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30C02CH

Bipolar Transistor 30V, 0.7A, Low $V_{CE(sat)}$ NPN Single CPH3

Applications

- Low-frequency Amplifier, high-speed switching, small motor drive

Features

- Large current capacity
- Low collector-to-emitter saturation voltage (resistance) $R_{CE(sat)}$ typ.=330m Ω [$I_C=0.7A$, $I_B=35mA$]
- Ultrasmall package facilitates miniaturization in end products
- Small ON-resistance (R_{on})

Specifications

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

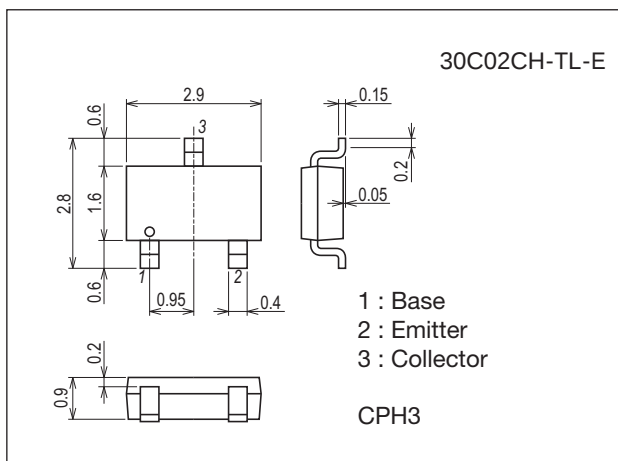
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		40	V
Collector-to-Emitter Voltage	V_{CEO}		30	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		700	mA
Collector Current (Pulse)	I_{CP}		1.4	A
Collector Dissipation	P_C	Mounted on a ceramic board (600mm ² ×0.8mm)	700	mW
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)

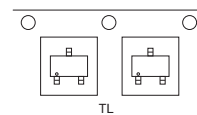
7015A-003



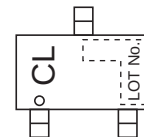
Product & Package Information

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

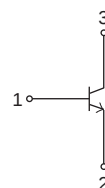
Packing Type: TL



Marking



Electrical Connection

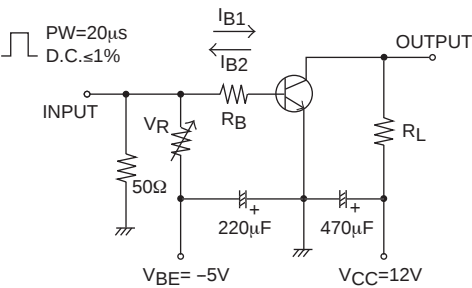


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Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =30V, I _E =0A			100	nA
Emitter Cutoff Current	IEBO	V _{EB} =4V, I _C =0A			100	nA
DC Current Gain	h _{FE}	V _{CE} =2V, I _C =50mA	300		800	
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =50mA		540		MHz
Output Capacitance	Cob	V _{CB} =10V, f=1MHz		3.3		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =200mA, I _B =10mA		85	190	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =200mA, I _B =10mA		0.9	1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =10μA, I _E =0A	40			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.		35		ns
Storage Time	t _{stg}			255		ns
Fall Time	t _f			40		ns

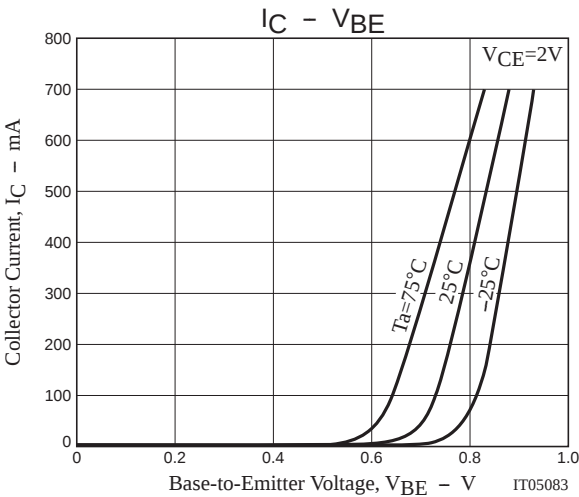
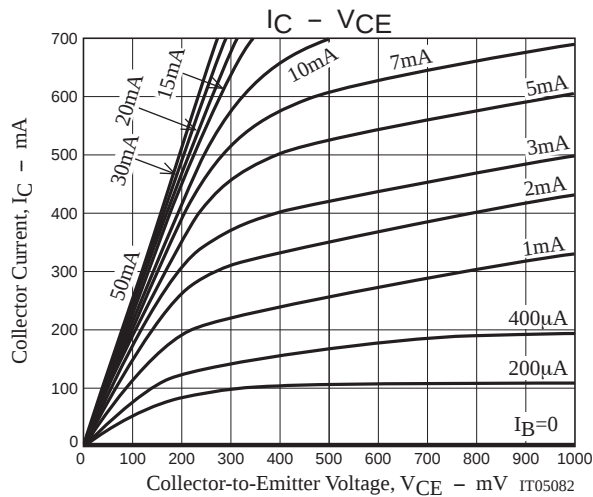
Switching Time Test Circuit

