



SANYO Semiconductors

## DATA SHEET

# 2SA2222

 — 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.

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CBO</sub>		-50	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		-50	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		-6	V
Collector Current	I <sub>C</sub>		-10	A
Collector Current (Pulse)	I <sub>CP</sub>		-13	A
Base Current	I <sub>B</sub>		-2	A
Collector Dissipation	P <sub>C</sub>		2	W
		T <sub>C</sub> =25°C	25	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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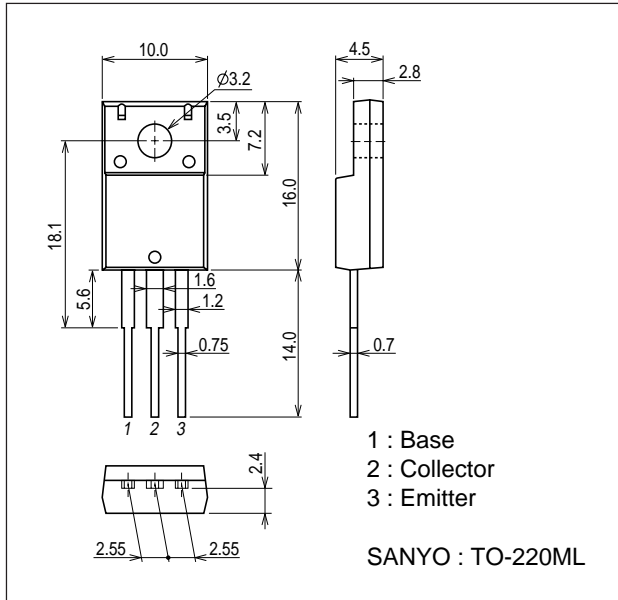
## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-40V, I_E=0A$			-10	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-4V, I_C=0A$			-10	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=-2V, I_C=-270mA$	150		450	
Gain-Bandwidth Product	$f_T$	$V_{CE}=-10V, I_C=-1A$		230		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10V, f=1MHz$		115		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-6A, I_B=-300mA$		-250	-500	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-6A, I_B=-300mA$			-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-100\mu A, I_E=0A$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	-50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-100\mu A, I_C=0A$	-6			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		40		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		240		ns
Fall Time	$t_f$	See specified Test Circuit.		22		ns

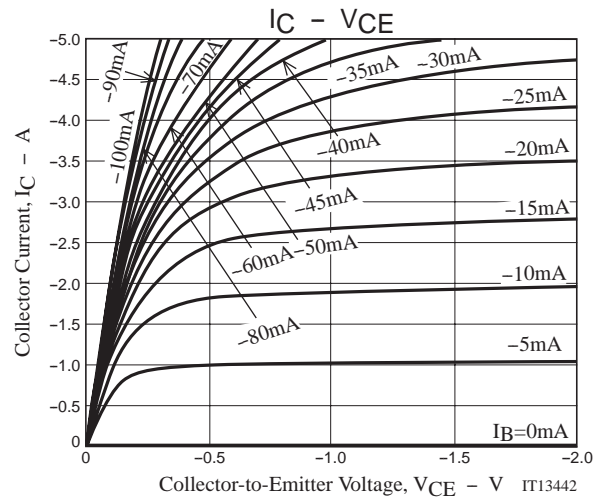
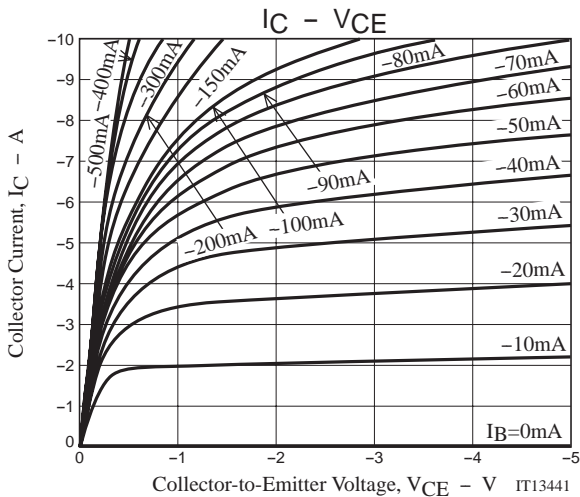
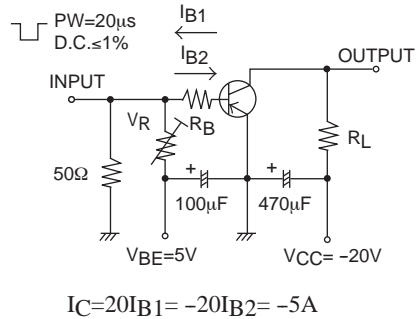
## Package Dimensions

