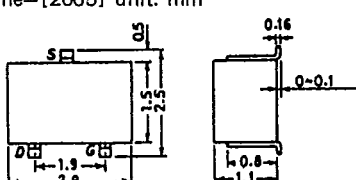
S: Source  
D: Drain  
G: Gate  
SANYO: PCP

Case Outline—[2069] unit: mm



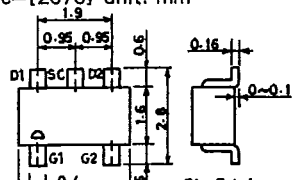
B: Base  
C: Collector  
E: Emitter  
SANYO: SMP

Case Outline—[2065] unit: mm



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

Case Outline—[2070] unit: mm



G1 : Gate 1  
G2 : Gate 2  
D2 : Drain 2  
SC : Source Common  
D1 : Drain 1  
SANYO : CP6

T-9120

