



SANYO Semiconductors

DATA SHEET

2SA2205 — PNP Epitaxial Planar Silicon Transistor

High-Voltage Switching Applications

Applications

- DC / DC converter, Relay drivers, lamp drivers, motor drivers.

Features

- Adoption of FBET, MBIT processes.
- Large current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- High allowable power dissipation.

Specifications

Absolute Maximum Ratings at $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		-100	V
Collector-to-Emitter Voltage	V_{CES}		-100	V
Collector-to-Emitter Voltage	V_{CEO}		-100	V
Emitter-to-Base Voltage	V_{EBO}		-7	V
Collector Current	I_C		-2	A
Collector Current (Pulse)	I_{CP}		-3	A
Base Current	I_B		-400	mA
Collector Dissipation	P_C		0.8	W
		$T_c=25^{\circ}\text{C}$	15	W
Junction Temperature	T_J		150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=-80\text{V}, I_E=0\text{A}$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}, I_C=0\text{A}$			-1	μA
DC Current Gain	h_{FE}	$V_{CE}=-5\text{V}, I_C=-100\text{mA}$	200		400	
Gain-Bandwidth Product	f_T	$V_{CE}=-10\text{V}, I_C=-500\text{mA}$		300		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}, f=1\text{MHz}$		20		pF

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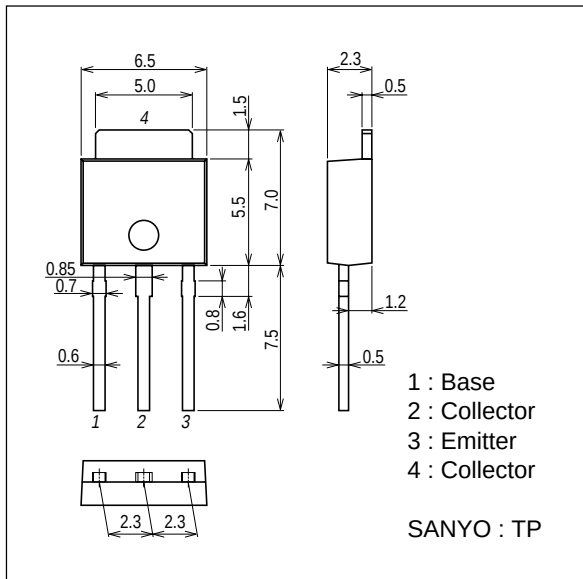
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -1A, I_B = -100mA$		-120	-240	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -1A, I_B = -100mA$		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0A$	-100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = -100\mu A, R_{BE} = 0\Omega$	-100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-100			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0A$	-7			V
Turn-On Time	t_{on}	See specified Test Circuit.		40		ns
Storage Time	t_{stg}	See specified Test Circuit.		600		ns
Fall Time	t_f	See specified Test Circuit.		30		ns

Package Dimensions

unit : mm (typ)

