Ordering number:ENN5809

PNP/NPN Epitaxial Planar Silicon Transistors

CPH6101/CPH6201

High-Current Switching Applications

Applications

· DC-DC converter, relay drivers, lamp drivers, motor drivers, strobes.

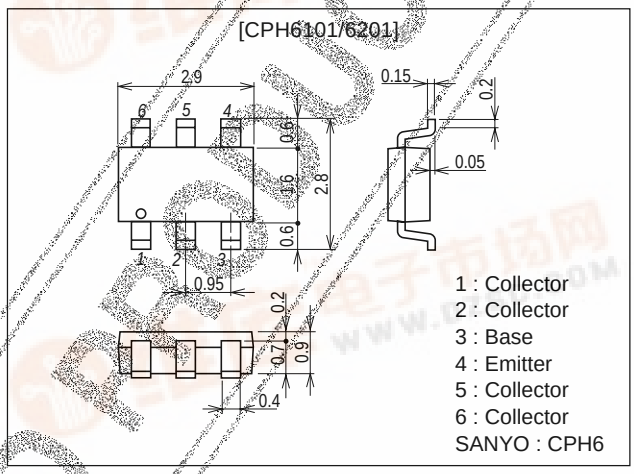
Features

· Adoption of FBET, MBIT processes.
· High current capacitance.
· Low collector-to-emitter saturation voltage.
· High-speed switching.
· Ultrasmall package permitting applied sets to be made small and slim (0.9mm).
· High allowable power dissipation.

Package Dimensions

unit:mm

2146A



( ) : CPH6101

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)30	V
Collector-to-Emitter Voltage	V_{CEO}		(–)30	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)	1.3	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}=(–)20V, I_E=0			(–)0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)3V, I_C=0			(–)0.1	μA
DC Current Gain	h_{FE}	V_{CE}=(–)2V, I_C=(–)100mA	200		400	
Gain-Bandwidth Product	f_T	V_{CE}=(–)10V, I_C=(–)50mA		150		MHz
Output Capacitance	Cob	V_{CB}=(–)10V, f=1MHz		(32)19		pF

Continued on next page.

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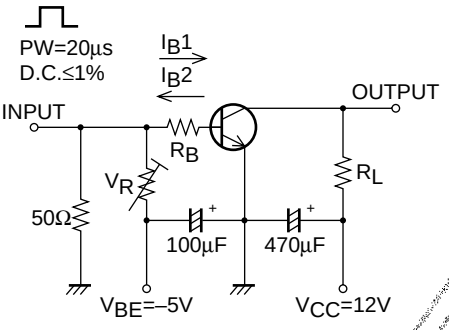
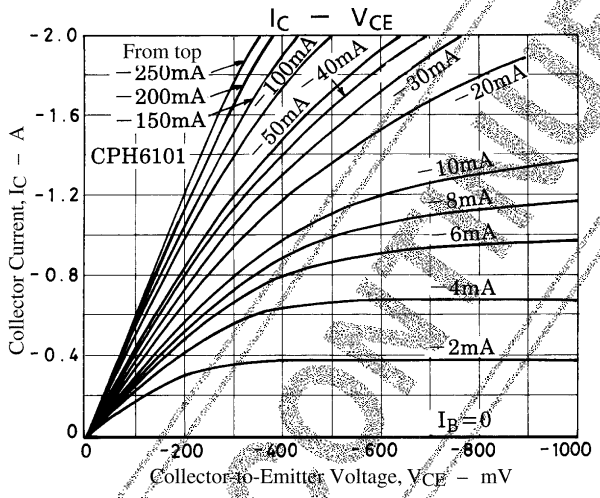
Continued from preceding page.

