



SANYO Semiconductors

## DATA SHEET

# 2SA2192

 — PNP Epitaxial Planar Silicon Transistor  
**High-Current Switching Applications**

## Applications

- Relay drivers, lamp drivers, motor drivers.

## Features

- Adoption of MBIT process.
- Large current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.

## Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		-50	V
Collector-to-Emitter Voltage	V <sub>CES</sub>		-50	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		-50	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		-8	V
Collector Current	I <sub>C</sub>		-10	A
Collector Current (Pulse)	I <sub>CP</sub>	PW≤100μs	-13	A
Base Current	I <sub>B</sub>		-2	A
Collector Dissipation	P <sub>C</sub>		0.95	W
		T <sub>c</sub> =25°C	20	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> =-40V, I <sub>E</sub> =0A			-10	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =-4V, I <sub>C</sub> =0A			-10	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =-2V, I <sub>C</sub> =-1A	200		560	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-1A		130		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, f=1MHz		90		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-5A, I <sub>B</sub> =-250mA	-290		-580	mV
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-5A, I <sub>B</sub> =-250mA	-0.93		-1.4	V

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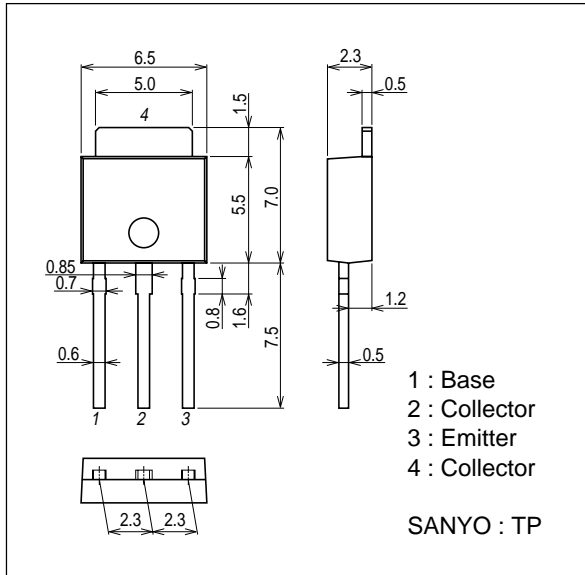
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -100\mu A, I_E = 0A$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = -100\mu A, R_{BE} = 0\Omega$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -100\mu A, I_C = 0A$	-8			V
Turn-On Time	$t_{on}$	See specified Test Circuit.		70		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		650		ns
Fall Time	$t_f$	See specified Test Circuit.		60		ns

