Ordering number : ENA0401

SANYO Semiconductors
DATA SHEET

CPH3248 — NPN Epitaxial Planar Silicon Transistor
High-Voltage Switching Applications

Applications

- DC / DC converters, relay drivers, lamp drivers, motor drivers, inverters.

Features

- Adoption of FBET, MBIT processes.
- Large current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- Ultrasmall package permitting applied sets to be small and slim (mounting height: 0.9mm).
- 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}		100	V
Emitter-to-Base Voltage	V_{EBO}		6.5	V
Collector Current	I_C		2	A
Collector Current (Pulse)	I_{CP}		3	A
Base Current	I_B		400	mA
Collector Dissipation	P_C	Mounted on a ceramic board (600mm²×0.8mm)	0.9	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}=80V, I_E=0A			1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0A			1	μA
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=100mA	300		600	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=300mA		300		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		13		pF

Marking : DT

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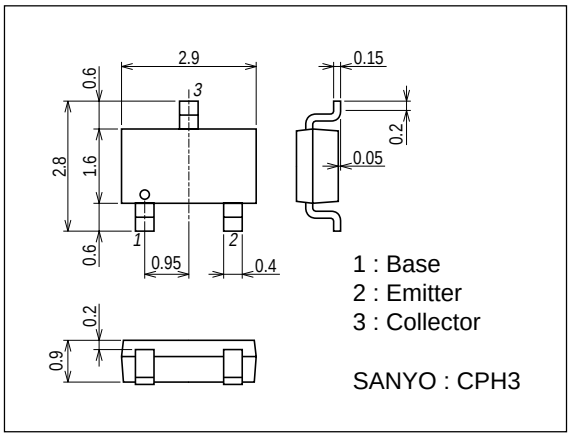
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=1A, I_B=100mA		90	150	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=1A, I_B=100mA		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	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}=∞	100			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0A	6.5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		40		ns
Storage Time	tstg	See specified Test Circuit.		1100		ns
Fall Time	t_f	See specified Test Circuit.		40		ns

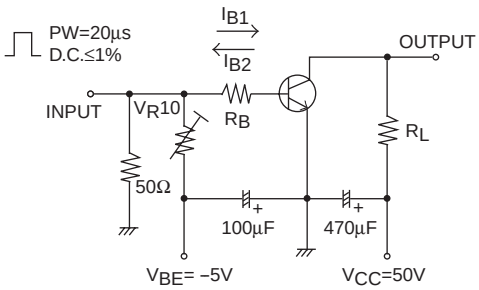
Package Dimensions

unit : mm

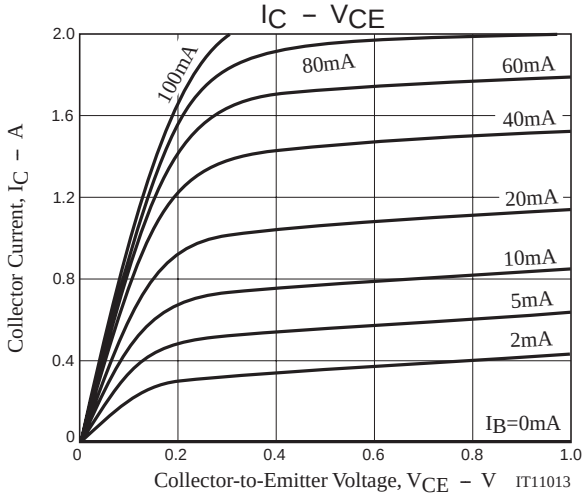
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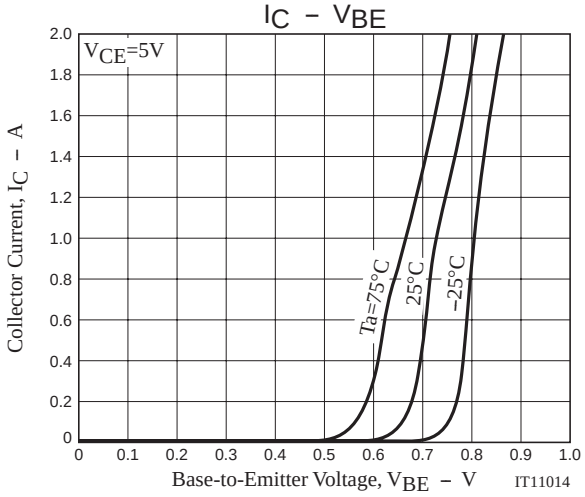