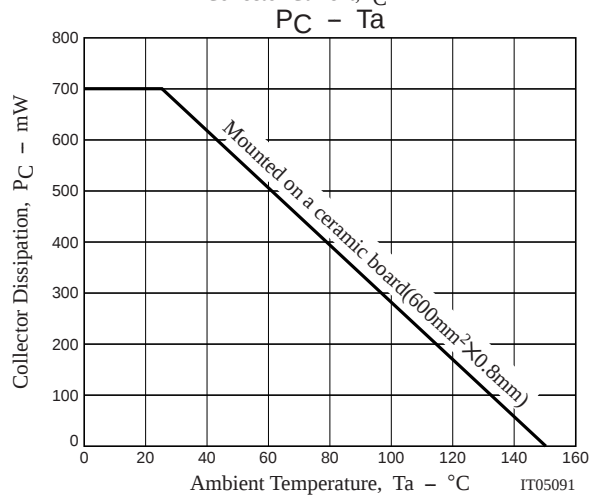
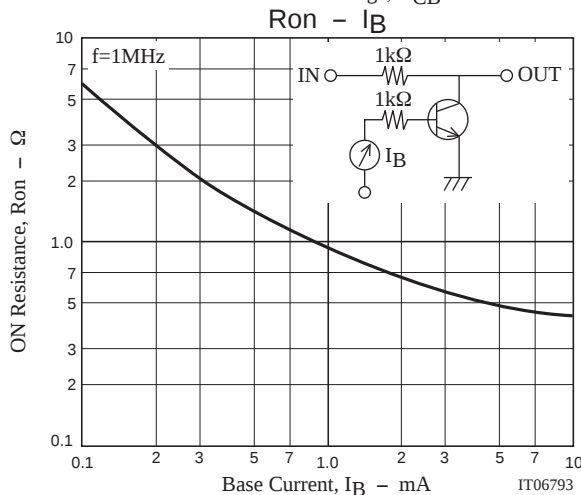
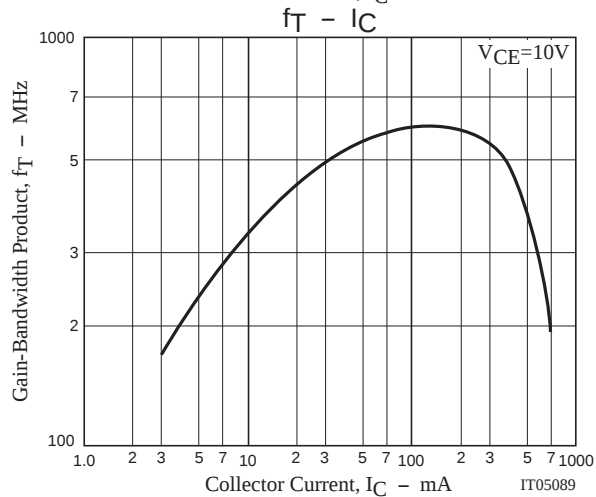
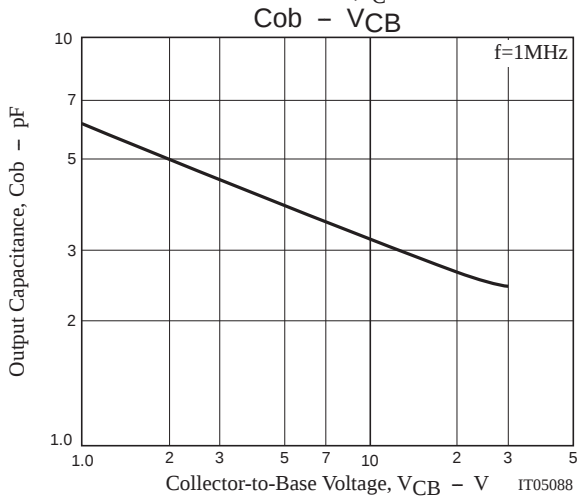
