



# 2SA2168

 — PNP Epitaxial Planar Silicon Transistor  

## High-Voltage Switching Applications

### Features

- Adoption of MBIT process.
- High breakdown voltage and large current capacity.

### Specifications

**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>		1.5	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

**Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =-120V, I <sub>E</sub> =0A			-1	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =-4V, I <sub>C</sub> =0A			-1	μA
DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-100mA	140*		400*	
	h <sub>FE2</sub>	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		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA		-200	-500	mV
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CB0</sub>	I <sub>C</sub> =-10μA, I <sub>E</sub> =0A	-180			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-1mA, R <sub>BE</sub> =∞	-160			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-10μA, I <sub>C</sub> =0A	-6			V
Turn-ON Time	t <sub>on</sub>	See specified Test Circuit.		40		ns
Storage Time	t <sub>stg</sub>	See specified Test Circuit.		0.7		μs
Fall Time	t <sub>f</sub>	See specified Test Circuit.		40		ns

\* ; The 2SA2168 is classified by 100mA h<sub>FE</sub> as follows :

Rank	S	T
h <sub>FE</sub>	140 to 280	200 to 400

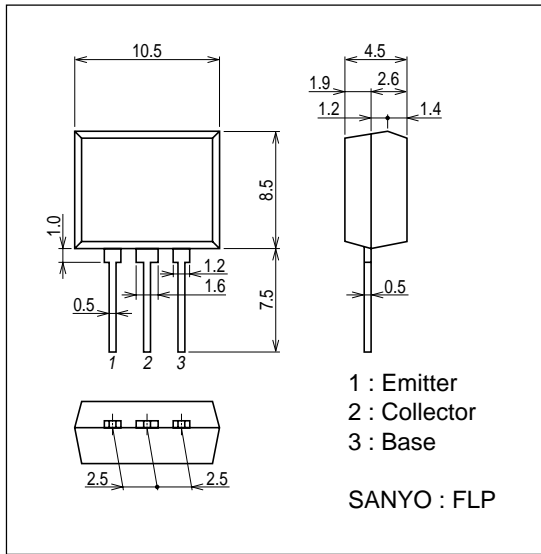
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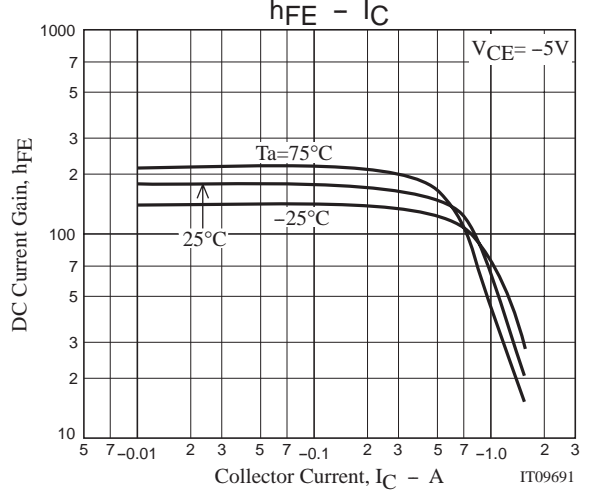
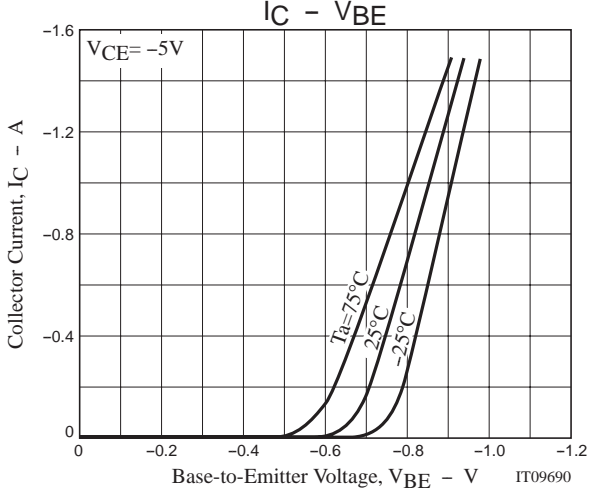
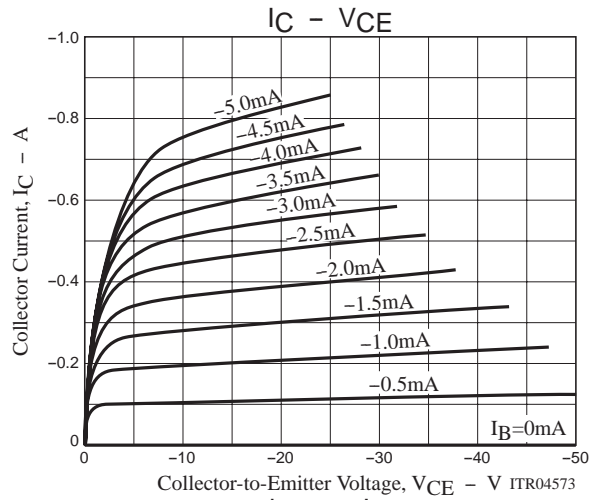
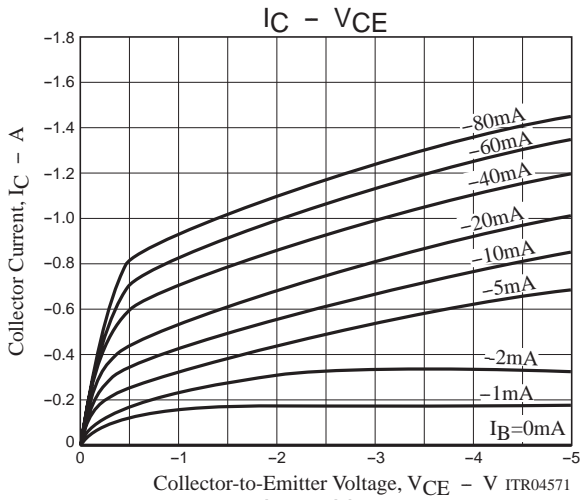
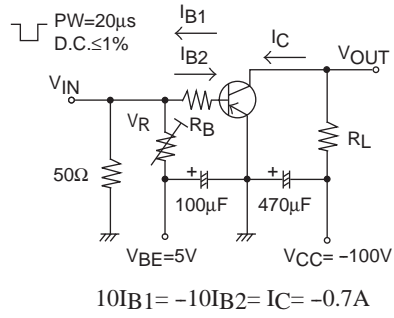
# 2SA2168

