Ordering number : ENN6793

NPN Epitaxial Planar Silicon Transistor

CPH5504

High-Current Switching Applications

Applications

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

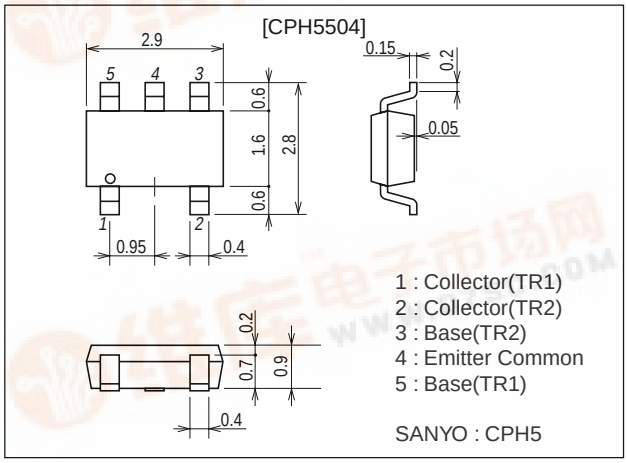
Features

- Composite type with 2 NPN transistors in one package facilitating high-density mounting.
- The CPH5504 is composed of 2 chips each equivaient to the CPH3205.
- Ultrasmall-sized package facilitates miniaturization in end products. (mounting height : 0.9mm)

Package Dimensions

unit : mm

2162



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		80	V
Collector-to-Emitter Voltage	V_{CES}		80	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		3	A
Collector Current (Pulse)	I_{CP}		6	A
Base Current	I_B		600	mA
Collector Dissipation	P_C	Mounted on a ceramic board (600mm²×0.8mm)	0.9	W
Total Power Dissipation	P_T	Mounted on a ceramic board (600mm²×0.8mm)	1.2	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +15	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=40V, I_E=0			1	µA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0			1	µA
DC Current Gain	$h_{FE}1$	V_{CE}=2V, I_C=100mA	200		560	
	$h_{FE}2$	V_{CE}=2V, I_C=3A	70			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=500mA		380		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		13		pF

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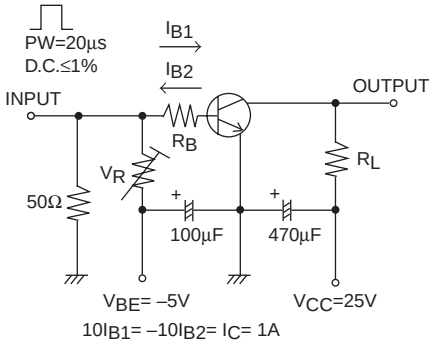
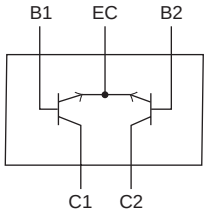
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=1A, I_B=50mA		80	120	mV
	V_{CE}(sat)	I_C=2A, I_B=100mA		140	210	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=2A, I_B=100mA		0.88	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	80			V
Collector-to-Base Breakdown Voltage	$V_{(BR)CES}$	I_C=100μA, R_{BE}=0	80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	50			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		35		ns
Storage Time	t_{stg}	See specified Test Circuit		300		ns
Fall Time	t_f	See specified Test Circuit		22		ns

