



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## 2SA1552 / 2SC4027 — PNP / NPN Epitaxial Planar Silicon Transistors

# High-Voltage Switching Applications

### Applications

- Converters, inverters, color TV audio output.

### Features

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

### Specifications ( ) : 2SA1552

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		(-)180	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		(-)160	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		(-)6	V
Collector Current	I <sub>C</sub>		(-)1.5	A
Collector Current (Pulse)	I <sub>CP</sub>		(-)2.5	A
Collector Dissipation	P <sub>C</sub>		1	W
		T <sub>c</sub> =25°C	15	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

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**SANYO Semiconductor Co., Ltd.**

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# 2SA1552 / 2SC4027

## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)120V, I_E = 0A$			(-)1.0	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4V, I_C = 0A$			(-)1.0	$\mu A$
DC Current Gain	$h_{FE1}$	$V_{CE} = (-)5V, I_C = (-)100mA$	100*		400*	
	$h_{FE2}$	$V_{CE} = (-)5V, I_C = (-)10mA$	80			
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)10V, I_C = (-)50mA$		120		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = (-)10V, f = 1MHz$		(22)12		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)500mA, I_B = (-)50mA$		(-0.2)0.13	(-0.5)0.45	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)500mA, I_B = (-)50mA$		(-)0.85	(-)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0A$	(-)180			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)160			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0A$	(-)6			V
Turn-On Time	$t_{on}$	See specified Test Circuit.		60		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		(0.7)1.2		$\mu s$
Fall Time	$t_f$	See specified Test Circuit.		(50)80		ns

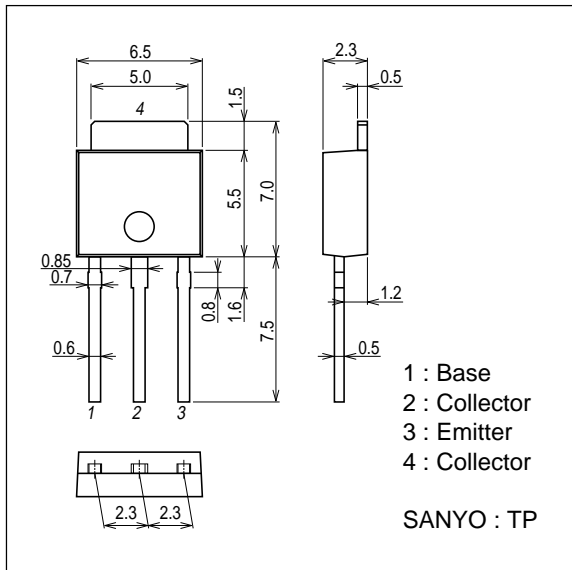
\* : The 2SA1552 / 2SC4027 are classified by 100mA  $h_{FE}$  as follows:

Rank	R	S	T
$h_{FE}$	100 to 200	140 to 280	200 to 400

### Package Dimensions

unit : mm (typ)

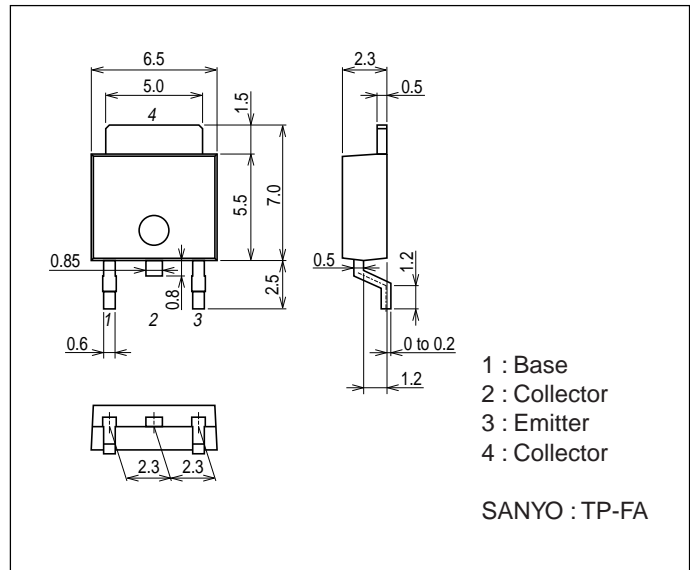
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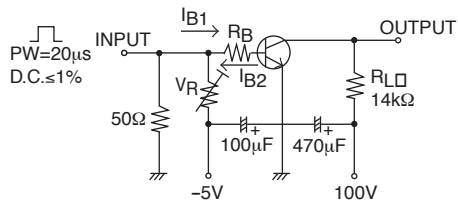
### Package Dimensions

unit : mm (typ)