Switching Time Test Circuit

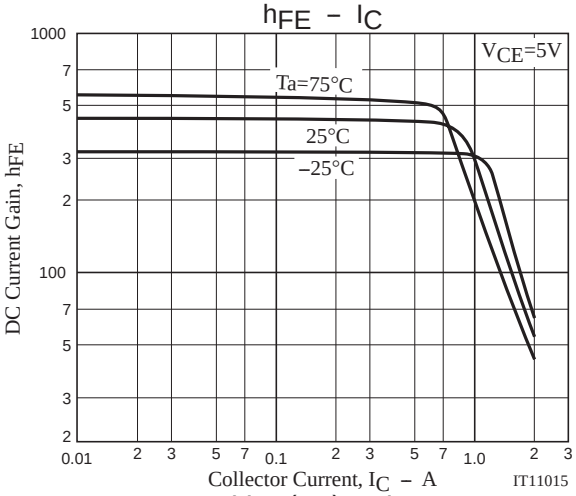


$10I_{B1}$= −$10I_{B2}$=I_C=0.5A

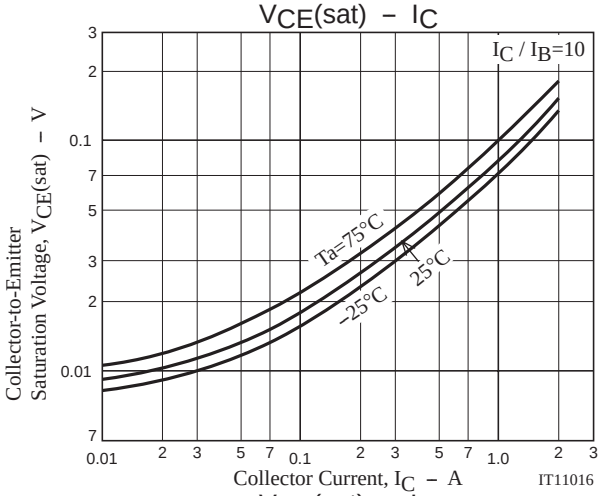




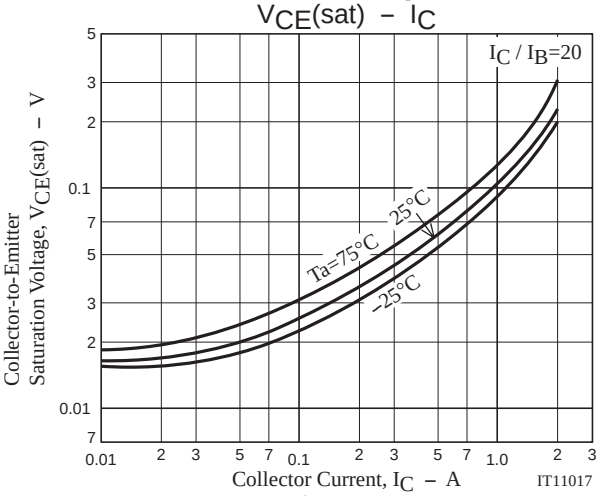
h_{FE} – I_C



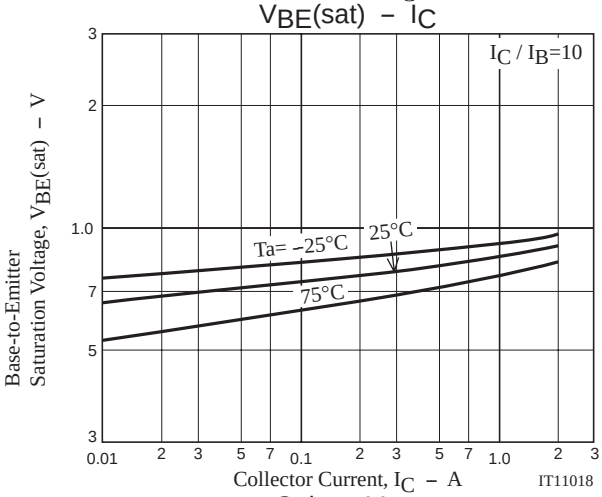
$V_{CE}(sat)$ – I_C



