



# SEK 19 male low profile connector solder angled



## General information

|                                     |                                          |                                              |                  |
|-------------------------------------|------------------------------------------|----------------------------------------------|------------------|
| Design                              | IEC 60603-13                             |                                              |                  |
| No. of contacts                     | 6,10,14,16,20,26,30,34,40,50,60,64       |                                              |                  |
| Contact spacing                     | 2,54 mm x 2,54 mm                        |                                              |                  |
| Test voltage Ur.m.s                 | 1 kV                                     |                                              |                  |
| Working voltage                     | 500 V for pollution degree 1             |                                              |                  |
| Contact resistance                  | max. 20mOhm                              |                                              |                  |
| Insulation resistance               | min. 10 <sup>9</sup> Ohm                 |                                              |                  |
| Working current acc. to IEC 60512-2 | See derating diagram                     |                                              |                  |
| Temperature range                   | -55°C ... +125°C                         |                                              |                  |
| Termination technology              | solder                                   |                                              |                  |
| Clearance & creepage distance       | min. 0,5 mm clearance min. 0,56 creepage |                                              |                  |
| Insertion and withdrawal forces     | 6-pole max. 12N for PL1-2 / 18N for PL3  | ; 30-pole max. 60N for PL1-2 / 90N for PL3   |                  |
|                                     | 10-pole max. 20N for PL1-2 / 30N for PL3 | ; 34-pole max. 68N for PL1-2 / 102N for PL3  |                  |
|                                     | 14-pole max. 28N for PL1-2 / 42 for PL3  | ; 40-pole max. 80N for PL1-2 / 120N for PL3  |                  |
|                                     | 16-pole max. 32N for PL1-2 / 48N for PL3 | ; 50-pole max. 100N for PL1-2 / 150N for PL3 |                  |
|                                     | 20-pole max. 40N for PL1-2 / 60N for PL3 | ; 60-pole max. 120N for PL1-2 / 180N for PL3 |                  |
|                                     | 26-pole max. 52N for PL1-2 / 78N for PL3 | ; 64-pole max. 128N for PL1-2 / 192N for PL3 |                  |
| Mating cycles                       | S4 surface treatment                     | Au over PdNi (min. 0,76 µm)                  |                  |
|                                     | PL 1 acc. to IEC 60603-13                | 500 mating cycles                            | 10 days gas test |
|                                     | PL 2 acc. to IEC 60603-13                | 250 mating cycles                            | 4 days gas test  |
|                                     | PL 3 acc. to IEC 60603-13                | 50 mating cycles                             | No gas test      |
| UL file                             | No                                       |                                              |                  |
| RoHS - compliant                    | Yes                                      |                                              |                  |
| Leadfree                            | Yes                                      |                                              |                  |
| Hot plugging                        | No                                       |                                              |                  |

## Insulator material

|                                 |                                                     |  |  |
|---------------------------------|-----------------------------------------------------|--|--|
| Material                        | PCT (thermoplastics, glass fiber reinforcement 30%) |  |  |
| Color                           | Black (RAL 7001) or beige                           |  |  |
| UL classification               | UL94-V0                                             |  |  |
| Material group acc. IEC 60664-1 | II (400 < CTI < 600)                                |  |  |
| NF F 16-101 classification      | No                                                  |  |  |

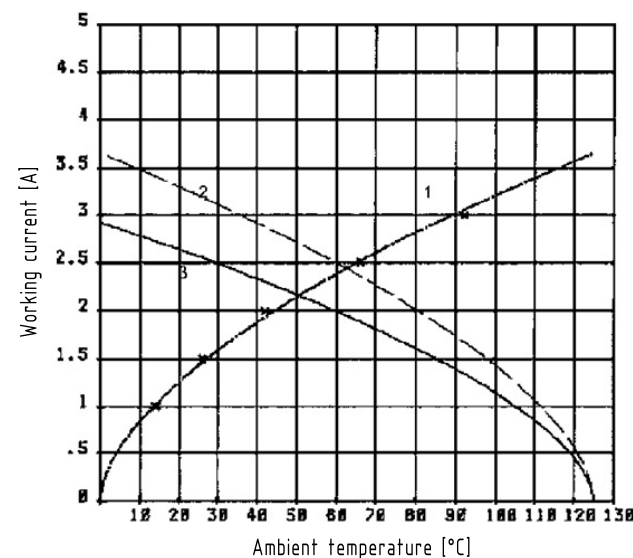
## Contact material

|                              |                                                     |  |  |
|------------------------------|-----------------------------------------------------|--|--|
| Contact material             | Copper alloy                                        |  |  |
| Plating termination zone     | Sn over Ni                                          |  |  |
| Plating contact sliding side | Au or Au over PdNi (according to performance level) |  |  |

