



CPH6102

Bipolar Transistor -50V, -1A, Low $V_{CE(sat)}$ PNP Single CPH6

ON Semiconductor®

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Applications

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

Features

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

Specifications

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

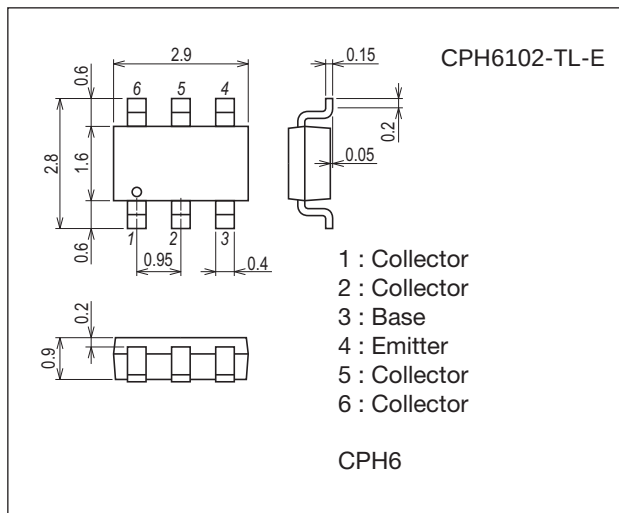
Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	V_{CBO}		-60	V
Collector to Emitter Voltage	V_{CEO}		-50	V
Emitter to Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-1.0	A
Collector Current (Pulse)	I_{CP}		-2	A
Collector Dissipation	P_C	When mounted on ceramic substrate (600mm ² ×0.8mm)	1.3	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-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)

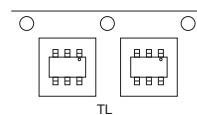
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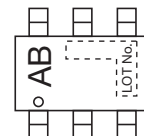
Product & Package Information

- Package : CPH6
- JEITA, JEDEC : SC-74, SOT-26, SOT-457
- Minimum Packing Quantity : 3,000 pcs./reel

