Ordering number : EN6479A

CPH5505

Bipolar Transistor
−30V, −3A, Low V_{CE}(sat), PNP Dual CPH5

ON Semiconductor®
http://onsemi.com

Applications

- Relay drivers, lamp drivers, motor drivers, flash

Features

- Composite type with two PNP transistors contained in a single package facilitating high-density mounting
- The CPH5505 consists of two chips which are equivalent to the CPH3109 encapsulated in a package
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm)

Specifications

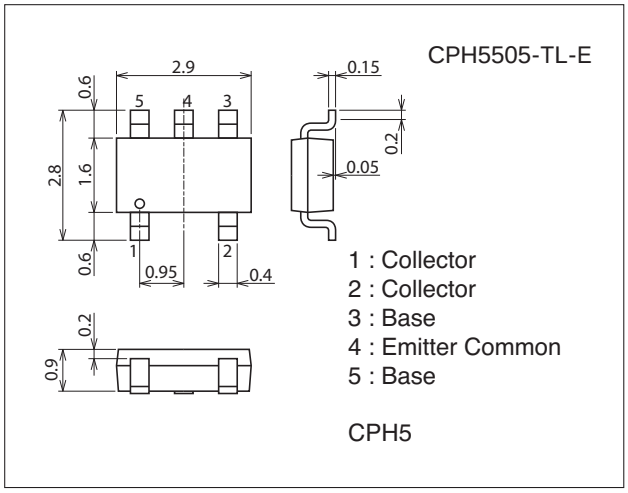
Absolute Maximum Ratings at Ta=25°C

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}		−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	When mounted on ceramic substrate (600mm^2×0.8mm)	0.9	W
Total Dissipation	P_T	When mounted on ceramic substrate (600mm^2×0.8mm)	1.2	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

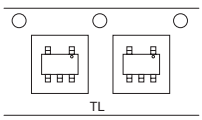
unit : mm (typ)
7017A-009



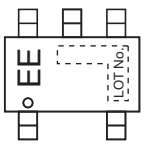
Product & Package Information

- Package : CPH5
- JEITA, JEDEC : SC-74A, SOT-25
- Minimum Packing Quantity : 3,000 pcs./reel

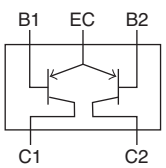
Packing Type : TL



Marking



Electrical Connection

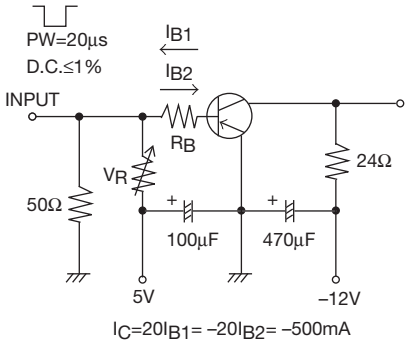


Semiconductor Components Industries, LLC, 2013

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}= −30V, I_E=0A			−0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}= −4V, I_C=0A			−0.1	μA
DC Current Gain	h_{FE}	V_{CE}= −2V, I_C= −500mA	200		560	
Gain-Bandwidth Product	f_T	V_{CE}= −10V, I_C= −500mA		380		MHz
Output Capacitance	Cob	V_{CB}= −10V, f=1MHz		25		pF
Collector to Emitter Saturation Voltage	V_{CE}(sat)1	I_C= −1.5A, I_B= −30mA		−155	−230	mV
	V_{CE}(sat)2	I_C= −1.5A, I_B= −75mA		−105	−155	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=0A	−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=0A	−5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		50		ns
Storage Time	t_{stg}			270		ns
Turn-OFF Time	t_f			25		ns

