

**SANYO****CPH3104/3204****DC/DC Converter Applications****Applications**

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

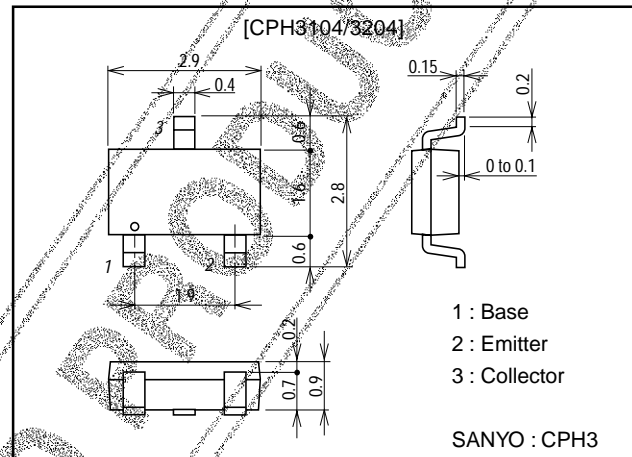
**Features**

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

**Package Dimensions**

unit:mm

2150



( ) : CPH3104

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		(-)15	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-)15	V
Emitter-to-Base Voltage	$V_{EBO}$		(-)5	V
Collector Current	$I_C$		(-)1.5	A
Collector Current (Pulse)	$I_{CP}$		(-)3	A
Base Current	$I_B$		(-)200	mA
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	$I_{CBO}$	$V_{CB} = (-)12\text{V}, I_E = 0$			(-)100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)100	nA
DC Current Gain	$h_{FE1}$	$V_{CE} = (-)2\text{V}, I_C = (-)50\text{mA}$	200		560	
	$h_{FE2}$	$V_{CE} = (-)2\text{V}, I_C = (-)800\text{mA}$	80			
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)2\text{V}, I_C = (-)50\text{mA}$		(300)		MHz
				200		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$	(15)	10		pF

