Ordering number : ENN8166

SANYO Semiconductors
DATA SHEET

CPH3145 / CPH3245 — PNP / NPN Epitaxial Planar Silicon Transistors
DC / DC Converter Applications

Applications

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

Features

- Adoption of MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm).
- High allowable power dissipation.

Specifications ( ) : CPH3145

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–50)80	V
Collector-to-Emitter Voltage	V_{CES}		(–50)80	V
Collector-to-Emitter Voltage	V_{CEO}		(–)50	V
Emitter-to-Base Voltage	V_{EBO}		(–)6	V
Collector Current	I_C		(–)2	A
Collector Current (Pulse)	I_{CP}		(–)4	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}=(–)40V, I_E=0			(–)1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=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		420		MHz
Output Capacitance	Cob	V_{CB}=(–)10V, f=1MHz		(16)8		pF

Marking : CPH3145 : BE, CPH3245 : DQ

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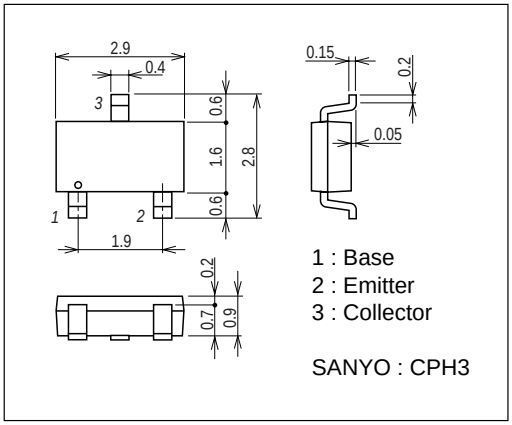
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=(-)1A, I_B=(-)50mA		(-165)130	(-330)260	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=(-)1A, I_B=(-)50mA		(-)0.9	(-)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)10μA, I_E=0	(-50)80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C=(-)100μA, R_{BE}=0	(-50)80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	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)35		ns
Storage Time	t_{stg}	See specified Test Circuit.		(200)330		ns
Fall Time	t_f	See specified Test Circuit.		(24)40		ns