## Derating diagram acc to IEC 60512-2 (Current carrying capacity)

The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity-curve is valid for continuous, not interrupted current-loaded contacts of connectors when simultaneous power on all contacts is given without exceeding the maximum temperature. Control and test procedures according to DIN IEC 60512.

- 1) Temperature rise
- 2) Derating
- 3) Derating curve at I max x 0.8(IEC 60512-2)



## Soldering instructions

THR (Through Hole Reflow) connectors are designed to be used in a reflow oven. THR connectors can also be used together with SMD (Surface Mount Device) components in a reflow oven. In this process, called as well "Pin in hole intrusive reflow", the connectors are inserted into plated through holes in a comparable way to conventional component mounting. All other components can be assembled on the PCB surface.

The length of the connector contacts should be such that they protrude by no more than 1,5 millimeters after insertion to the PCB. Each contact collects solder on its tip as it penetrates the solder paste in the hole. So if the contact is too long, this solder would no longer be able to reflow back into the plated through hole by capillary action during the soldering process, therefore the quality of the soldered connection would suffer as a result.

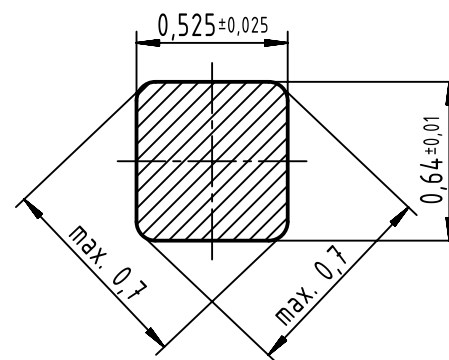
## Quantity of solder paste

Before the components are assembled, solder paste must be applied to all solder pads (for connecting surface-mount components) and the plated through holes. To ensure that the plated through holes are completely filled, significantly more solder paste must be applied than traditional solder pads on the PCB. The following rule of thumb has proved valuable in practice:

$V_{paste}=2(VH-VP)$   
in which:  
 $V_{Paste}$  = Required volume of solder paste  
 $VH$ = Volume of plated through hole  
 $VP$ = Volume of the connector termination in the hole

comment: the multiplier "2" compensates for solder paste shrinkage during soldering. For this purpose, it was assumed that 50% of the paste consists of the actual solder, the other 50% being soldering aids.

## Cross section of solder terminations



## Packaging material (only for plastic tray)

|                 |                                                         |  |  |
|-----------------|---------------------------------------------------------|--|--|
| Material        | Polystyrol                                              |  |  |
| Color           | Yellow                                                  |  |  |
| Standardization | acc. to DIN EN / IEC 61340-5-1 and ANSI / ESD S541-2003 |  |  |

- Safe protection for electronic components against electrostatic charges



All Dimensions in mm  
Original Size DIN A3

Scale  
1:1

Free size tol.

Ref.

Sub.



