Ordering number:ENN6404

PNP Epitaxial Planar Silicon Transistor

2SA2025

DC/DC Converter Applications

Applications

· Relay drivers, lamp drivers, motor drivers, strobes.

Features

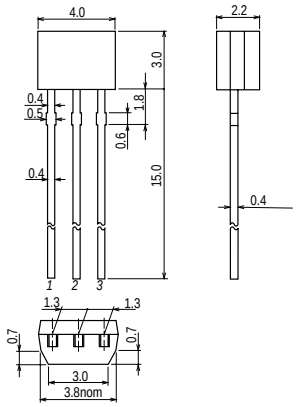
· Adoption of MBIT processes.
· Large current capacitance.
· Low collector-to-emitter saturation voltage.
· High-speed switching.
· Ultrasmall-sized package permitting applied sets to be made small and slim.
· High allowable power dissipation.

Package Dimensions

unit:mm

2033A

[2SA2025]



1 : Emitter
2 : Collector
3 : Base
SANYO : SPA

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		–15	V
Collector-to-Emitter Voltage	V_{CEO}		–12	V
Emitter-to-Base Voltage	V_{EBO}		–5	V
Collector Current	I_C		–3	A
Collector Current (Pulse)	I_{CP}		–5	A
Base Current	I_B		–600	mA
Collector Dissipation	P_C		0.55	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=–12V, I_E=0			–0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–4V, I_C=0			–0.1	μA
DC Current Gain	h_{FE}	V_{CE}=–2V, I_C=–500mA	200		560	
Gain-Bandwidth Product	f_T	V_{CE}=–2V, I_C=–500mA		280		MHz
Output Capacitance	Cob	V_{CB}=–10V, f=1MHz		36		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=–1.5A, I_B=–30mA		–110	–165	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=–1.5A, I_B=–30mA		–0.85	–1.2	V

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SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

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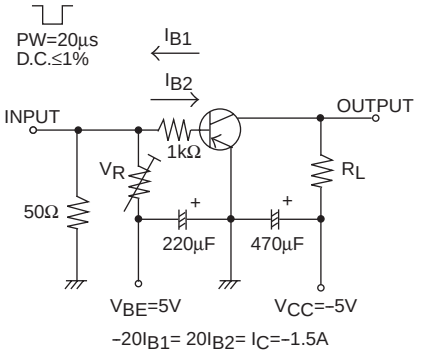
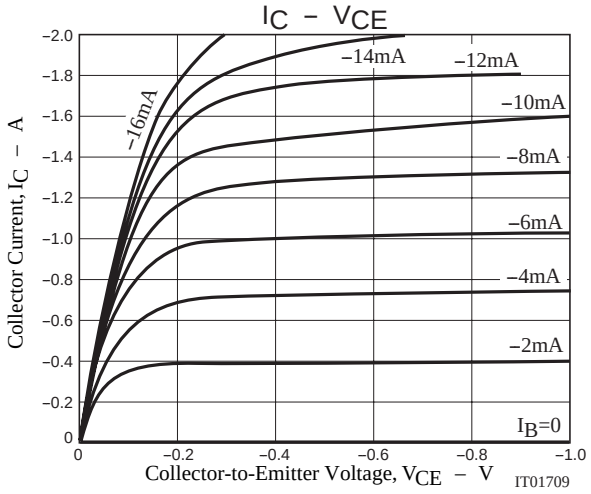
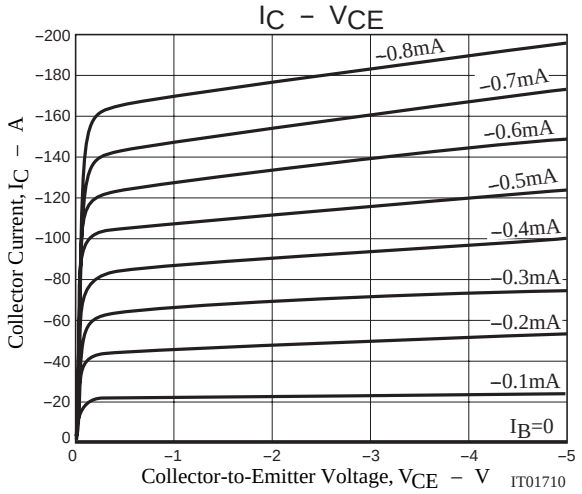
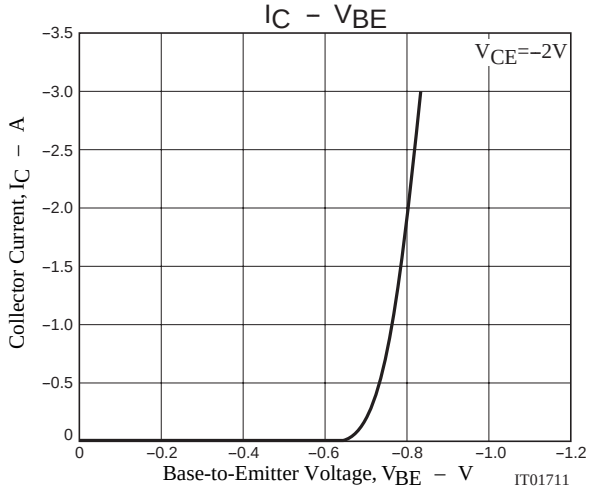
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–10μA, I_E=0	–15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	–12			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=–10μA, I_C=0	–5			V
Turn-ON Time	t_{on}	See specified Test Circuit		30		ns
Storage Time	t_{stg}	See specified Test Circuit		90		ns
Fall Time	t_f	See specified Test Circuit		10		ns

