



SANYO Semiconductors

DATA SHEET

CPH3146 — PNP Epitaxial Planar Silicon Transistor

High-Current Switching Applications

Applications

- DC / DC converter, Relay drivers, lamp drivers, motor drivers.

Features

- Adoption of FBET, MBIT processes.
- 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

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		-60	V
Collector-to-Emitter Voltage	V _{CES}		-60	V
Collector-to-Emitter Voltage	V _{CEO}		-60	V
Emitter-to-Base Voltage	V _{EBO}		-7	V
Collector Current	I _C		-3	A
Collector Current (Pulse)	I _{CP}		-5	A
Base Current	I _B		-600	mA
Collector Dissipation	P _C	Mounted on a ceramic board (600mm ² X0.8mm)	0.9	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-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} =-50V, 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} =-2V, I _C =-100mA	200		400	
Gain-Bandwidth Product	f _T	V _{CE} =-10V, I _C =-500mA		400		MHz
Output Capacitance	C _{ob}	V _{CB} =-10V, f=1MHz		25		pF

Marking : BM

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CPH3146

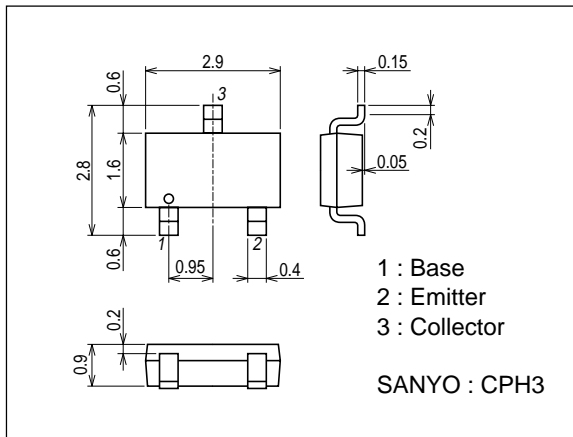
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -1A, I_B = -50mA$		-100	-200	mV
	$V_{CE(sat)2}$	$I_C = -1A, I_B = -100mA$		-80	-160	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -1A, I_B = -100mA$		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0A$	-60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = -100\mu A, R_{BE} = 0\Omega$	-60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-60			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0A$	-7			V
Turn-ON Time	t_{on}	See specified test circuit.		35		ns
Storage Time	t_{stg}	See specified test circuit.		480		ns
Fall Time	t_f	See specified test circuit.		28		ns

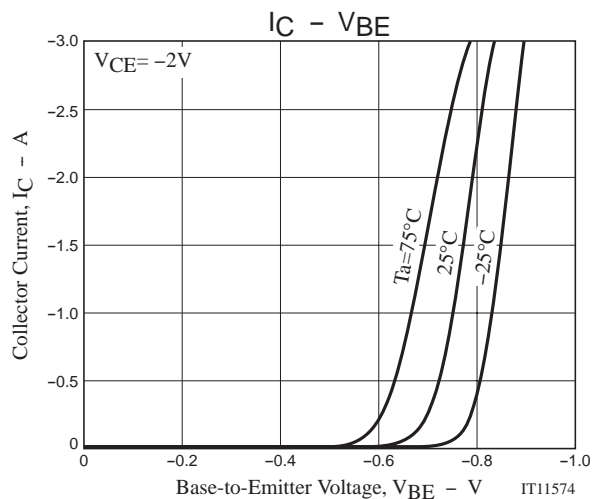
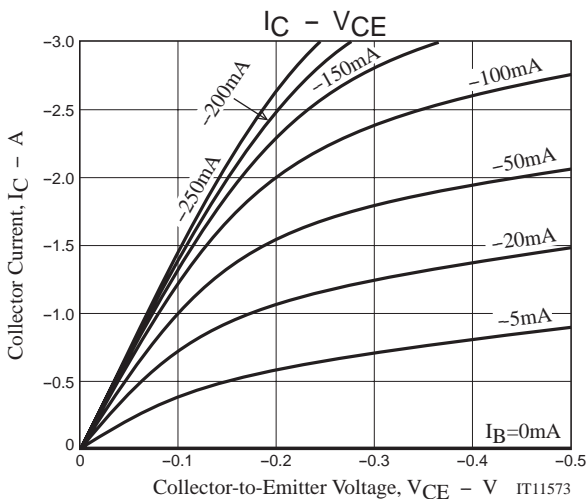
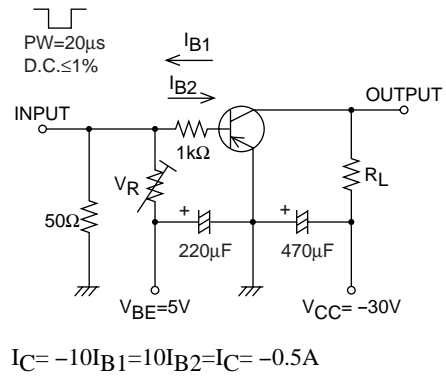
Package Dimensions

