

**CPH3107/3207****DC/DC Converter Applications****Applications**

- Relay drivers, lamp drivers, motor drivers, and strobes.

**Features**

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

() : PNP

**Specifications****Absolute Maximum Ratings** at  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		(-)15	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-)15	V
Emitter-to-Base Voltage	$V_{EBO}$		(-)5	V
Collector Current	$I_C$		(-)6	A
Collector Current (Pulse)	$I_{CP}$		(-)9	A
Base Current	$I_B$		(-)1.2	A
Collector Dissipation	$P_C$	Mounted on a ceramic board (600mm <sup>2</sup> ×0.8mm)	0.9	W
Junction Temperature	$T_J$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

**Electrical Characteristics** at  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=(-)12\text{V}, I_E=0$			(-)0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)4\text{V}, I_C=0$			(-)0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=(-)2\text{V}, I_C=(-)500\text{mA}$	200		560	
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)2\text{V}, I_C=(-)500\text{mA}$		(140)		MHz
				250		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		(82)46		pF

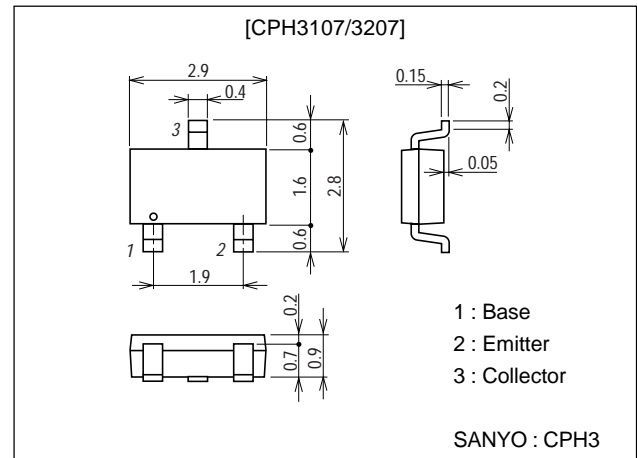
Marking : CPH3107 : AG, CPH3207 : CG

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**Package Dimensions**

unit:mm

2150A



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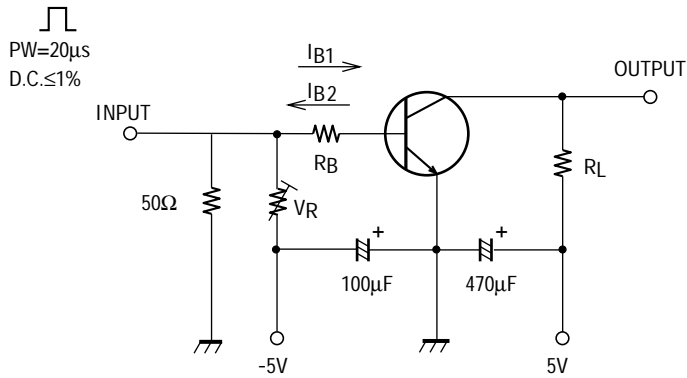
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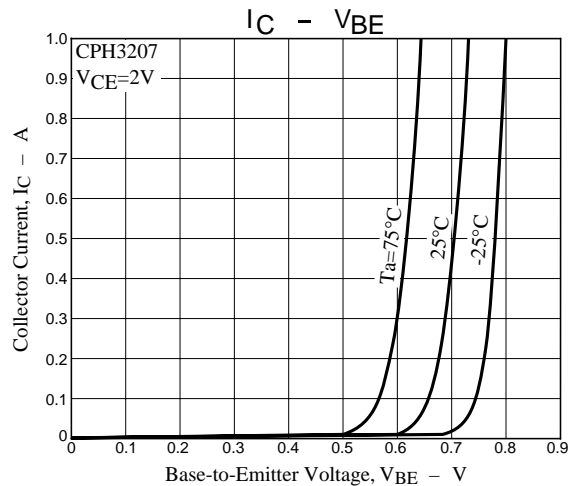
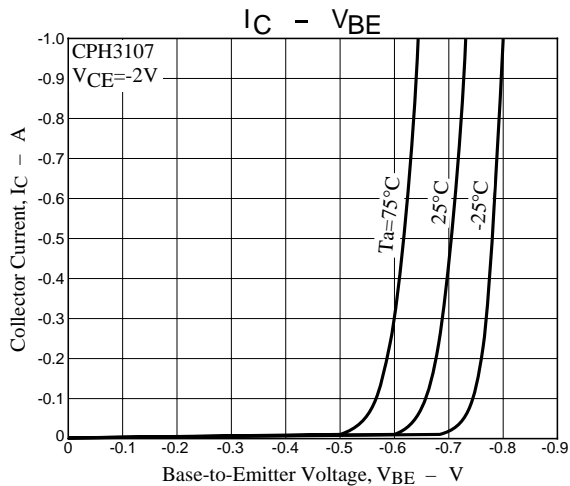
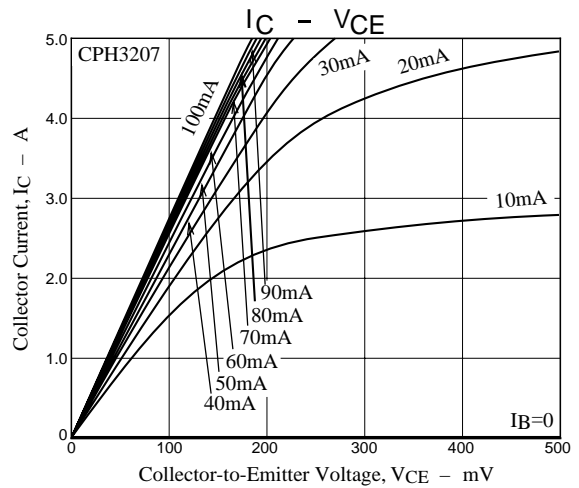
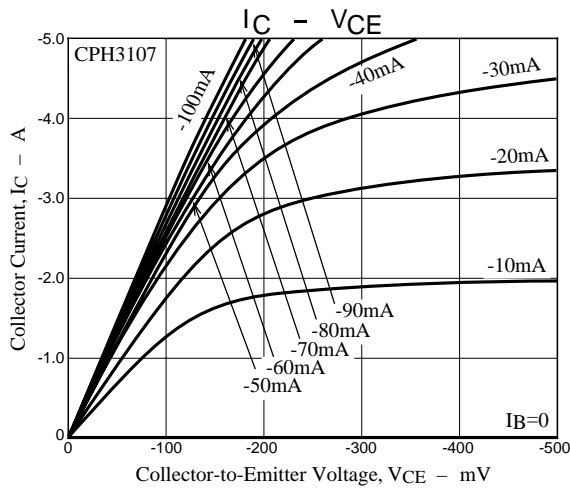
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)3A, I_B=(-)60mA$		(-) $100$	(-) $150$	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)3A, I_B=(-)60mA$		(-) $0.85$	(-) $1.2$	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-) $15$			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-) $15$			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_C=(-)10\mu A, I_C=0$	(-) $5$			V
Turn-ON Time	$t_{on}$	See specified test circuit.		(30) $32$		ns
Storage Time	$t_{stg}$	See specified test circuit.		(120)		ns
				250		ns
Turn-OFF Time	$t_f$	See specified test circuit.		(14) $10$		ns

