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CPH3122

Bipolar Transistor -30V, -3A, Low $V_{CE(sat)}$ PNP Single CPH3

Applications

- Relay drivers, lamp drivers, motor drivers, flash

Features

- Adoption of MBIT processes
- Large current capacity
- Low collector to emitter saturation voltage
- High-speed switching
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm)
- High allowable power dissipation

Specifications

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

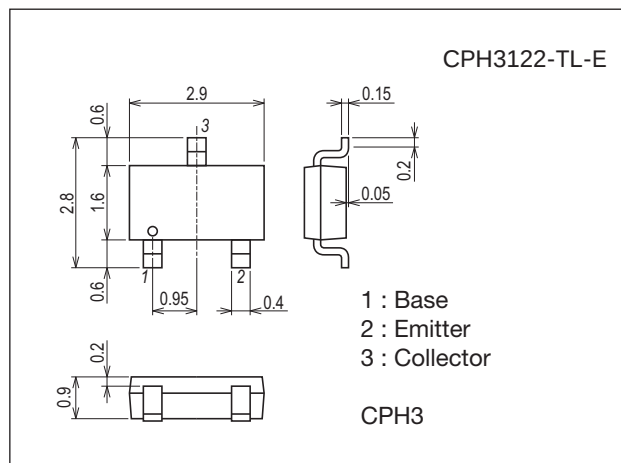
Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	V_{CBO}		-30	V
Collector to Emitter Voltage	V_{CEO}		-30	V
Emitter to Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-3	A
Collector Current (Pulse)	I_{CP}		-5	A
Base Current	I_B		-600	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (600mm ² ×0.8mm)	0.9	W
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)

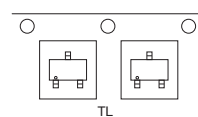
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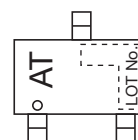
Product & Package Information

- Package : CPH3
- JEITA, JEDEC : SC-59, TO-236, SOT-23
- Minimum Packing Quantity : 3,000 pcs./reel

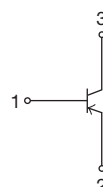
Packing Type: TL



Marking



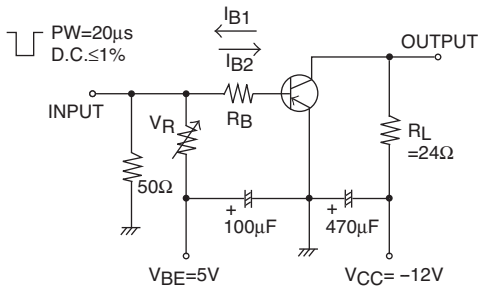
Electrical Connection



Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	VCE= -30V, IE=0A			-0.1	μA
Emitter Cutoff Current	IEBO	VEB= -4V, IC=0A			-0.1	μA
DC Current Gain	hFE	VCE= -2V, IC= -500mA	200		560	
Gain-Bandwidth Product	fT	VCE= -10V, IC= -500mA		400		MHz
Output Capacitance	Cob	VCE= -10V, f=1MHz		25		pF
Collector to Emitter Saturation Voltage	VCE(sat)1	IC= -1.5A, IB= -30mA		-180	-270	mV
	VCE(sat)2	IC= -1.5A, IB= -75mA		-120	-180	mV
Base to Emitter Saturation Voltage	VBE(sat)	IC= -1.5A, IB= -30mA		-0.83	-1.2	V
Collector to Base Breakdown Voltage	V(BR)CBO	IC= -10μA, IE=0A	-30			V
Collector to Emitter Breakdown Voltage	V(BR)CEO	IC= -1mA, RE=∞	-30			V
Emitter to Base Breakdown Voltage	V(BR)EBO	IE= -10μA, IC=0A	-5			V
Turn-ON Time	ton	See specified Test Circuit.		50		ns
Storage Time	tstg			270		ns
Fall Time	tf			27		ns