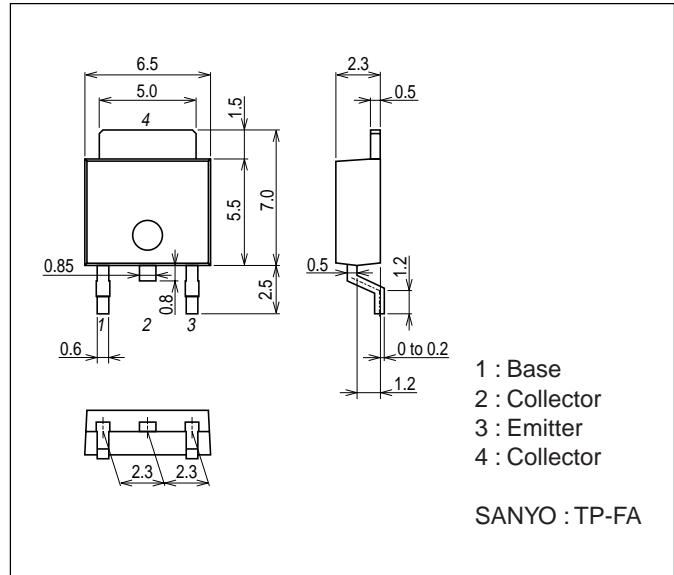
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unit : mm  
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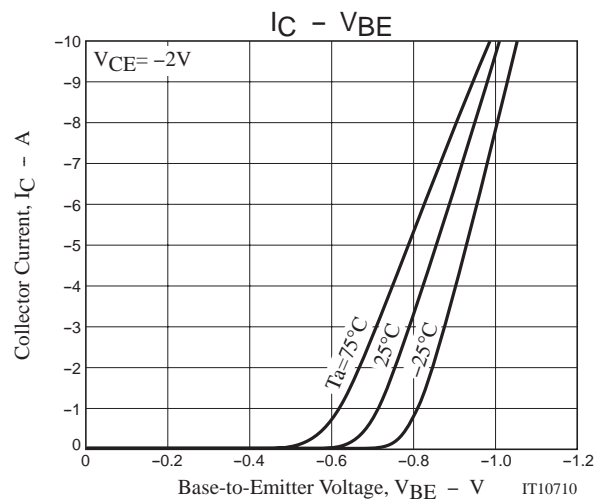
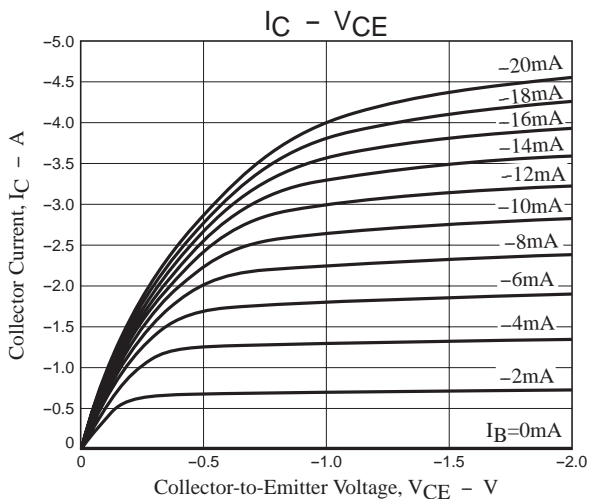
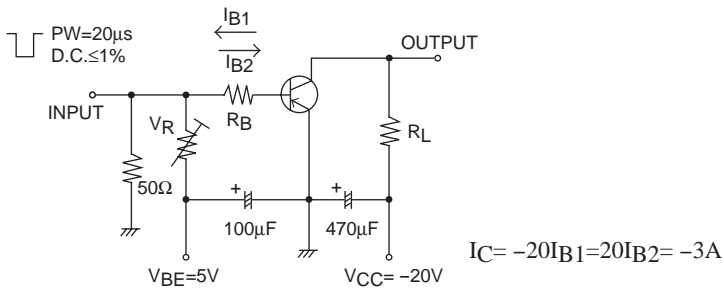