Marking : CPH3104 : AD, CPH3204 : CD

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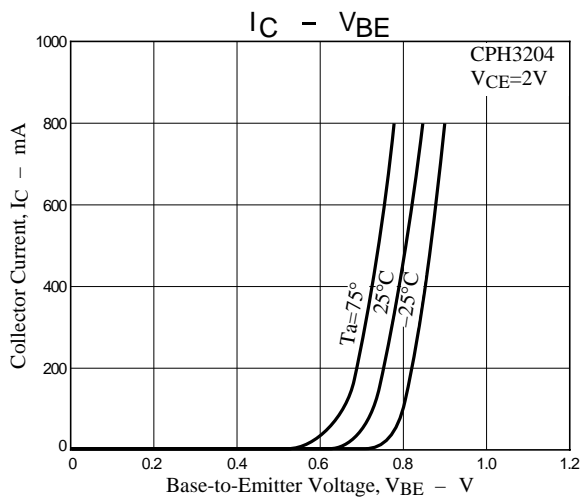
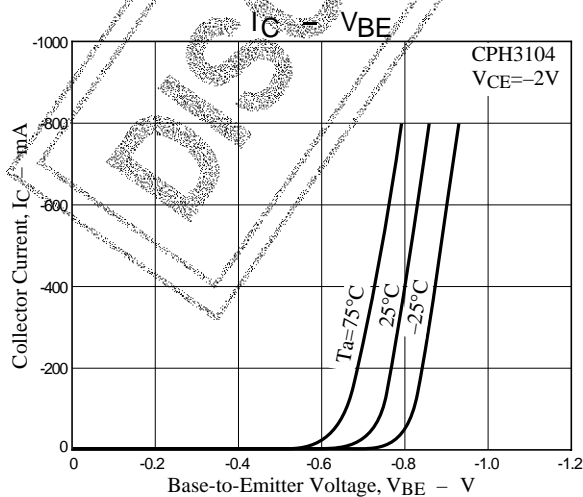
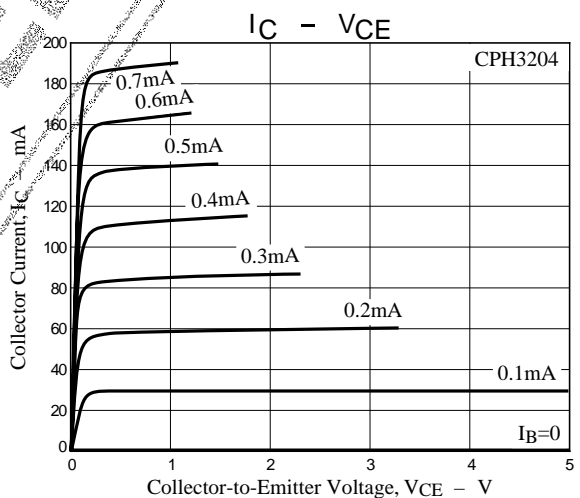
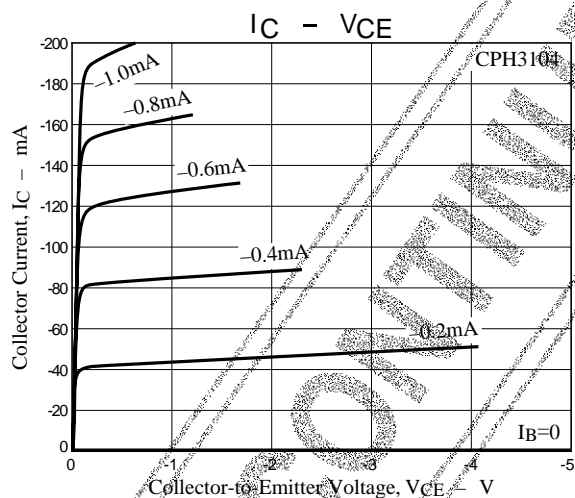
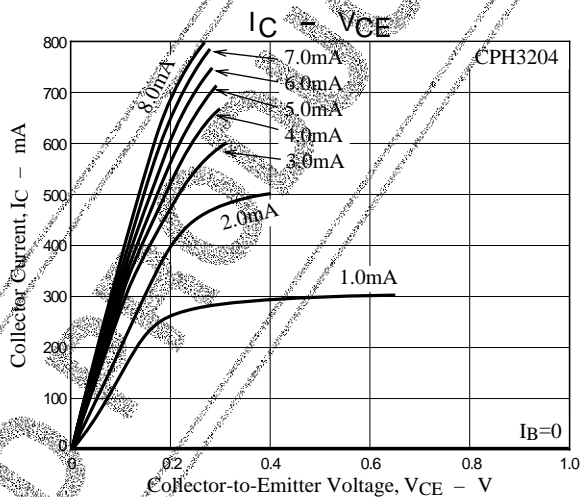
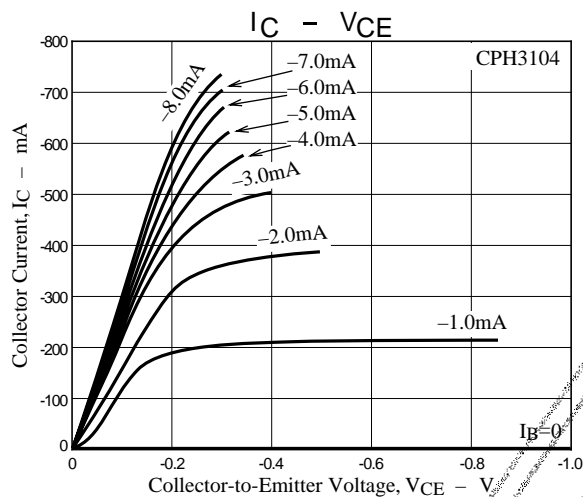
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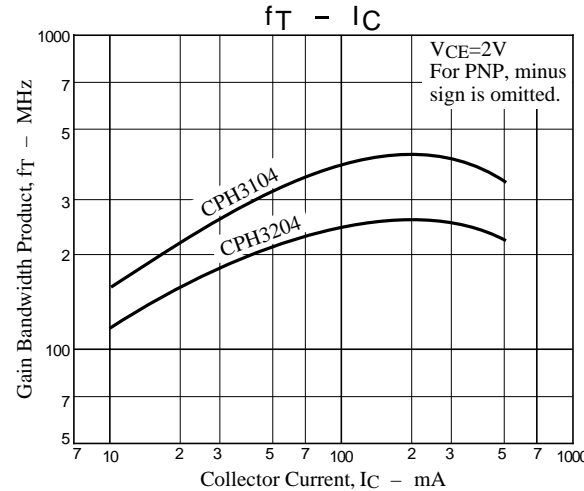
