

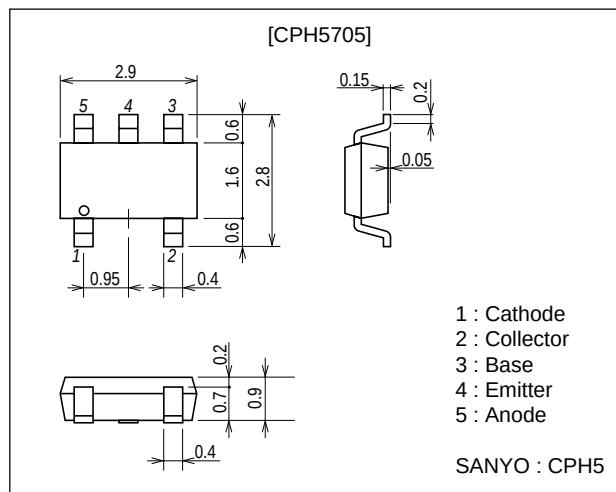
**CPH5705****DC / DC Converter Applications****Features**

- Composite type with a PNP transistor and a Schottky barrier diode contained in one package facilitating high-density mounting.
- The CPH5705 consists of two chips which are equivalent to the CPH3109 and the SBS004, respectively.
- Ultrasmall package facilitates miniaturization in end products.

Package Dimensions

unit : mm

2156

**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	V _{CB0}		-30	V
Collector-to-Emitter Voltage	V _{CE0}		-30	V
Emitter-to-Base Voltage	V _{EB0}		-5	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 ×0.8mm)	0.9	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +125	°C
[SBD]				
Repetitive Peak Reverse Voltage	V _{RRM}		15	V
Non-repetitive Peak Reverse Surge Voltage	V _{RSM}		15	V
Average Output Current	I _O		1	A
Surge Forward Current	I _{FSM}	50Hz sine wave, 1cycle	10	A
Junction Temperature	T _J		-55 to +125	°C
Storage Temperature	T _{stg}		-55 to +125	°C

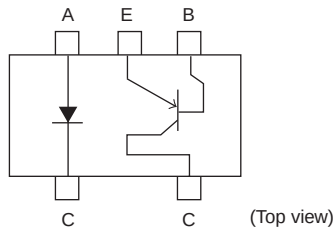
Marking : PE

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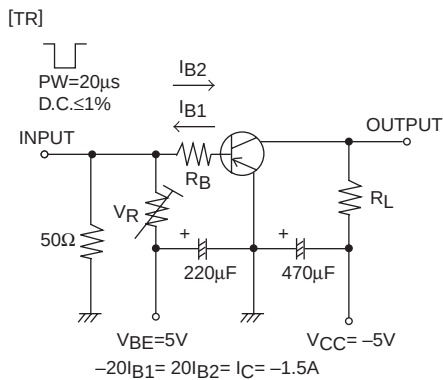
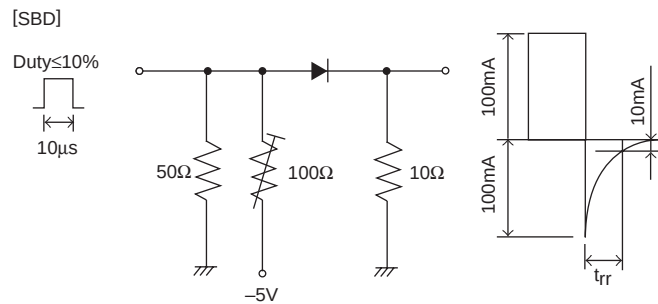
Electrical Characteristics at $T_a=25^{\circ}\text{C}$

