



CPH5506

Bipolar Transistor

(-30V, (-)5A, Low $V_{CE(sat)}$ Complementary Dual CPH5

ON Semiconductor®

<http://onsemi.com>

Applications

- Relay drivers, Lamp drivers, Motor drivers

Features

- Composite type with a PNP transistor and an NPN transistor contained in one package, facilitate high-density mounting
- The CPH5506 consists of two chips encapsulated in a package which are equivalent to the CPH3115 and the CPH3215, respectively
- Ultrasmall package facilitate miniaturization in end products. (0.9mm mounting height)

Specifications () : PNP

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

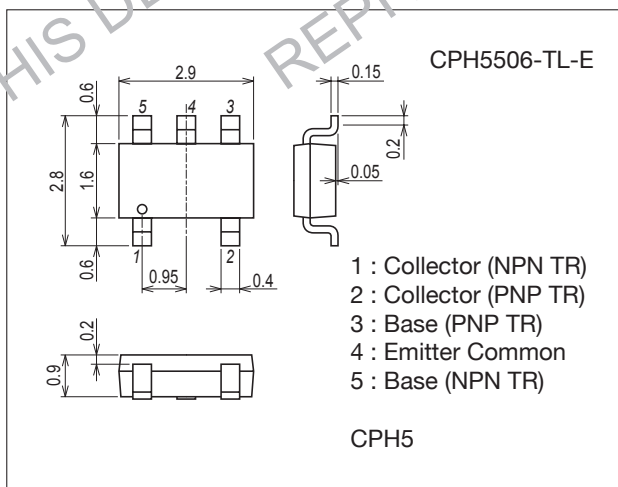
Parameter	Symbol	Conditions	Rating	Unit
Collector-to-Base Voltage	V_{CBO}		(-20)40	V
Collector-to-Emitter Voltage	V_{CEO}		(-)30	V
Emitter-to-Base Voltage	V_{EBO}		(-)5	V
Collector Current	I_C		(-)1.5	A
Collector Current (Pulse)	I_{CP}		(-)5	A
Base Current	I_B		(-)300	mA
Collector Dissipation	P_C	Mounted on a ceramic board (600mm ² ×0.8mm)	0.9	W
Total Power Dissipation	P_T	Mounted on a ceramic board (500mm ² ×0.8mm)	1.2	W
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Package Dimensions

unit : mm (typ)

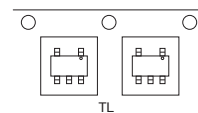
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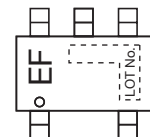
Product & Package Information

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

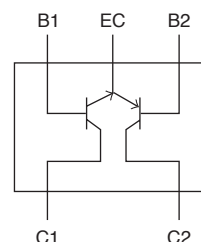
Packing Type : TL



Marking



Electrical Connection



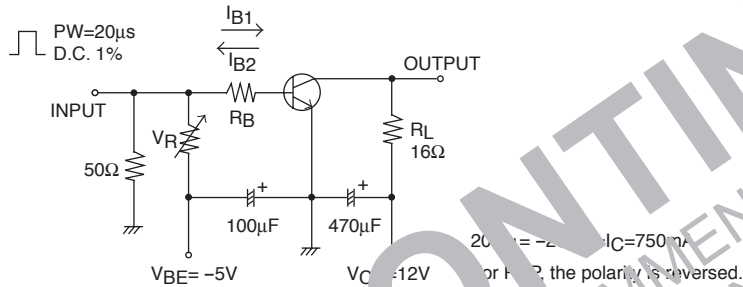
ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