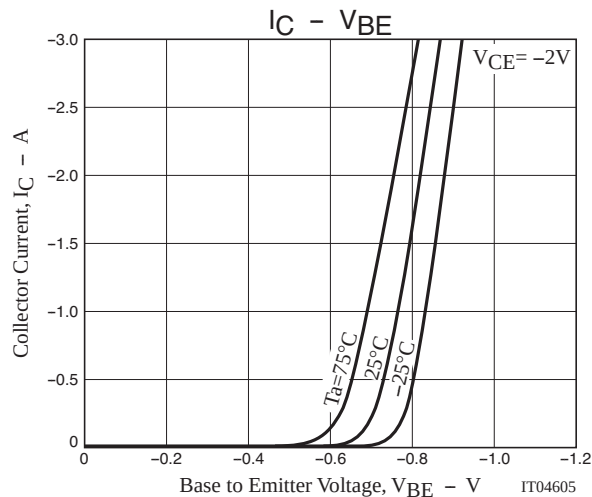
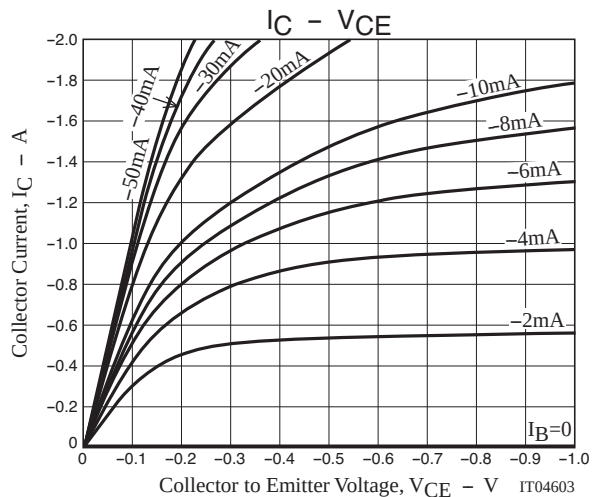
Switching Time Test Circuit

