



# SANYO Semiconductors DATA SHEET

## 2SA2210 — PNP Epitaxial Planar Silicon Transistor High-Current Switching Applications

### Applications

- Relay drivers, lamp drivers, motor drivers.

### Features

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

### Specifications

**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>CEO</sub>		-50	V
Emitter-to-Base Voltage	V <sub>EB0</sub>		-6	V
Collector Current	I <sub>C</sub>		-20	A
Collector Current (Pulse)	I <sub>CP</sub>		-25	A
Base Current	I <sub>B</sub>		-3	A
Collector Dissipation	P <sub>C</sub>		2	W
		T <sub>c</sub> =25°C	30	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

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# 2SA2210

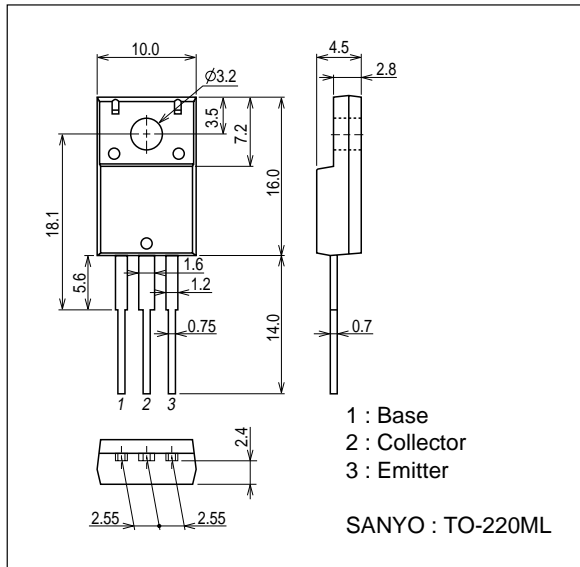
## Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-40\text{V}, I_E=0\text{A}$			-10	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-4\text{V}, I_C=0\text{A}$			-10	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=-2\text{V}, I_C=-1\text{A}$	150		450	
Gain-Bandwidth Product	$f_T$	$V_{CE}=-10\text{V}, I_C=-1\text{A}$		140		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10\text{V}, f=1\text{MHz}$		215		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-7\text{A}, I_B=-350\text{mA}$		-200	-500	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-7\text{A}, I_B=-350\text{mA}$			-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-100\mu\text{A}, I_E=0\text{A}$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, R_{BE}=\infty$	-50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-100\mu\text{A}, I_C=0\text{A}$	-6			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		60		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		270		ns
Fall Time	$t_f$	See specified Test Circuit.		20		ns

