Ordering number : ENA0522A

CPH6532

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

ON Semiconductor®

http://onsemi.com

Applications

- Relay drivers, lamp drivers, motor drivers, flash

Features

- Composite type with two NPN transistors contained in one package facilitating high-density mounting
- The two chips contained are equivalent to the CPH3216
- Ultrasmall package permitting applied sets to be small and slim

Specifications

Absolute Maximum Ratings at Ta=25°C

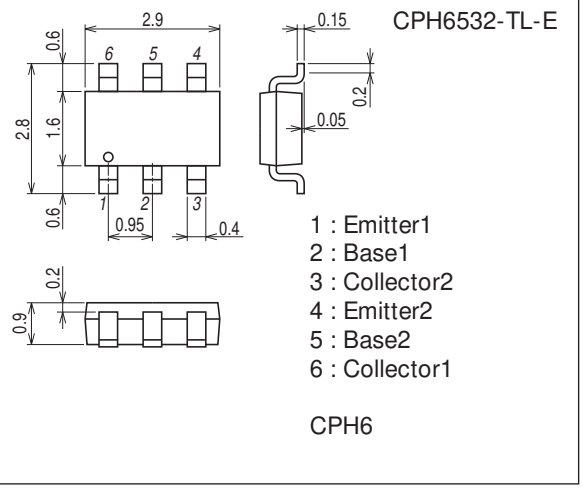
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		80	V
Collector-to-Emitter Voltage	V_{CES}		80	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		1.0	A
Collector Current (Pulse)	I_{CP}		2	A
Base Current	I_B		200	mA
Collector 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)

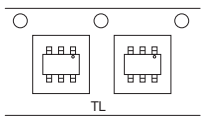
7018A-006



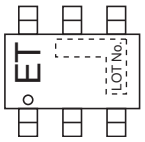
Product & Package Information

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

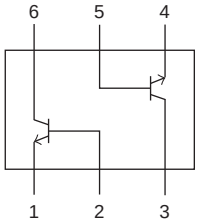
Packing Type: TL



Marking



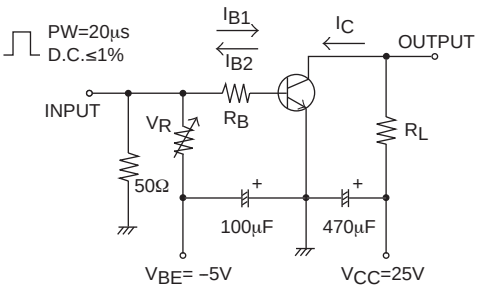
Electrical Connection



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		6		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)1	I_C=500mA, I_B=10mA		130	190	mV
	V_{CE}(sat)2	I_C=300mA, I_B=6mA		90	135	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	80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C=100μA, R_{BE}=0Ω	80			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.		38		ns
Storage Time	t_{stg}			332		ns
Fall Time	t_f			40		ns