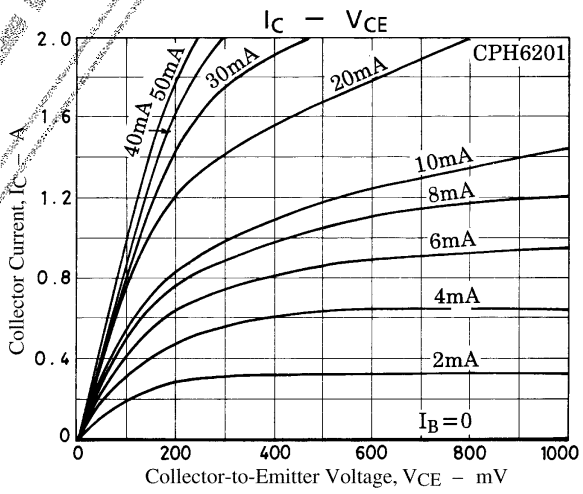
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)1.5A, I_B=(–)75mA		(–350)	(–600)	mV
				180	400	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)1.5A, I_B=(–)75mA		(–)0.85	(–)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0	(–)30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)30			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.		60(60)		ns
Storage Time	t_{stg}	See specified test circuit.		500		ns
				(350)		ns
Fall Time	t_f	See specified test circuit.		25(25)		ns

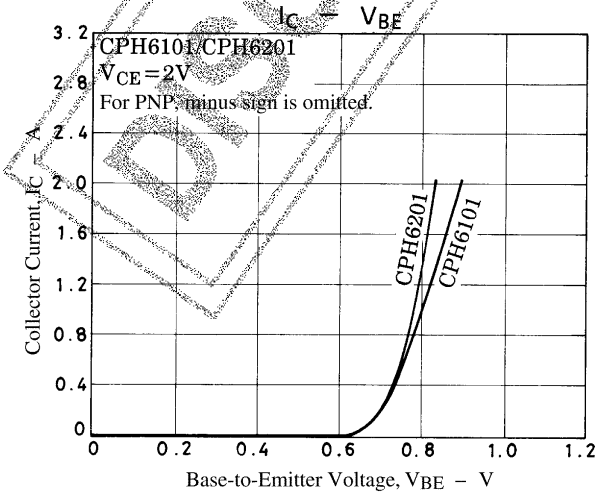
Switching Time Test Circuit

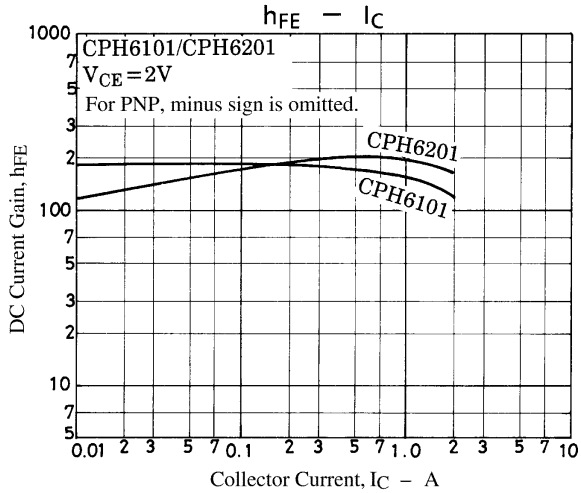


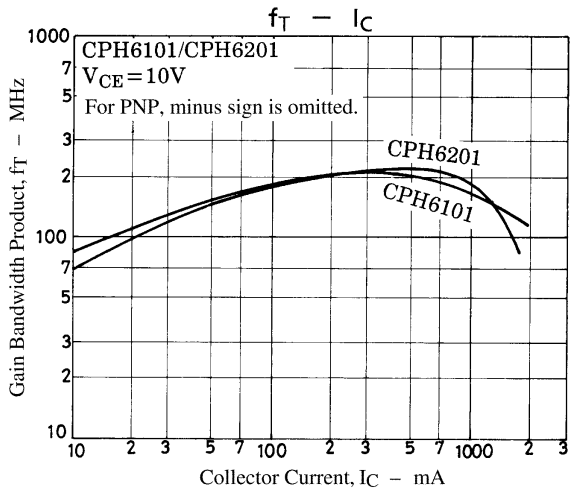
$20I_{B}1=-20I_{B}2=I_C=500mA$
(For PNP, the polarity is reversed.)