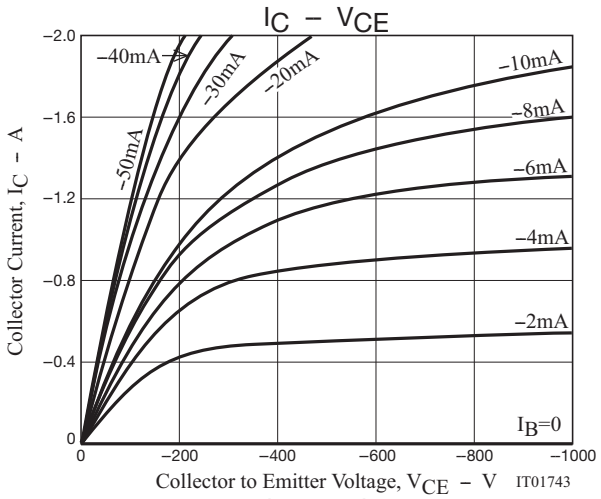
Switching Time Test Circuit

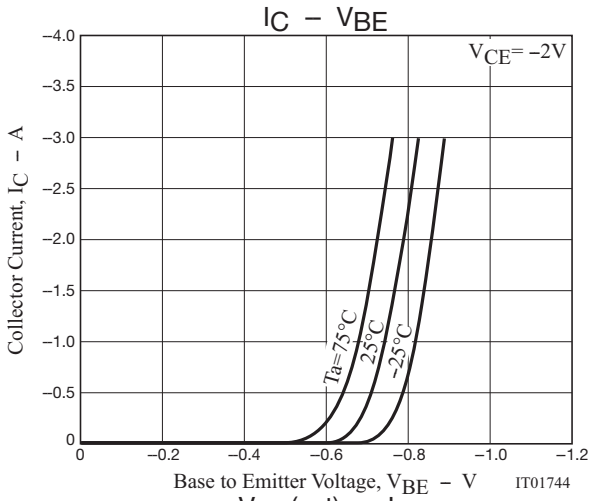


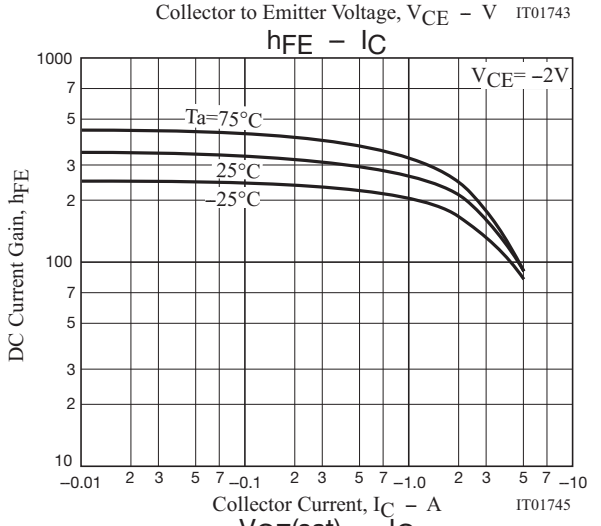
I_C=20I_{B1}= −20I_{B2}= −500mA

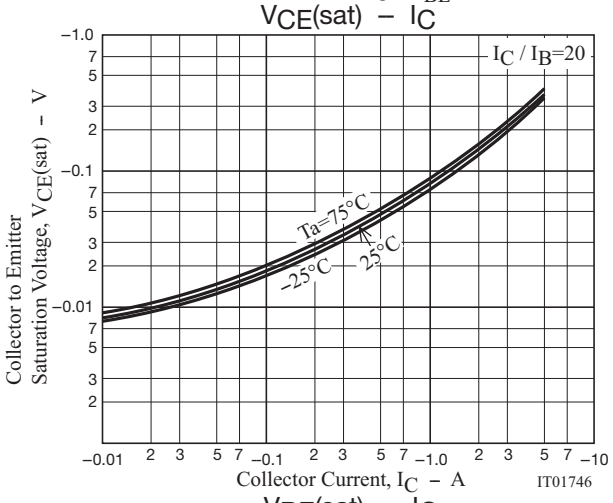
Ordering Information

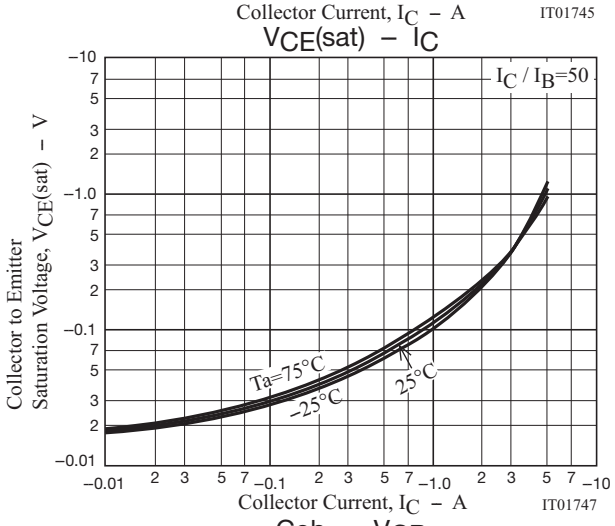
Device	Package	Shipping	memo
CPH5505-TL-E	CPH5	3,000pcs./reel	Pb Free

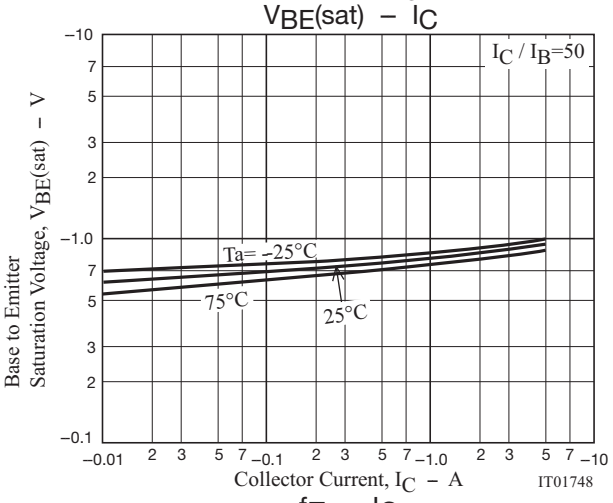

IC – VCE