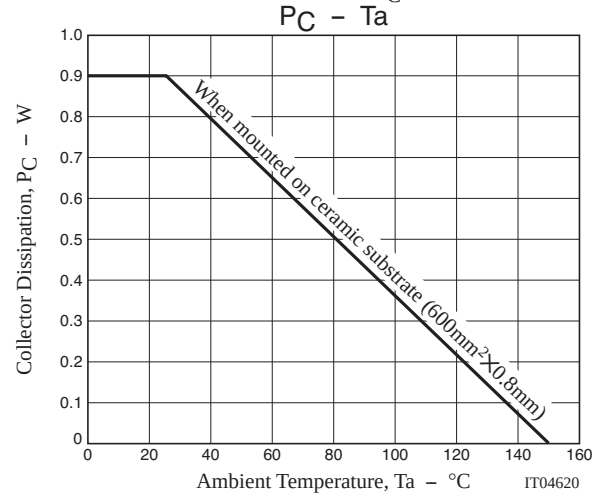
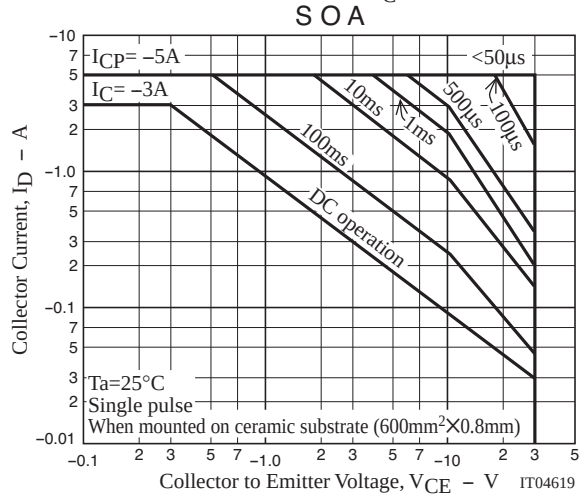
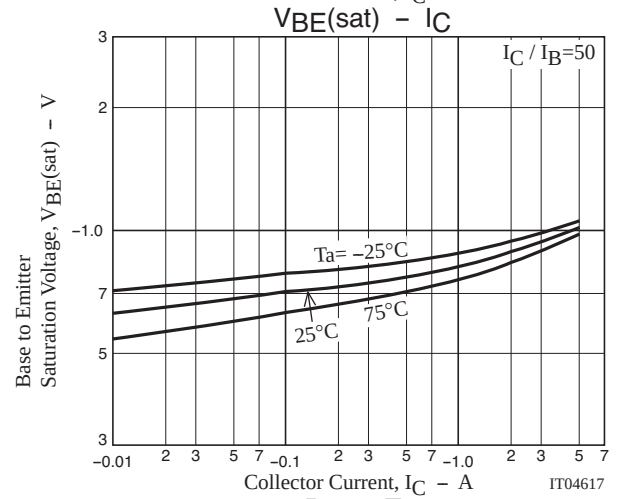
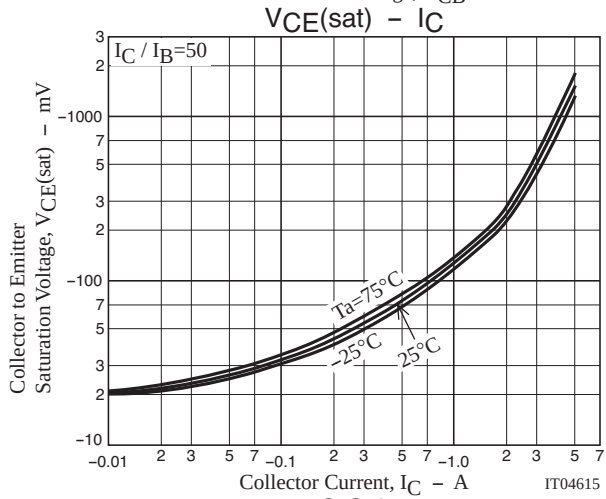
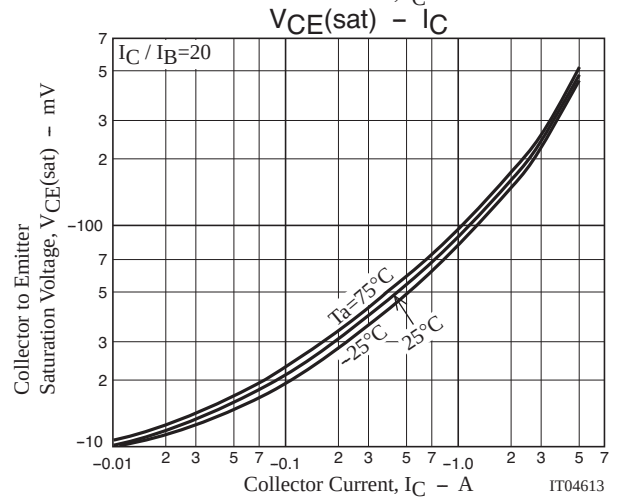
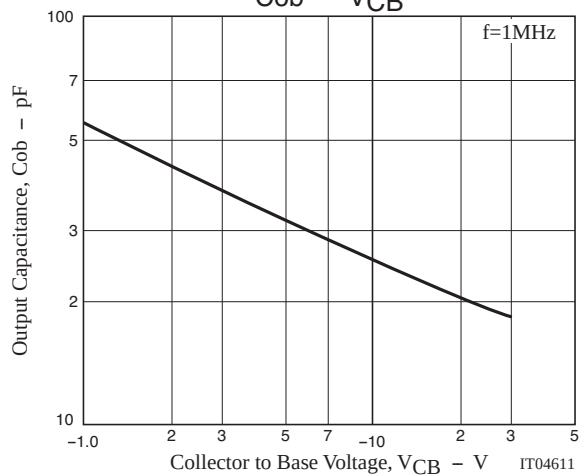
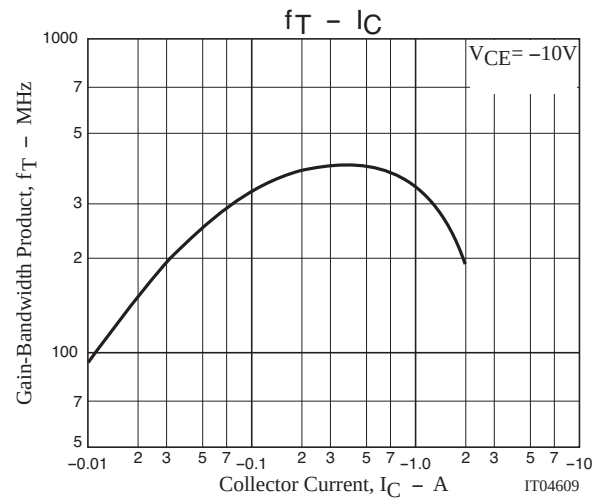
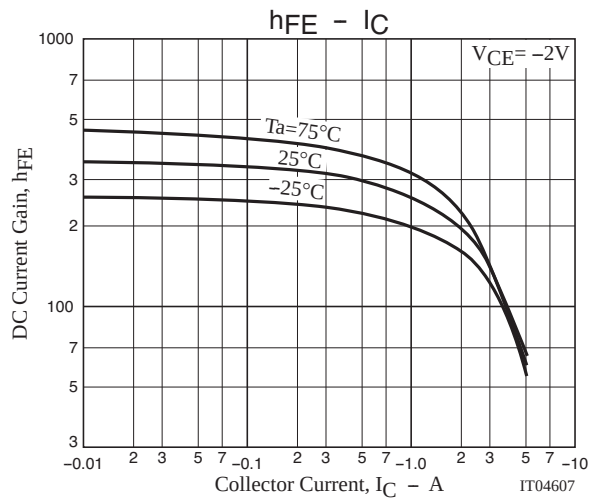


