Ordering number : ENA1346

SANYO Semiconductors
DATA SHEET

PCP1103 — PNP Epitaxial Planar Silicon Transistor
DC / DC Converter Applications

Applications

- DC / DC converters, relay drivers, lamp drivers, motor drivers, IGBT gate drivers.

Features

- Adoption of MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High speed switching.
- High allowable power dissipation.
- Halogen free compliance.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-30	V
Collector-to-Emitter Voltage	V_{CEO}		-30	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-1.5	A
Collector Current (Pulse)	I_{CP}		-5	A
Base Current	I_B		-300	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (450mm^2×0.8mm)	1.3	W
		Tc=25°C	3.5	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Marking : RF

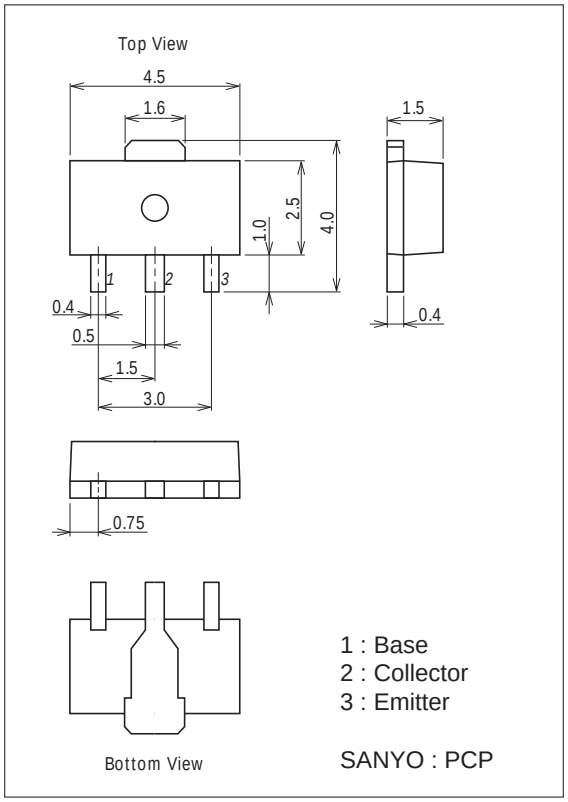
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}= -30V, I_E=0A			-0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}= -4V, I_C=0A			-0.1	μA
DC Current Gain	h_{FE}	V_{CE}= -2V, I_C= -100mA	200		560	
Gain-Bandwidth Product	f_T	V_{CE}= -10V, I_C= -300mA		450		MHz
Output Capacitance	Cob	V_{CB}= -10V, f=1MHz		9		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C= -0.75A, I_B= -15mA		-250	-375	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C= -0.75A, I_B= -15mA		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C= -10μA, I_E=0A	-30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C= -1mA, R_{BE}=∞	-30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E= -10μA, I_C=0A	-5			V
Turn-On Time	t_{on}	See specified Test Circuit.		35		ns
Storage Time	t_{stg}	See specified Test Circuit.		115		ns
Fall Time	t_f	See specified Test Circuit.		30		ns

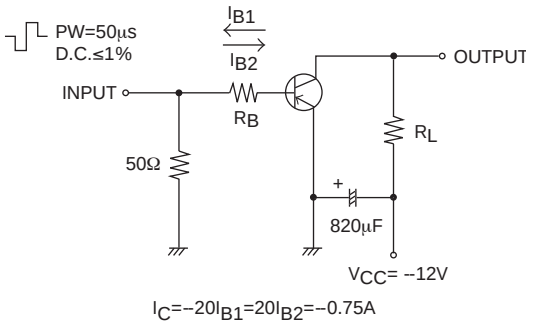
Package Dimensions

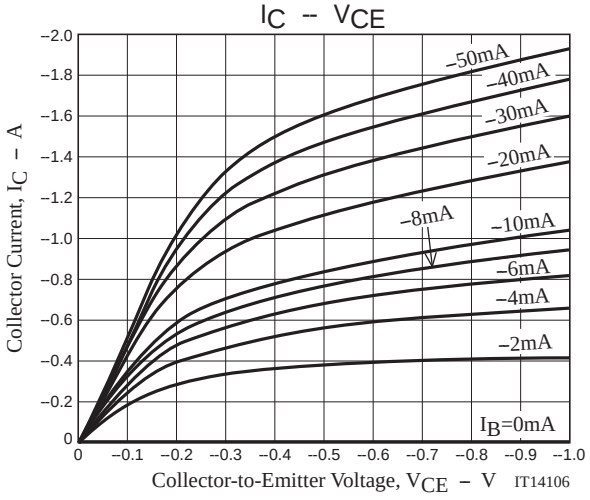
unit : mm (typ)