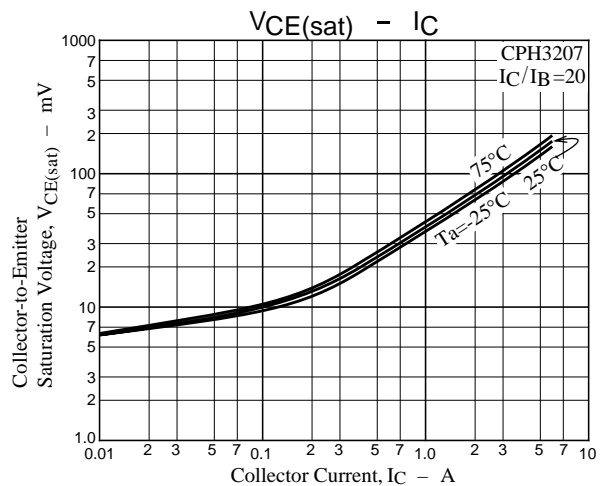
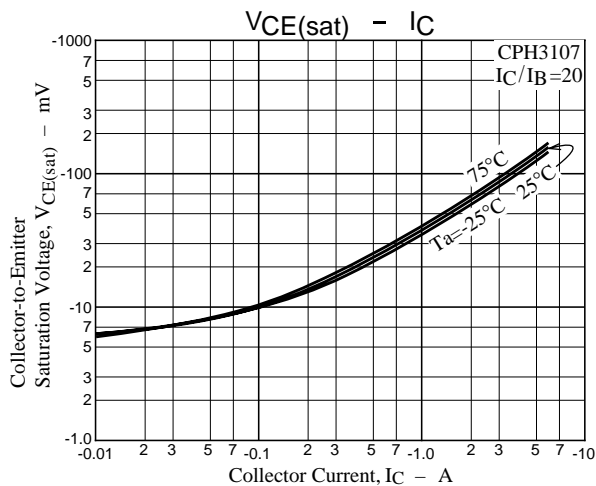
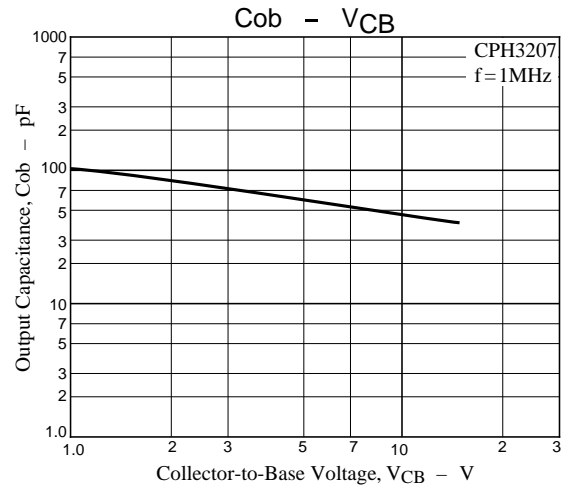
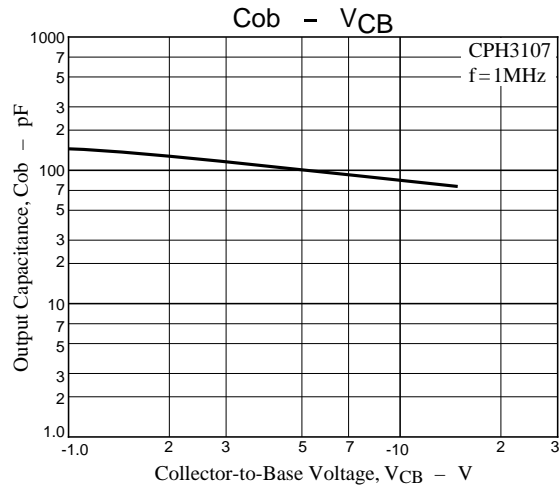
