Ordering number : ENA0307

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_{CBO}		−50	V
Collector-to-Emitter Voltage	V_{CES}		−50	V
Collector-to-Emitter Voltage	V_{CEO}		−50	V
Emitter-to-Base Voltage	V_{EBO}		−8	V
Collector Current	I_C		−10	A
Collector Current (Pulse)	I_{CP}	PW≤100μs	−13	A
Base Current	I_B		−2	A
Collector Dissipation	P_C		0.95	W
		Tc=25°C	20	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}=−40V, I_E=0A			−10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=−4V, I_C=0A			−10	μA
DC Current Gain	h_{FE}	V_{CE}=−2V, I_C=−1A	200		560	
Gain-Bandwidth Product	f_T	V_{CE}=−5V, I_C=−1A		130		MHz
Output Capacitance	Cob	V_{CB}=−10V, f=1MHz		90		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=−5A, I_B=−250mA		−290	−580	mV
Base-to-Emitterr Saturation Voltage	V_{BE}(sat)	I_C=−5A, I_B=−250mA		−0.93	−1.4	V

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

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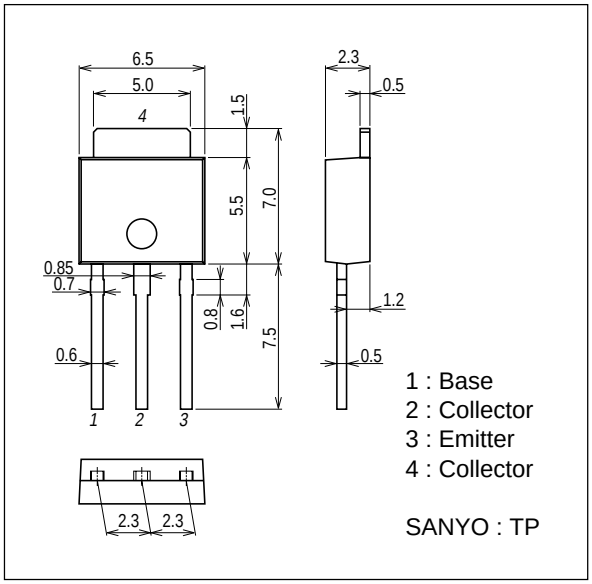
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=-100μA, I_E=0A	−50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C=-100μA, R_{BE}=0Ω	−50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-1mA, R_{BE}=∞	−50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=-100μA, 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