Collector Current, IC – A
Collector to Emitter Voltage, VCE – V
IT01743
–40mA
–30mA
–20mA
–50mA
–10mA
–8mA
–6mA
–4mA
–2mA
IB=0

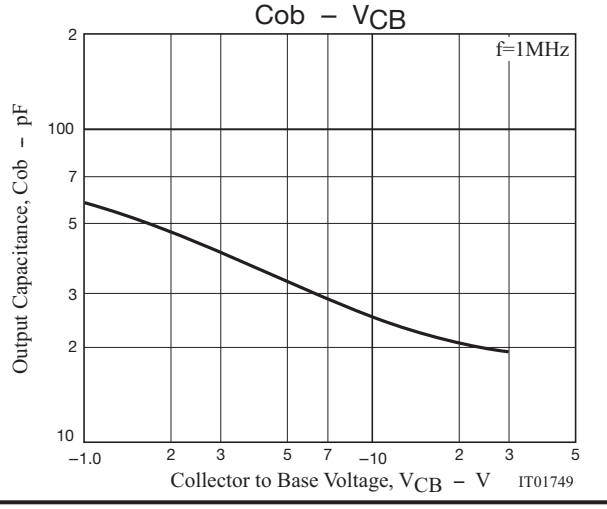

IC – VBE
Collector Current, IC – A
Base to Emitter Voltage, VBE – V
IT01744
VCE= –2V
Ta=75°C
25°C
–25°C

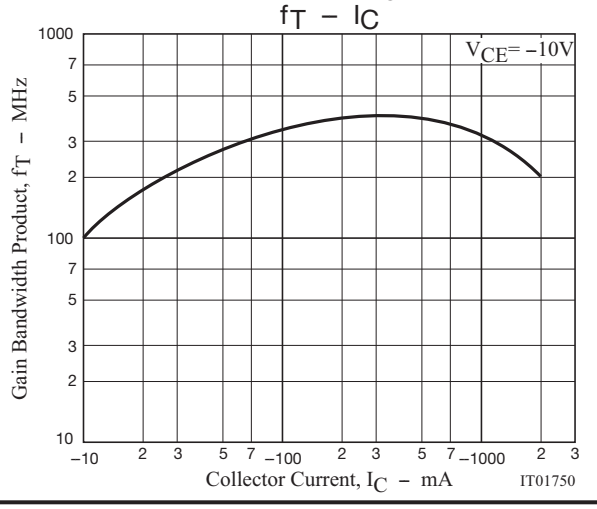

hFE – IC
DC Current Gain, hFE
Collector Current, IC – A
IT01745
VCE= –2V
Ta=75°C
25°C
–25°C

