Ordering number : ENN7721A

SANYO Semiconductors

DATA SHEET

CPH3236 — NPN Epitaxial Planar Silicon Transistor

DC / DC Converter Applications

Applications

- Relay drivers, lamp drivers, motor drivers, flash.

Features

- Adoption of MBIT processes.
- Large current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- Narrow h_{FE} range.
- Ultrasmall package facilitates miniaturization in end products(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}		100	V
Collector-to-Emitter Voltage	V_{CES}		100	V
	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		3	A
Collector Current (Pulse)	I_{CP}		6	A
Base Current	I_B		600	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}=40V, I_E=0			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0			0.1	μA
DC Current Gain	h_{FE}	V_{CE}=2V, I_C=100mA	250		400	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=500mA		380		MHz

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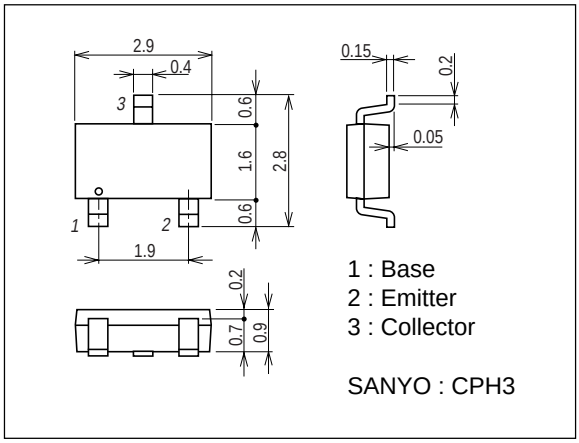
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		13		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)1	I_C=1A, I_B=50mA		60	100	mV
	V_{CE}(sat)2	I_C=2A, I_B=100mA		105	160	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=2A, I_B=100mA		0.88	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C=100μA, R_{BE}=0	100			V
	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	6			V
Turn-ON Time	t_{on}	See specified test circuit.		35		ns
Storage Time	t_{stg}	See specified test circuit.		300		ns
Fall Time	t_f	See specified test circuit.		22		ns