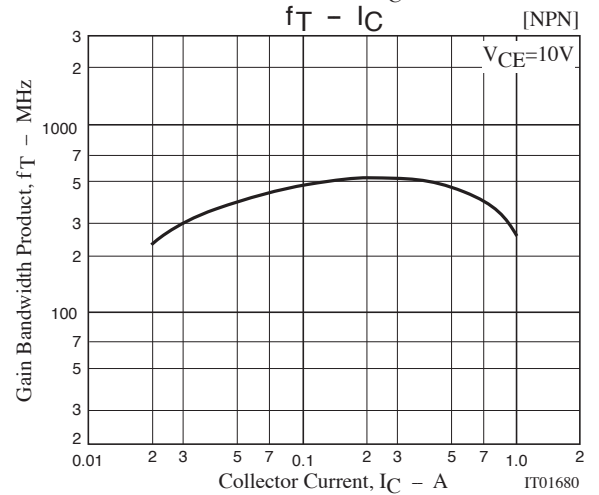
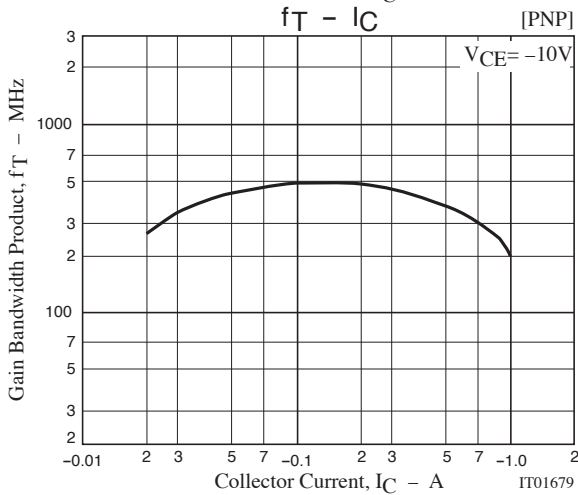
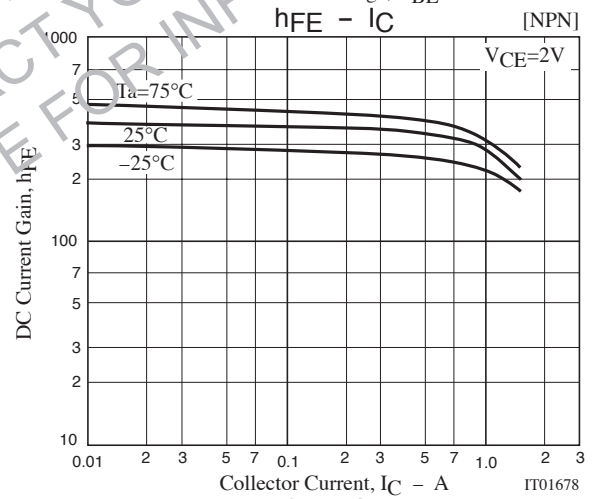
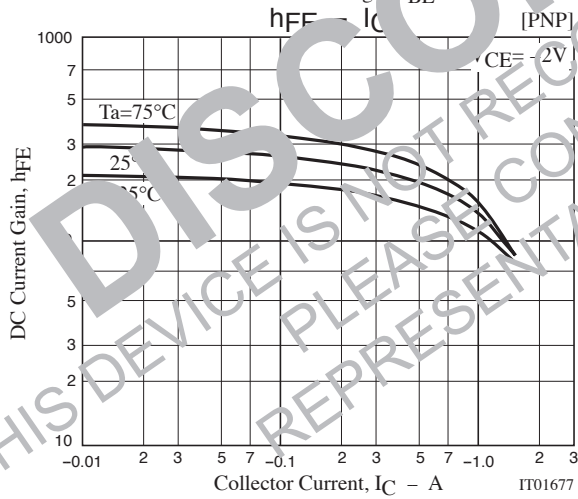
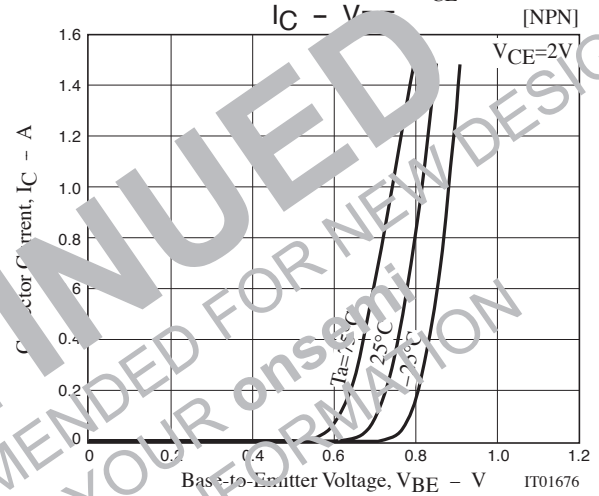