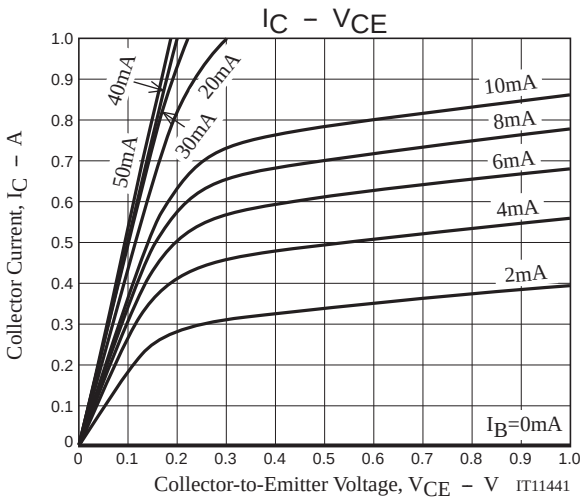
Switching Time Test Circuit

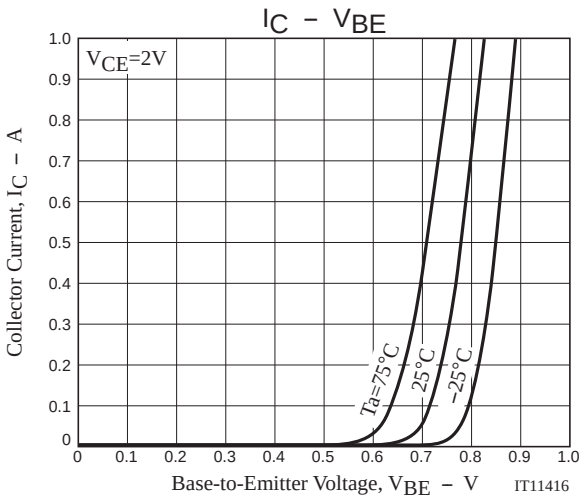


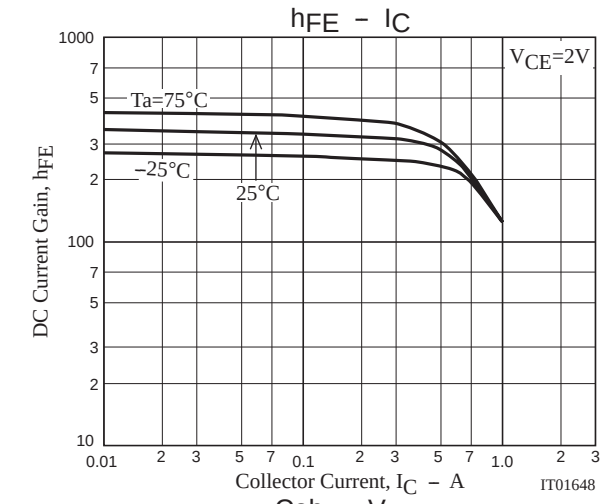
$20I_{B1}=-20I_{B2}=I_C=500mA$

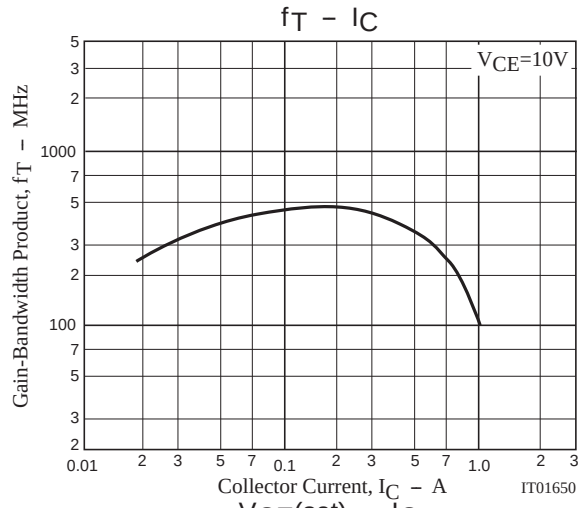
Ordering Information

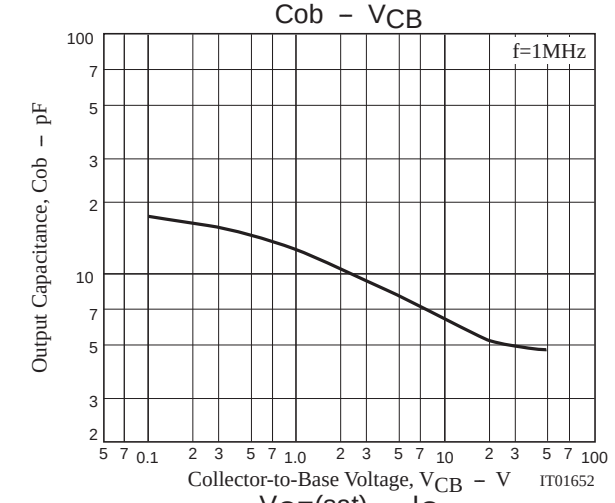
Device	Package	Shipping	memo
CPH6532-TL-E	CPH6	3,000pcs./reel	Pb Free