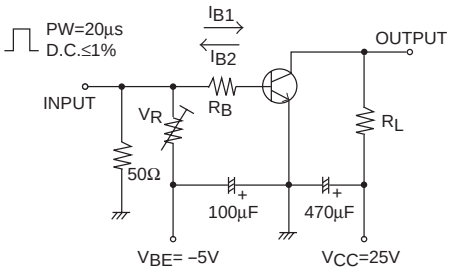
Package Dimensions

unit : mm

2150A

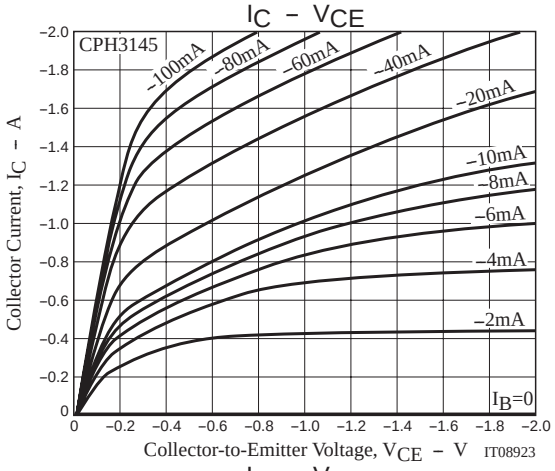


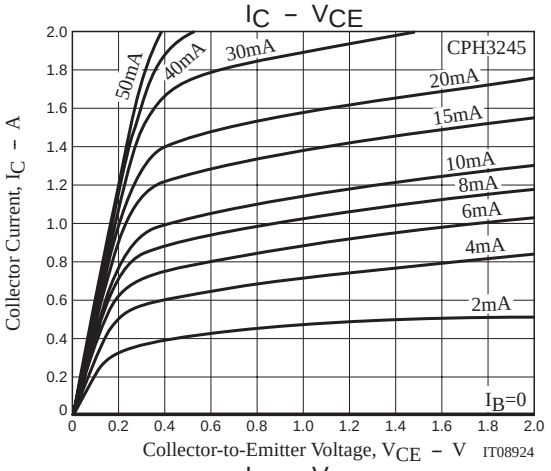
Switching Time Test Circuit

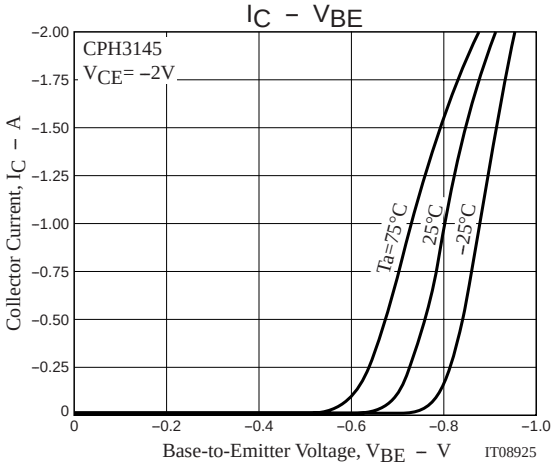


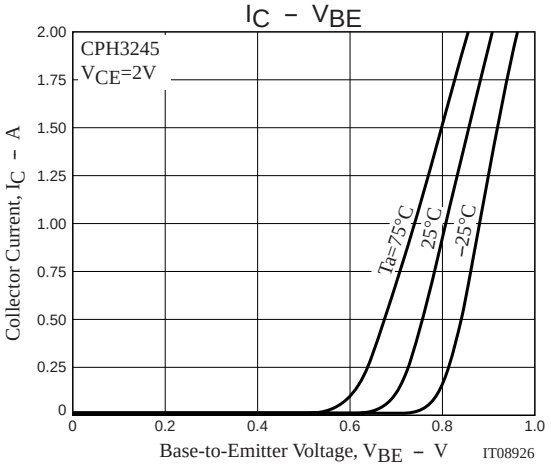
I_C=10I_{B1}= −10I_{B2}=0.7A

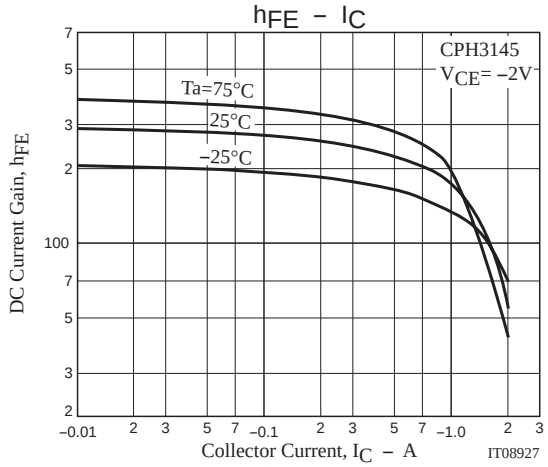
For PNP, the polarity is reversed.