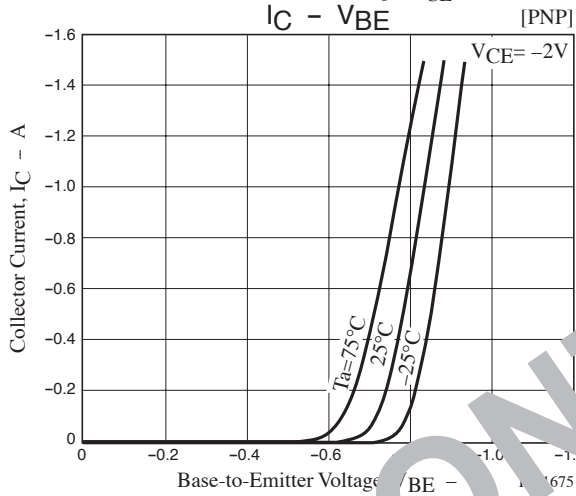
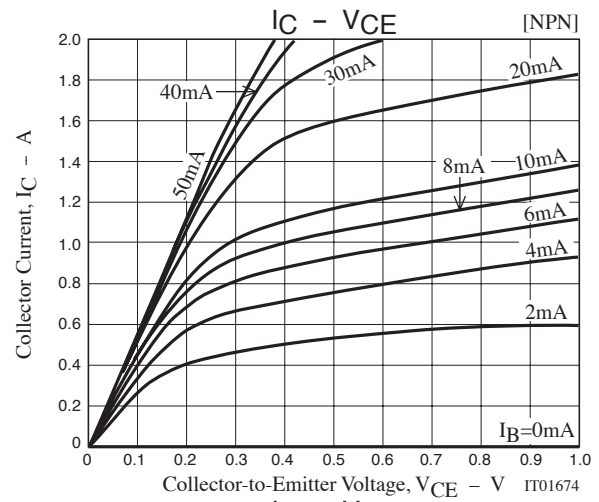
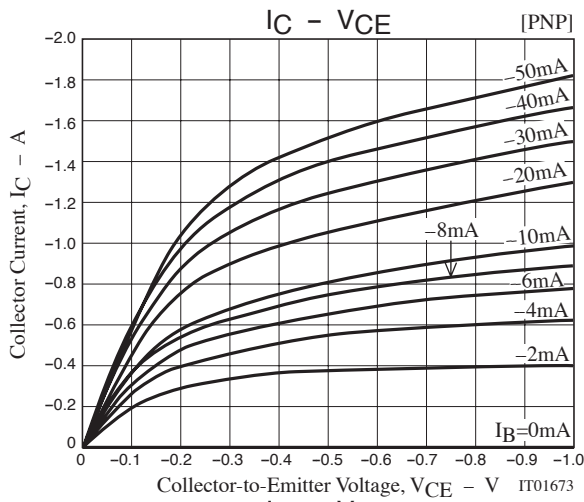
Electrical Characteristics at $T_a=25^{\circ}\text{C}$