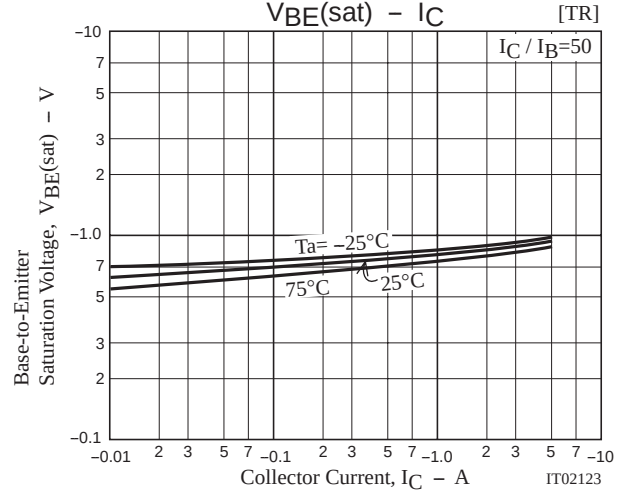
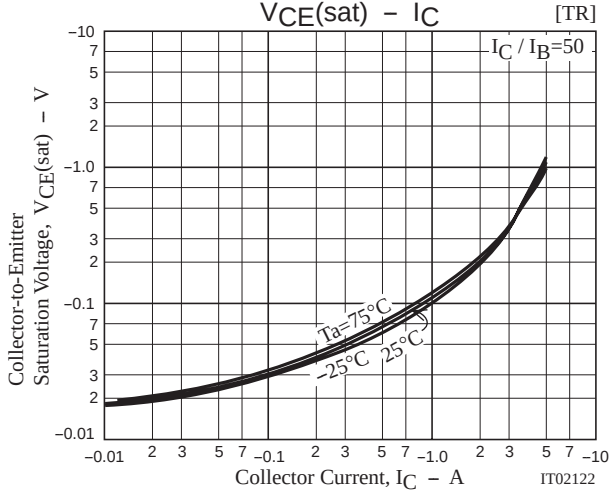
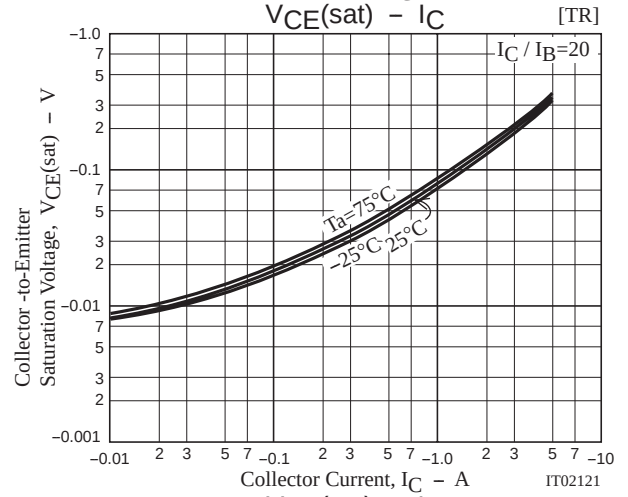
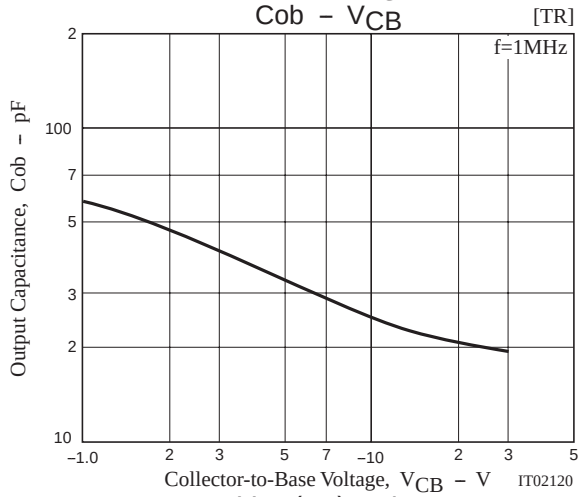
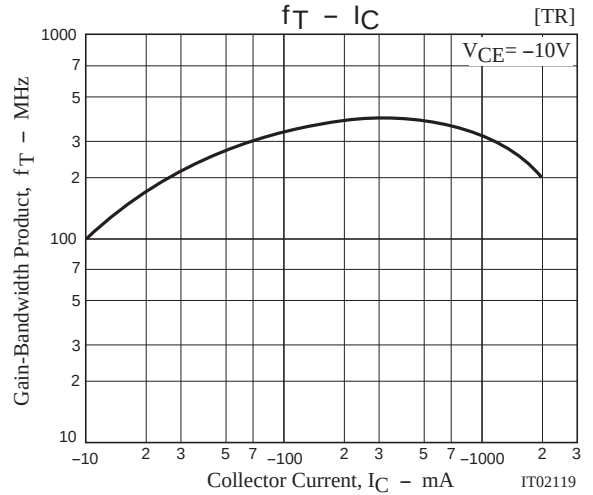
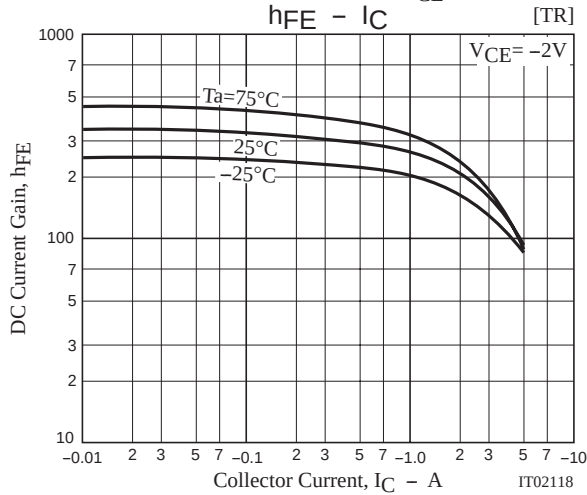
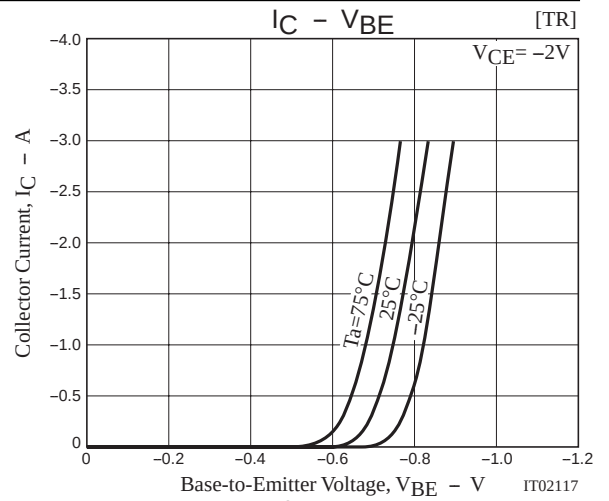
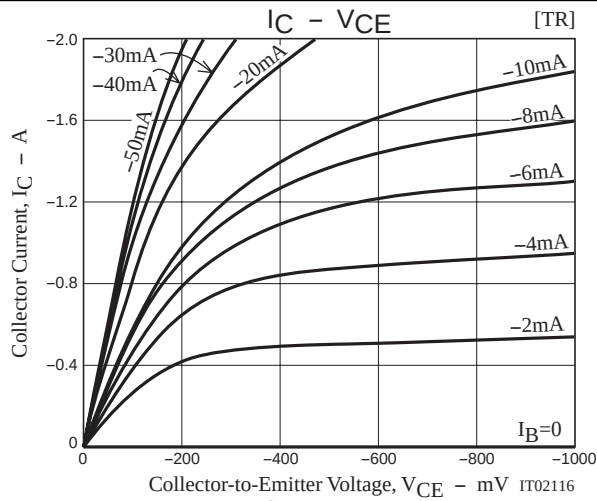
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I _{CBO}	V _{CB} =-12V, I _E =0			-0.1	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =-4V, I _C =0			-0.1	μA
DC Current Gain	h _{FE}	V _{CE} =-2V, I _C =-0.5A	200		560	
Gain Bandwidth Product	f _T	V _{CE} =-2V, I _C =-0.5A		380		MHz
Output Capacitance	C _{ob}	V _{CB} =-10V, f=1MHz		25		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =-1.5A, I _B =-30mA		-155	-230	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =-1.5A, I _B =-30mA		-0.83	-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	-5			V
Turn-ON Time	t _{on}	See specified Test Circuit		50		ns
Storage Time	t _{stg}	See specified Test Circuit		270		ns
Fall Time	t _f	See specified Test Circuit		25		ns
[SBD]						
Reverse Voltage	V _R	I _R =1mA	15			V
Forward Voltage	V _{F1}	I _F =0.5A		0.30	0.35	V
	V _{F2}	I _F =1A		0.35	0.40	V
Reverse Current	I _R	V _R =6V			500	μA
Interterminal Capacitance	C	V _R =10V, f=1MHz		42		pF
Reverse Recovery Time	t _{rr}	I _F =I _R =100mA, See specified Test Circuit			15	ns
Thermal Resistance	R _{th j-a}	Mounted on a ceramic board (600mm²X0.8mm)		110		°C/W

