Ordering number : ENA1166

SANYO Semiconductors
DATA SHEET

SFT1101 — PNP Epitaxial Planar Silicon Transistor
High-Voltage Switching Applications

Applications

- DC / DC converters, 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 Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		–120	V
Collector-to-Emitter Voltage	V_{CES}		–120	V
Collector-to-Emitter Voltage	V_{CEO}		–120	V
Emitter-to-Base Voltage	V_{EBO}		–7	V
Collector Current	I_C		–2.5	A
Collector Current (Pulse)	I_{CP}		–4	A
Base Current	I_B		–500	mA
Collector Dissipation	P_C		1	W
		Tc=25°C	15	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		–55 to +150	°C

Marking : T1101

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

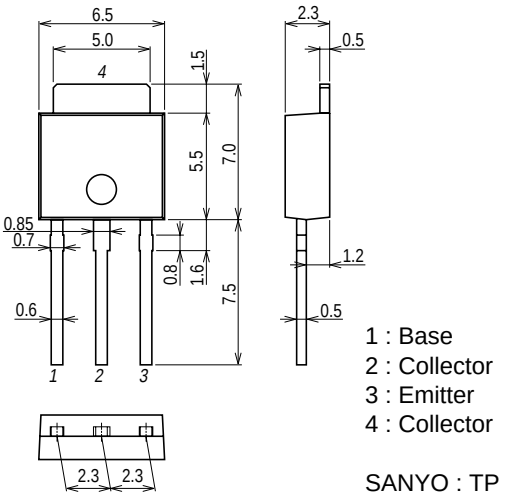
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=–80V, I_E=0A			–1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–5V, I_C=0A			–1	μA
DC Current Gain	h_{FE}	V_{CE}=–5V, I_C=–100mA	200		560	
Gain-Bandwidth Product	f_T	V_{CE}=–10V, I_C=–100mA		75		MHz
Output Capacitance	Cob	V_{CB}=–10V, f=1MHz		21		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=–1A, I_B=–100mA		–150	–270	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=–10μA, I_E=0A	–120			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C=–100μA, R_{BE}=0Ω	–120			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	–120			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=–10μA, I_C=0A	–7			V
Turn-ON Time	t_{on}	See specified Test Circuit.		55		ns
Storage Time	t_{stg}	See specified Test Circuit.		840		ns
Fall Time	t_f	See specified Test Circuit.		40		ns

Package Dimensions

unit : mm (typ)

7518-003



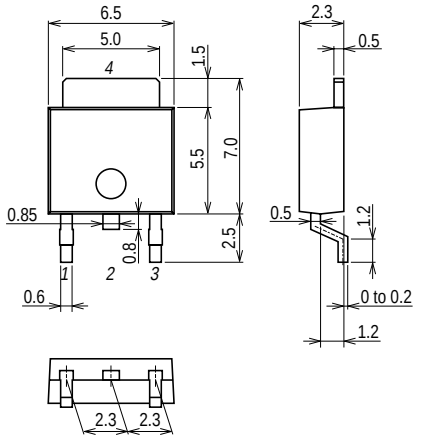
1 : Base
2 : Collector
3 : Emitter
4 : Collector

SANYO : TP

Package Dimensions

unit : mm (typ)

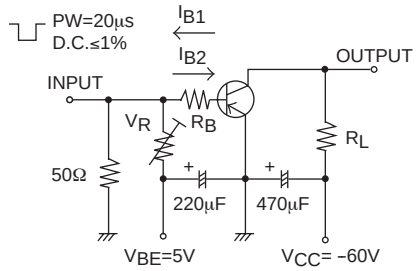
7003-003



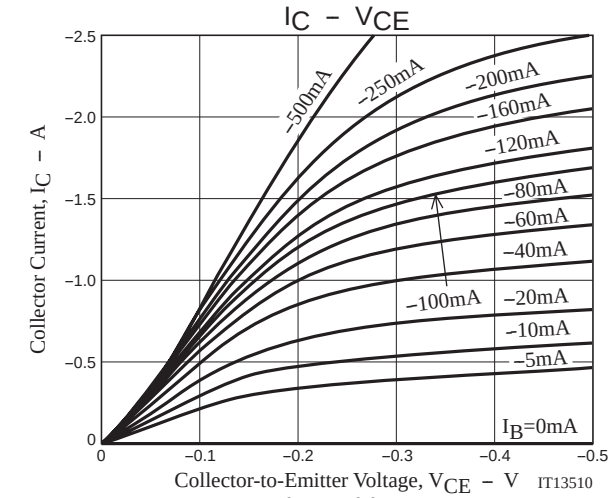
1 : Base
2 : Collector
3 : Emitter
4 : Collector