## Package Dimensions

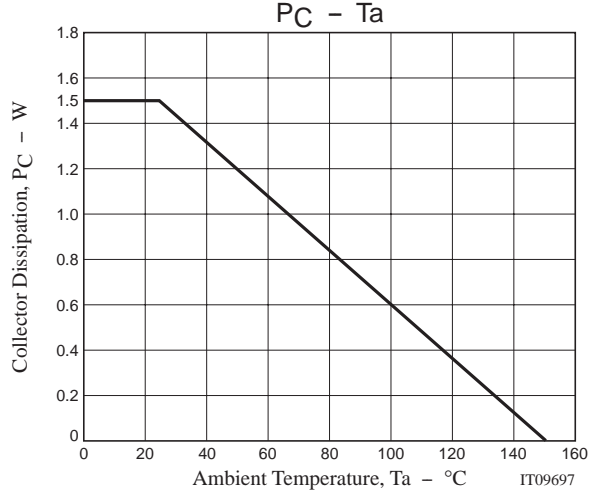
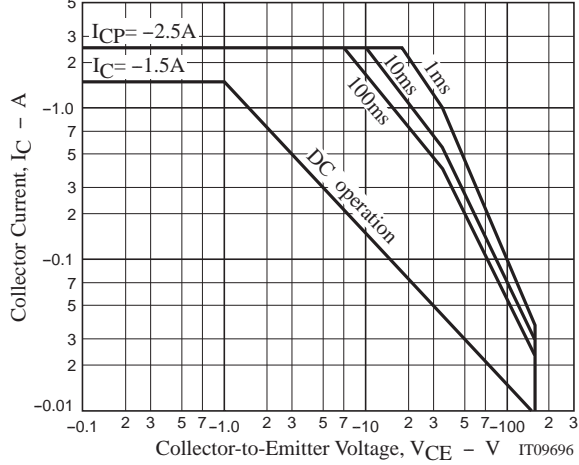
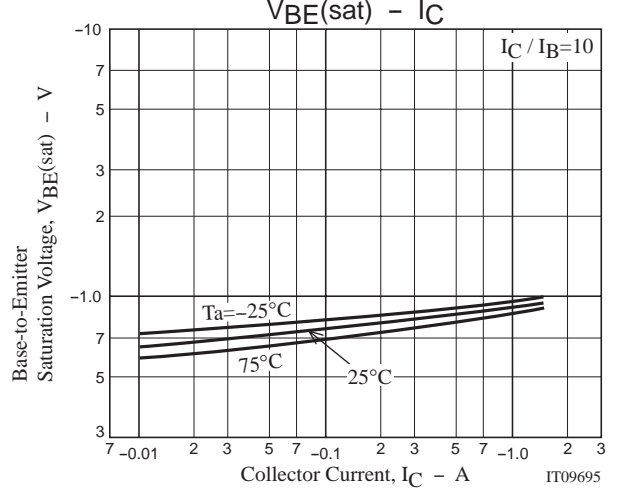
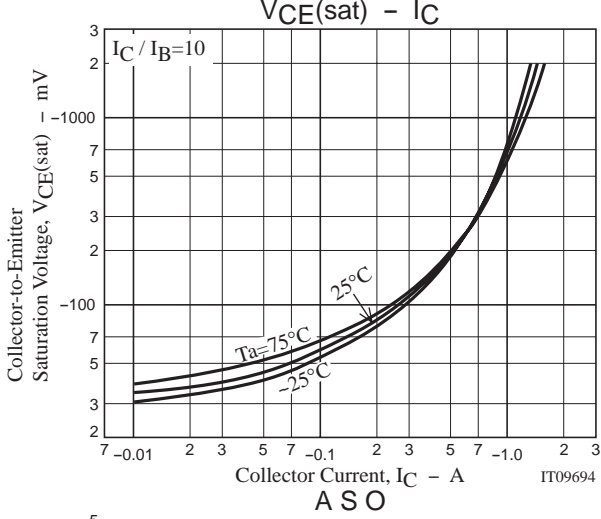
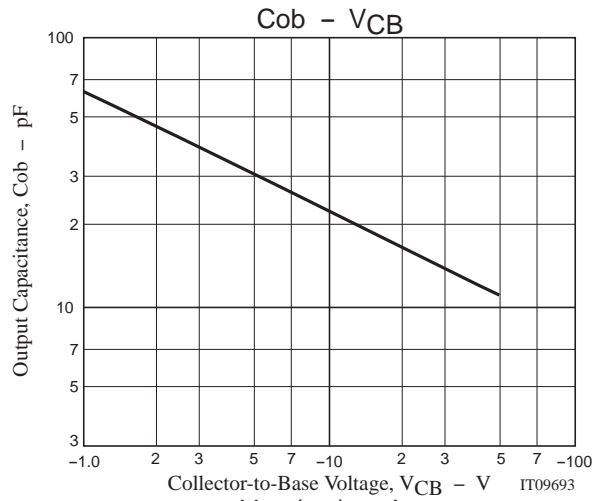
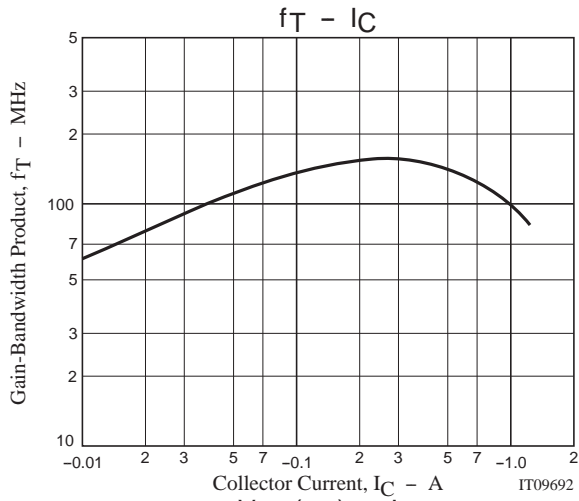
unit : mm  
7514-003



## Switching Time Test Circuit



# 2SA2168



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