Package Dimensions

unit : mm

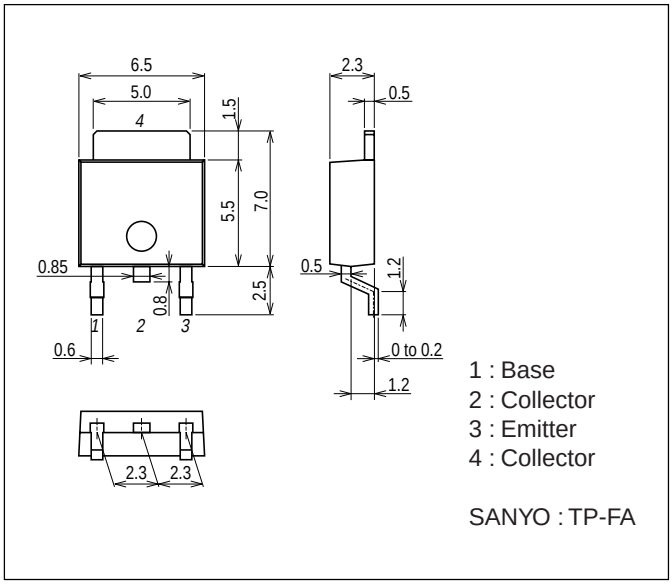
7518-003



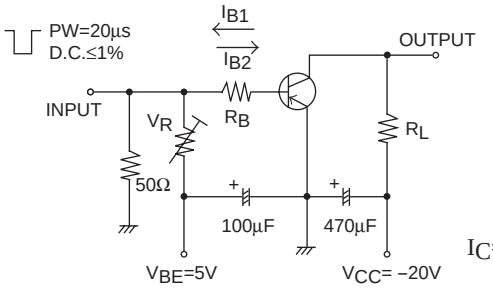
Package Dimensions

unit : mm

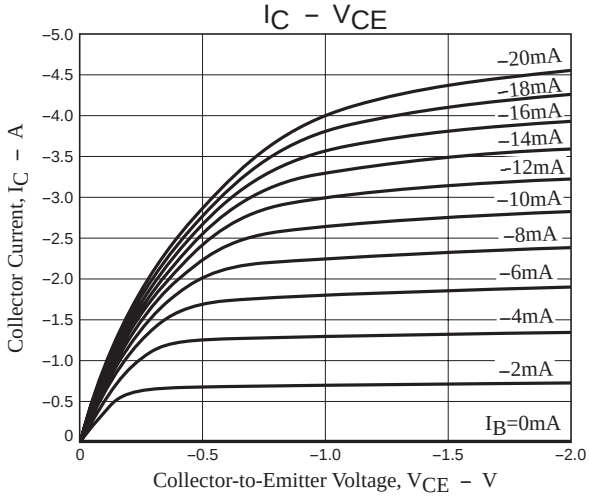
7003-003

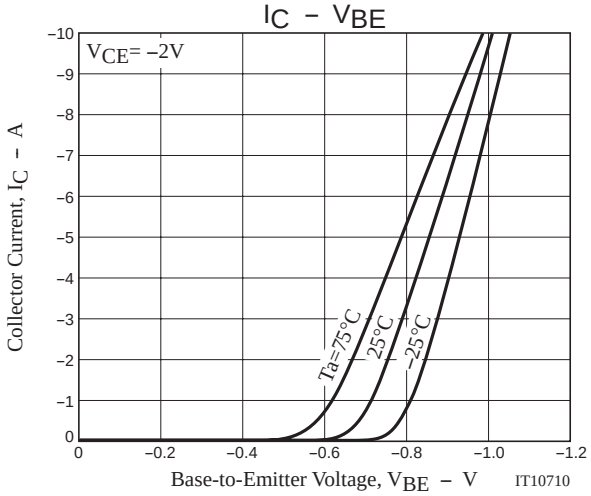


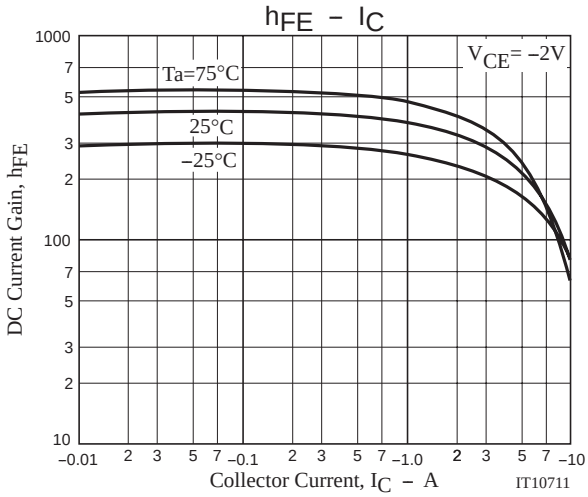
Switching Time Test Circuit

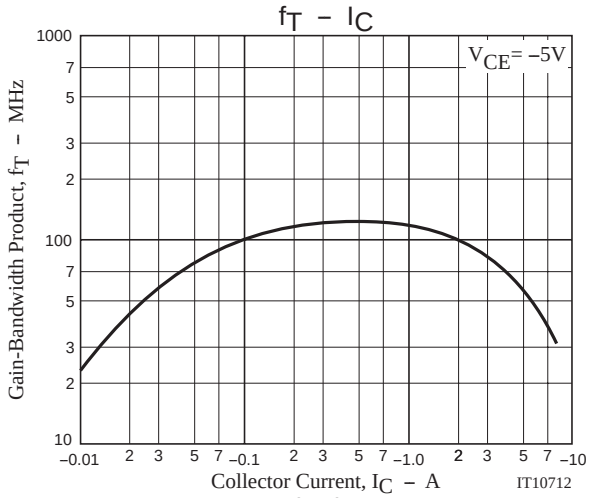


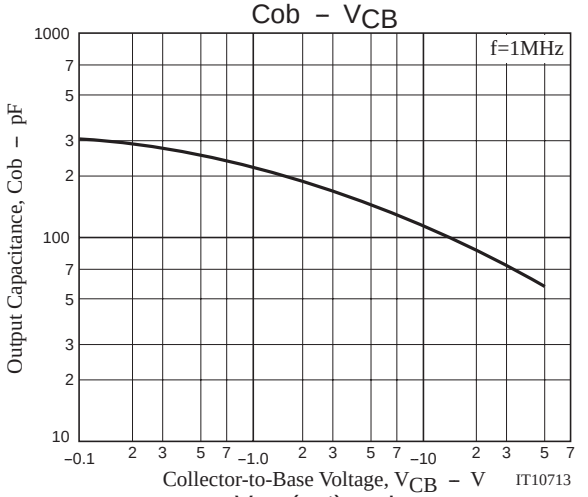
I_C= −20I_{B1}=20I_{B2}= −3A

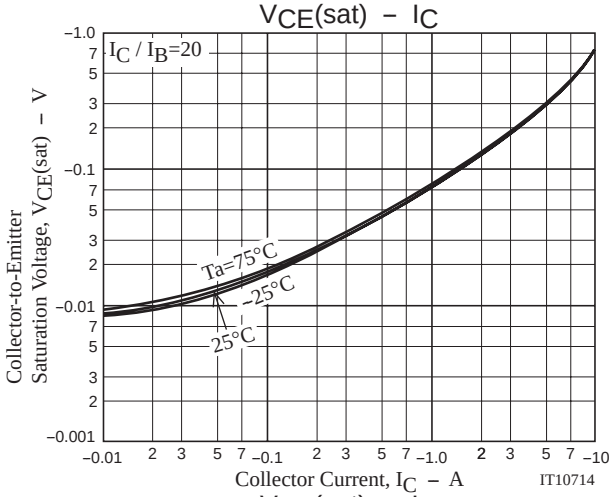


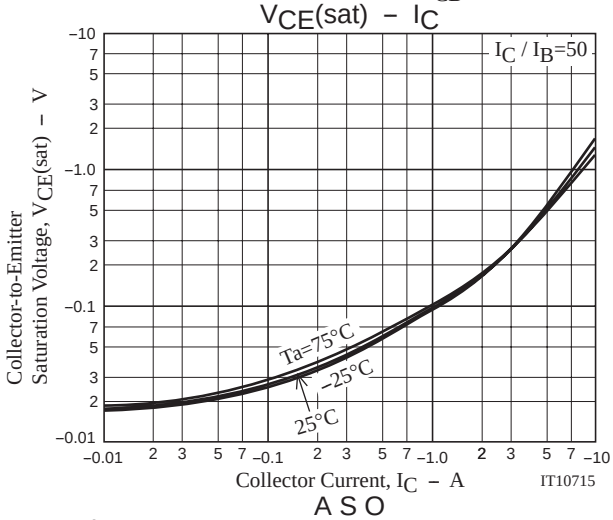


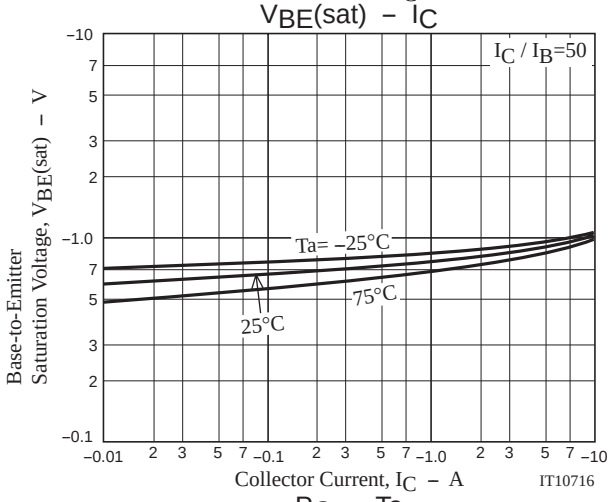

hFE – IC
VCE= –2V
Ta=75°C
25°C
–25°C
DC Current Gain, hFE
Collector Current, IC – A
IT10711

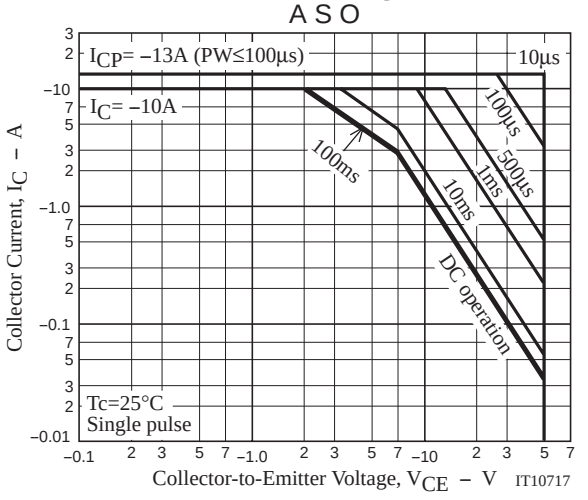

fT – IC
VCE= –5V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT10712