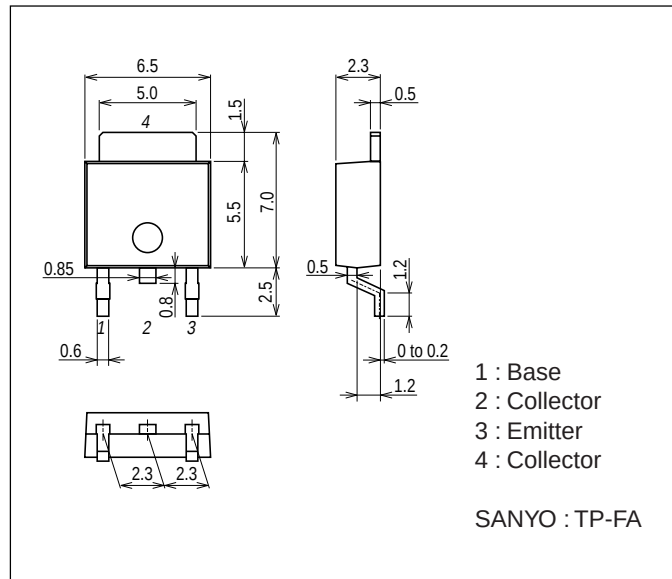
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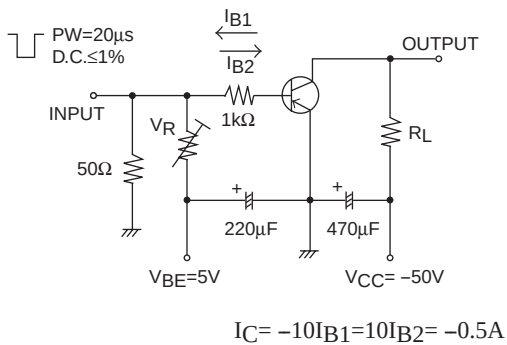
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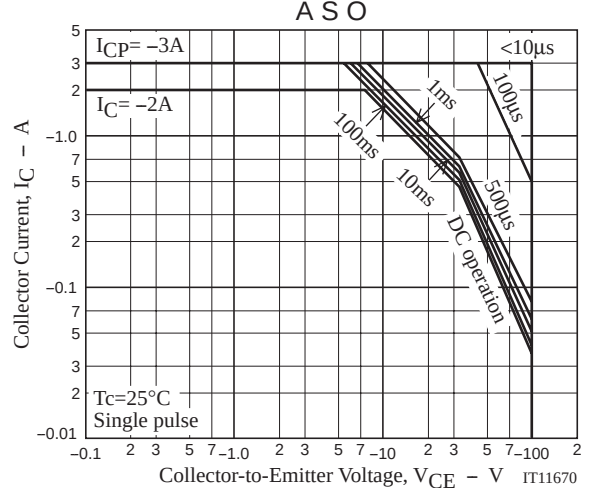
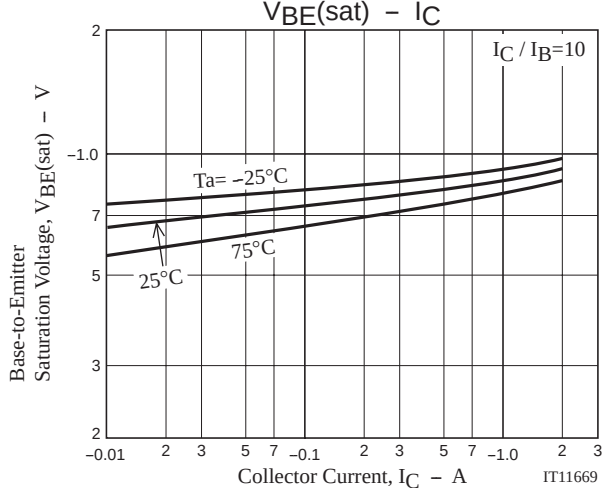