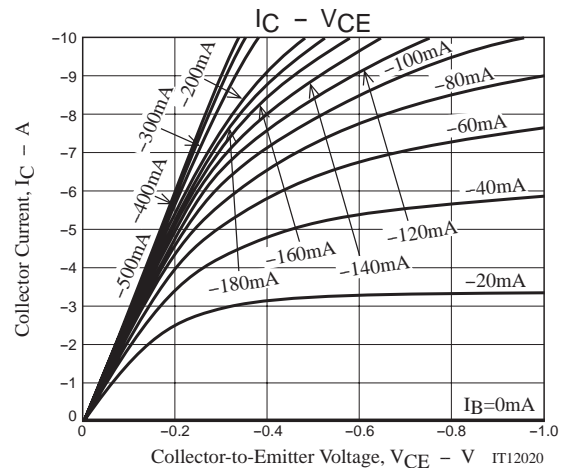
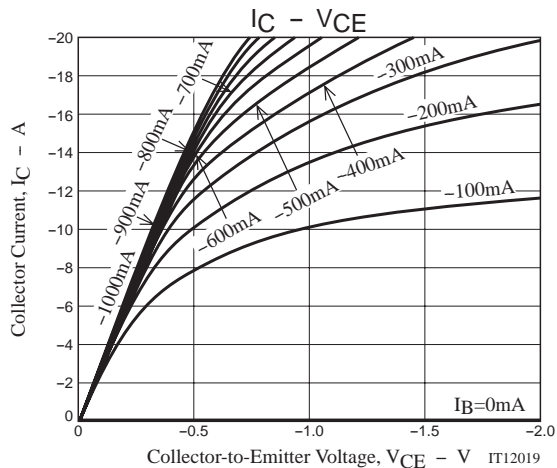
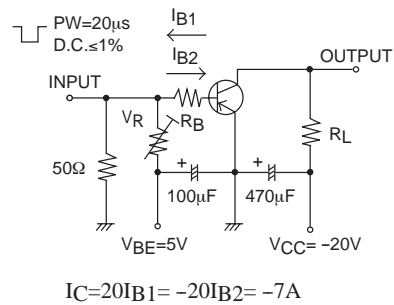
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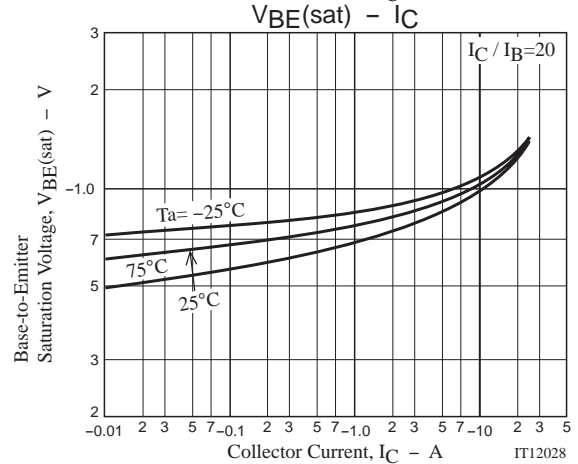
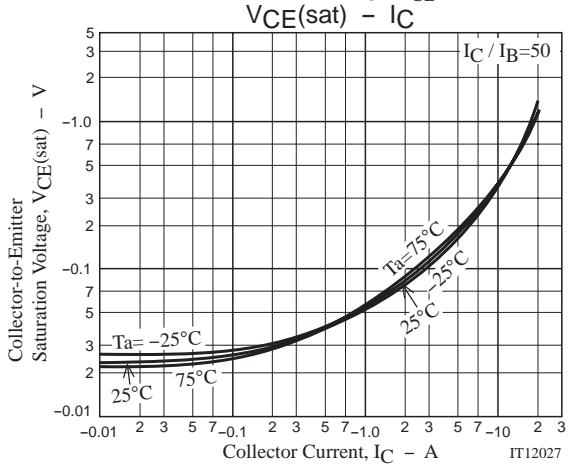
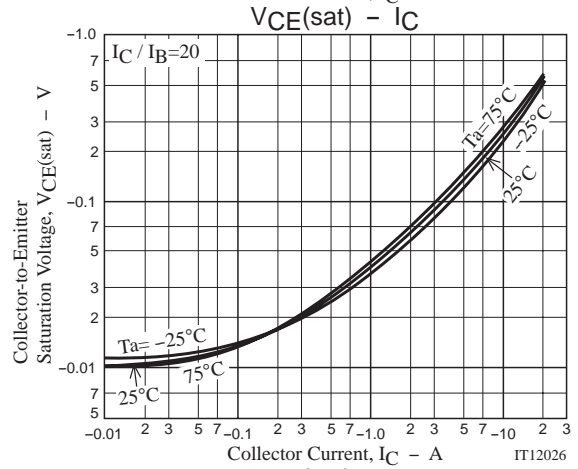
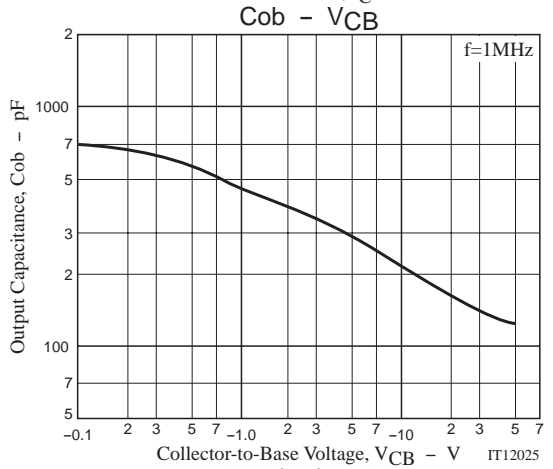
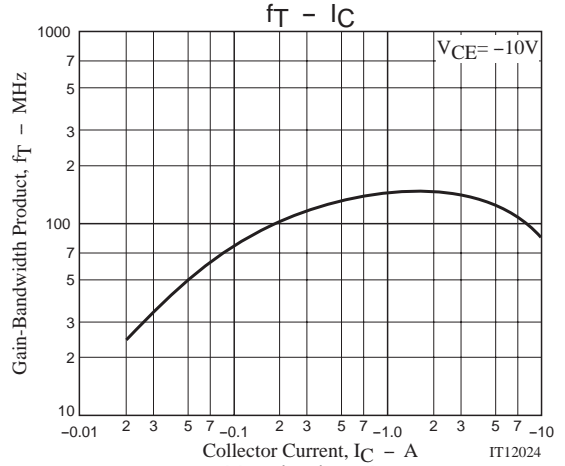
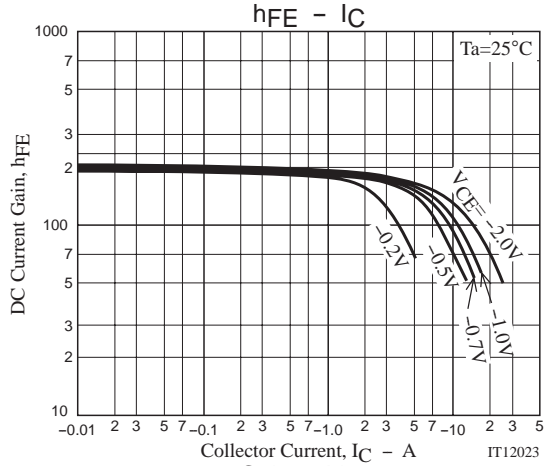
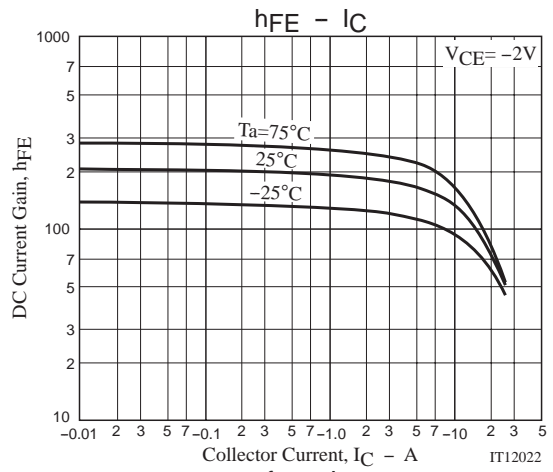
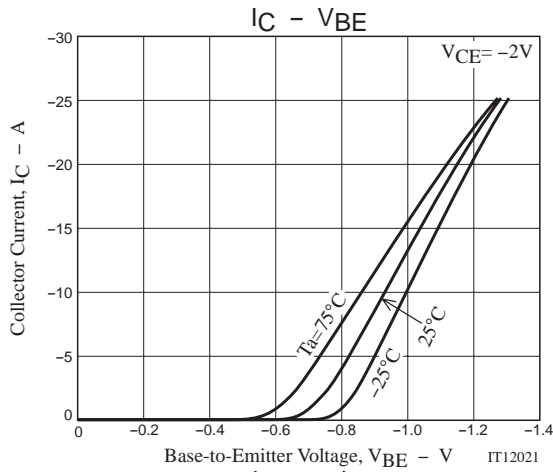
unit : mm (typ)