$I_C=20I_{B1}=-20I_{B2}=-500\text{mA}$

Ordering Information

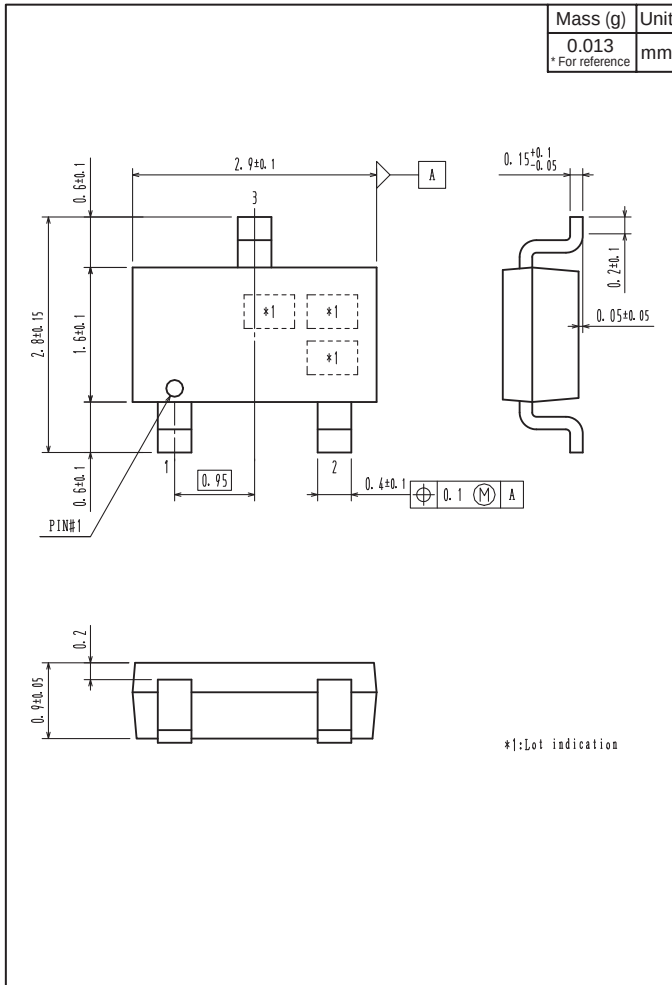
Device	Package	Shipping	memo
CPH3122-TL-E	CPH3	3,000pcs./reel	Pb Free



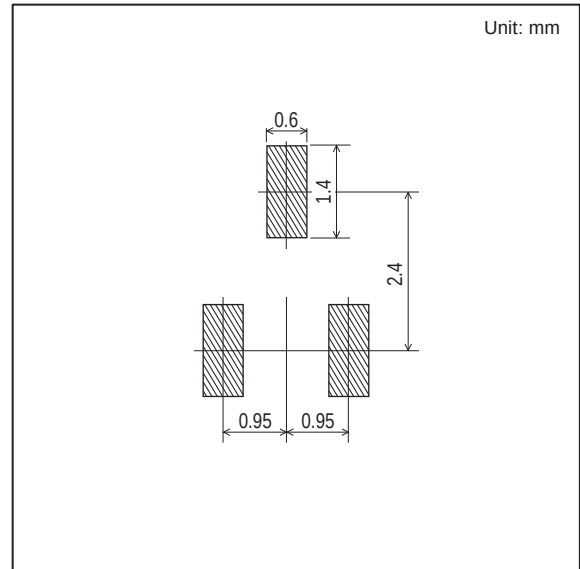


Outline Drawing

CPH3122-TL-E



Land Pattern Example



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