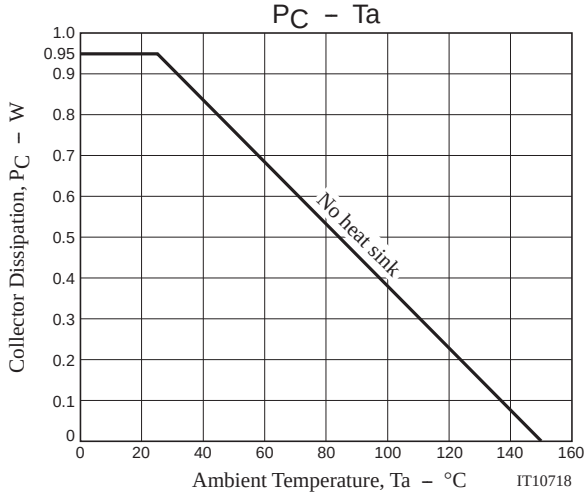

Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT10713


VCE(sat) – IC
IC / IB=20
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Ta=75°C
–25°C
25°C
Collector Current, IC – A
IT10714


VCE(sat) – IC
IC / IB=50
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Ta=75°C
–25°C
25°C
Collector Current, IC – A
IT10715


VBE(sat) – IC
IC / IB=50
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Ta= –25°C
75°C
25°C
Collector Current, IC – A
IT10716


A S O
ICP= –13A (PW≤100µs)
IC= –10A
10µs
100µs
500µs
1ms
10ms
100ms
DC operation
Tc=25°C
Single pulse
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT10717


PC – Ta
No heat sink
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
IT10718