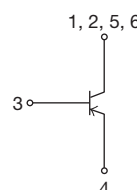
Packing Type: TL



Marking



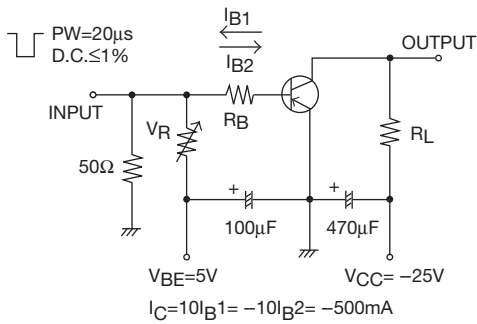
Electrical Connection



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

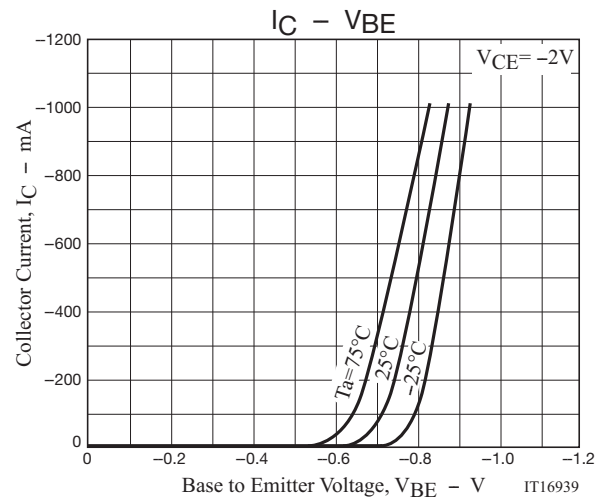
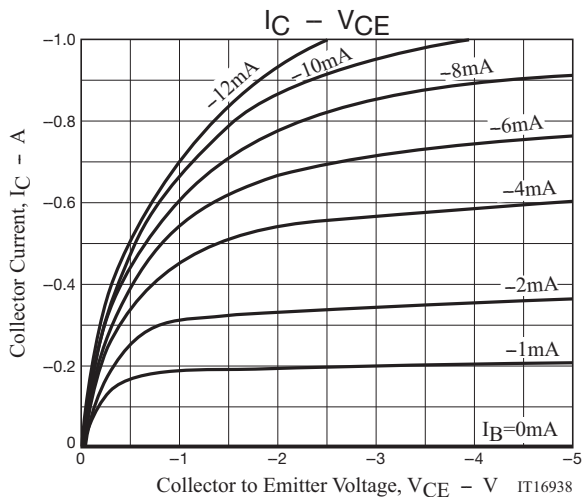
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = -50\text{V}, I_E = 0\text{A}$			-100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -4\text{V}, I_C = 0\text{A}$			-100	nA
DC Current Gain	h_{FE1}	$V_{CE} = -2\text{V}, I_C = -100\text{mA}$	200		560	
	h_{FE2}	$V_{CE} = -2\text{V}, I_C = -1\text{A}$	30			
Gain-Bandwidth Product	f_T	$V_{CE} = -10\text{V}, I_C = -50\text{mA}$		150		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		12		pF
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$		-180	-500	mV
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$		-0.9	-1.2	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0\text{A}$	-60			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-50			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0\text{A}$	-5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		40		ns
Storage Time	t_{stg}			300		ns
Fall Time	t_f			30		ns