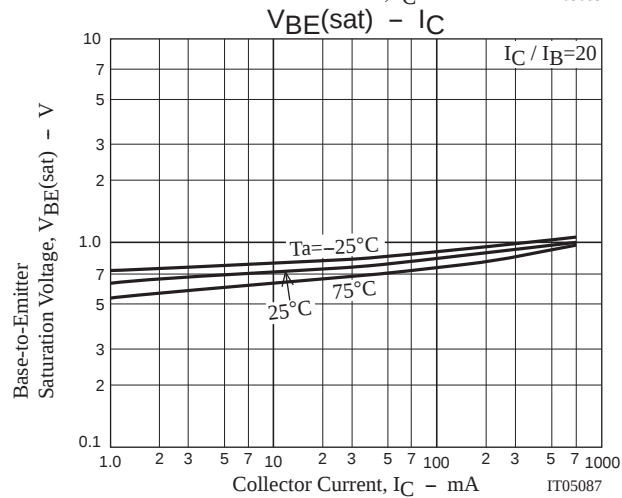
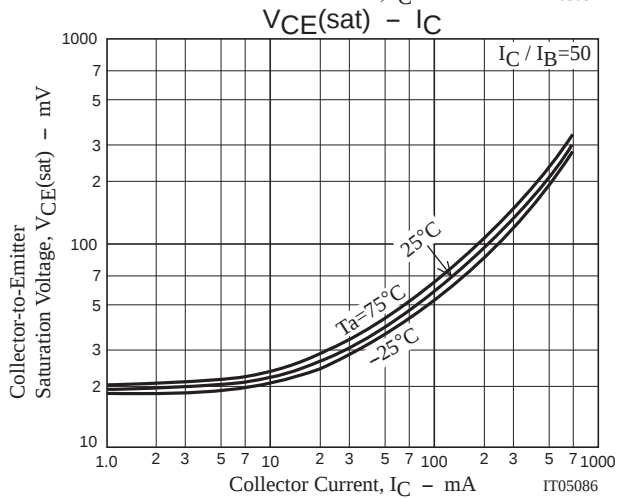
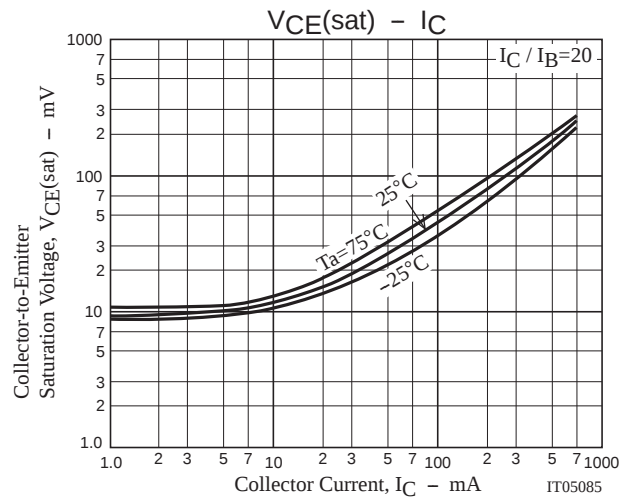
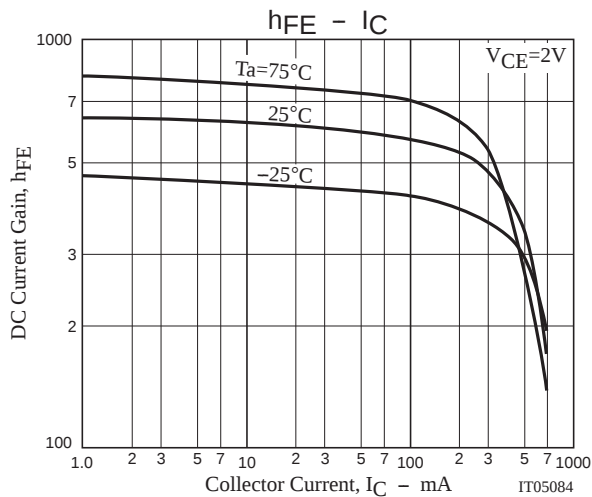