Marking : DG

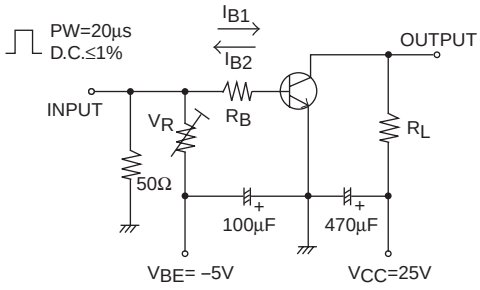
Package Dimensions

unit : mm

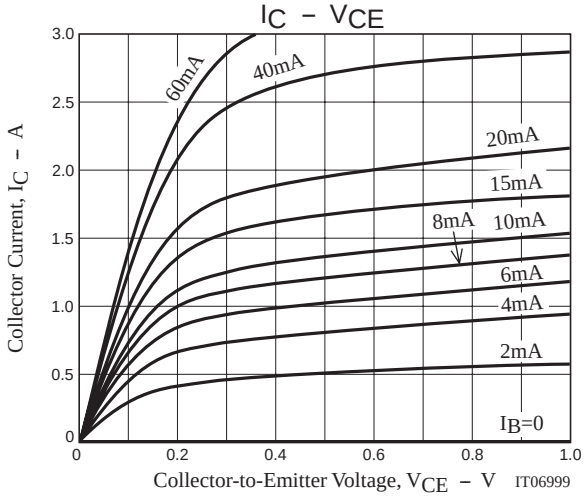
2150A

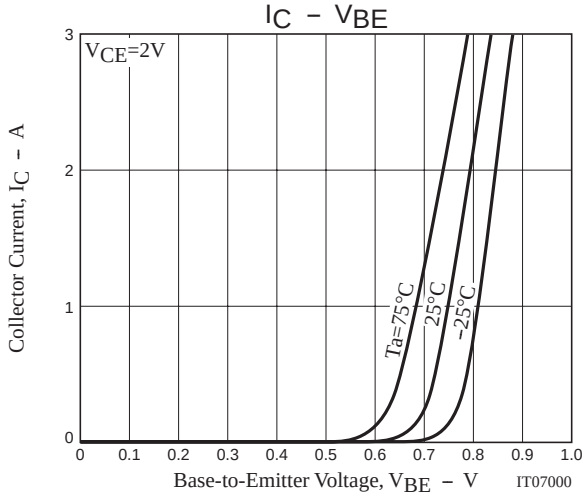


Switching Time Test Circuit

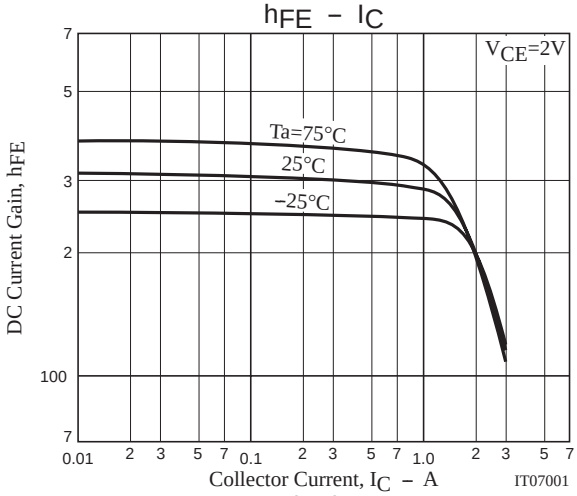


I_C=10I_{B1}= −10I_{B2}=1A

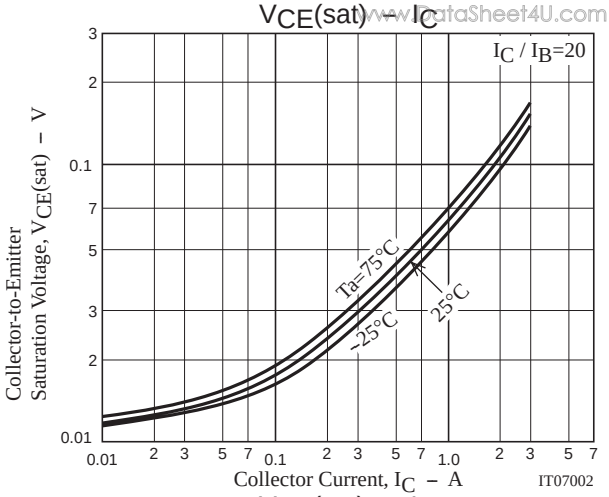




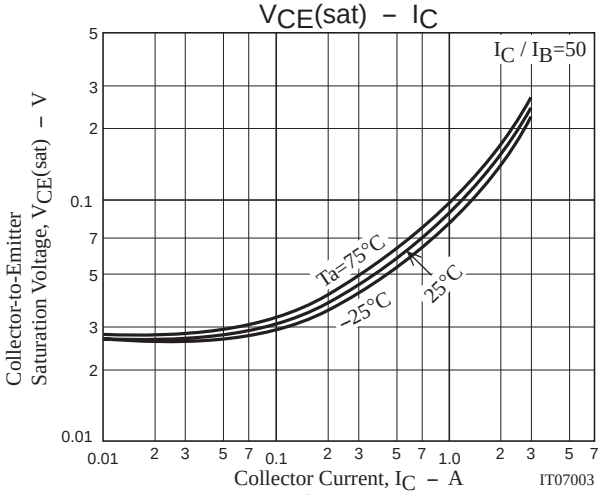
h_{FE} – I_C