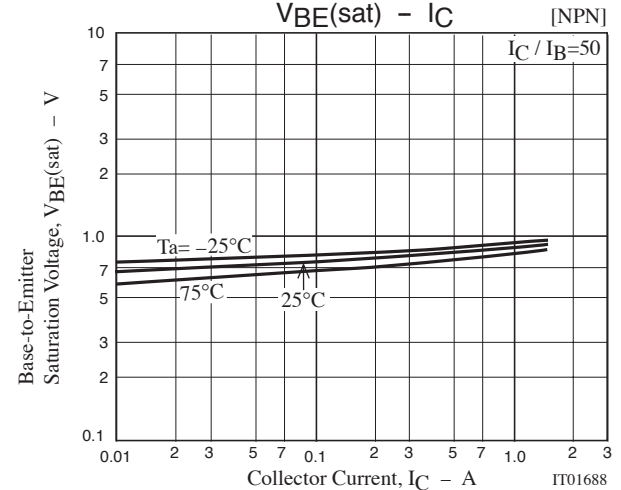
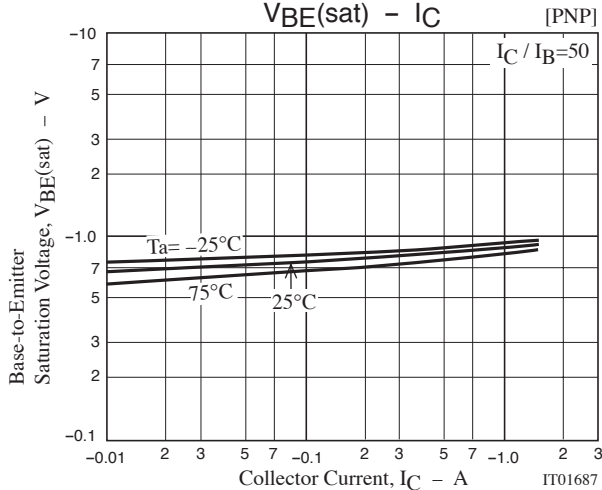
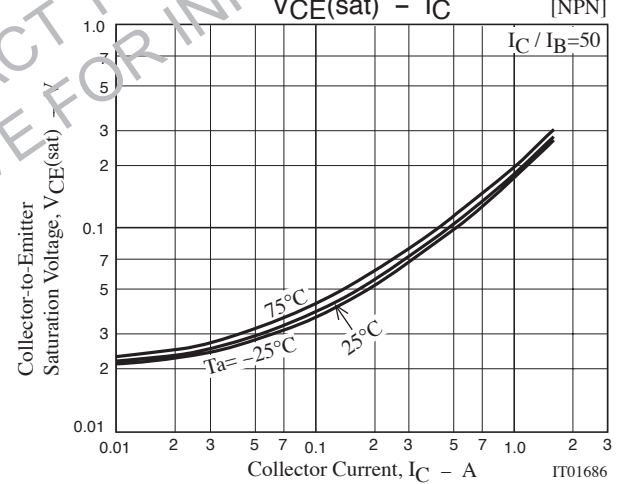
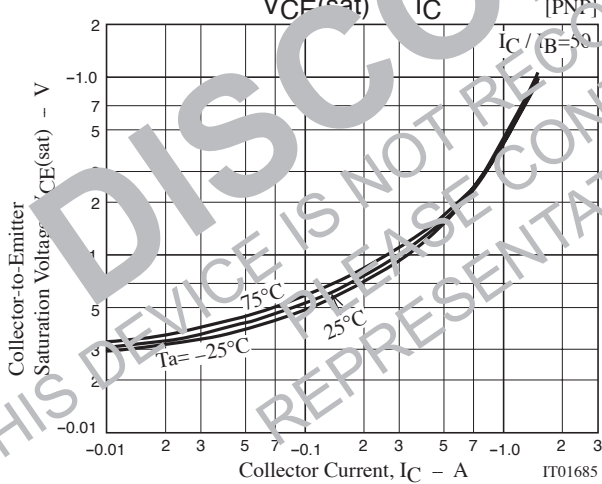
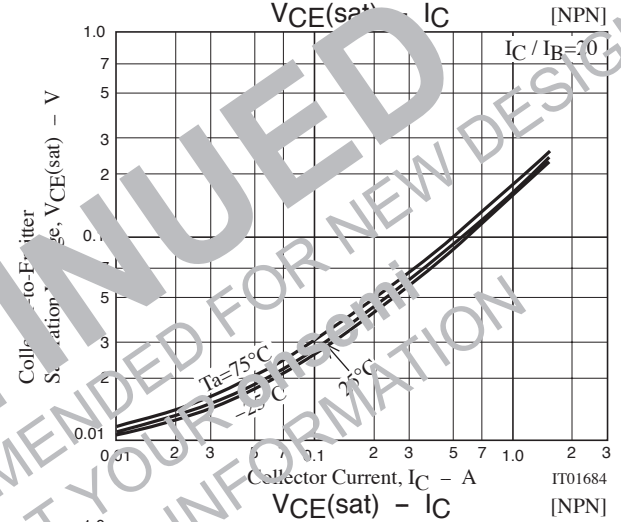
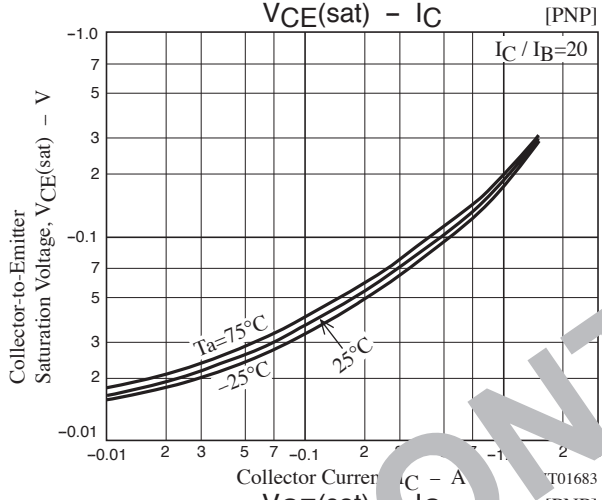
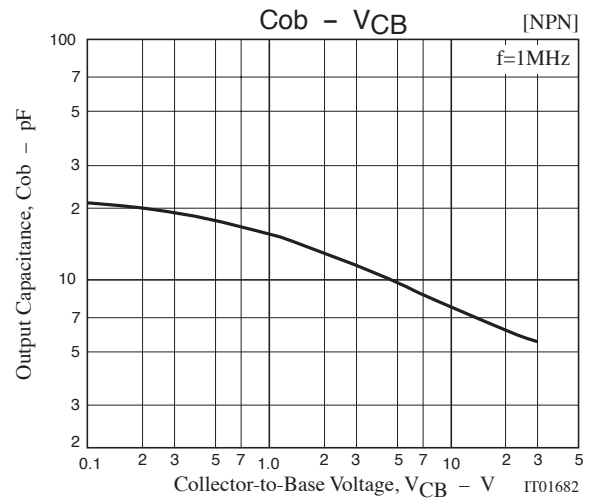
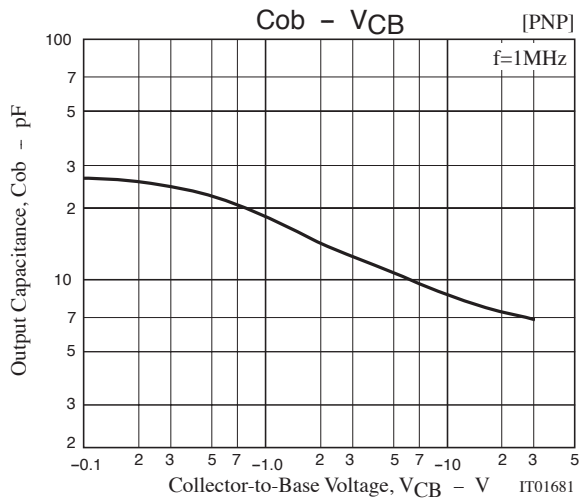
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)30\text{V}$, $I_E=0\text{A}$			$(-)0.1$	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4\text{V}$, $I_C=0\text{A}$			$(-)0.1$	μA
DC Current Gain	h_{FE}	$V_{CE}=(-)2\text{V}$, $I_C=(-)100\text{mA}$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10\text{V}$, $I_C=(-)300\text{mA}$		(450)500		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}$, $f=1\text{MHz}$		(9)8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)750\text{mA}$, $I_E=(-)15\text{mA}$		$(-250)150$	$(-375)225$	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)750\text{mA}$, $I_E=(-)15\text{mA}$		$(-)0.85$	$(-)1.2$	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}$, $I_E=0\text{A}$	$(-30)40$			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1\text{mA}$, $R_{BE}=\infty$	$(-)30$			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.		35		ns
Storage Time	t_{stg}			(115)205		ns
Fall Time	t_f			30		ns