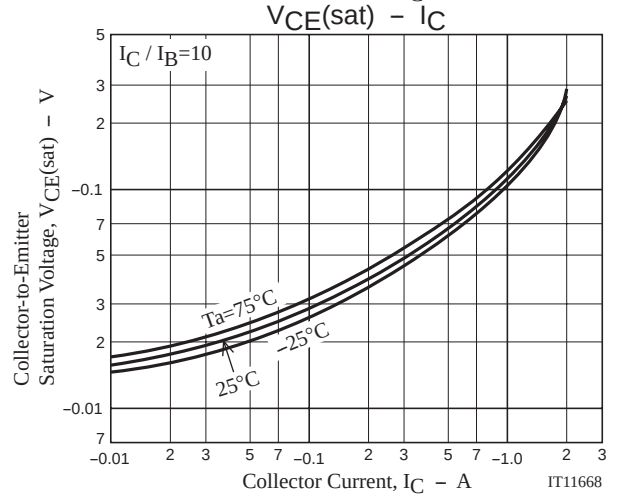
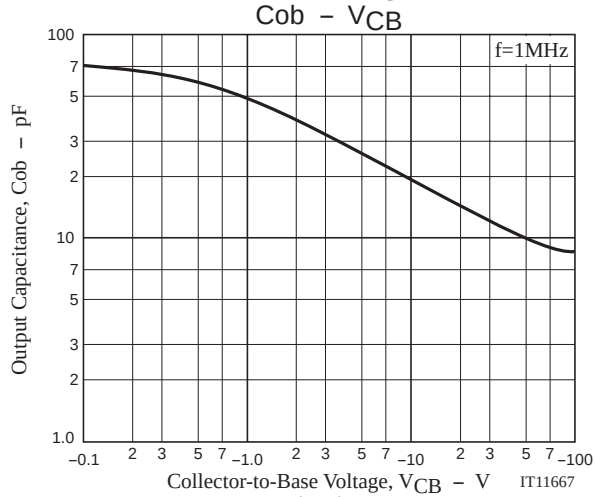
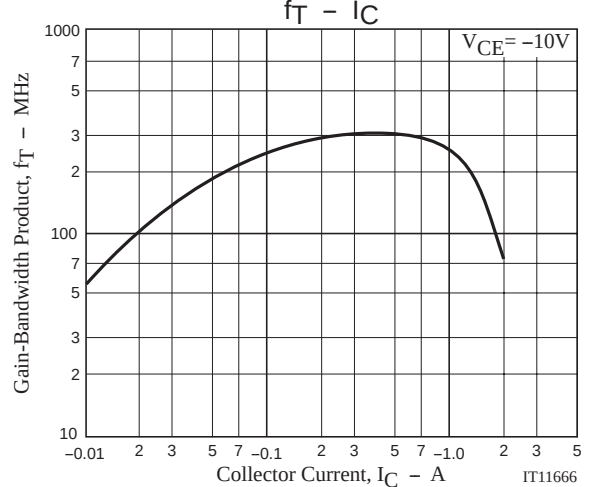
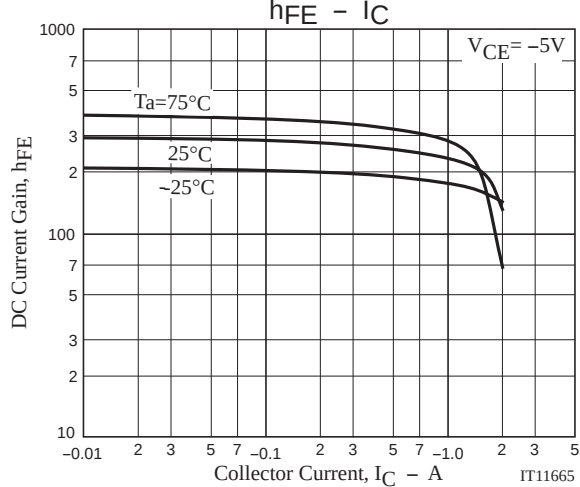
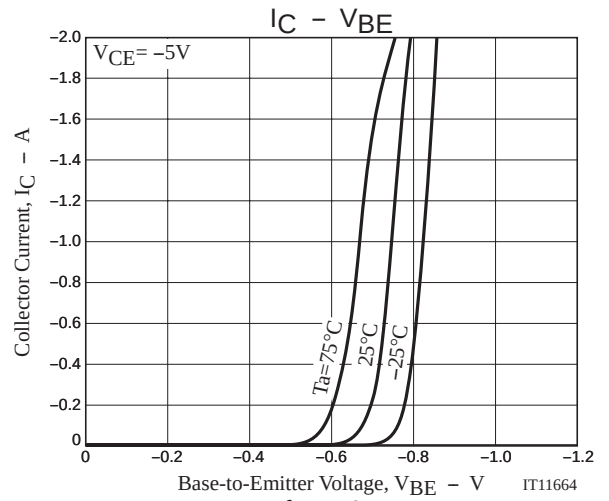
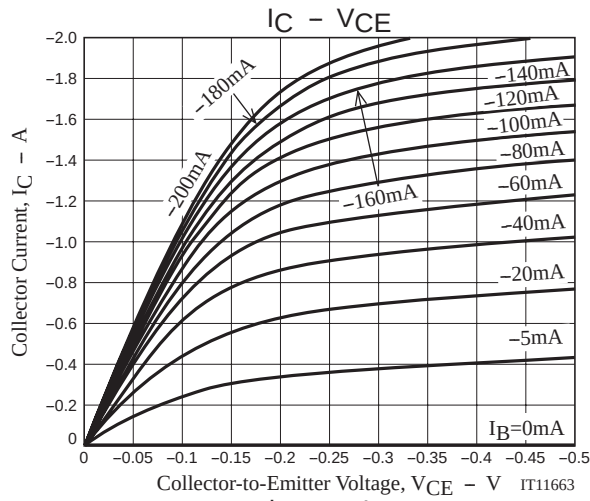