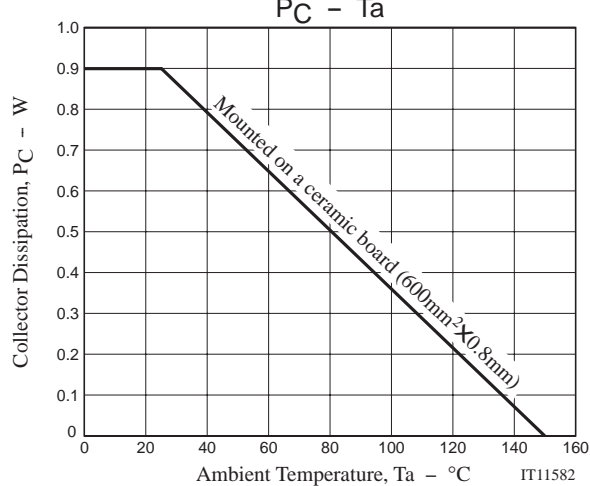
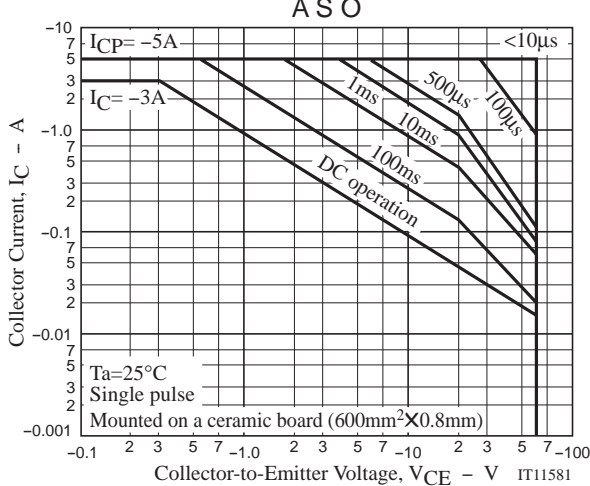
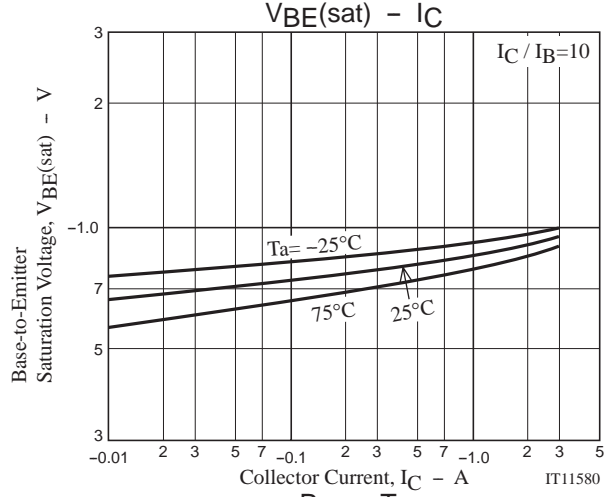
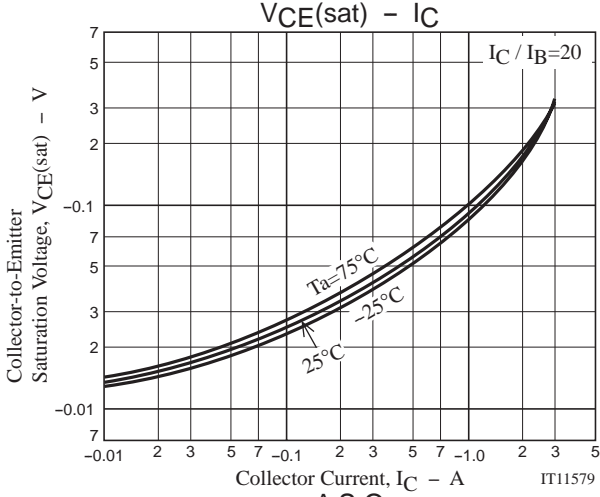
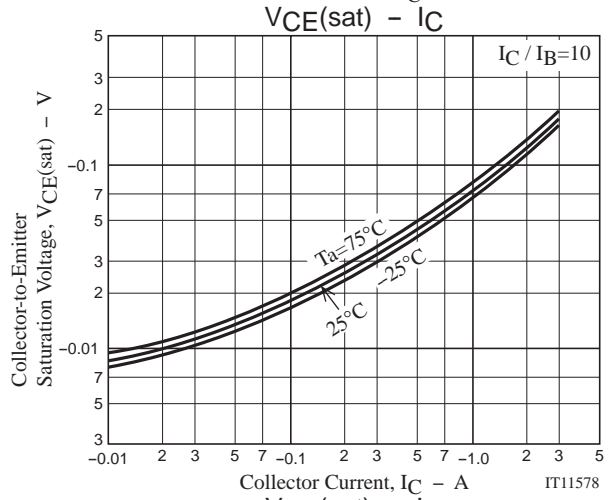