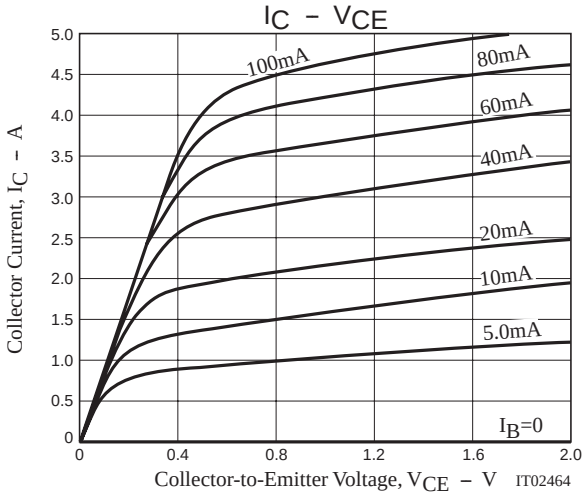
Marking : ED

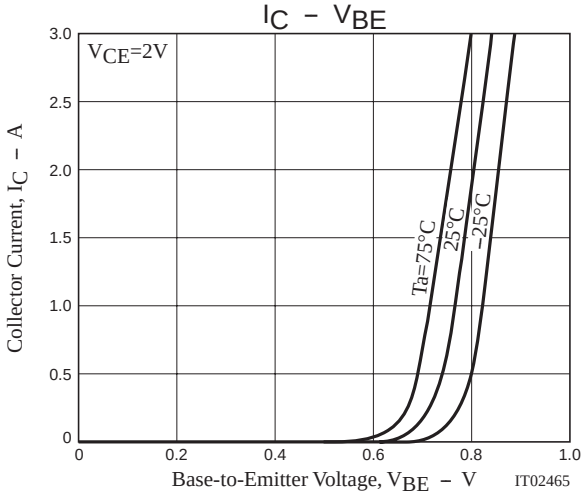
Switching Time Test Circuit

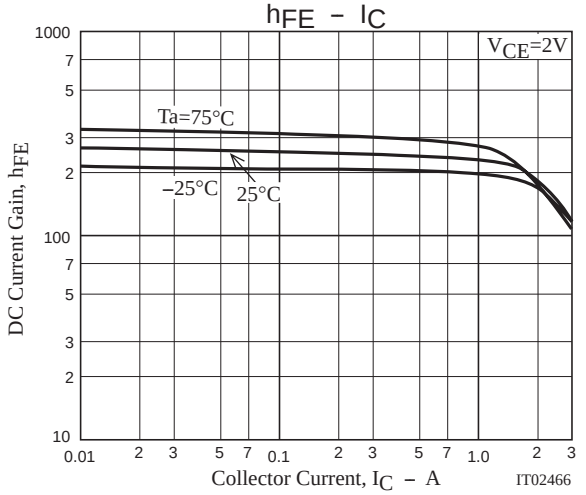


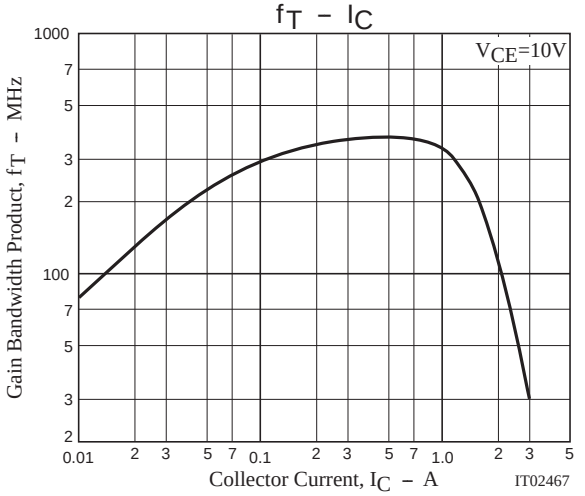
Electrical Connection



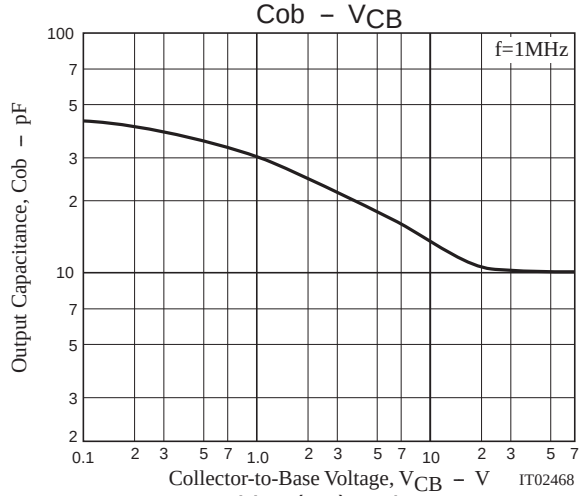




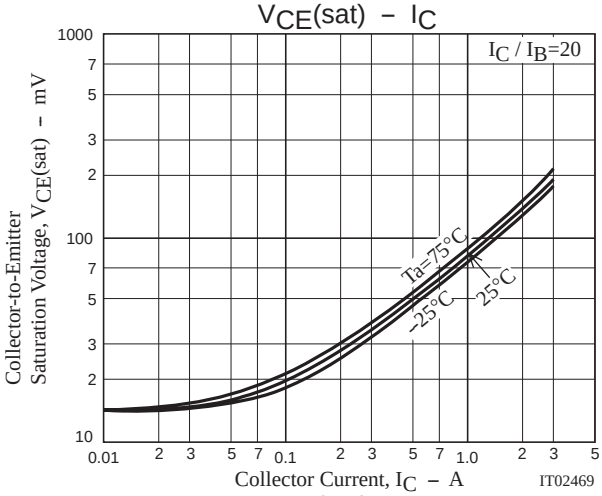