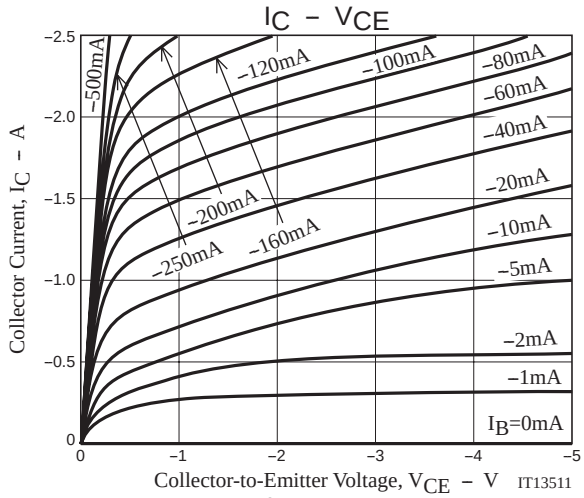
SANYO : TP-FA

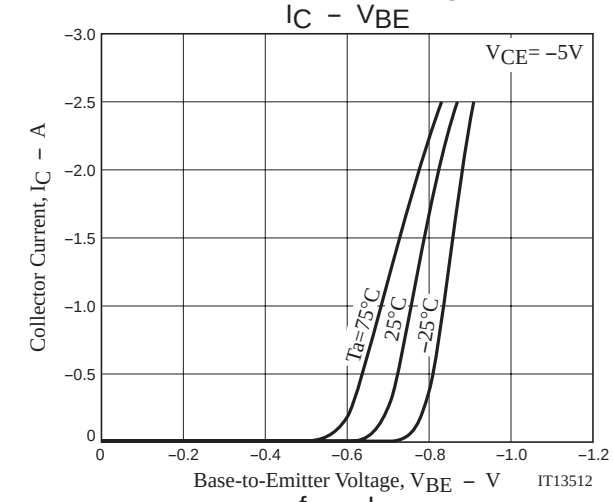
Switching Time Test Circuit

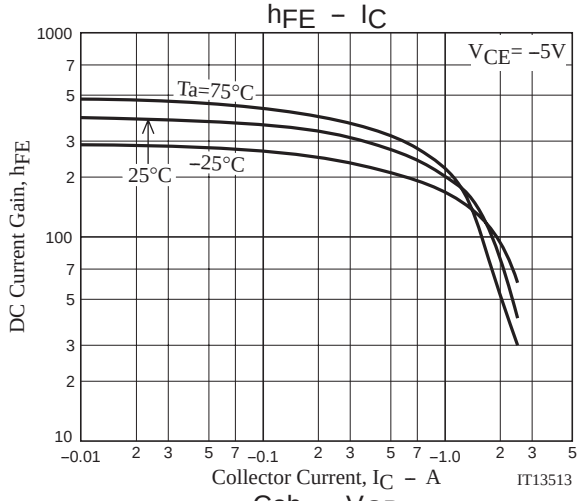


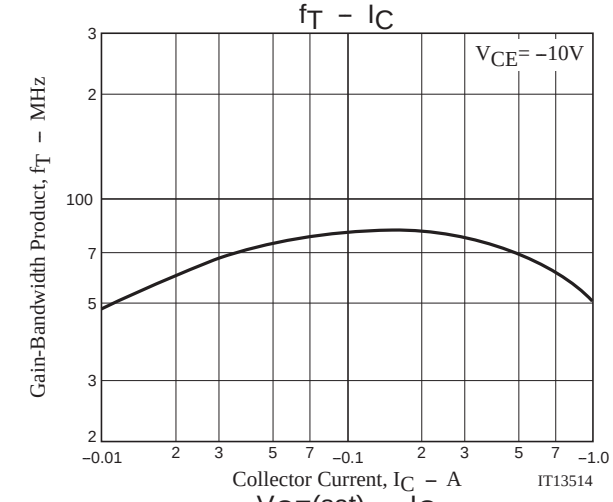
I_C= –10I_{B1}=10I_{B2}= –0.7A

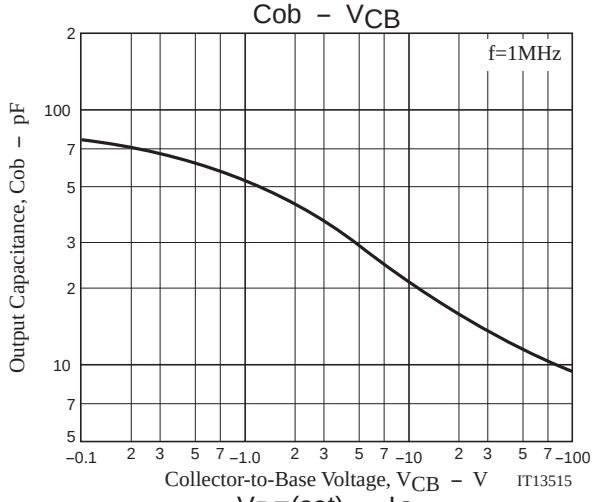

IC – VCE
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT13510
–500mA
–250mA
–200mA
–160mA
–120mA
–80mA
–60mA
–40mA
–100mA
–20mA
–10mA
–5mA
IB=0mA

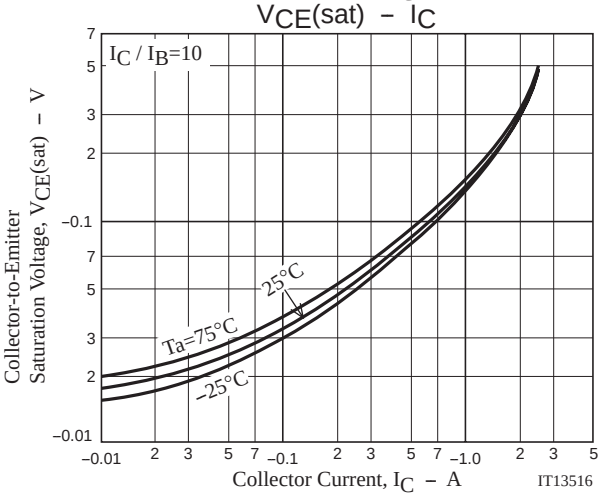

IC – VCE
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT13511
–500mA
–120mA
–100mA
–80mA
–60mA
–40mA
–200mA
–20mA
–250mA
–160mA
–10mA
–5mA
–2mA
–1mA