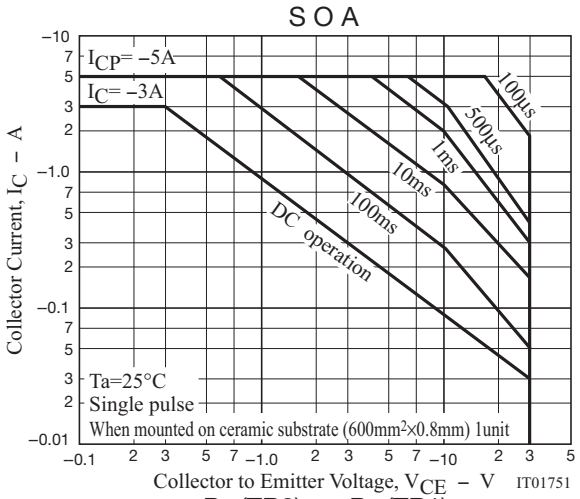

VCE(sat) – IC
Collector to Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT01746
IC / IB=20
Ta=75°C
25°C
–25°C

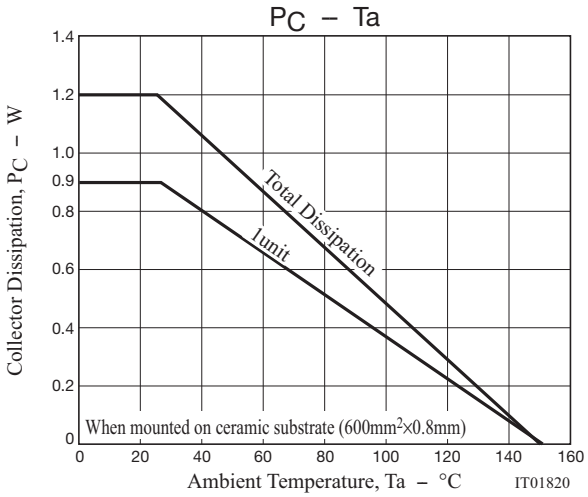

VCE(sat) – IC
Collector to Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT01747
IC / IB=50
Ta=75°C
25°C
–25°C

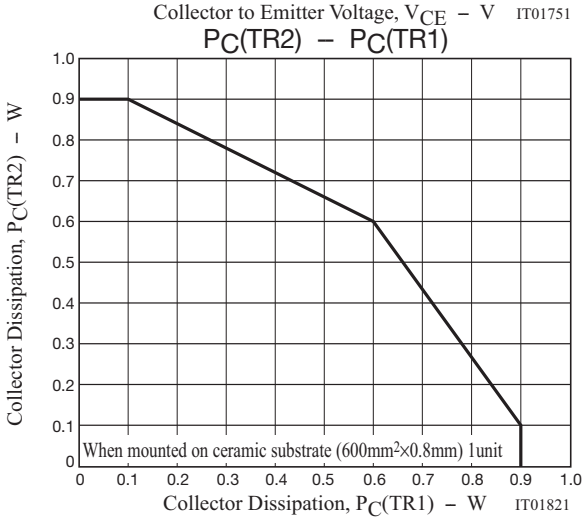

VBE(sat) – IC
Base to Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT01748
IC / IB=50
Ta= –25°C
75°C
25°C


Cob – VCB
Output Capacitance, Cob – pF
Collector to Base Voltage, VCB – V
IT01749
f=1MHz


fT – IC
Gain Bandwidth Product, fT – MHz
Collector Current, IC – mA
IT01750
VCE= –10V