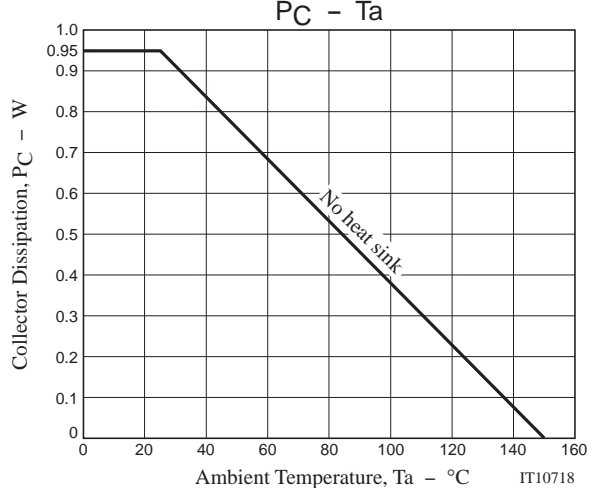
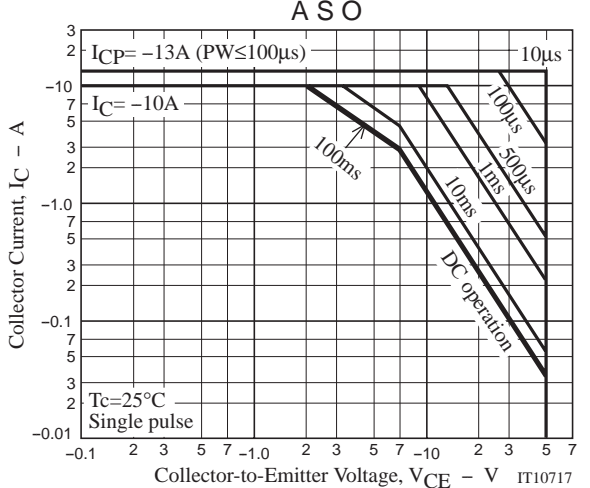
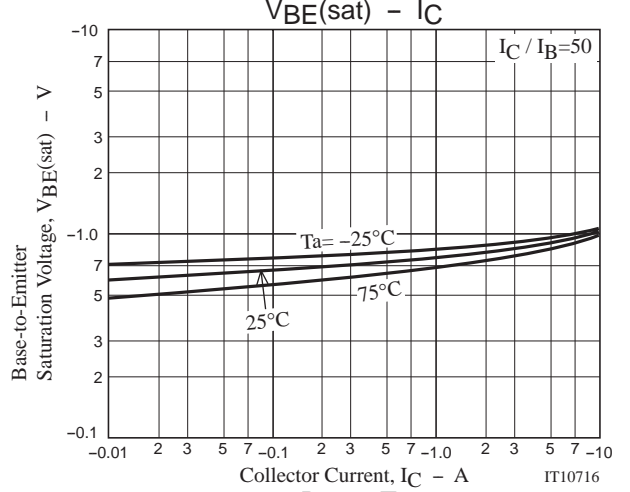
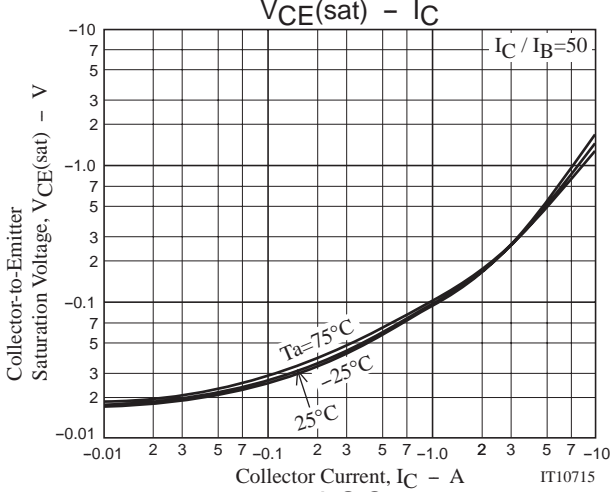
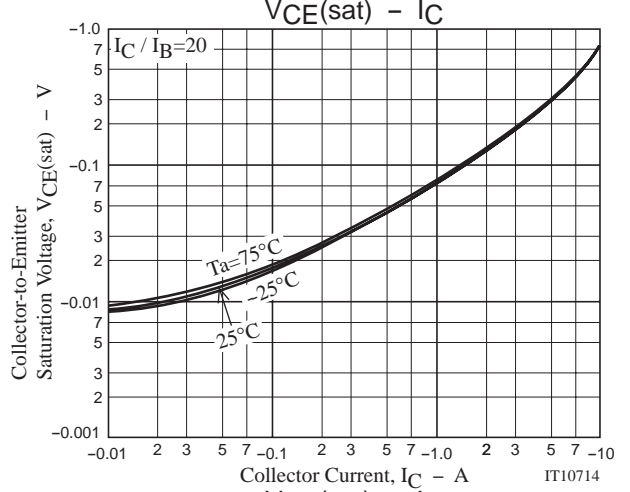
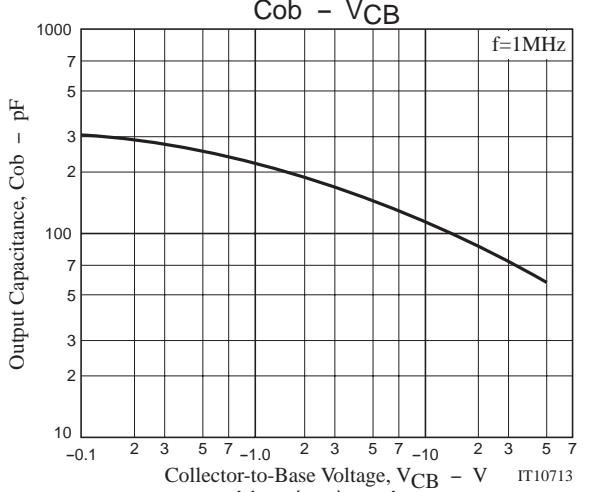
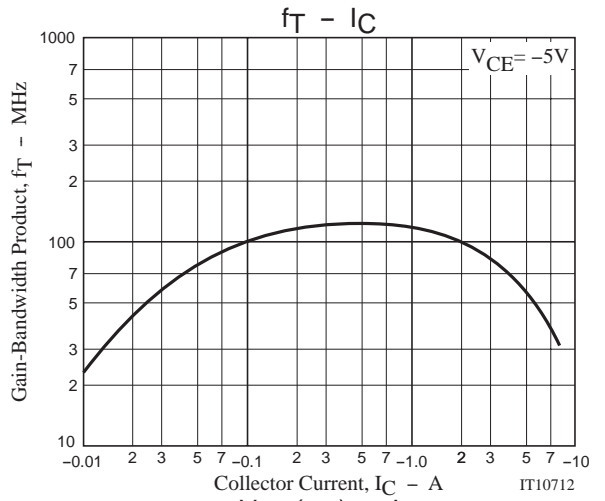