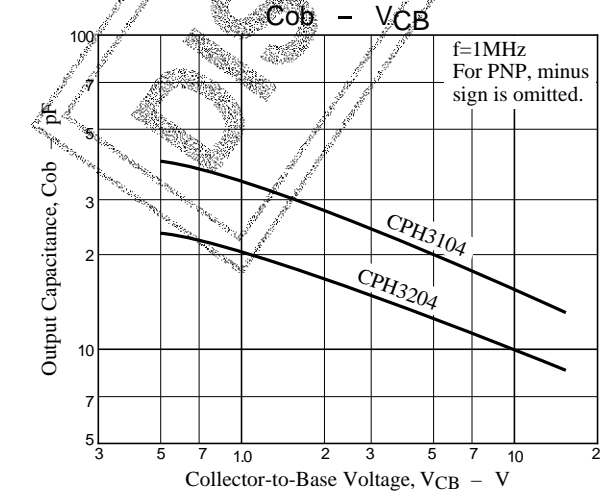
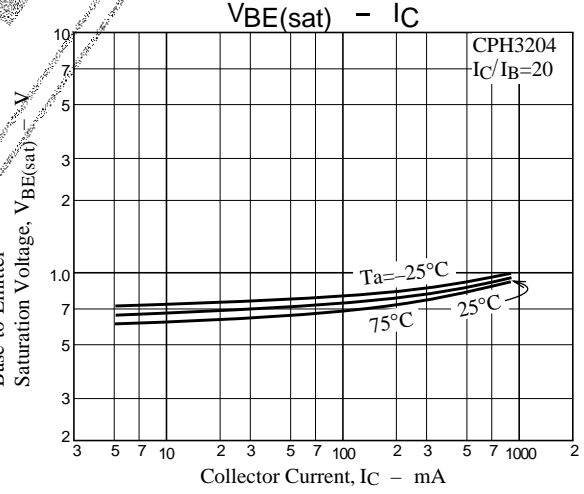
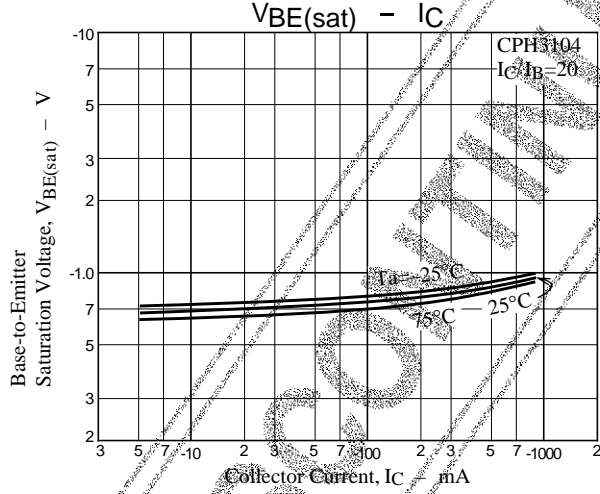
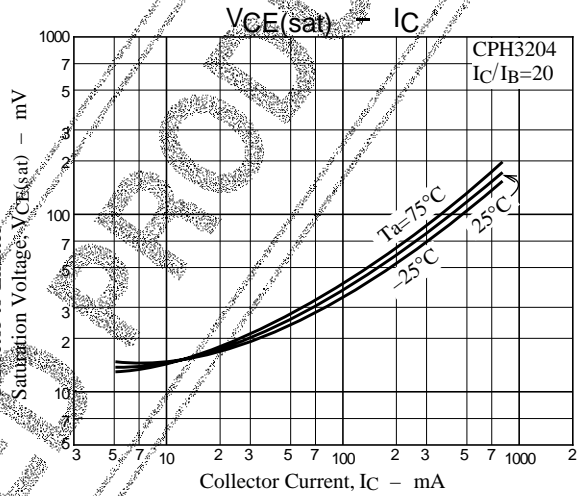
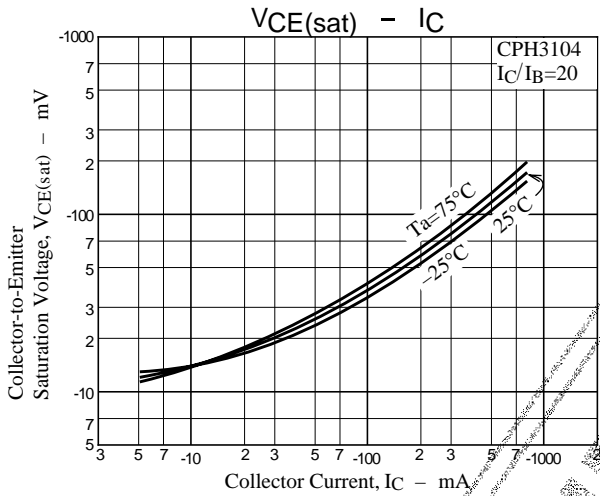
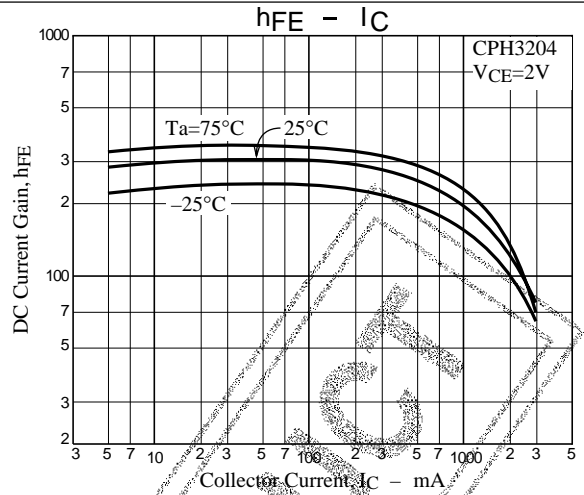
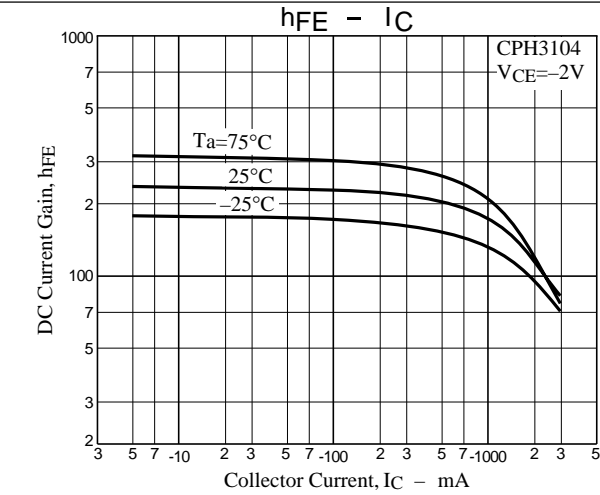
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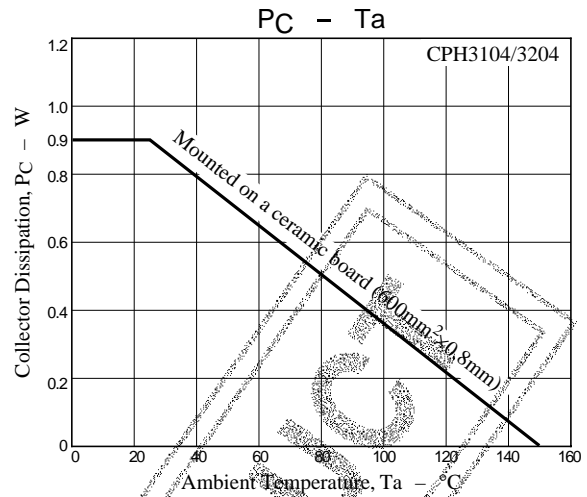
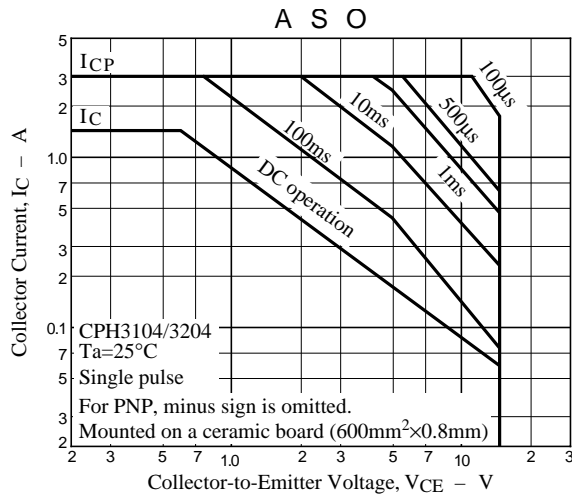
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=(-)5mA, I_B=(-)0.5mA$		(-)10	(-)25	mV
	$V_{CE(sat)2}$	$I_C=(-)500mA, I_B=(-)25mA$		(-)120	(-)240	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500mA, I_E=(-)25mA$		(-)0.9	(-)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



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