7003-003

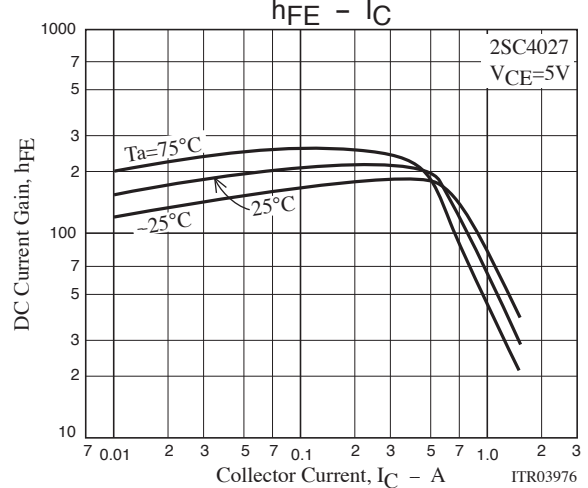
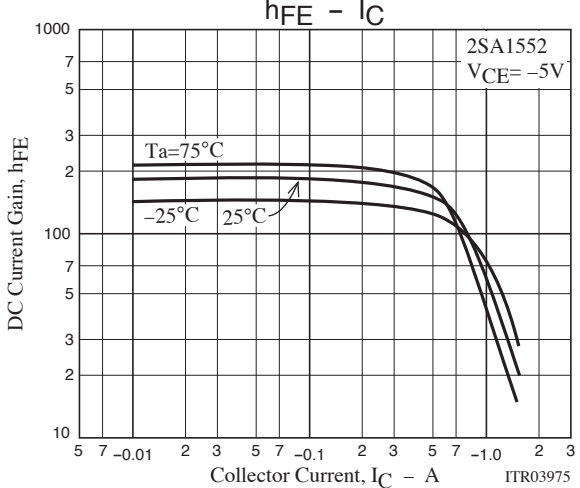
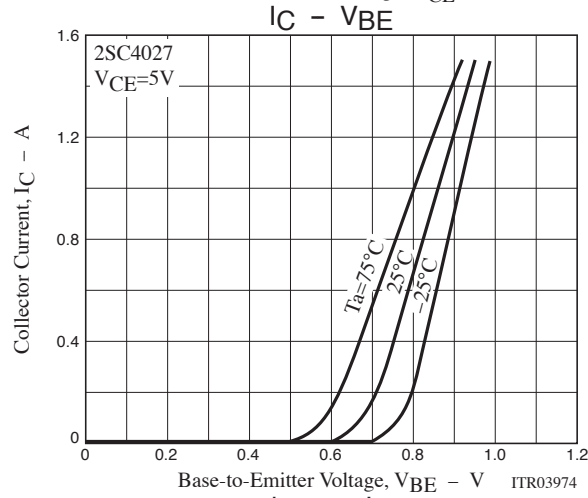
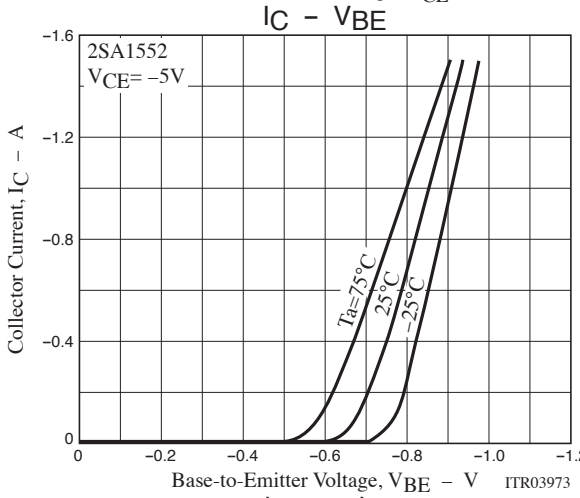