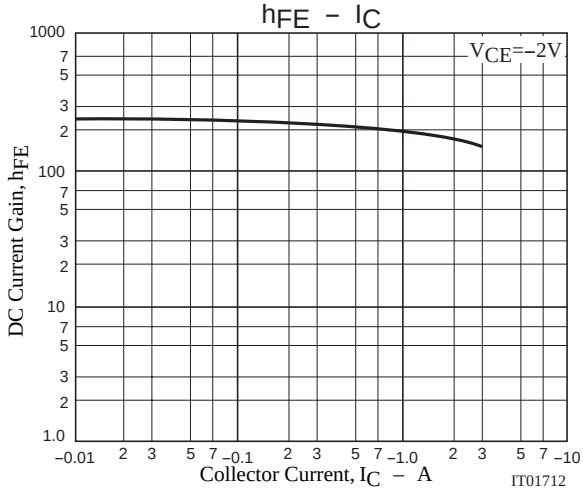
Switching Time Test Circuit



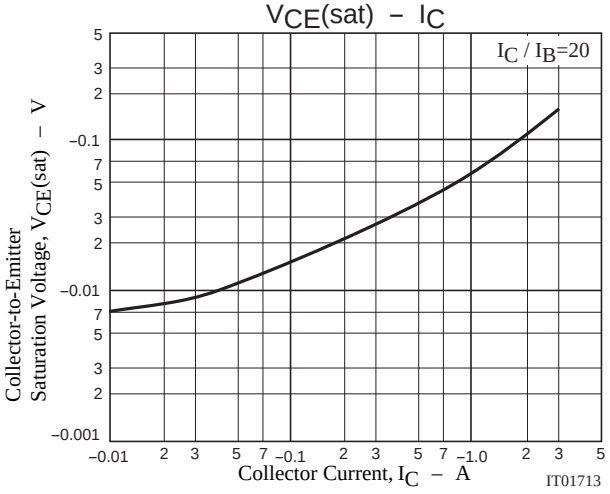




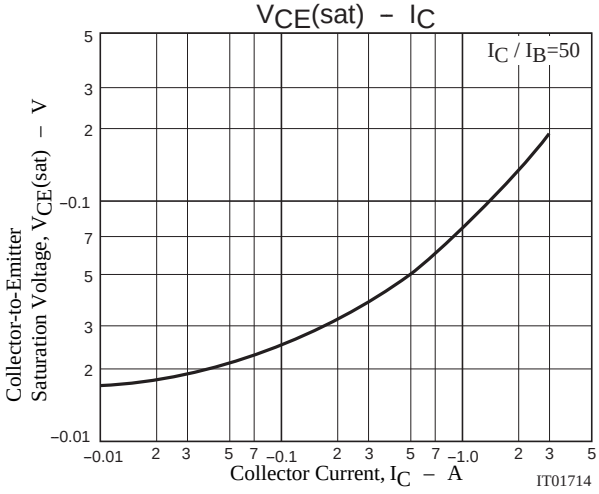




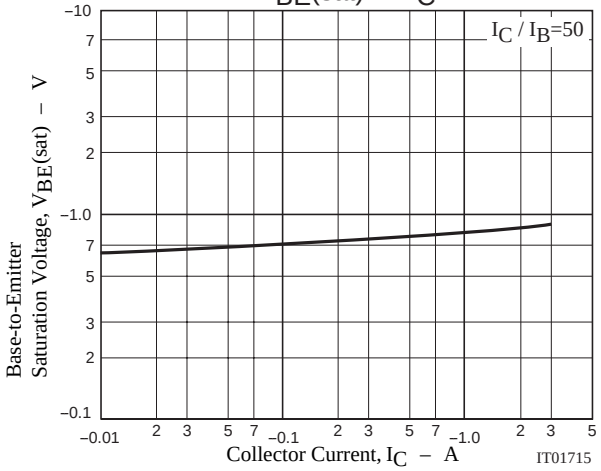
$V_{CE}(sat)$ – I_C



