Ordering number : ENA0521A

CPH6531

Bipolar Transistor
−50V, −1A, Low V_{CE}(sat) PNP Dual CPH6

ON Semiconductor®

http://onsemi.com

Applications

- Relay drivers, lamp drivers, motor drivers, flash

Features

- Composite type with two PNP transistors contained in one package facilitating high-density mounting
- The two chips contained are equivalent to the CPH3116
- Ultrasmall package permitting applied sets to be small and slim

Specifications

Absolute Maximum Ratings at Ta=25°C

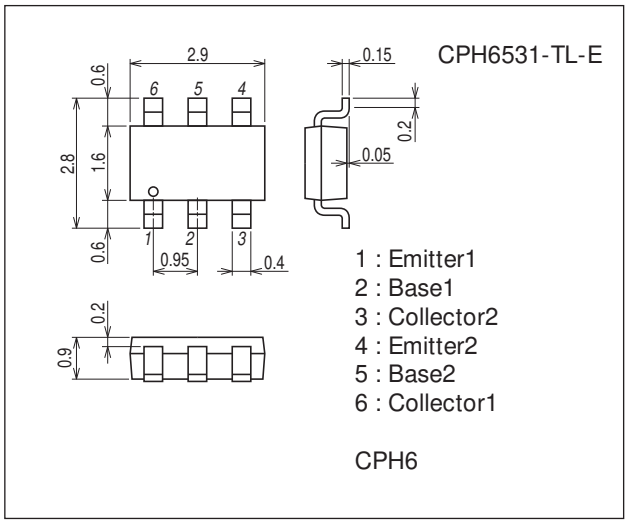
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-50	V
Collector-to-Emitter Voltage	V_{CES}		-50	V
Collector-to-Emitter Voltage	V_{CEO}		-50	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-1.0	A
Collector Current (Pulse)	I_{CP}		-2	A
Base Current	I_B		-200	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (600mm^2×0.8mm) 1unit	0.9	W
Total Power Dissipation	P_T	When mounted on ceramic substrate (600mm^2×0.8mm)	1.1	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)

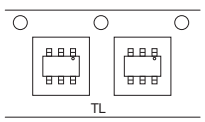
7018A-006



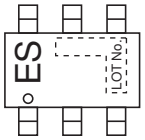
Product & Package Information

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

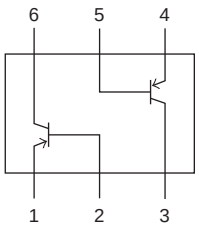
Packing Type: TL



Marking



Electrical Connection

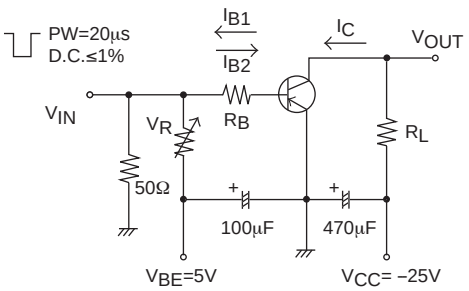


Semiconductor Components Industries, LLC, 2013

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}= -40V, 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= -100mA	200		560	
Gain-Bandwidth Product	f_T	V_{CE}= -10V, I_C= -300mA		420		MHz
Output Capacitance	Cob	V_{CB}= -10V, f=1MHz		9		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)1	I_C= -500mA, I_B= -10mA		-230	-380	mV
	V_{CE}(sat)2	I_C= -300mA, I_B= -6mA		-125	-200	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C= -500mA, I_B= -10mA		-0.81	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C= -10μA, I_E=0A	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C= -100μA, R_{BE}=0Ω	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C= -1mA, R_{BE}=∞	-50			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}			170		ns
Fall Time	t_f			30		ns