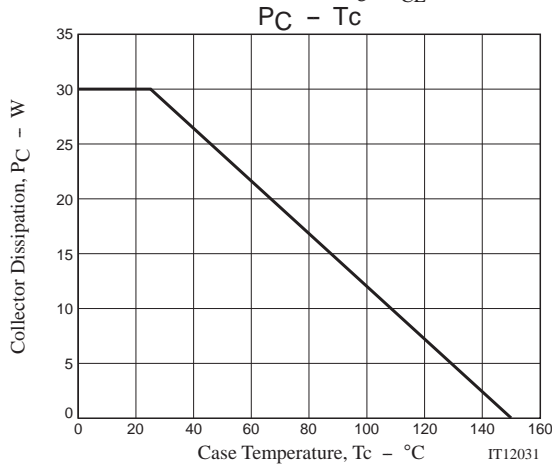
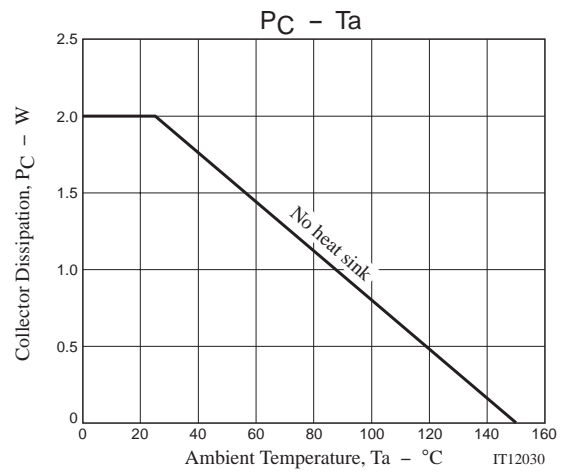
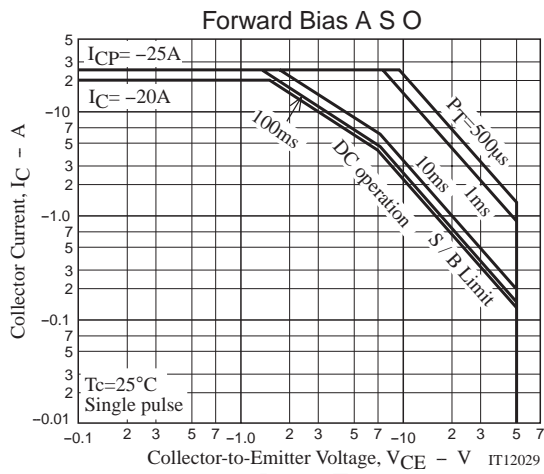
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## Switching Time Test Circuit







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