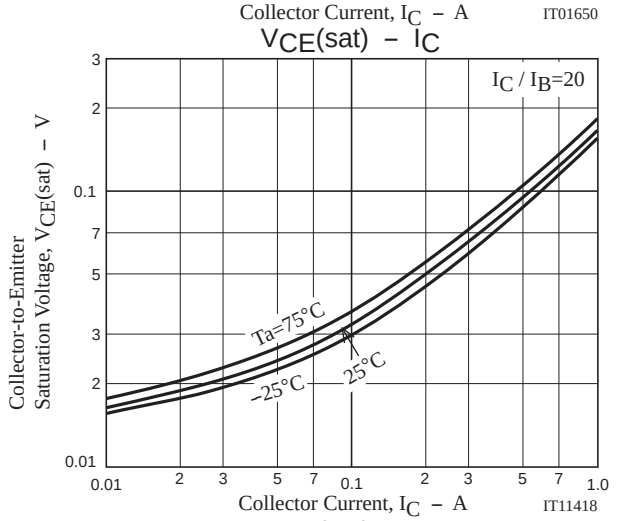


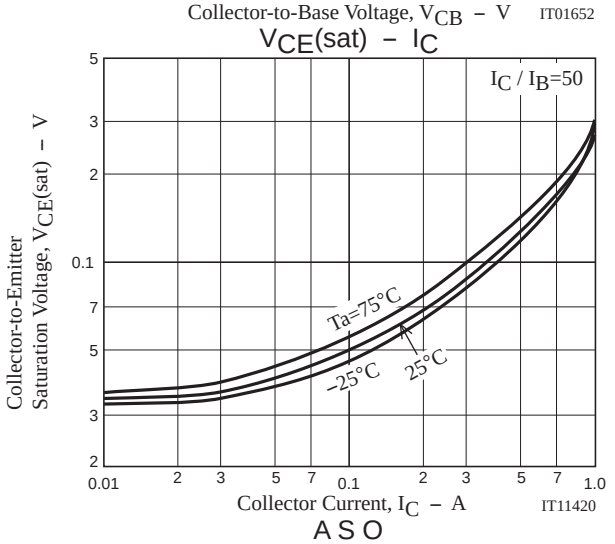


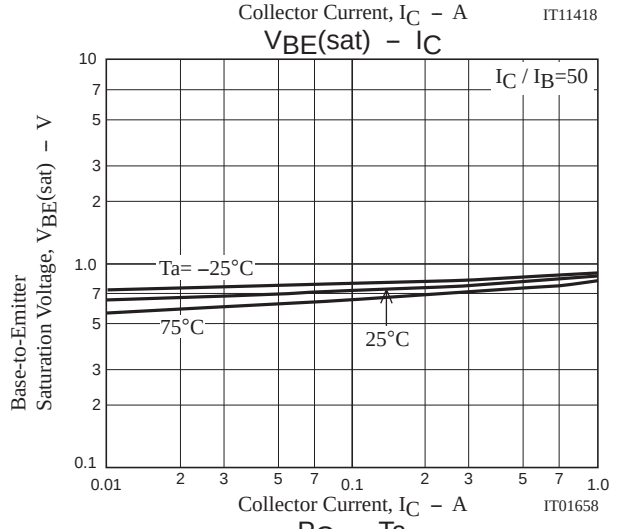

hFE – IC
VCE=2V
Ta=75°C
–25°C
25°C
DC Current Gain, hFE
Collector Current, IC – A
IT01648