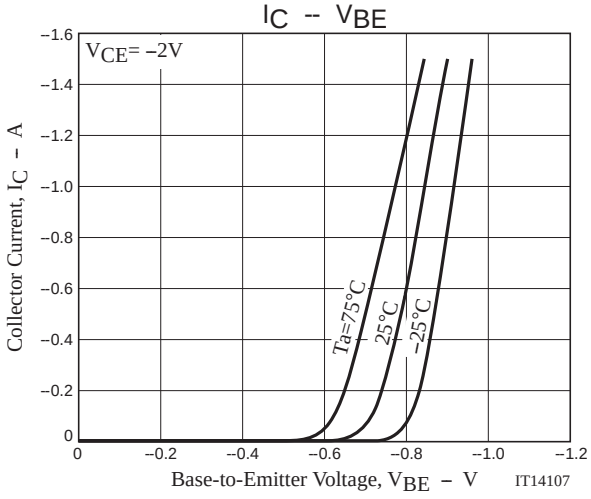
7007A-004

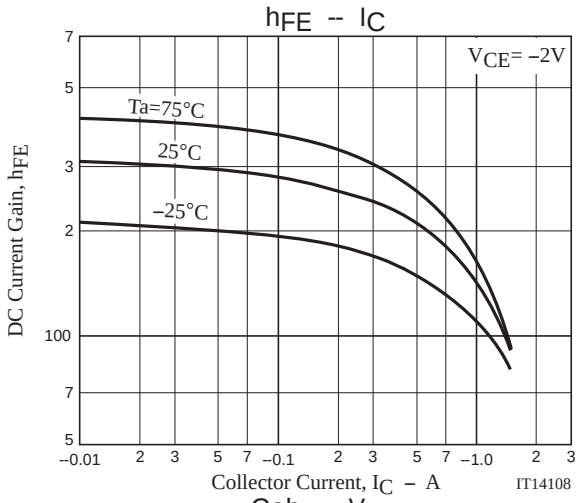


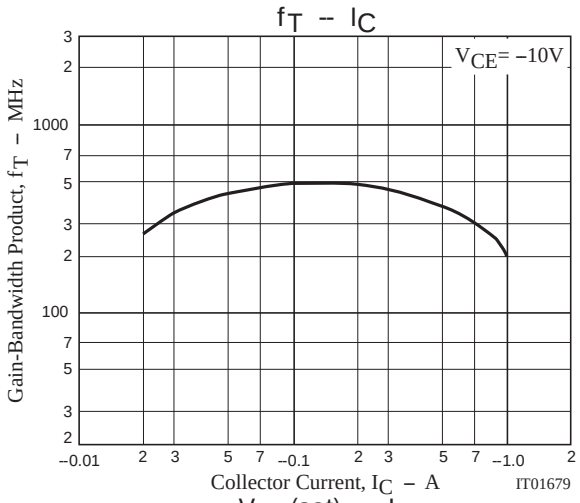
Switching Time Test Circuit

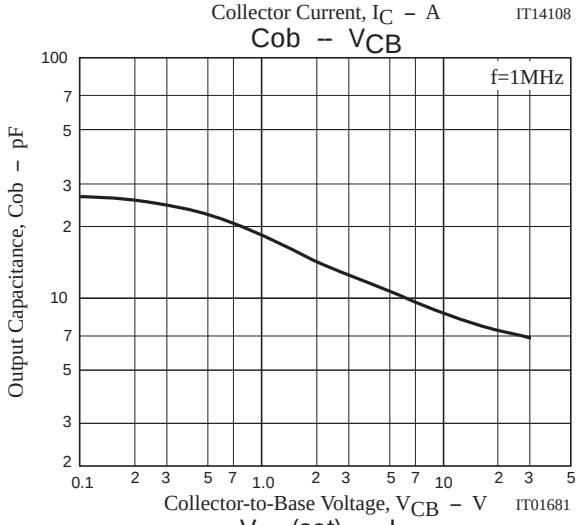


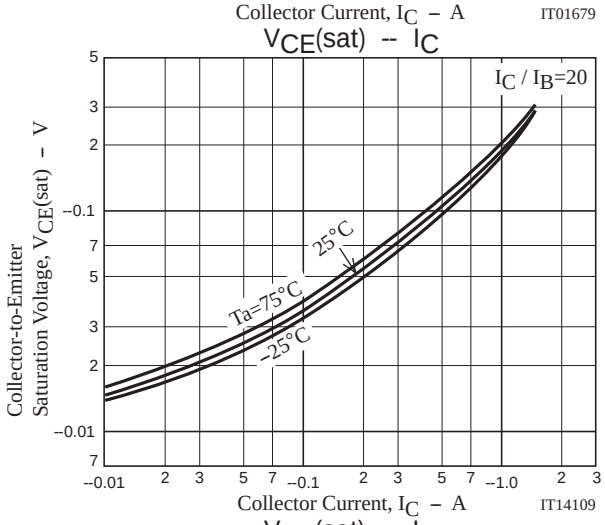


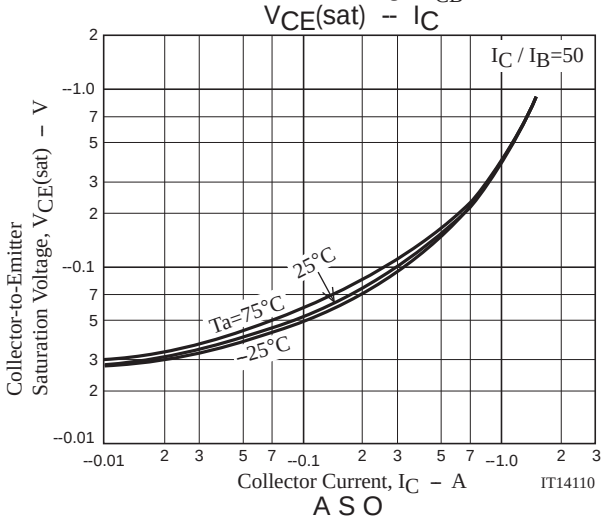


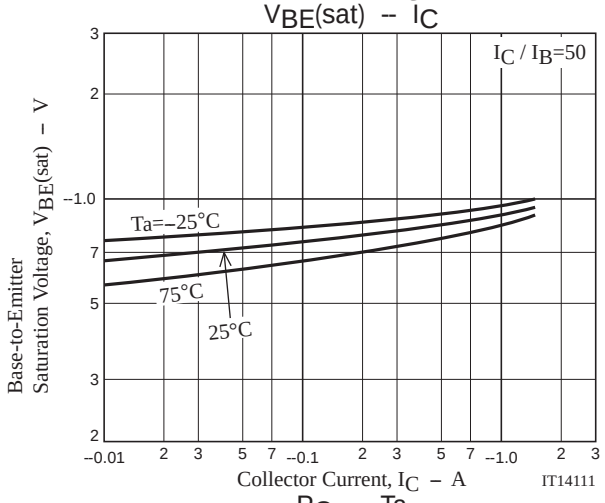

hFE -- IC
VCE= −2V
Ta=75°C
25°C
−25°C
DC Current Gain, hFE
Collector Current, IC − A
IT14108

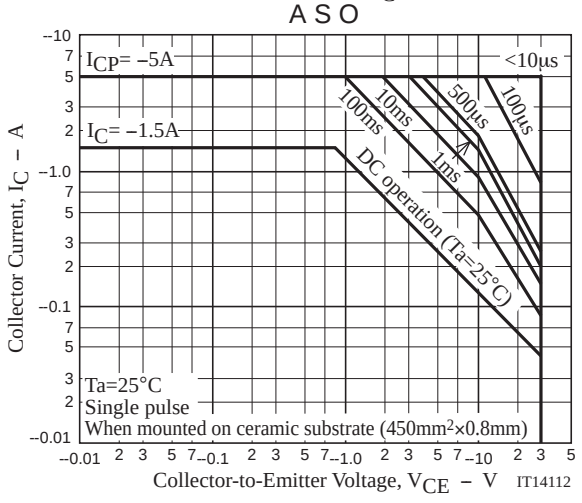

fT -- IC
VCE= −10V
Gain-Bandwidth Product, fT − MHz
Collector Current, IC − A
IT01679

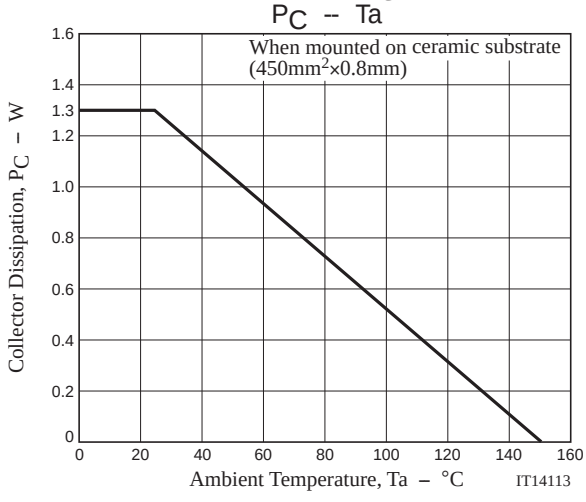

Cob -- VCB
f=1MHz
Output Capacitance, Cob − pF
Collector-to-Base Voltage, VCB − V
IT01681


VCE(sat) -- IC
IC / IB=20
25°C
Ta=75°C
−25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) − V
Collector Current, IC − A
IT14109


VCE(sat) -- IC
IC / IB=50
25°C
Ta=75°C
−25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) − V
Collector Current, IC − A
IT14110


VBE(sat) -- IC
IC / IB=50
Ta=−25°C
75°C
25°C
Base-to-Emitter Saturation Voltage, VBE(sat) − V
Collector Current, IC − A
IT14111


A S O
ICP= −5A
IC= −1.5A
<10μs
100μs
500μs
10ms
100ms
1ms
DC operation (Ta=25°C)
Ta=25°C
Single pulse
When mounted on ceramic substrate (450mm²×0.8mm)
Collector Current, IC − A
Collector-to-Emitter Voltage, VCE − V
IT14112


PC -- Ta
When mounted on ceramic substrate
(450mm²×0.8mm)
Collector Dissipation, PC − W
Ambient Temperature, Ta − °C
IT14113