



SANYO Semiconductors

DATA SHEET

PCP1202

NPN Epitaxial Planar Silicon Transistor

High-Voltage Switching Applications

Applications

- DC / DC converter, relay drivers, lamp drivers, motor drivers, inverter.

Features

- Adoption of FBET, MBIT process.
- High 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 _{CB0}		180	V
Collector-to-Emitter Voltage	V _{CES}		180	V
Collector-to-Emitter Voltage	V _{CEO}		150	V
Emitter-to-Base Voltage	V _{EB0}		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	When mounted on ceramic substrate (450mm ² ×0.8mm)	1.3	W
		T _c =25°C	3.5	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Marking : QI

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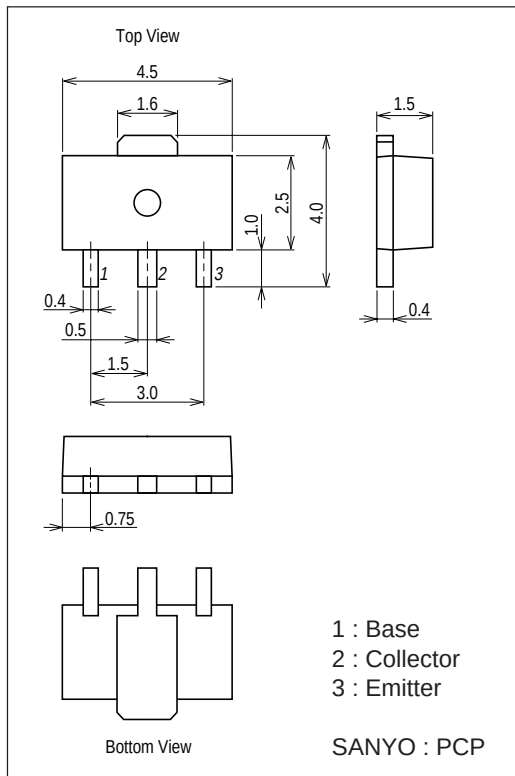
Electrical Characteristics at $T_a=25^\circ\text{C}$

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		560	
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=300\text{mA}$		140		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		12		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=1\text{A}, I_B=100\text{mA}$		110	165	mV
	$V_{CE(sat)2}$	$I_C=0.5\text{A}, I_B=50\text{mA}$		65	100	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1\text{A}, I_B=100\text{mA}$		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0\text{A}$	180			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=100\mu\text{A}, R_{BE}=0\Omega$	180			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	150			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0\text{A}$	7			V
Turn-ON Time	t_{on}	See specified Test Circuit.		50		ns
Storage Time	t_{stg}	See specified Test Circuit.		1460		ns
Fall Time	t_f	See specified Test Circuit.		70		ns

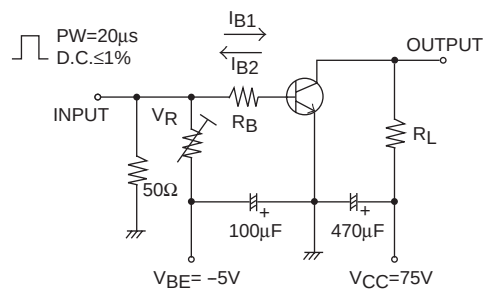
Package Dimensions

unit : mm (typ)