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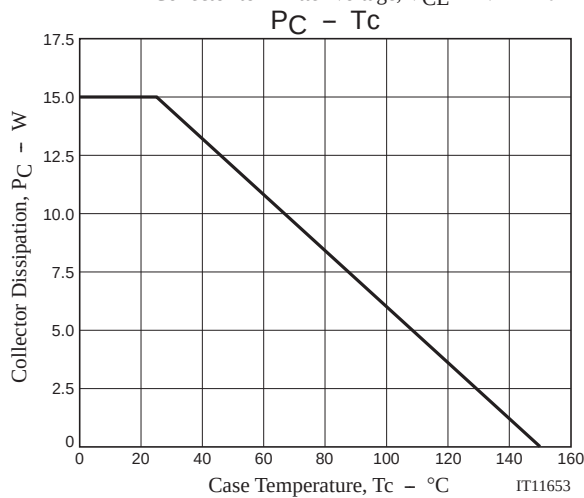
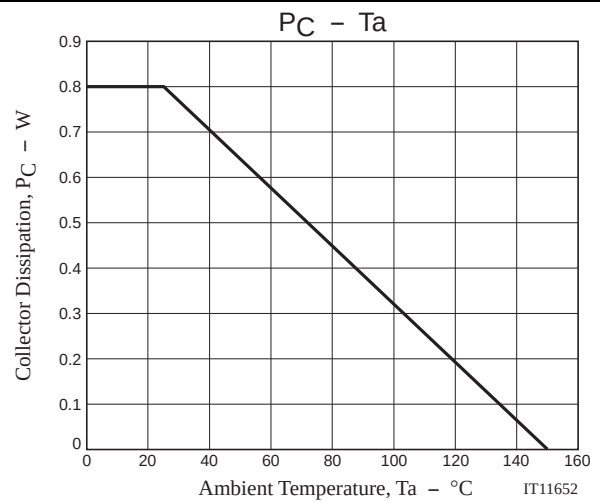
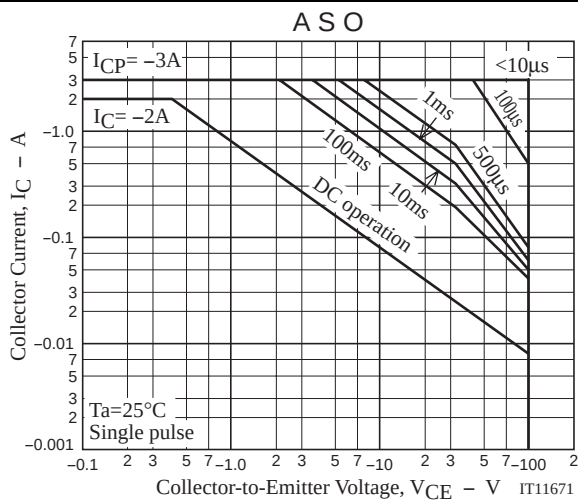
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Switching Time Test Circuit







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