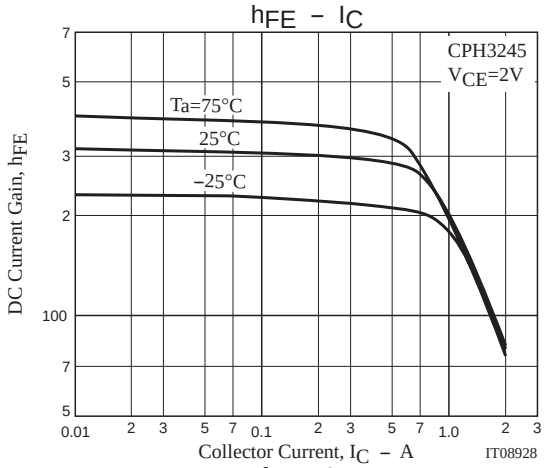


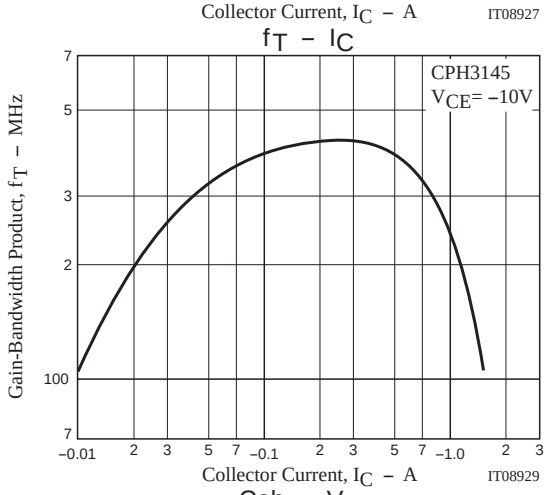


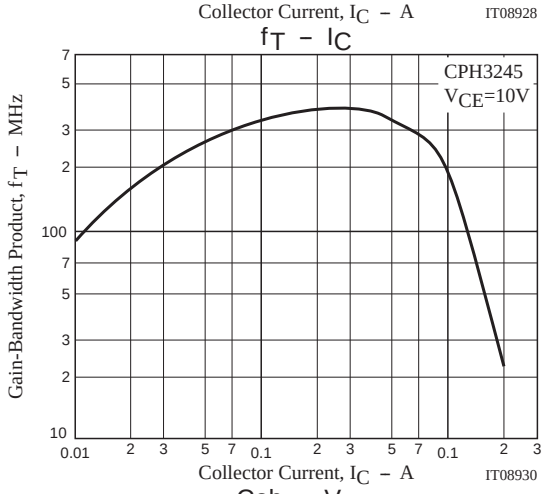


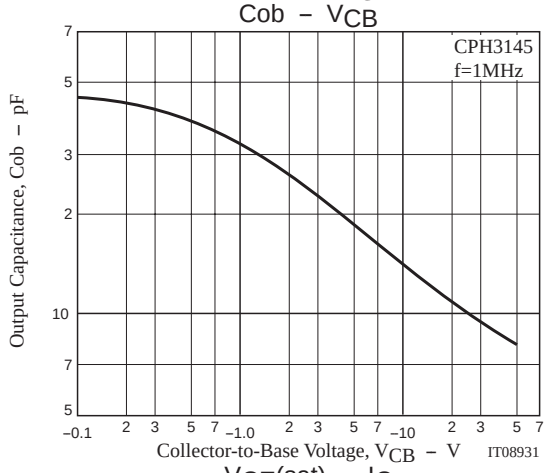


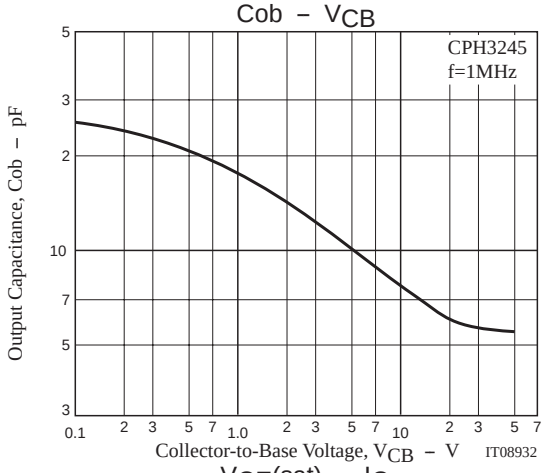


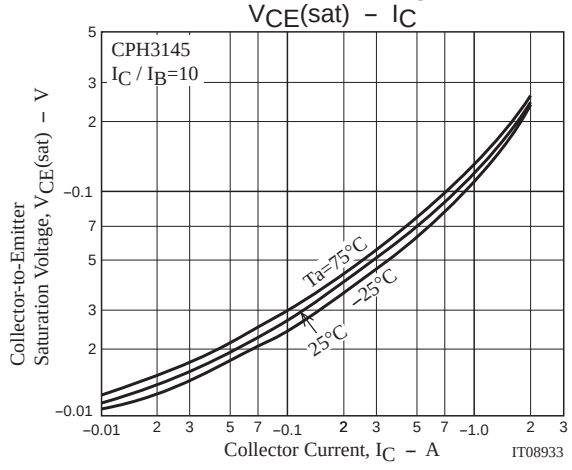


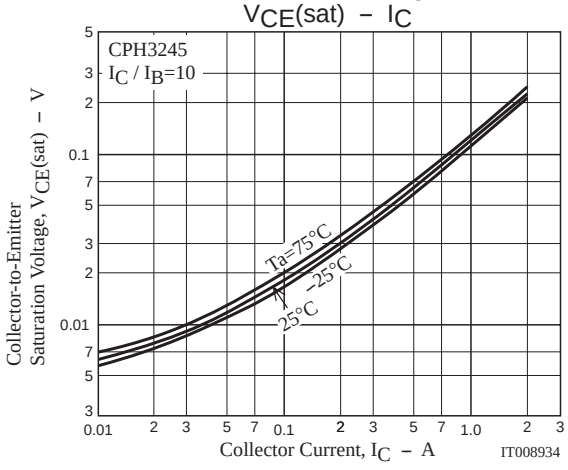