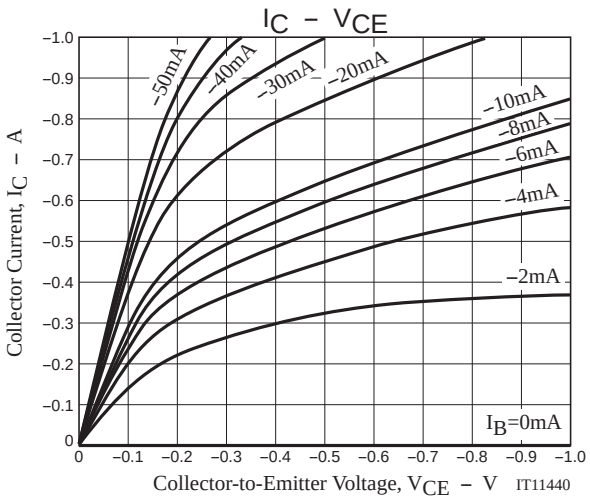
Switching Time Test Circuit

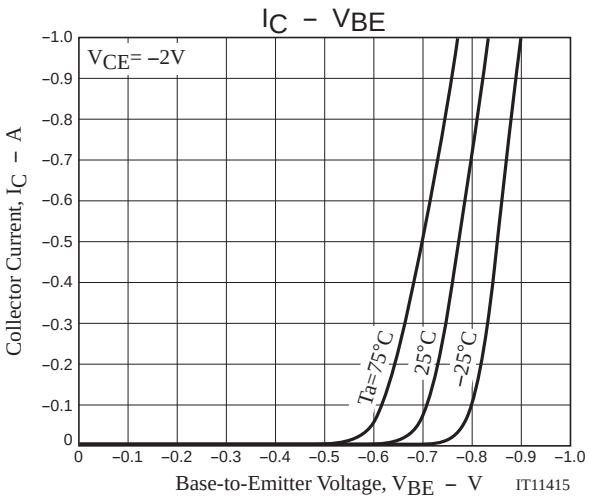


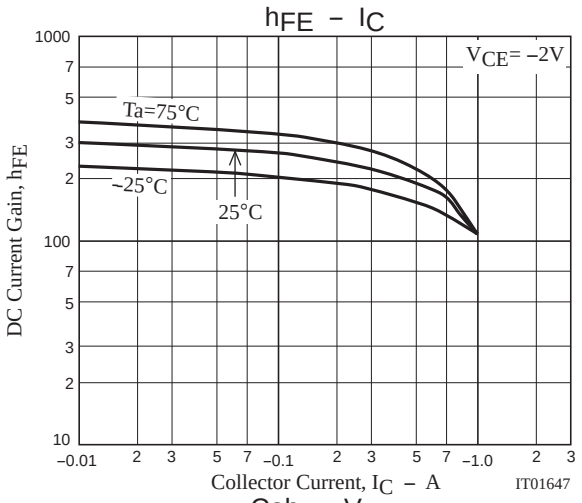
$20I_{B1}= -20I_{B2}=I_C= -500mA$

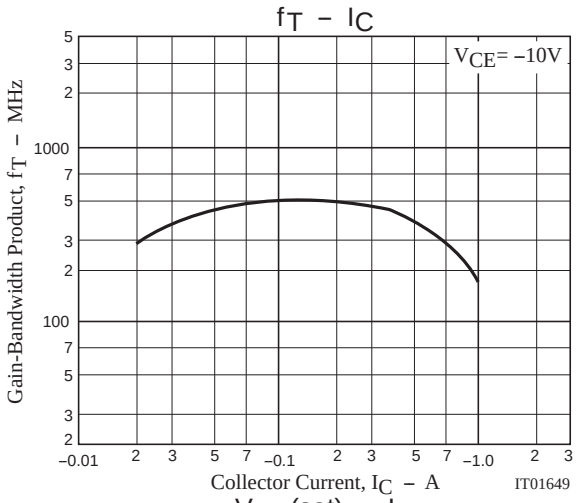
Ordering Information

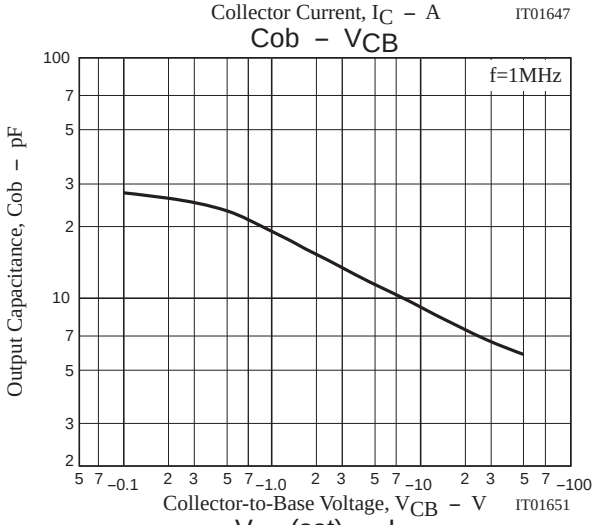
Device	Package	Shipping	memo
CPH6531-TL-E	CPH6	3,000pcs./reel	Pb Free