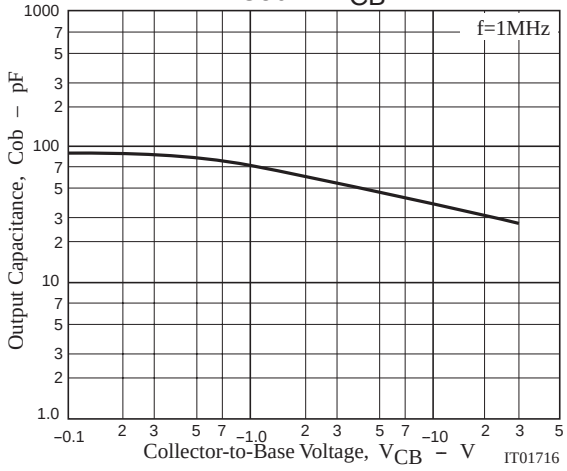
$V_{CE}(sat)$ – I_C



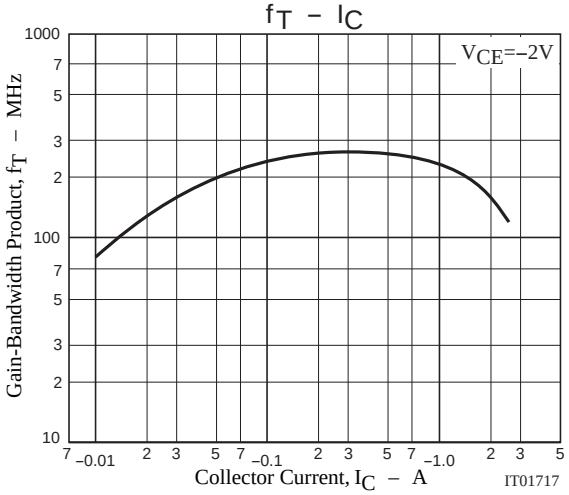
$V_{BE}(sat)$ – I_C



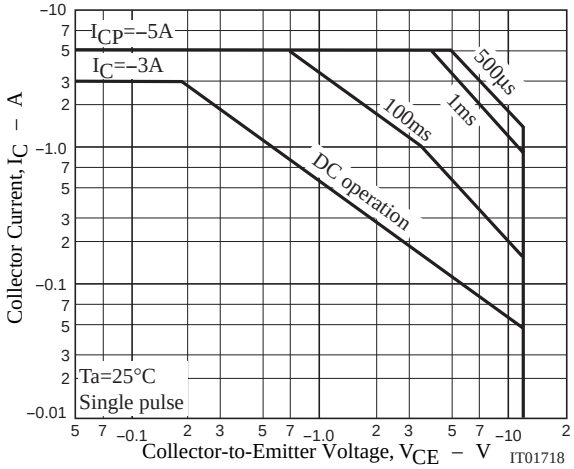
Cob – V_{CB}



f_T – I_C



A S O



P_C – Ta