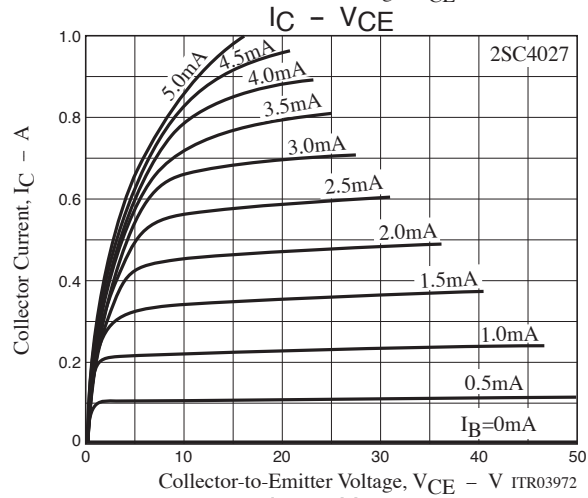
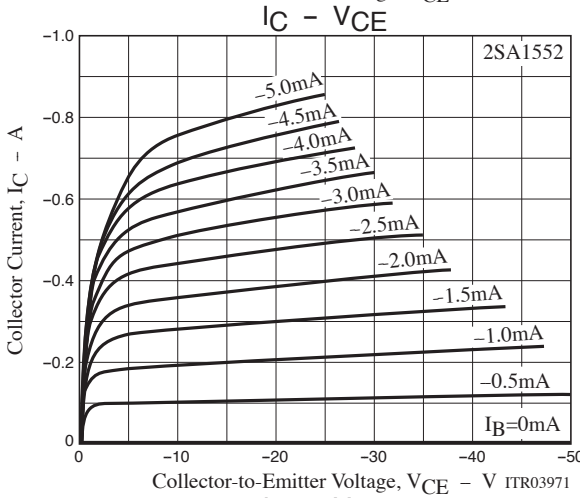
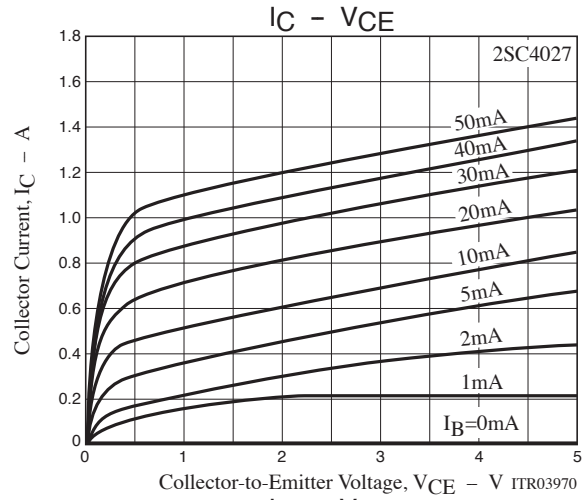
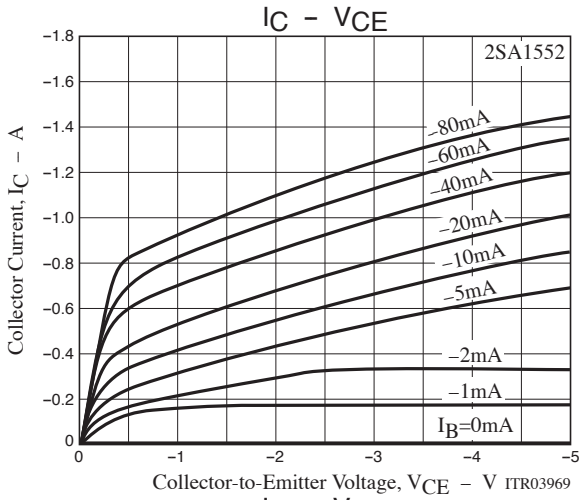