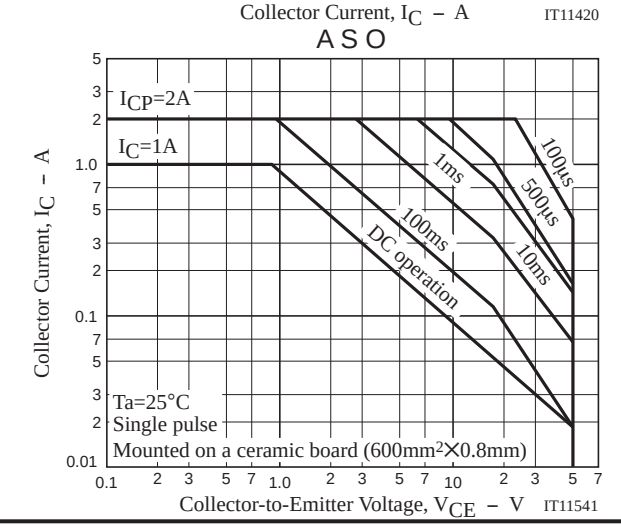

fT – IC
VCE=10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT01650

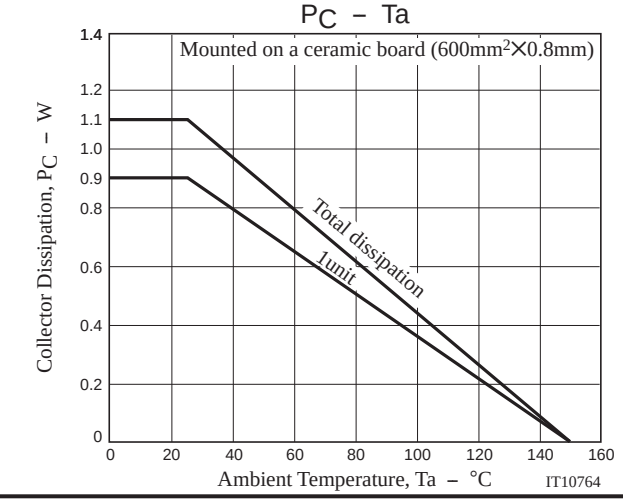

Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT01652


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
IT11418


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
IT11420


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
IT01658


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

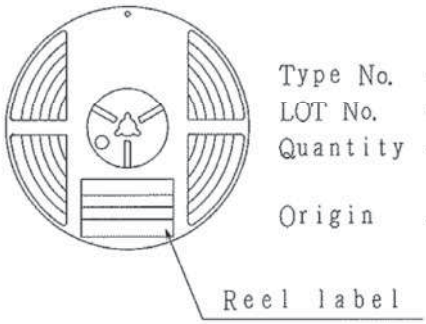
Embossed Taping Specification

CPH6532-TL-E

1. Packing Format

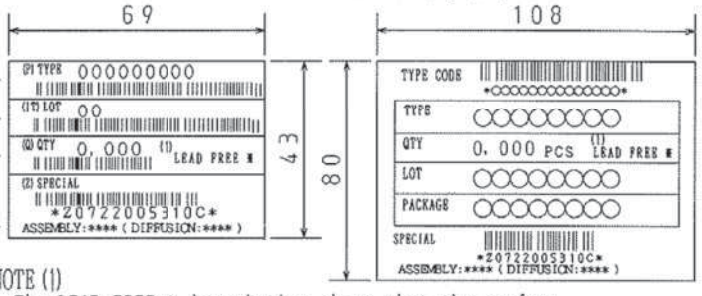
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH6	CPH6	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method



Reel label, Inner box label

(unit:mm)



Outer box label

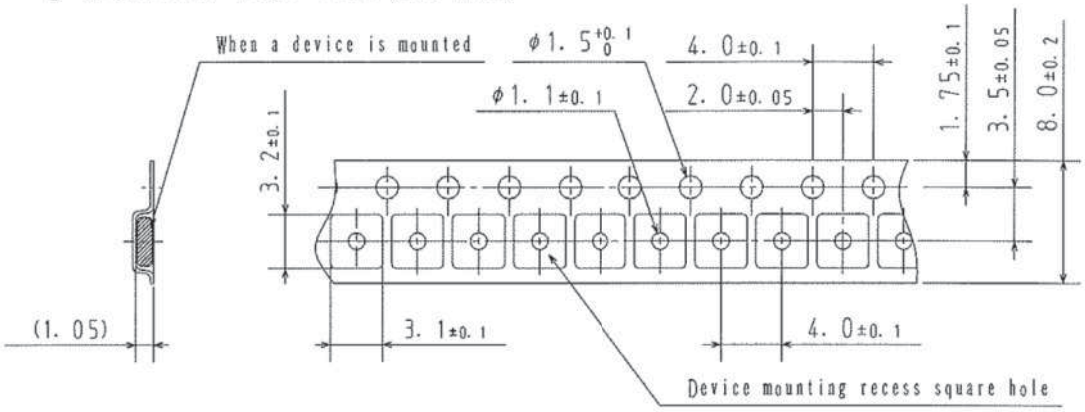
It is a label at the time of factory shipments. The form of a label may change in physical distribution process.