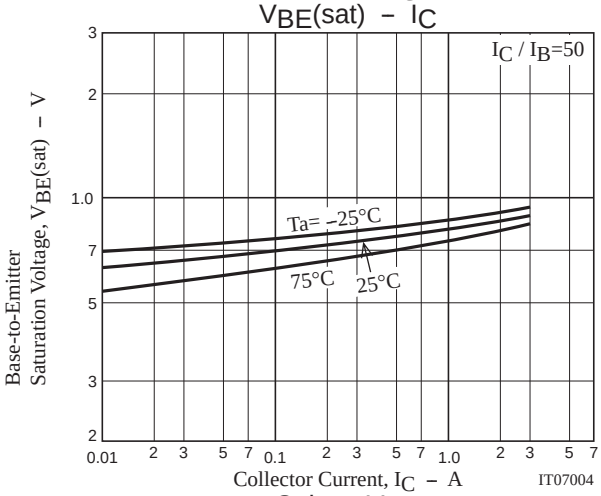
V_{CE}(sat) – I_C



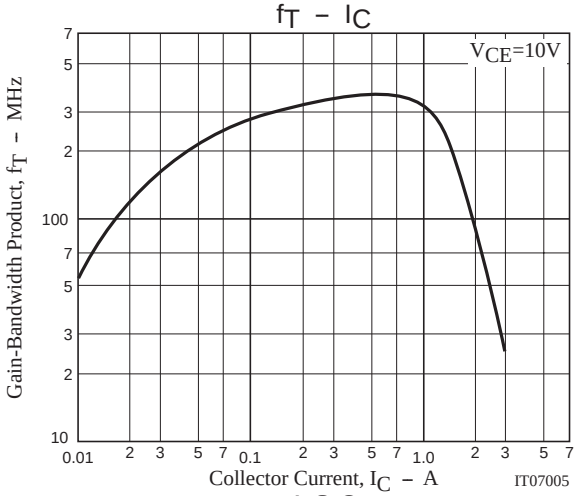
V_{CE}(sat) – I_C



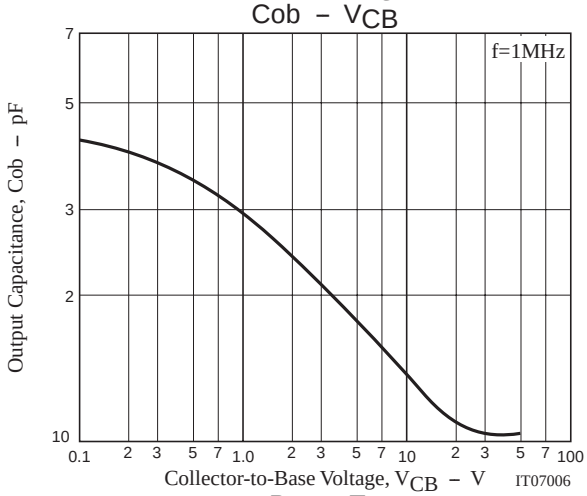
V_{BE}(sat) – I_C



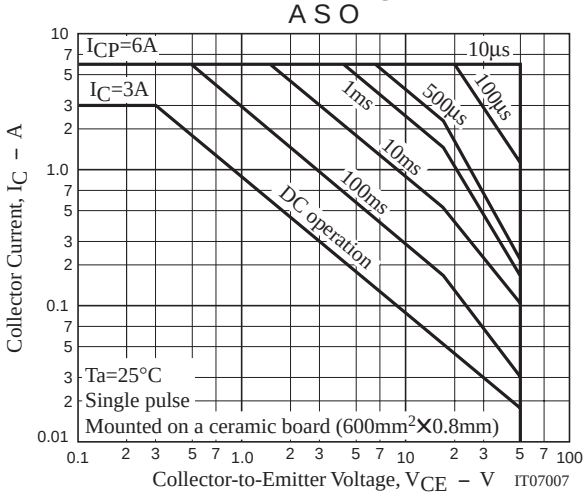
f_T – I_C



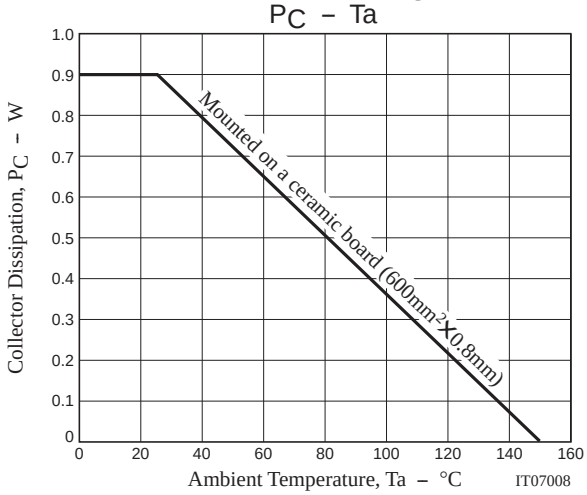
Cob – V_{CB}



A S O



P_C – Ta



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