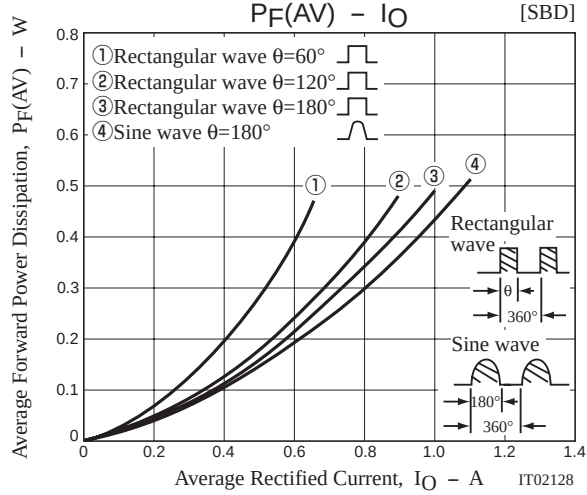
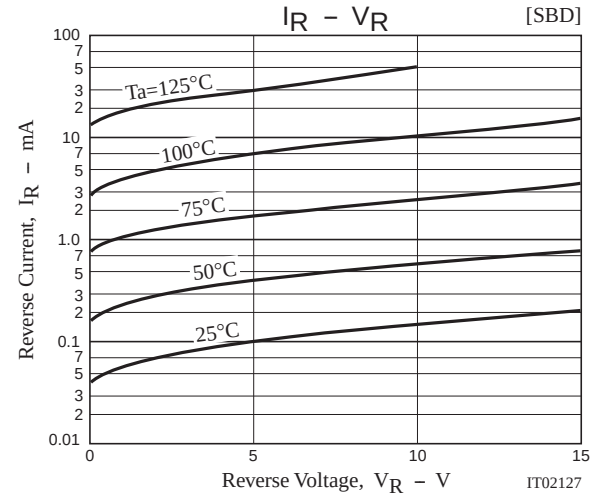
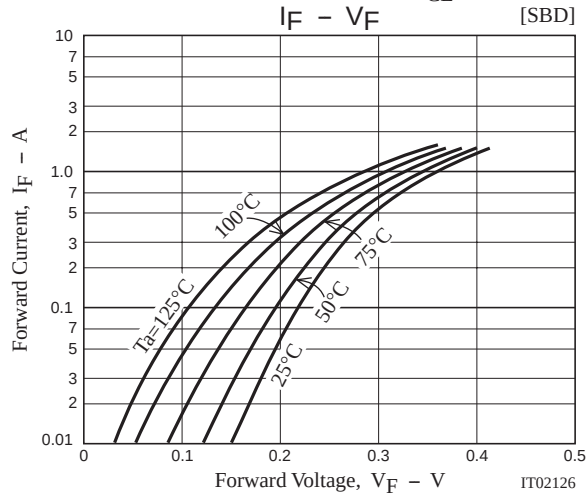
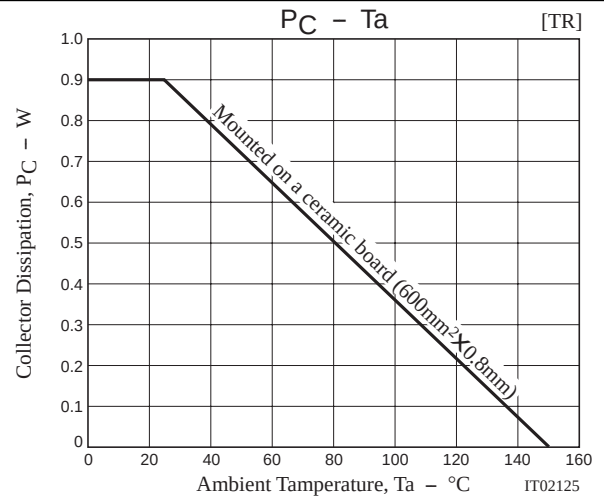
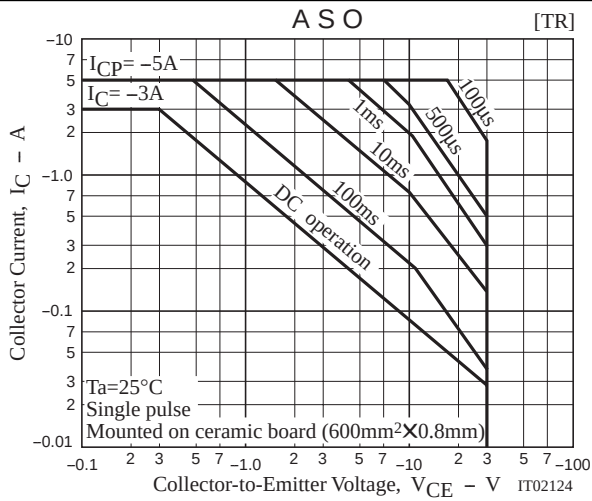
Electrical Connection



Switching Time Test Circuit

 t_{rr} Test Circuit





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