### Switching Time Test Circuit

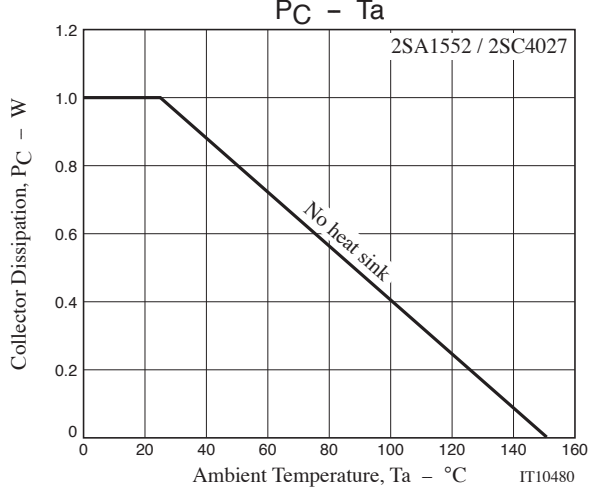
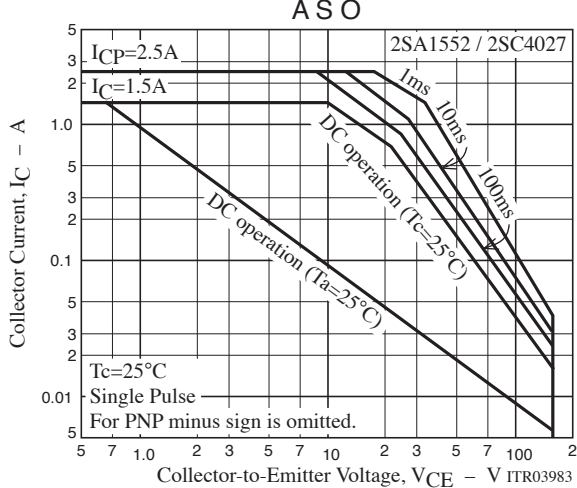
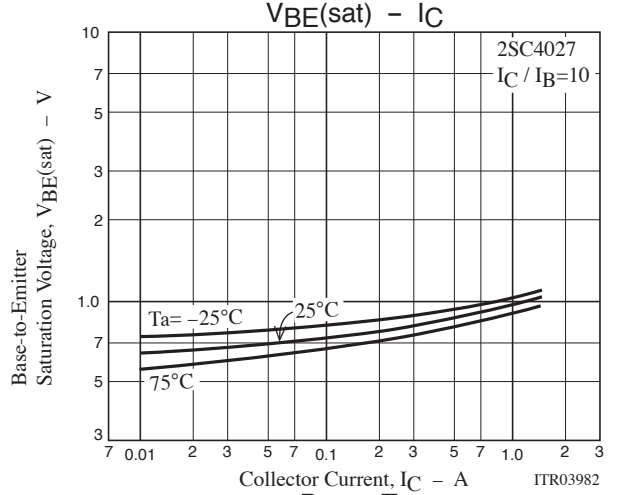
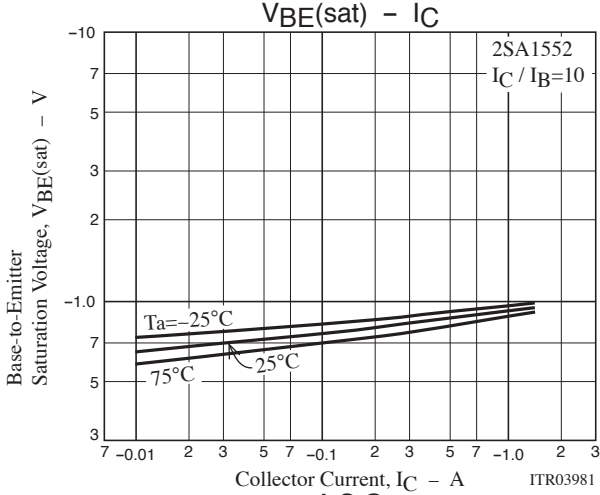
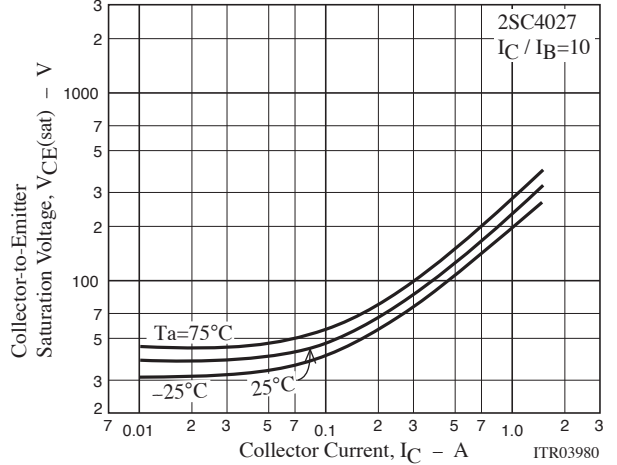
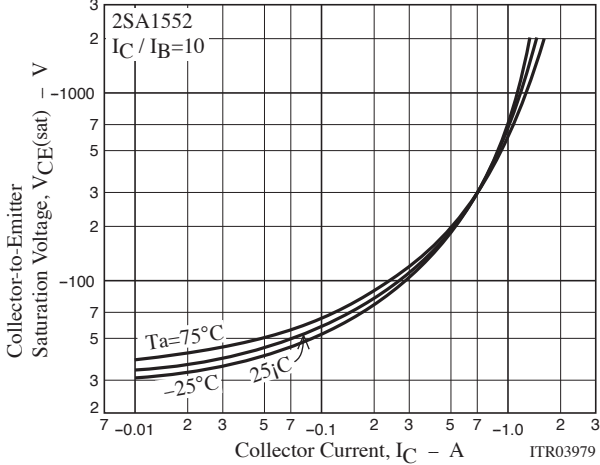