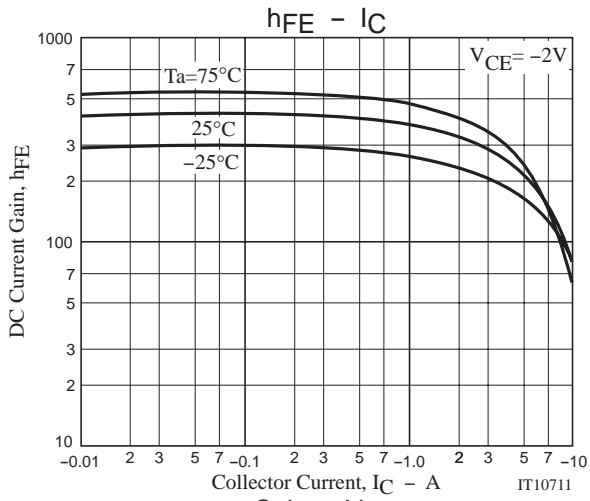
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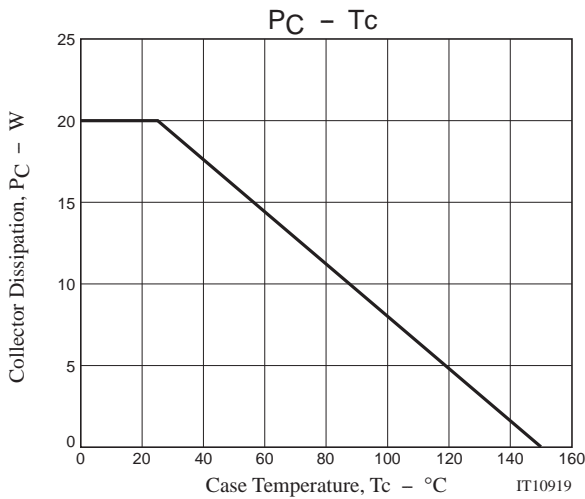
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## Switching Time Test Circuit







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