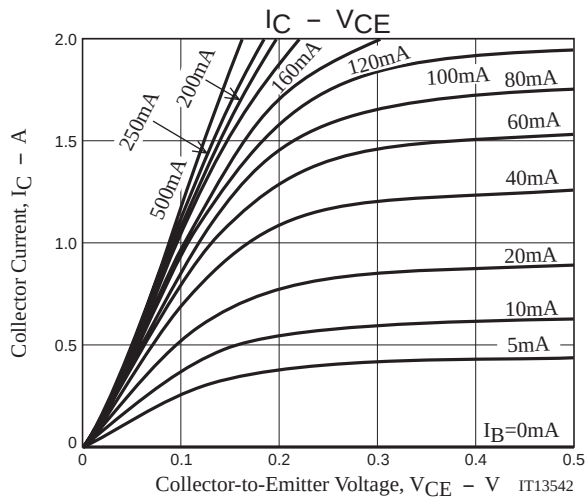
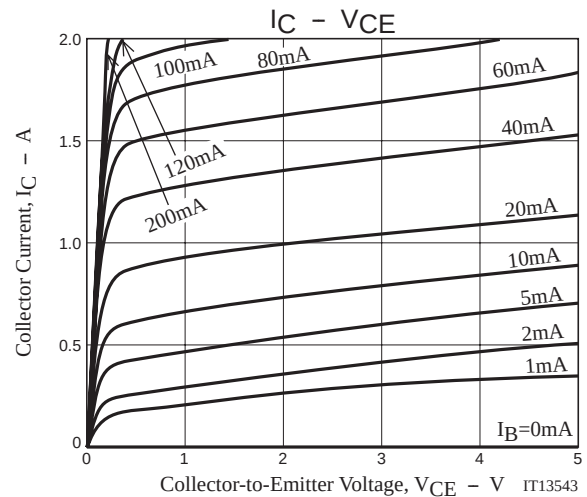
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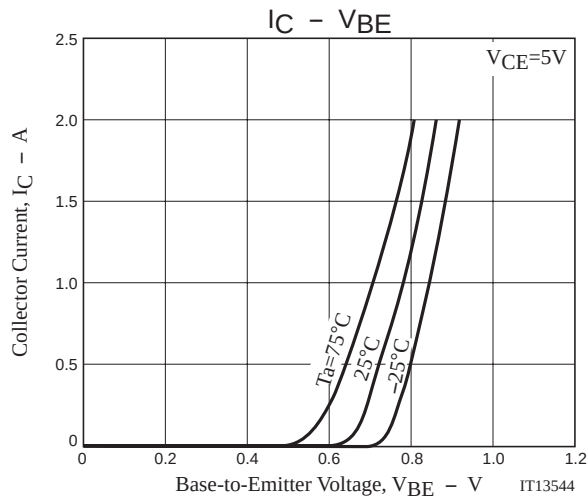
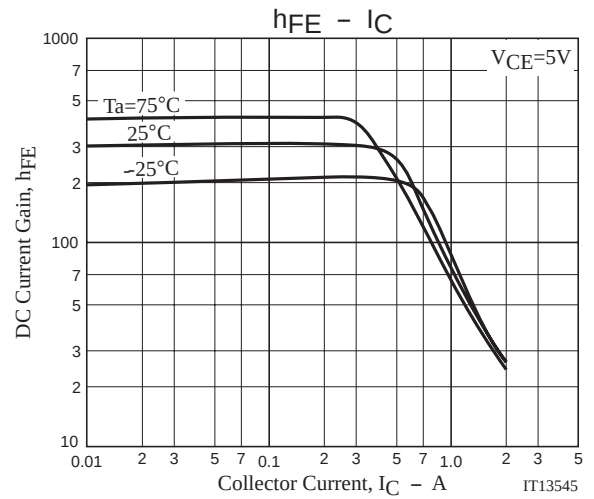
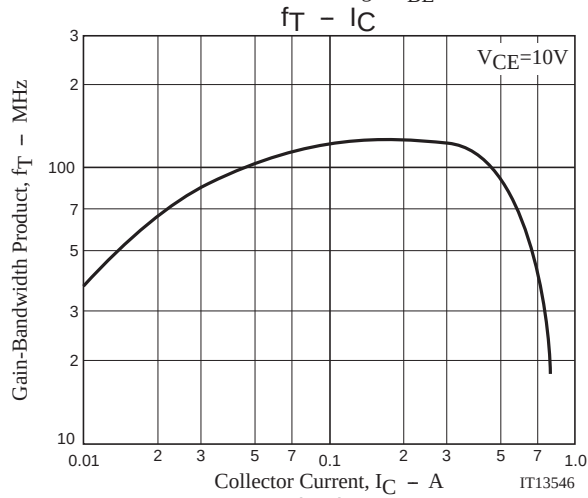
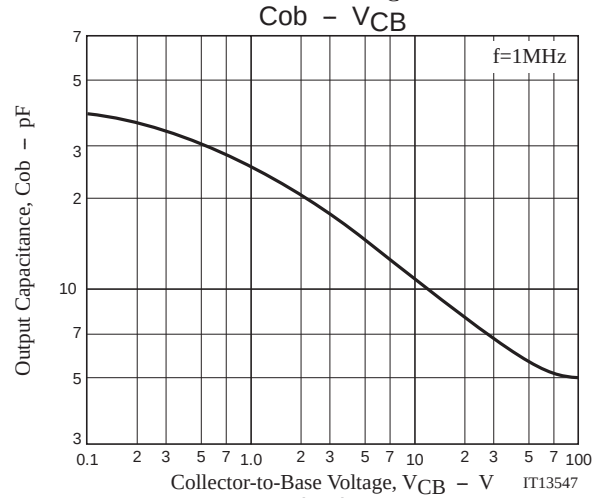
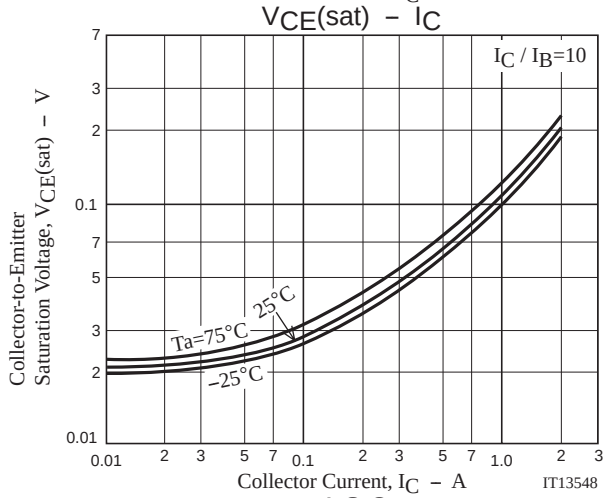