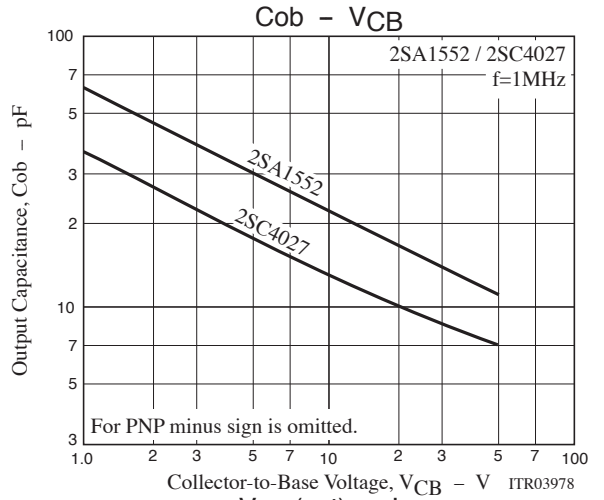
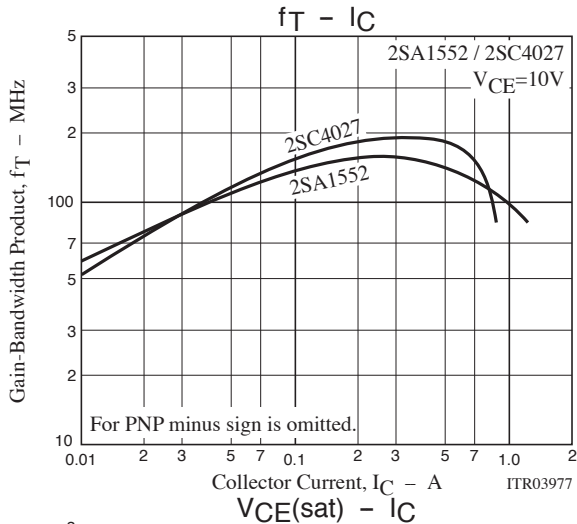


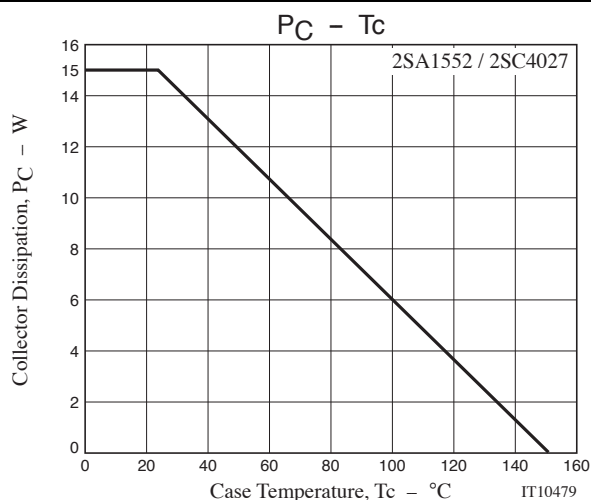
$10I_{B1} = -10I_{B2} = I_C = 0.7A$   
For PNP, the polarity is reversed.

2SA1552 / 2SC4027



# 2SA1552 / 2SC4027





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