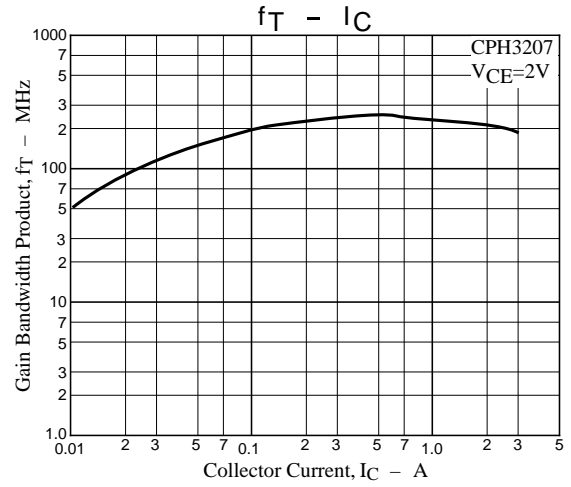
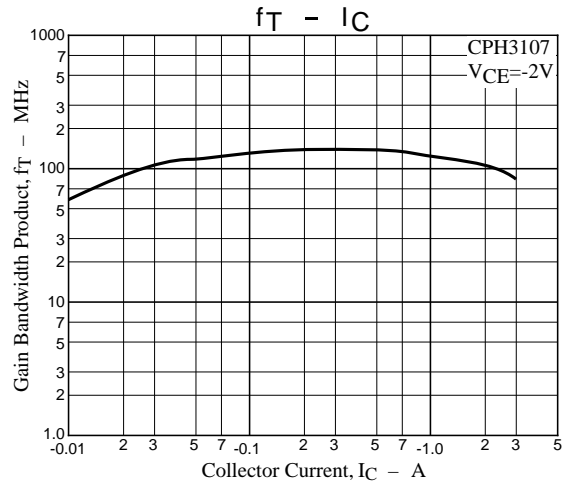
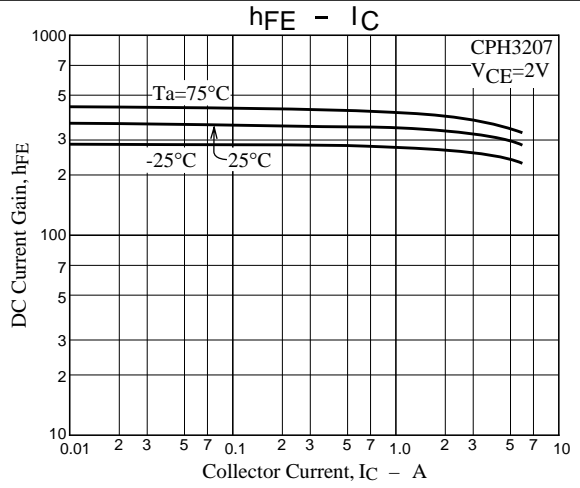
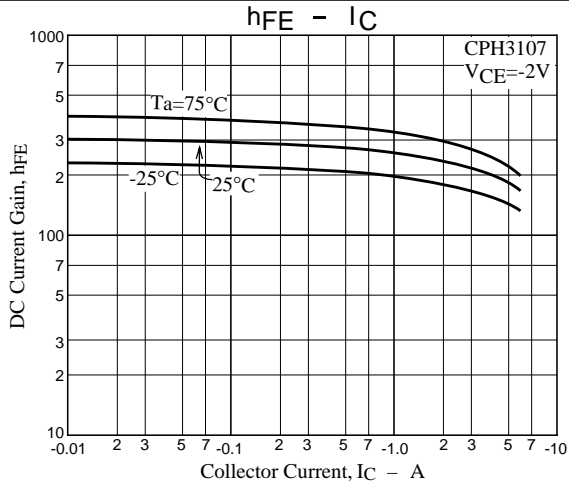
## Switching Time Test Circuit