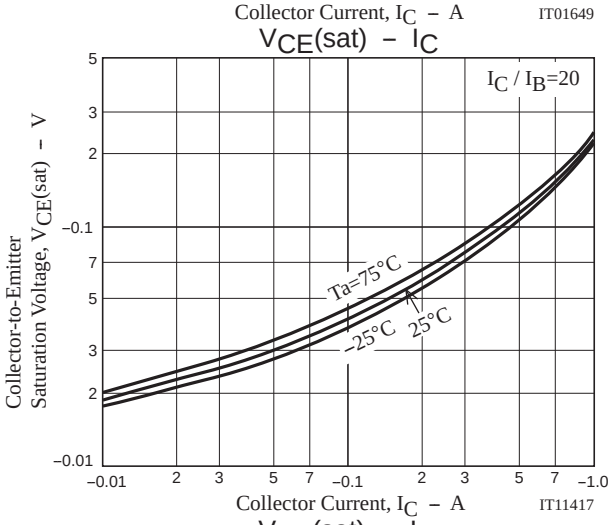


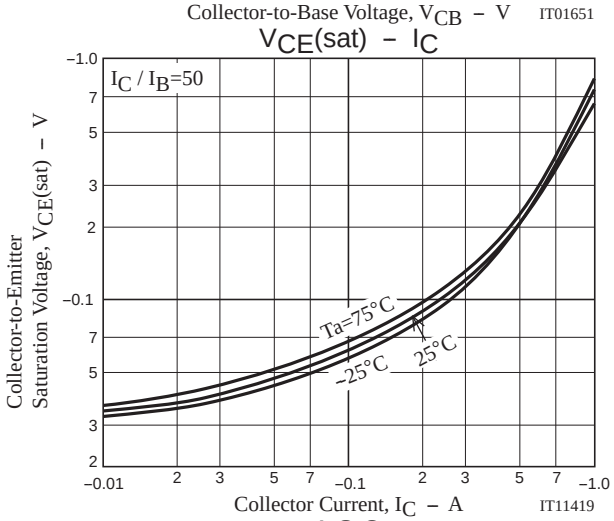


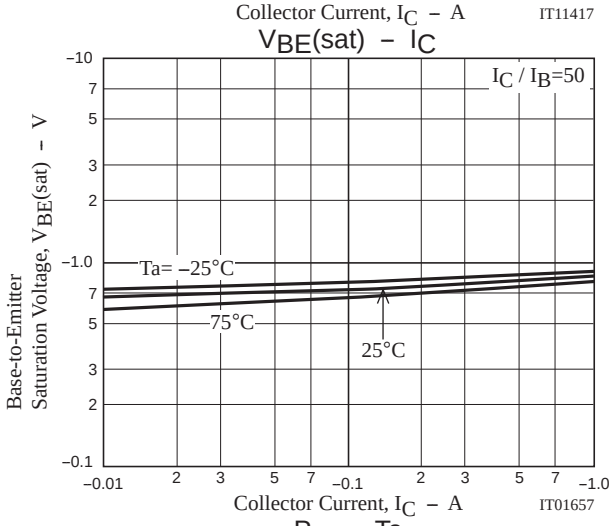

hFE – IC
VCE= –2V
Ta=75°C
–25°C
25°C
DC Current Gain, hFE
Collector Current, IC – A
IT01647