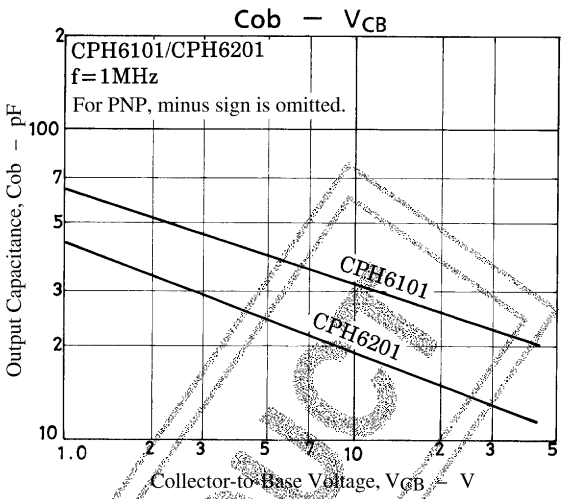


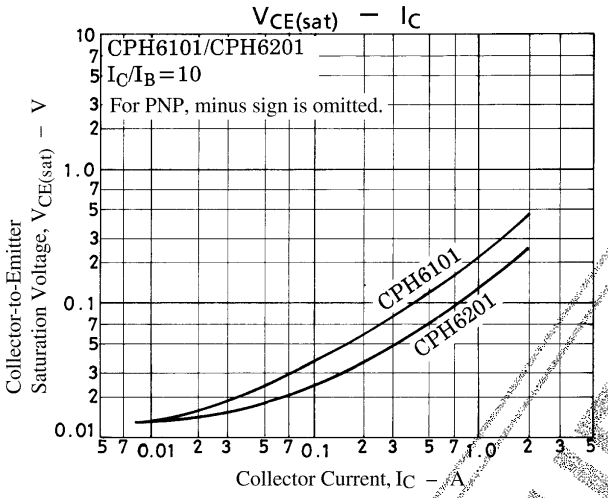


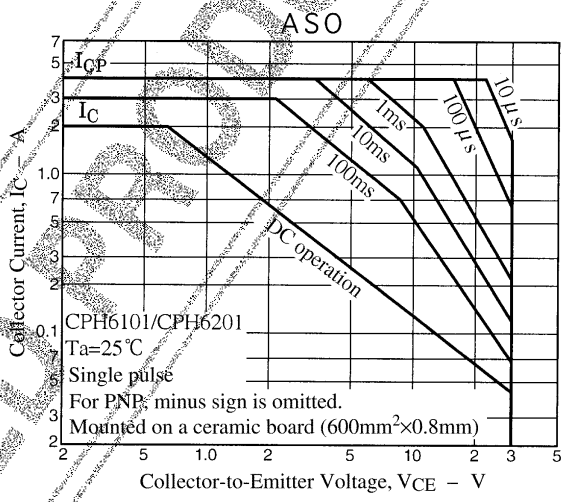


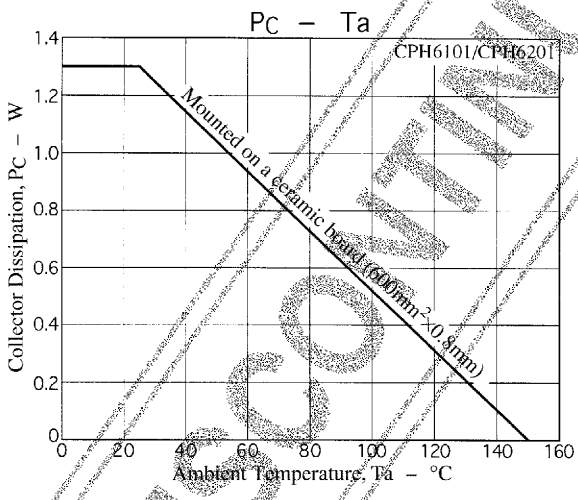












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