unit : mm (typ)

7508-002

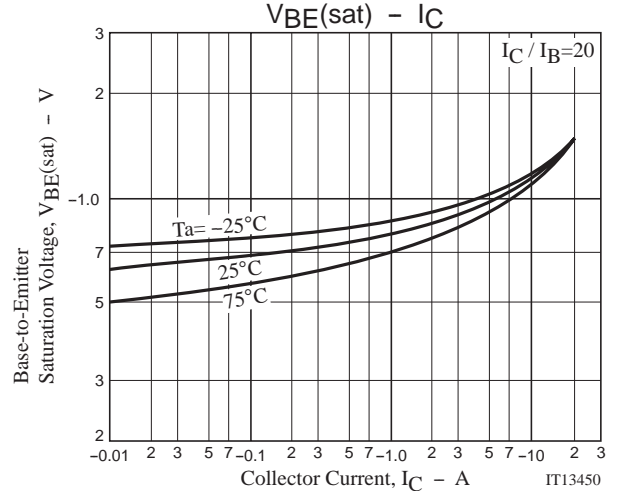
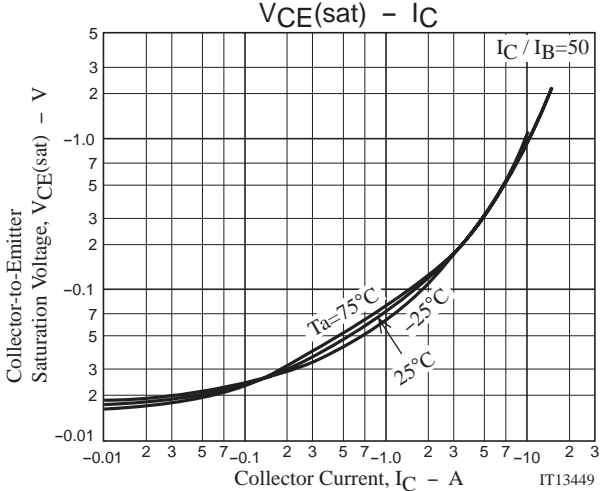
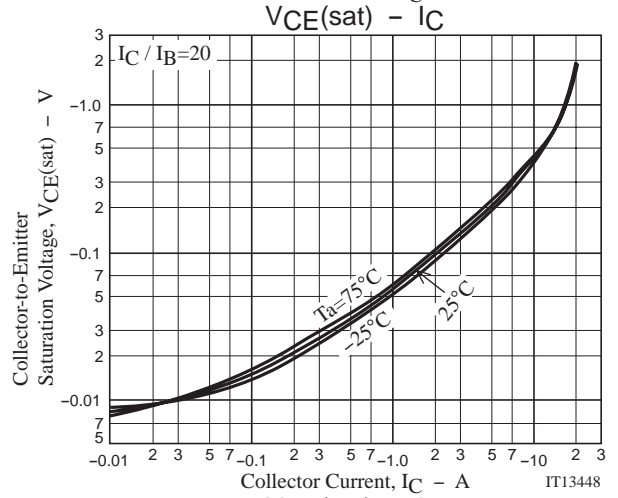
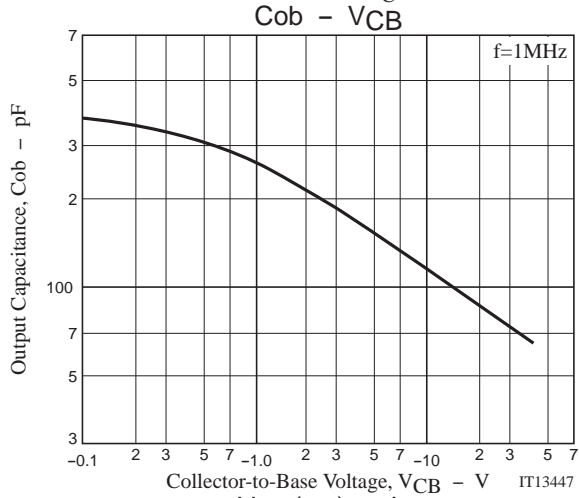