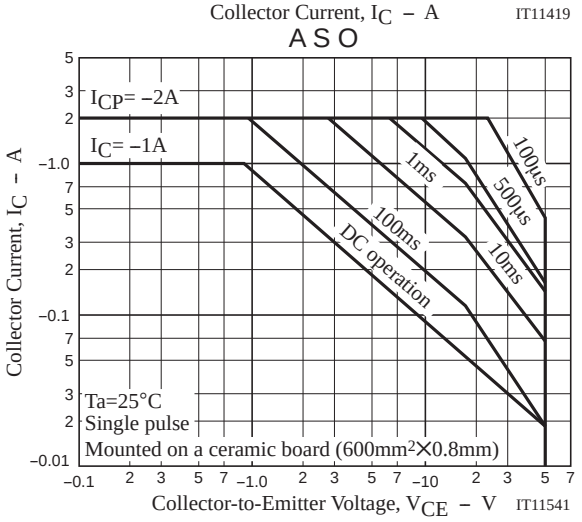

fT – IC
VCE= –10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT01649

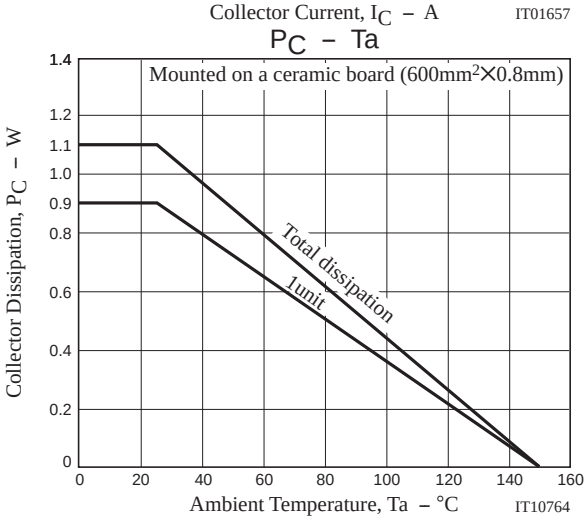

Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT01651


VCE(sat) – IC
IC / IB=20
Ta=75°C
–25°C
25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT11417


VCE(sat) – IC
IC / IB=50
Ta=75°C
–25°C
25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT11419


VBE(sat) – IC
IC / IB=50
Ta= –25°C
75°C
25°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT01657


A S O
ICP= –2A
IC= –1A
1ms
100µs
500µs
100ms
10ms
DC operation
Ta=25°C
Single pulse
Mounted on a ceramic board (600mm2×0.8mm)
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT11541


PC – Ta
Mounted on a ceramic board (600mm2×0.8mm)
Total dissipation
1unit
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
IT10764

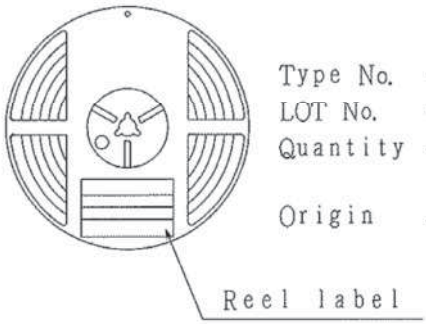
Embossed Taping Specification

CPH6531-TL-E

1. Packing Format

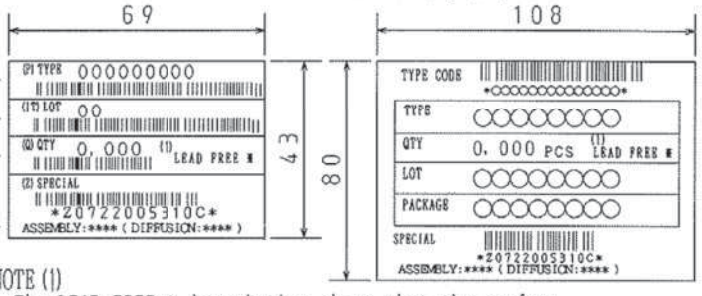
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH6	CPH6	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method



Reel label, Inner box label

(unit:mm)



Outer box label

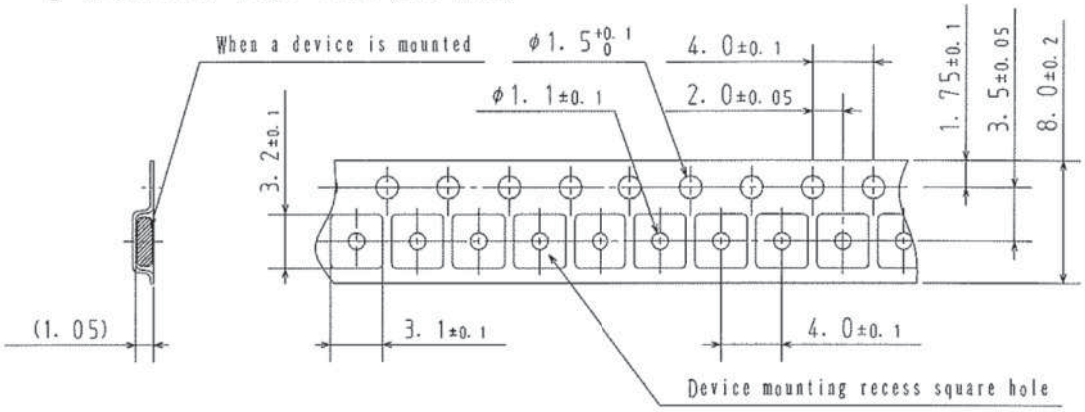
It is a label at the time of factory shipments. The form of a label may change in physical distribution process.

NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

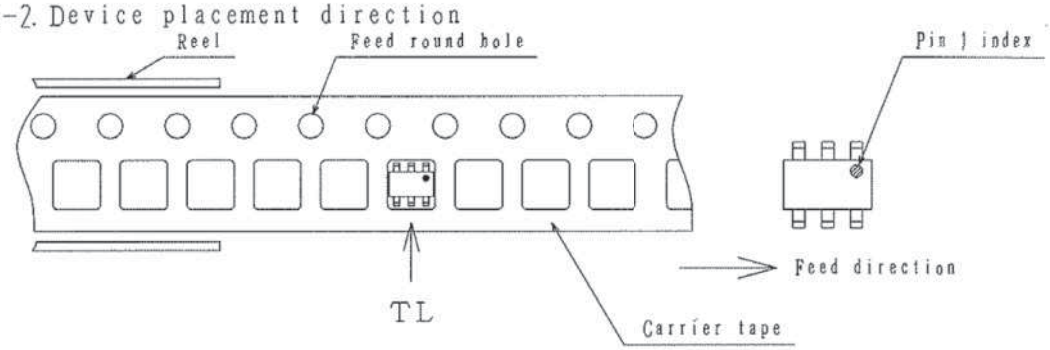
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



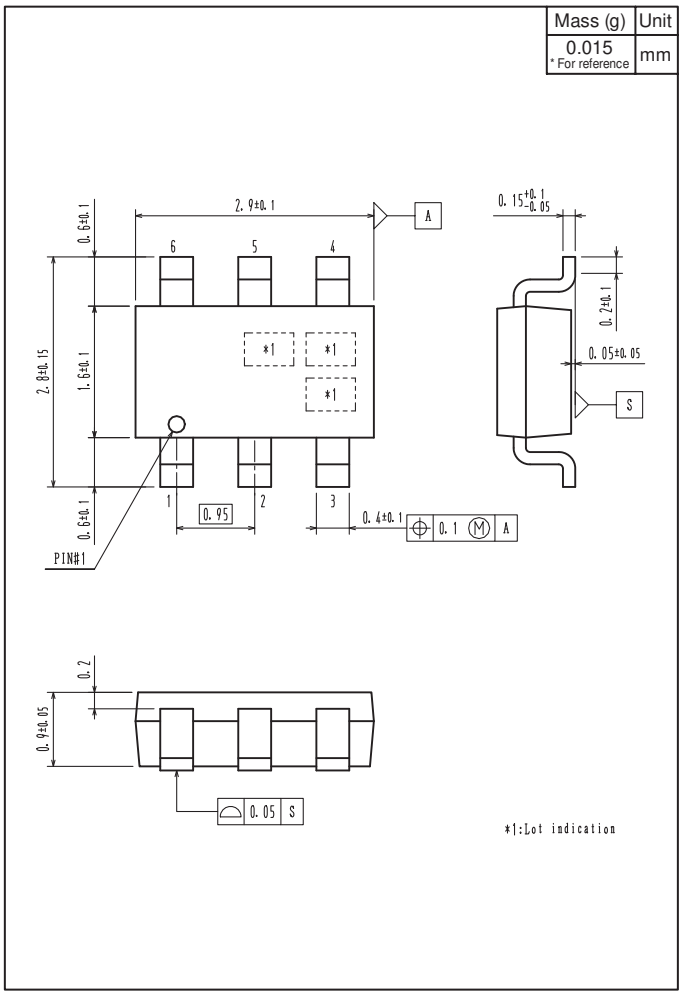
2-2. Device placement direction



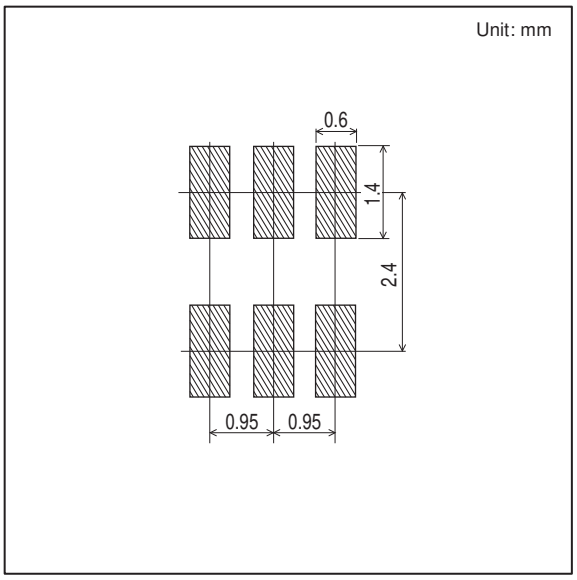
Those with pin 1 index on the feed hole side·····TL

Outline Drawing

CPH6531-TL-E



Land Pattern Example



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