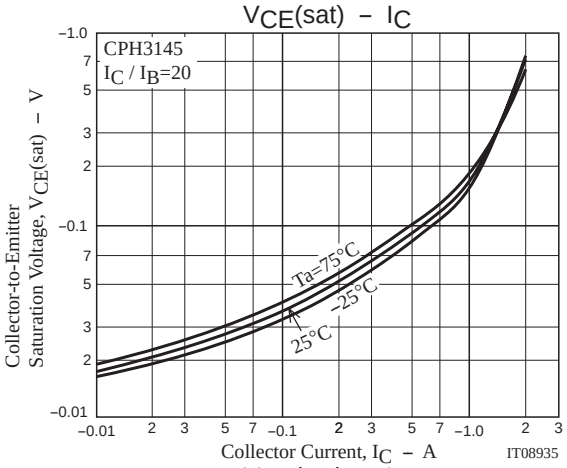


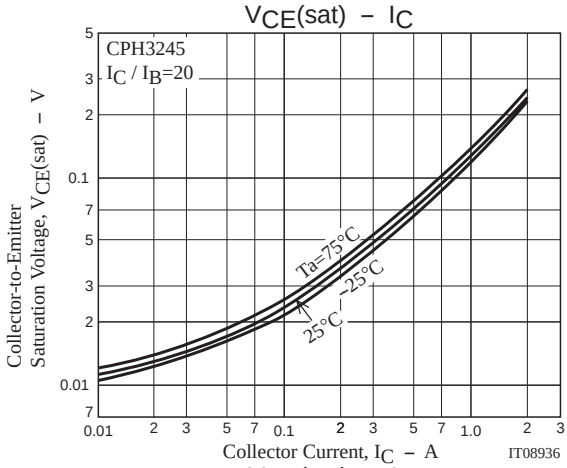


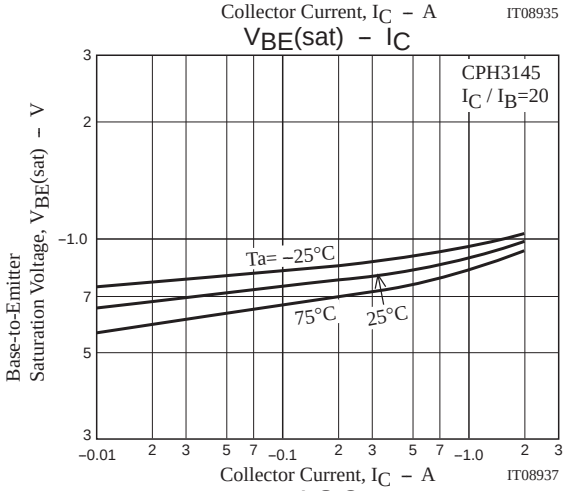


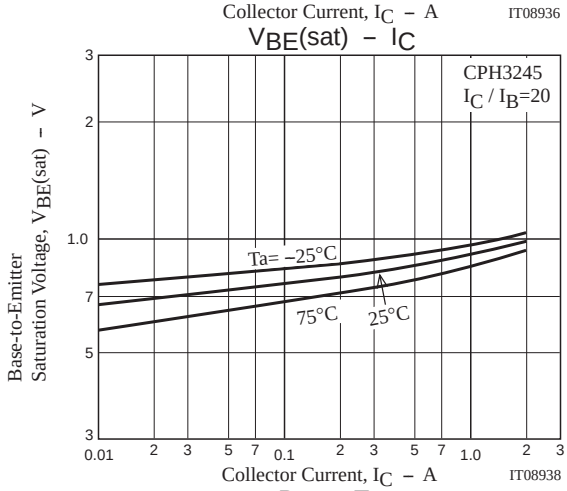


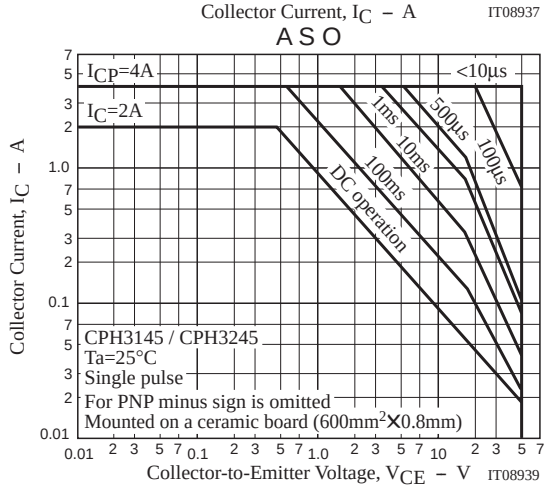


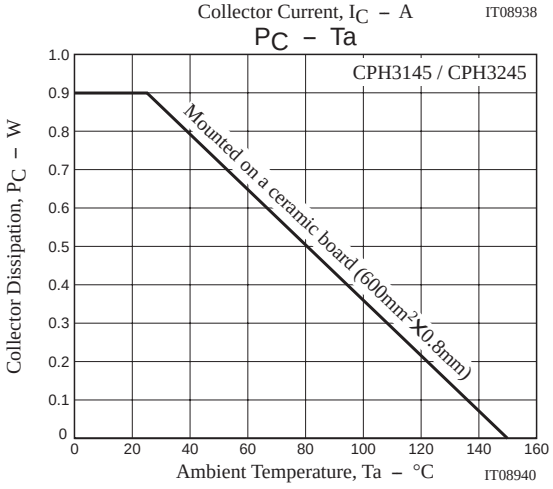












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