IB=0mA

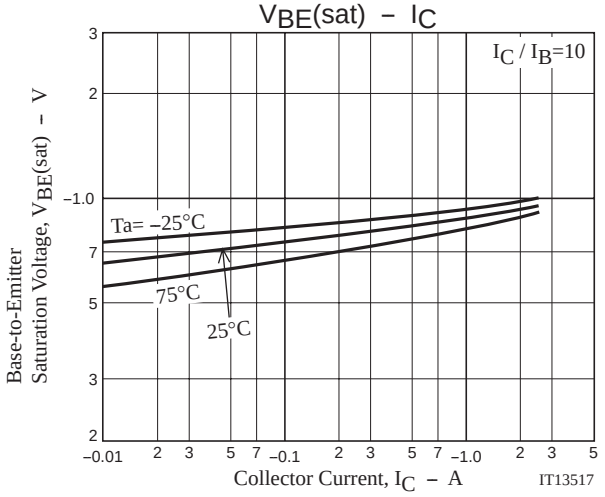

IC – VBE
VCE= –5V
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
IT13512
Ta=75°C
25°C
–25°C


hFE – IC
VCE= –5V
DC Current Gain, hFE
Collector Current, IC – A
IT13513
Ta=75°C
25°C
–25°C


fT – IC
VCE= –10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT13514


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT13515


VCE(sat) – IC
IC / IB=10
Collector-to-Emitter
Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT13516
Ta=75°C
25°C
–25°C


VBE(sat) – IC
IC / IB=10
Base-to-Emitter
Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT13517
Ta= –25°C
75°C
25°C