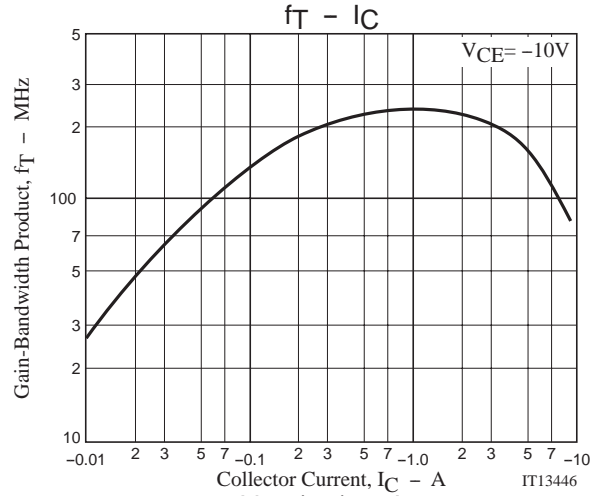
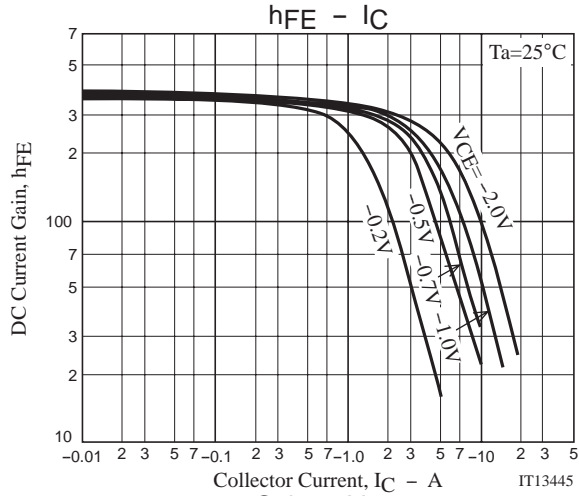
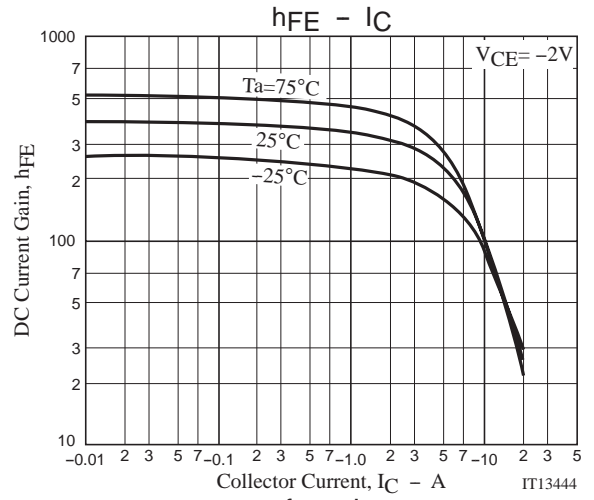
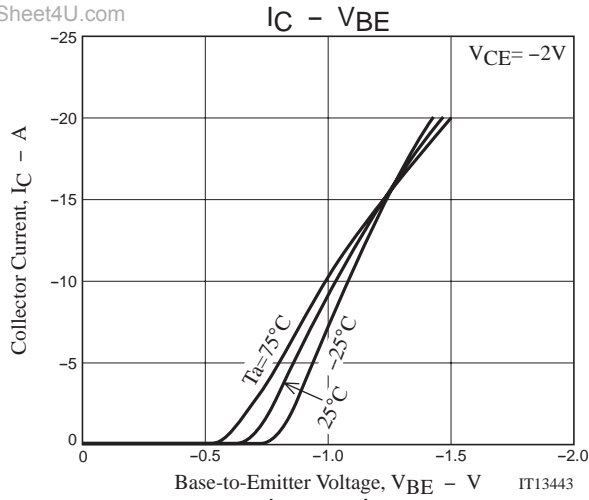