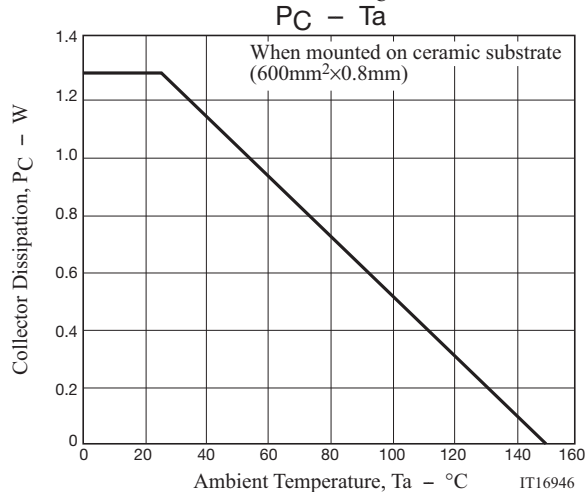
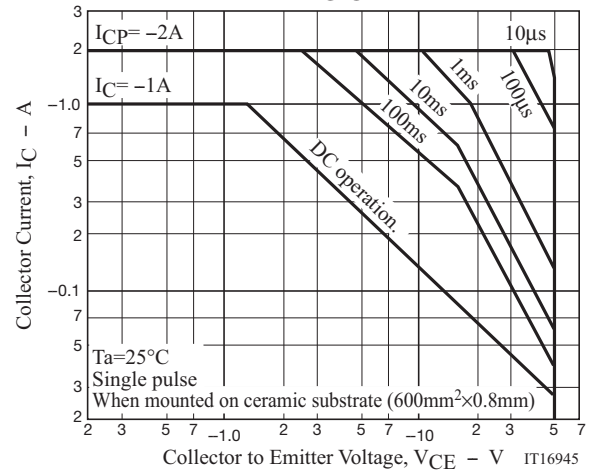
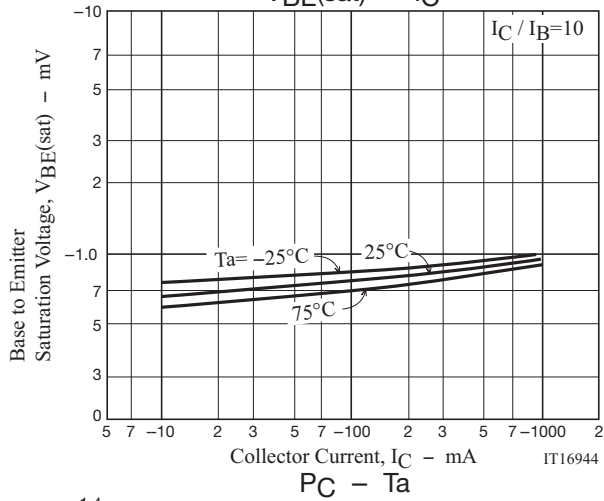
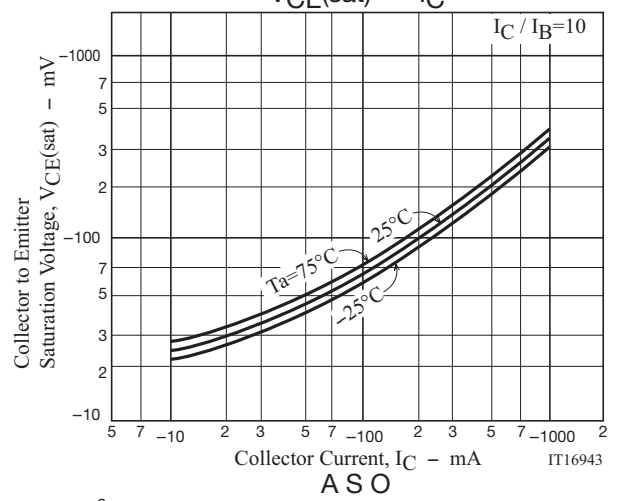
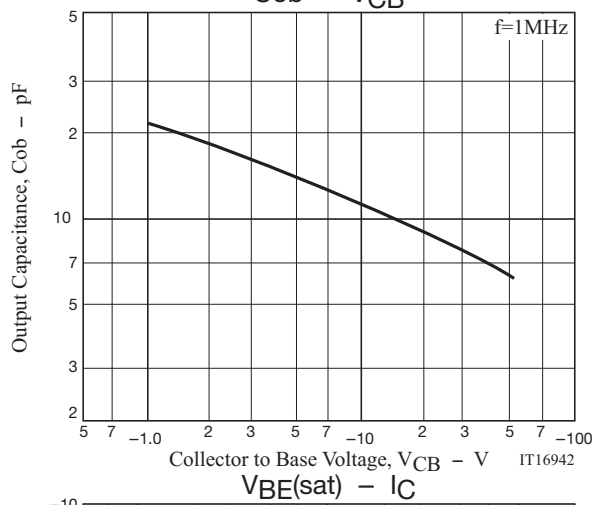
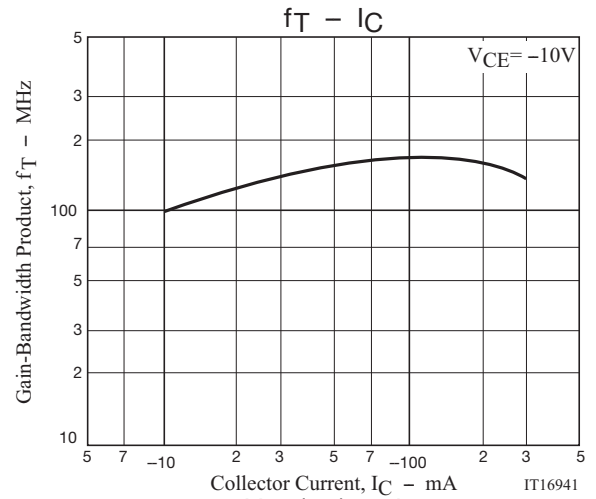
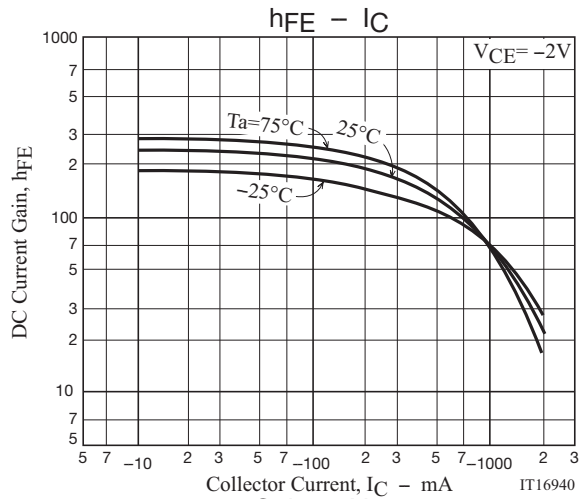
Switching Time Test Circuit