$I_C = 20I_{B1} = -20I_{B2} = 300\text{mA}$

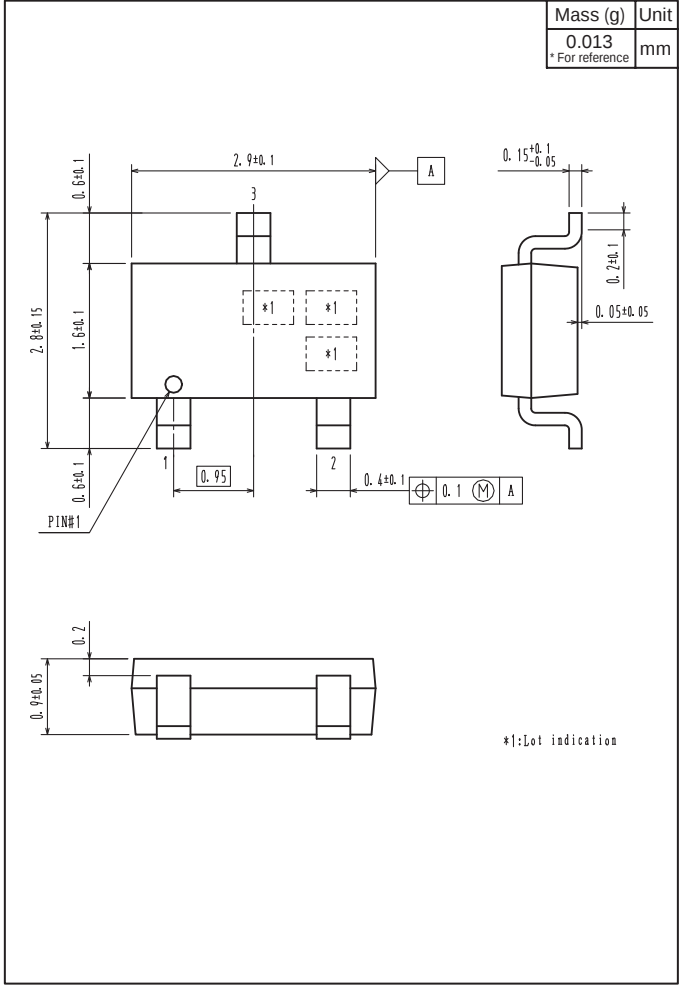
Ordering Information

Device	Package	Shipping	memo
30C02CH-TL-E	CPH3	3,000pcs./reel	Pb Free

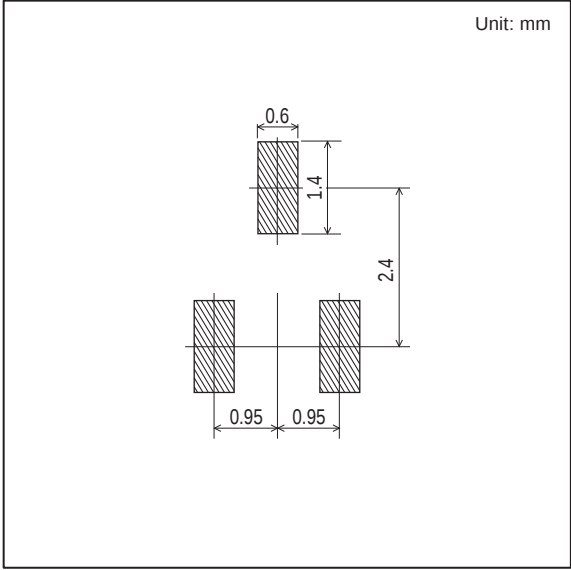




Outline Drawing
30C02CH-TL-E



Land Pattern Example



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