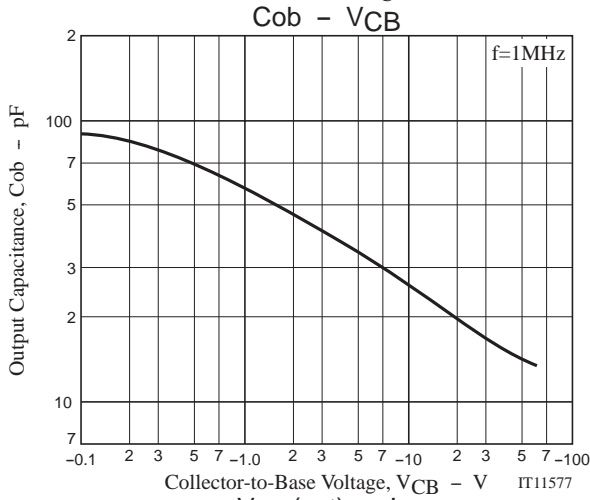
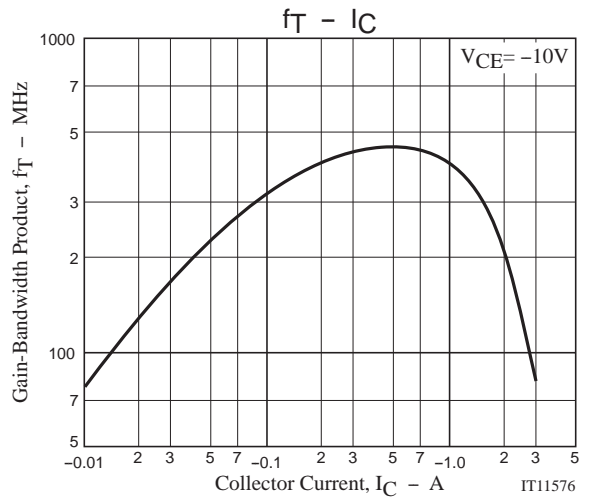
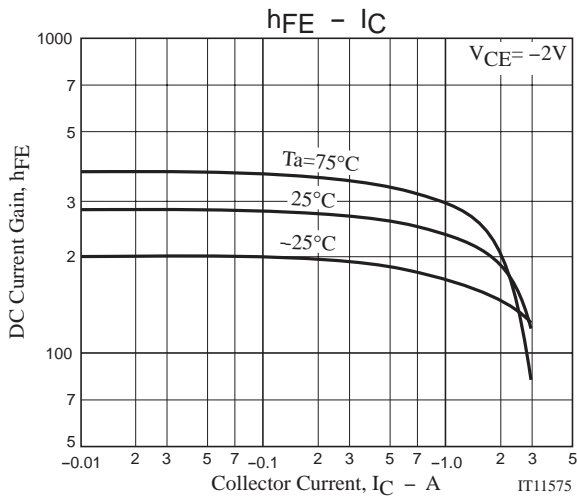
unit : mm (typ)

7015A-003



Switching Time Test Circuit





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