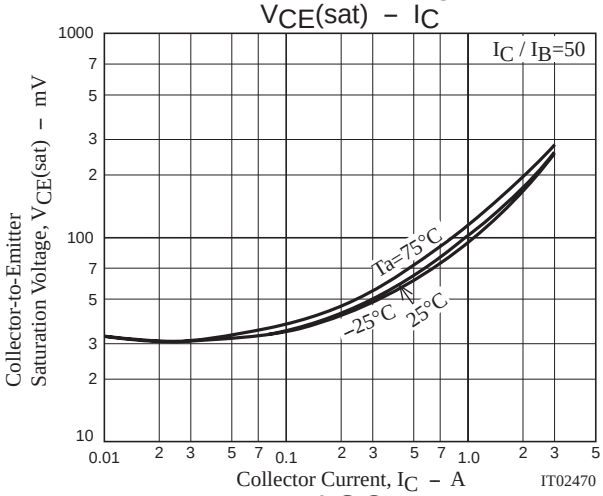
Cob – V_{CB}



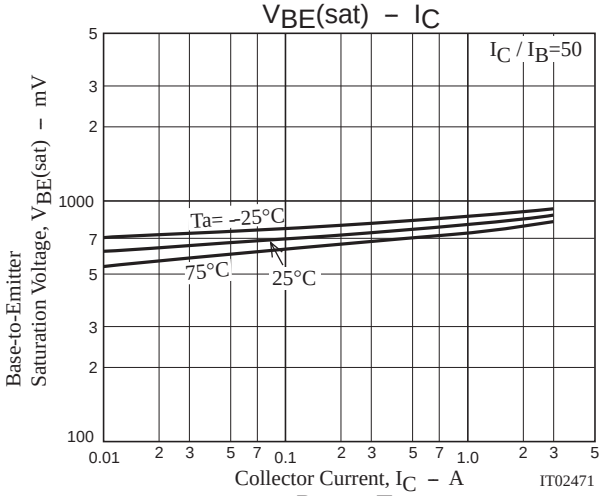
V_{CE}(sat) – I_C



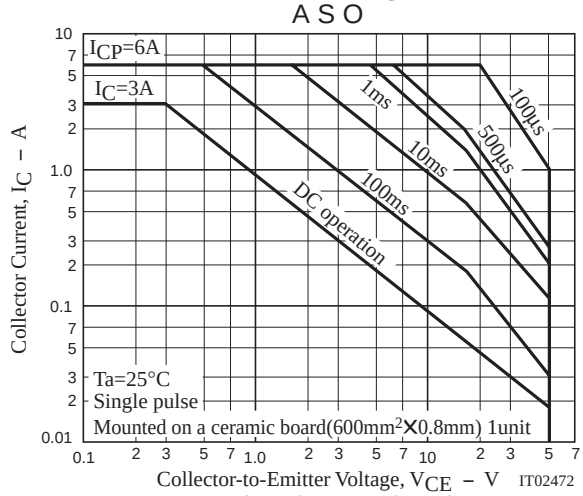
V_{CE}(sat) – I_C



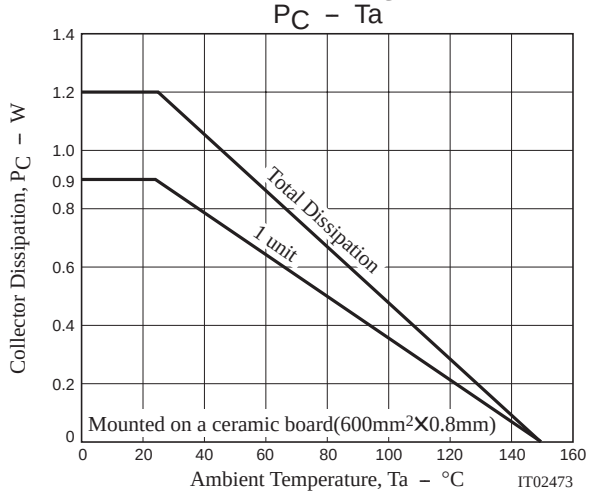
V_{BE}(sat) – I_C



A S O



P_C – Ta



P_C(TR2) – P_C(TR1)