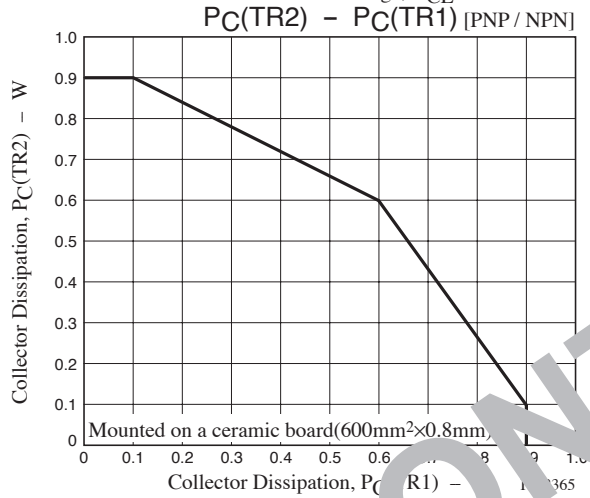
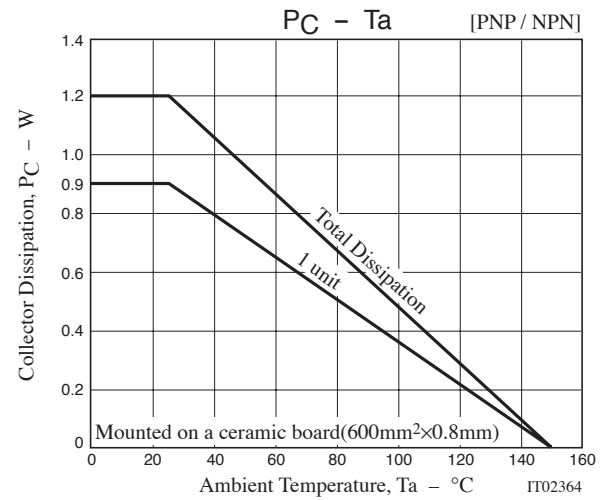
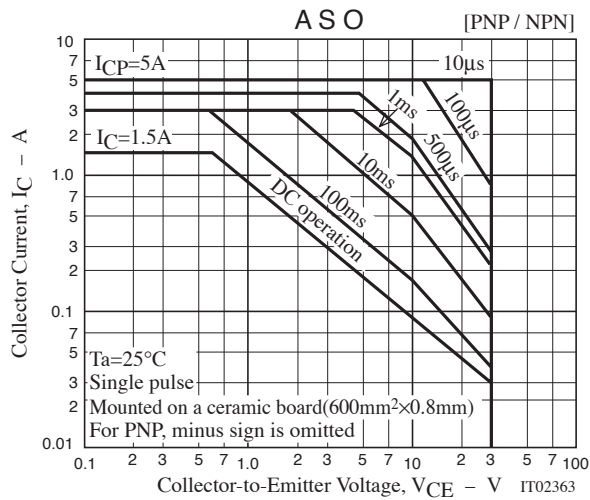
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