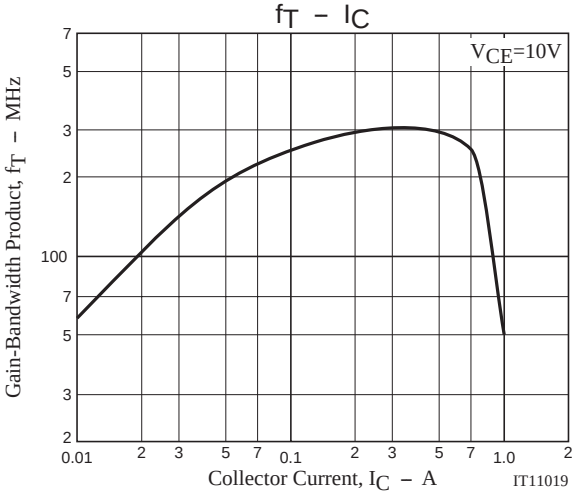
$V_{CE}(sat)$ – I_C



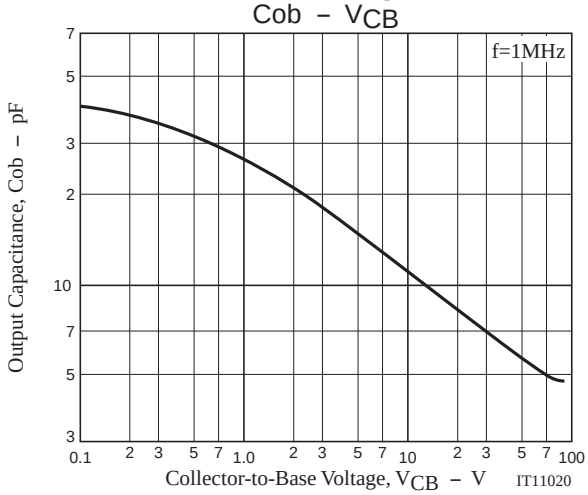
$V_{BE}(sat)$ – I_C



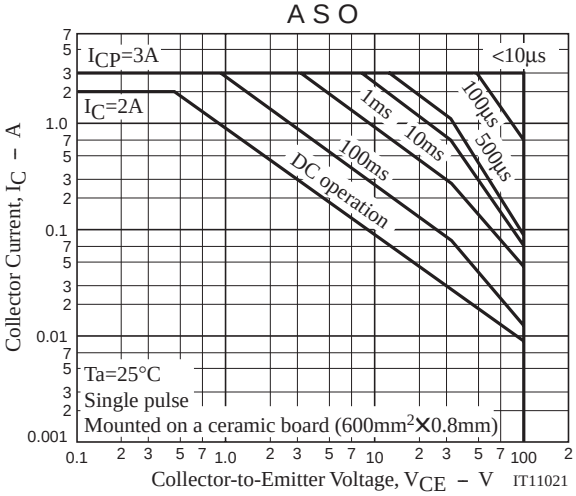
f_T – I_C



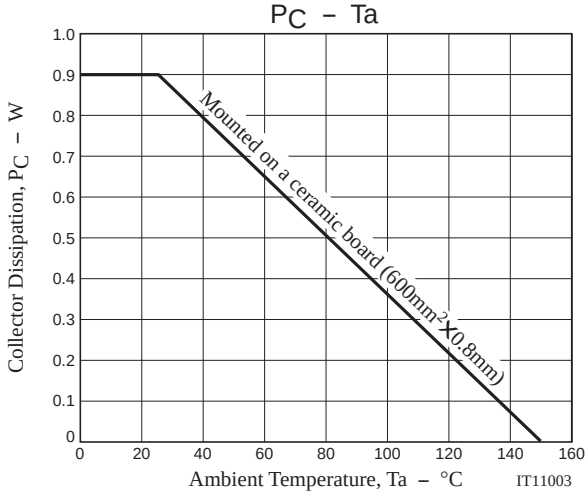
Cob – V_{CB}



A S O



P_C – Ta



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