## Switching Time Test Circuit

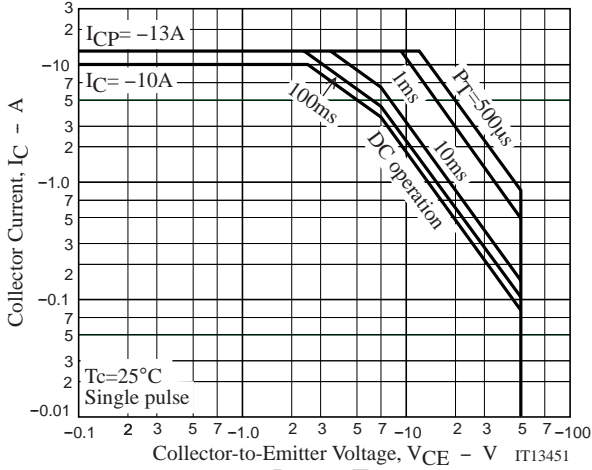


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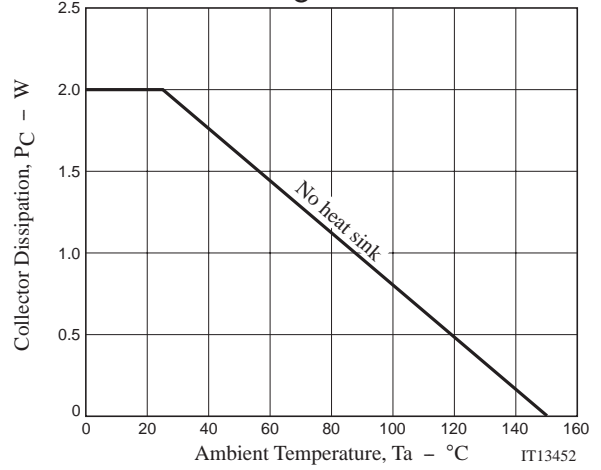
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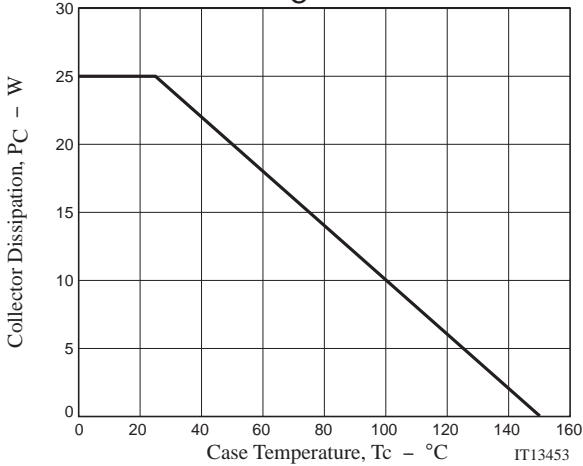
Forward Bias A S O



PC - Ta



PC - Tc



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