Switching Time Test Circuit**Ordering Information**

Device	Package	Shipping	memo
CPH5506-TL-E	CPH3	3,000pcs./reel	Pb Free







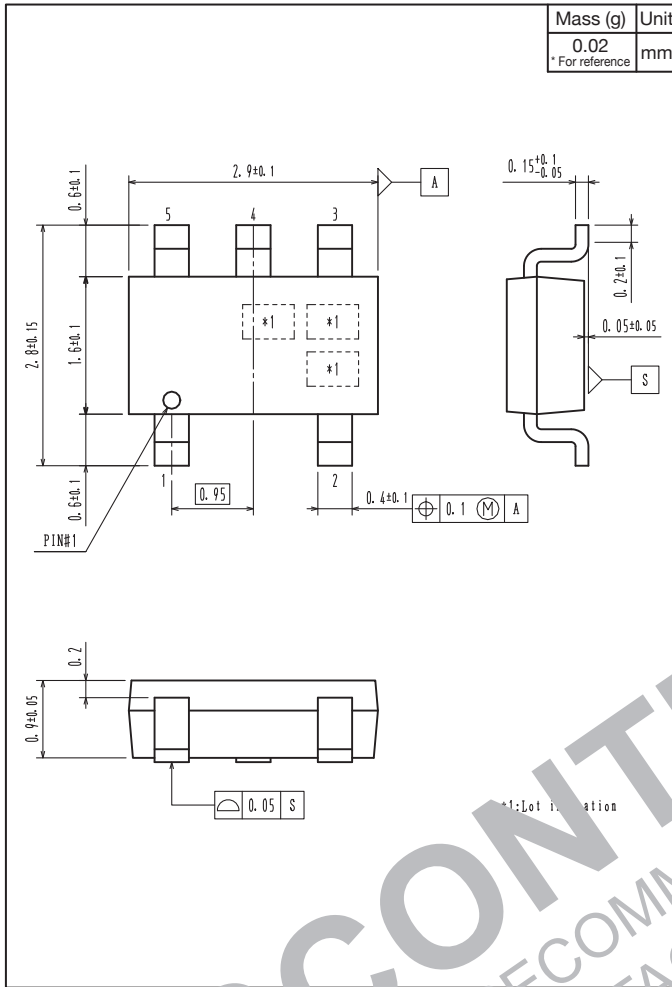
DISCONTINUED

THIS DEVICE IS NOT RECOMMENDED FOR NEW DESIGN

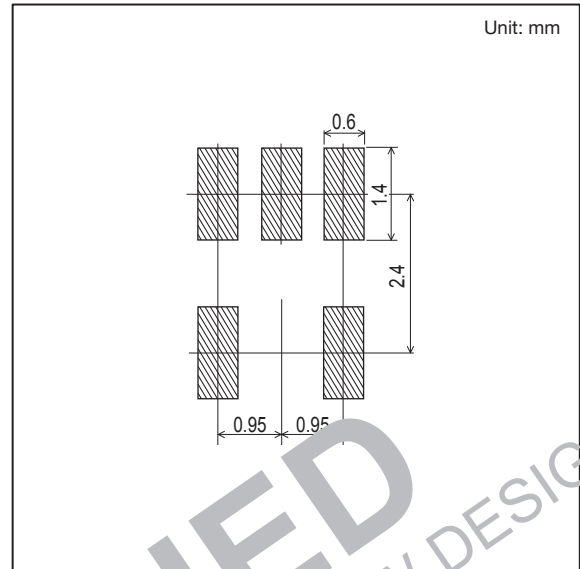
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Outline Drawing

CPH5506-TL-E



Land Pattern Example



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