Ordering Information

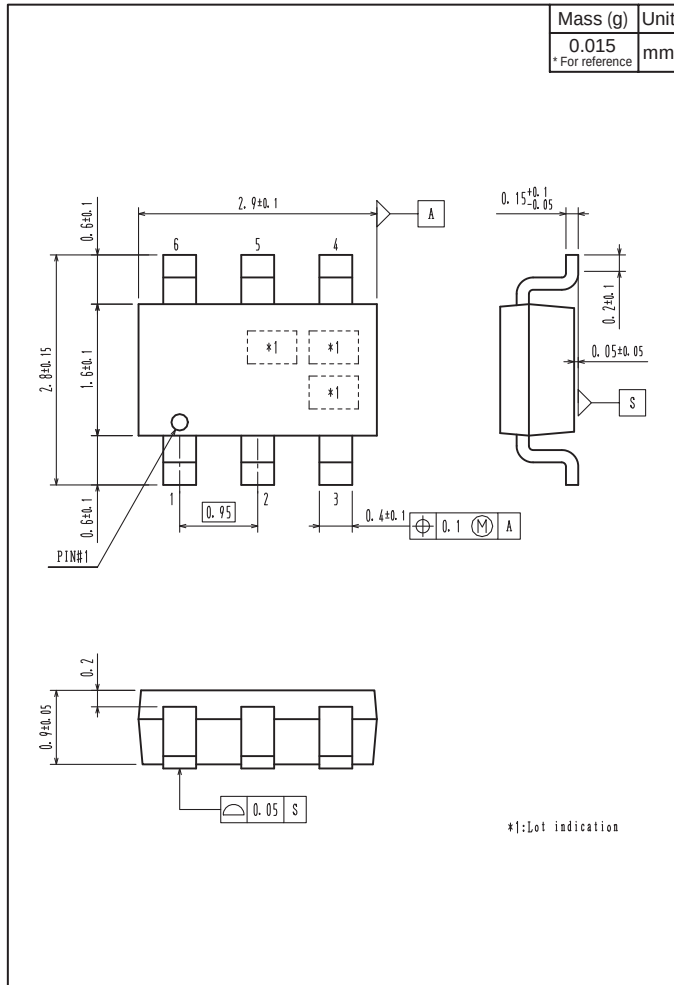
Device	Package	Shipping	memo
CPH6102-TL-E	CPH6	3,000pcs./reel	Pb Free



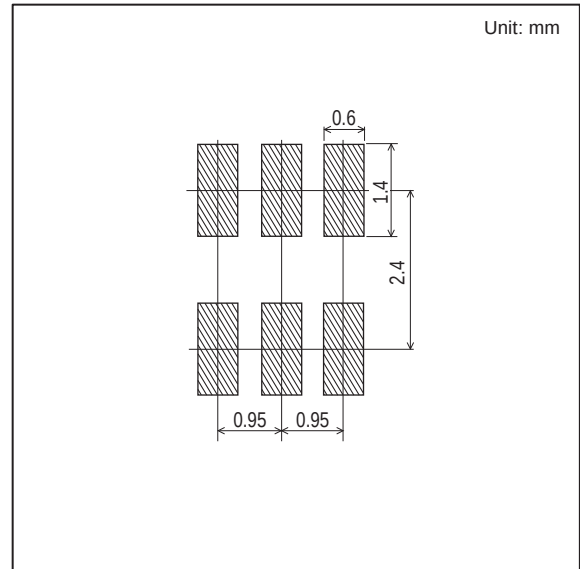


Outline Drawing

CPH6102-TL-E



Land Pattern Example



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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

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moschip.ru_9