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

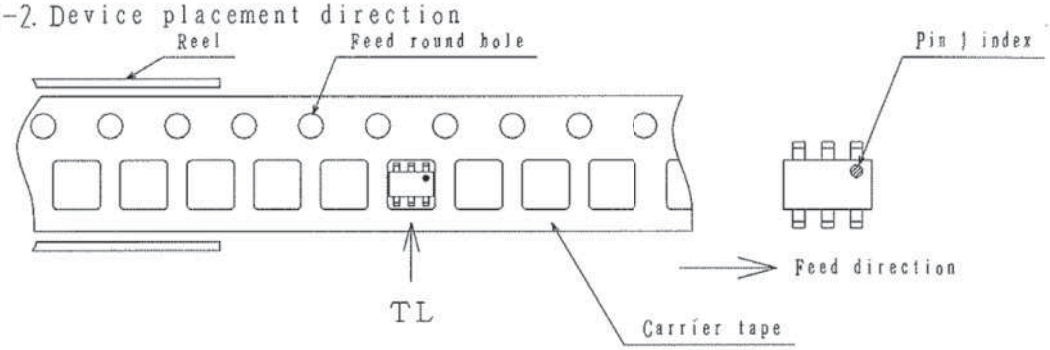
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



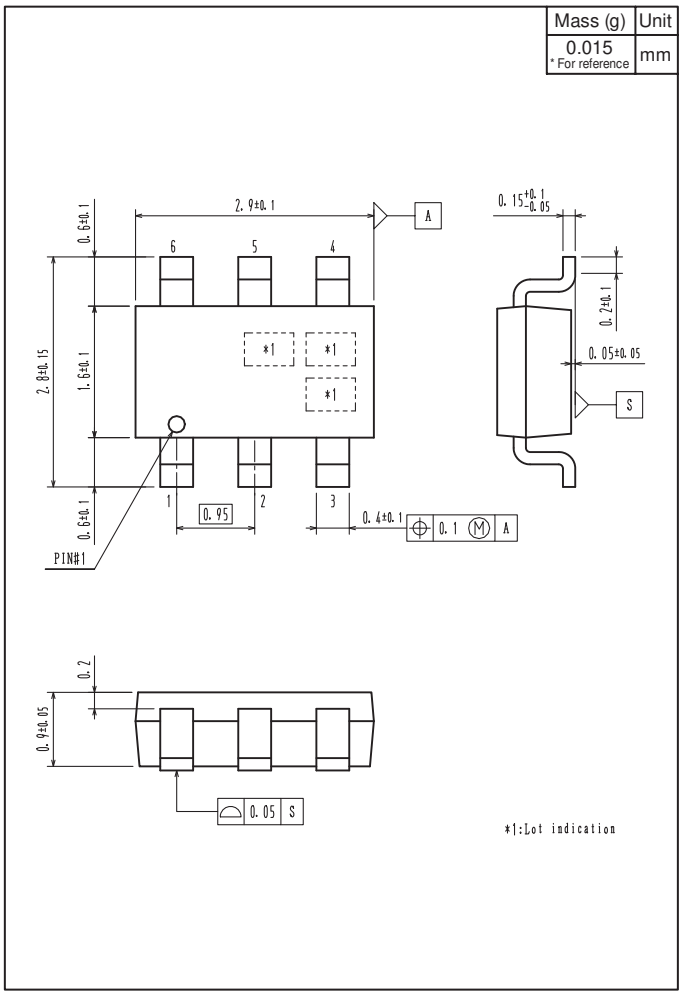
2-2. Device placement direction



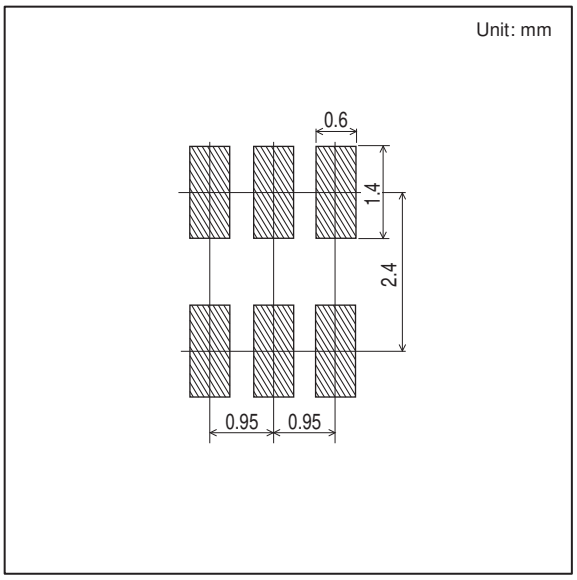
Those with pin 1 index on the feed hole side·····TL

Outline Drawing

CPH6532-TL-E



Land Pattern Example



ON Semiconductor and the ON logo are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of SCILLC's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.