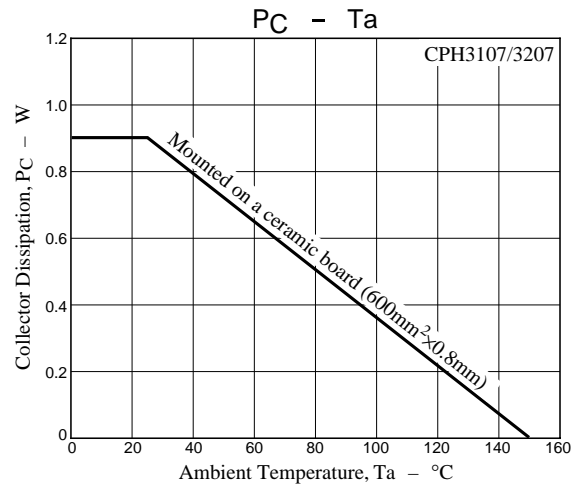
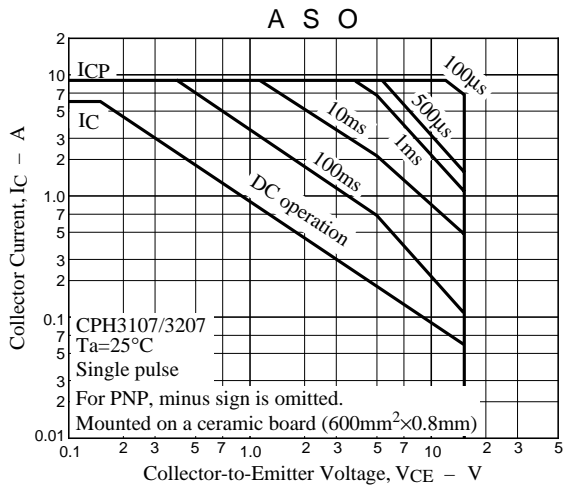
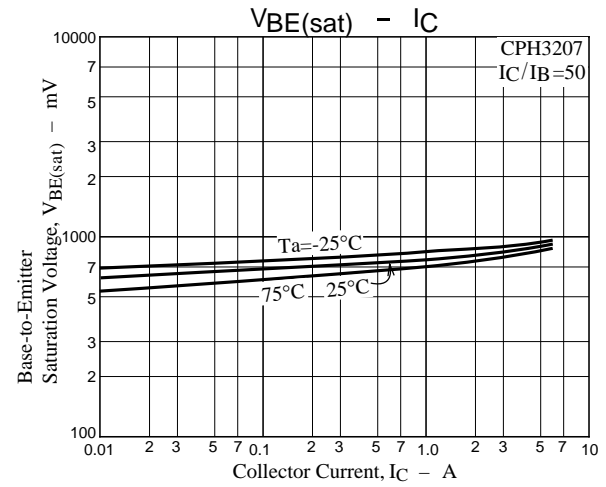
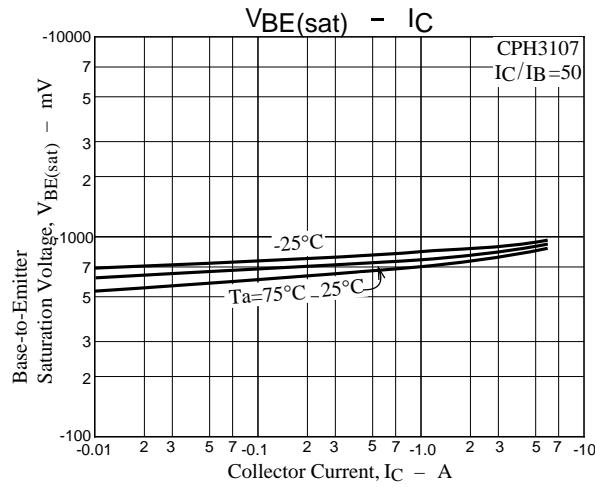
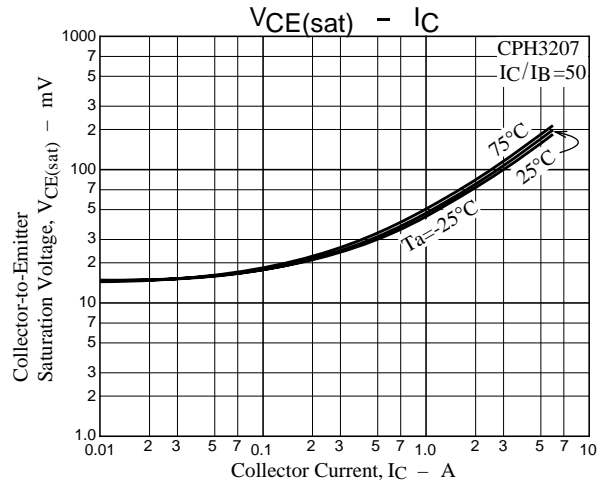
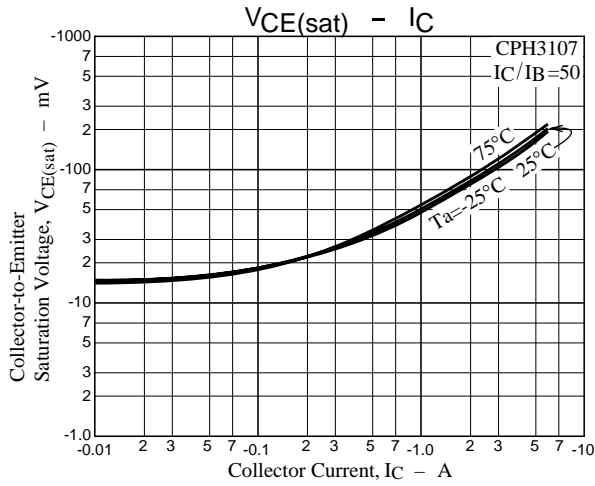
$20I_{B1} = -20I_{B2} = I_C = 3A$   
(For PNP, the polarity is reversed.)



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