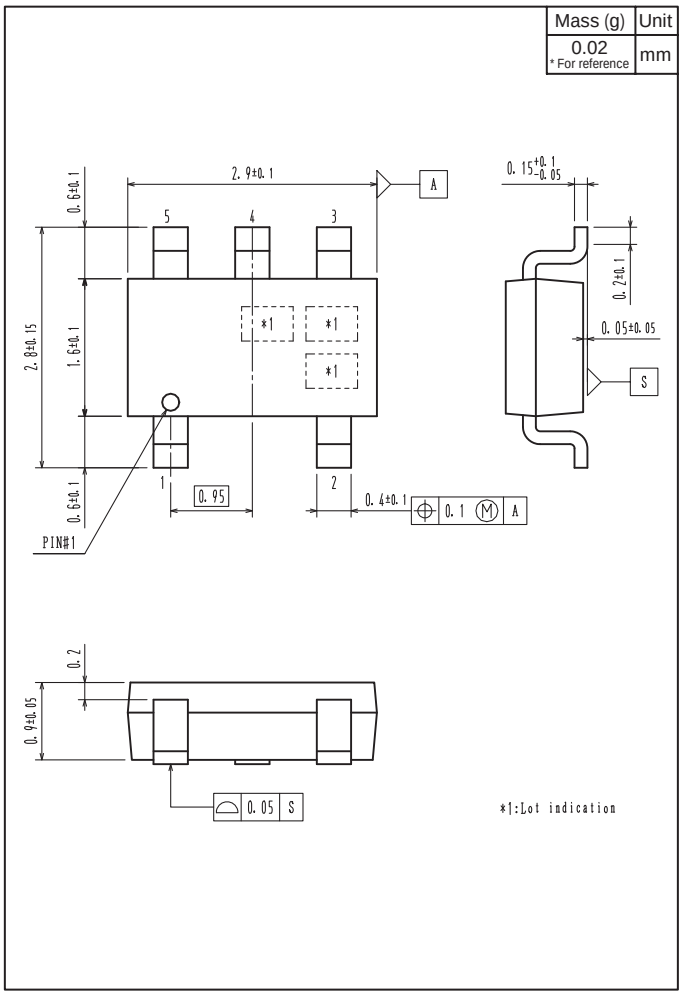

S O A
I_{CP}= −5A
I_C= −3A
100μs
500μs
1ms
10ms
100ms
DC operation
Ta=25°C
Single pulse
When mounted on ceramic substrate (600mm²×0.8mm) 1unit
Collector Current, I_C – A
Collector to Emitter Voltage, V_{CE} – V
IT01751


P_C – Ta
Total Dissipation
1unit
When mounted on ceramic substrate (600mm²×0.8mm)
Collector Dissipation, P_C – W
Ambient Temperature, Ta – °C
IT01820

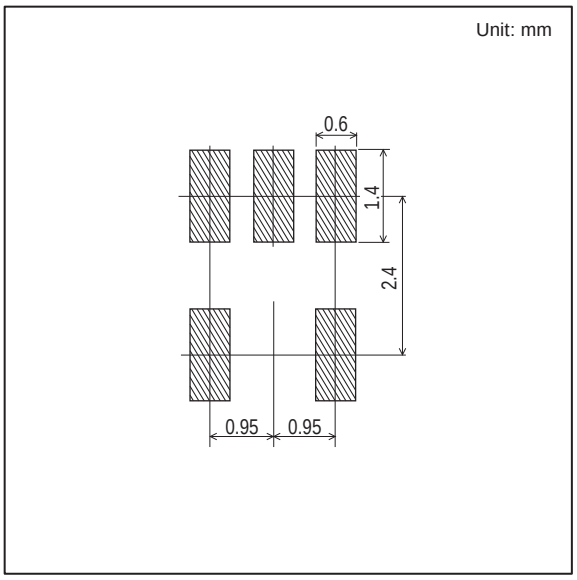

P_C(TR2) – P_C(TR1)
When mounted on ceramic substrate (600mm²×0.8mm) 1unit
Collector Dissipation, P_C(TR2) – W
Collector Dissipation, P_C(TR1) – W
IT01821

Outline Drawing

CPH5505-TL-E



Land Pattern Example



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