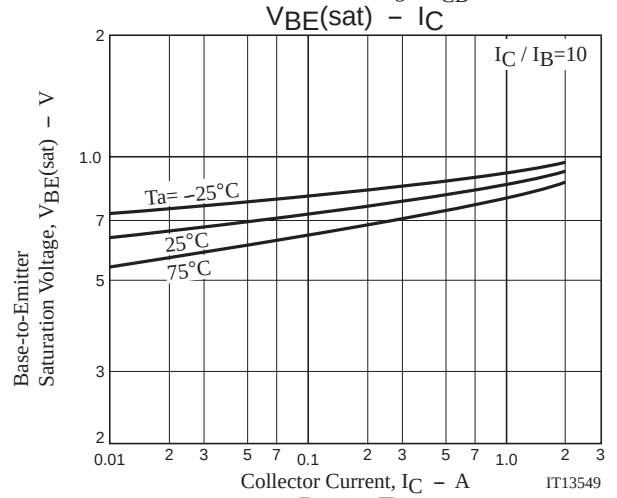
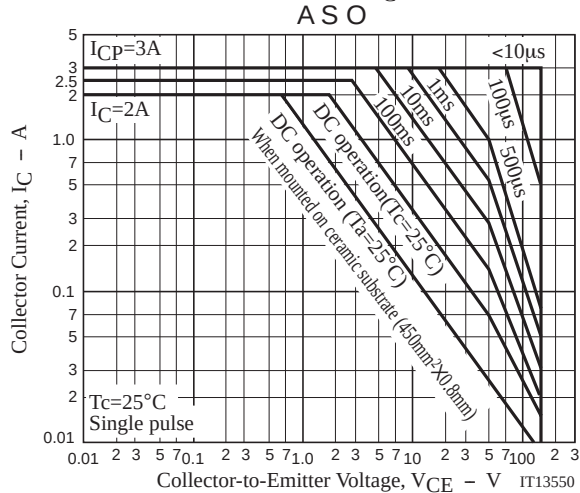
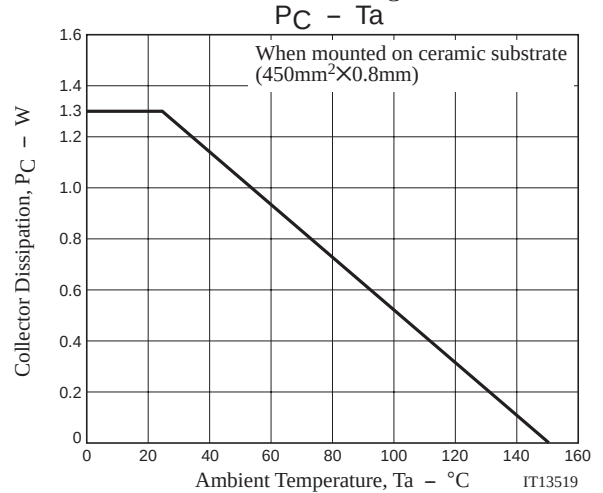


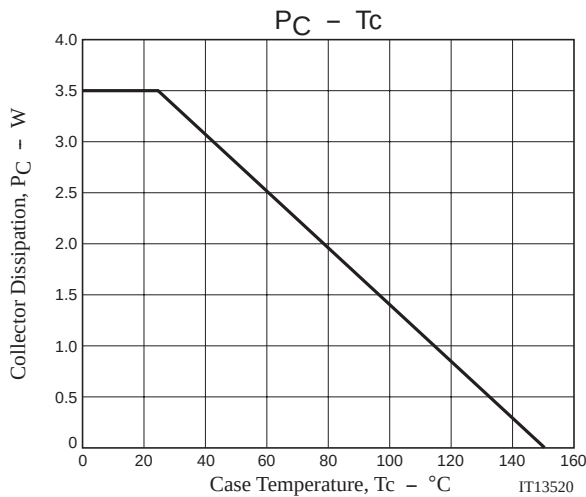
Switching Time Test Circuit



$$I_C = 10I_{B1} = -10I_{B2} = 0.5\text{A}$$







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