All rights reserved

Department EC PD - DE

Created by  
STORCK

Inspected by  
LEHNERT

Standardisation  
HOFFMANN

Date  
2018-02-13

State  
Final Release

Title  
SEK 19 male low profile connector solder angled

Doc-Key / ECM-Nr.  
100555122/UGD/001/F  
500000131326

HARTING Electronics GmbH

D-32339 Espelkamp

Type  
DS

Number  
09191230201

Rev.  
F

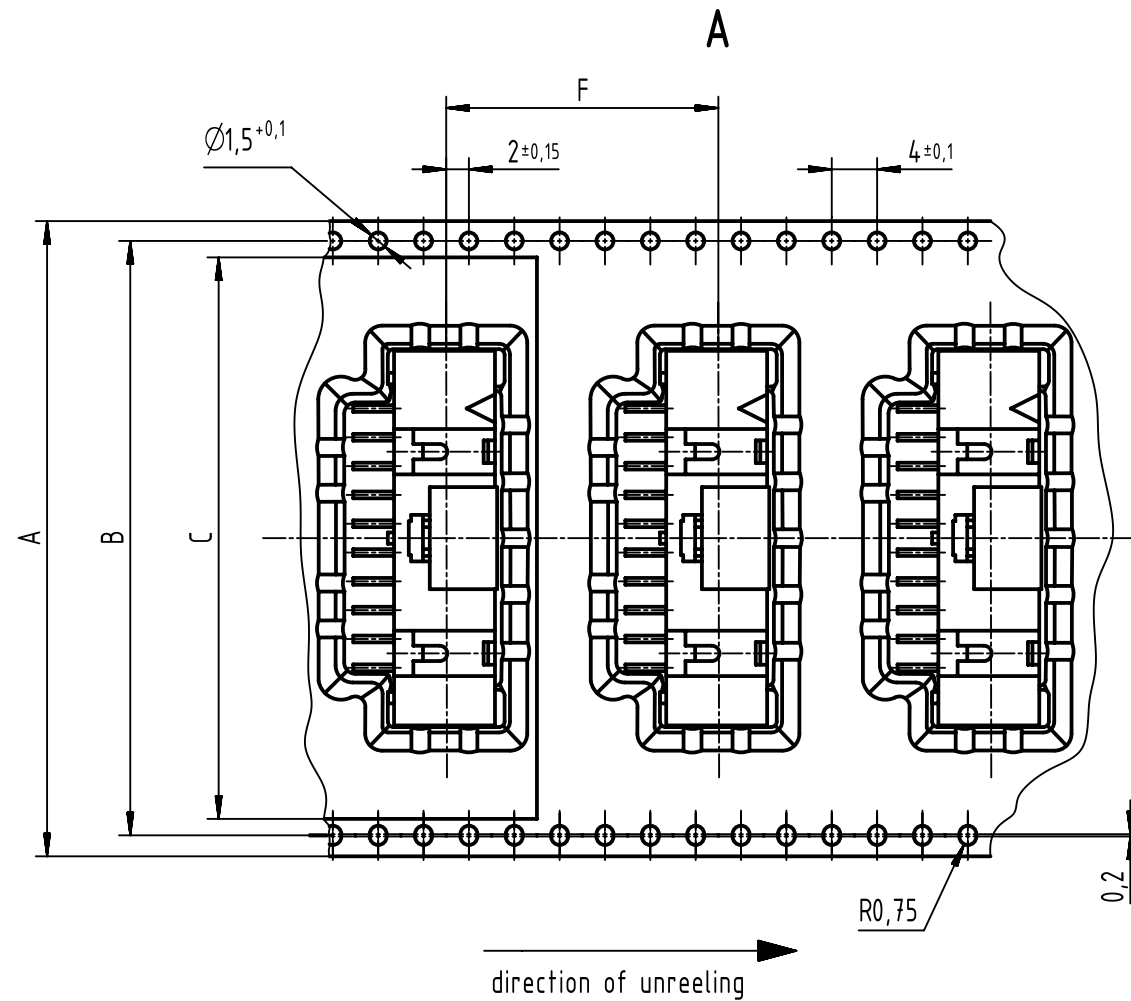
Page  
1/2



# SEK 19 male low profile connector solder angled



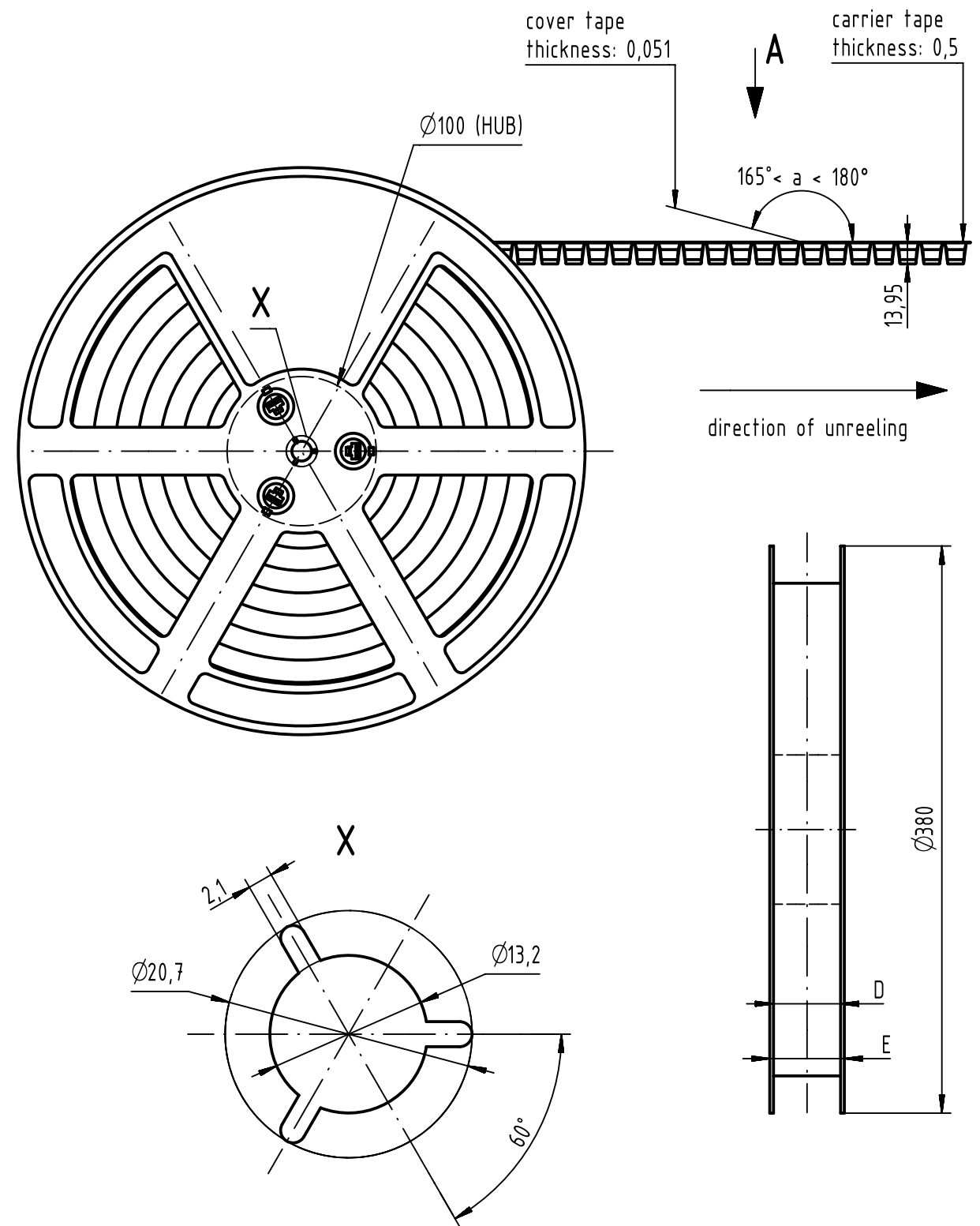
## Tape layout & packaging



| colour | Part number       |
|--------|-------------------|
| beige  | 0919 5xx x32x 740 |
| black  | 0919 5xx x32x 741 |

|          |    |      |      |    |    |    |                                          |                                    |                                         |
|----------|----|------|------|----|----|----|------------------------------------------|------------------------------------|-----------------------------------------|
| 40       | 72 | 68,4 | 65,5 | 73 | 78 | 24 | 14                                       | 280                                | 16                                      |
| 34       | 72 | 68,4 | 65,5 | 73 | 78 | 24 | 14                                       | 280                                | 16                                      |
| 30       | 56 | 52,4 | 49,5 | 57 | 62 | 24 | 14                                       | 280                                | 16                                      |
| 26       | 56 | 52,4 | 49,5 | 57 | 62 | 24 | 14                                       | 280                                | 16                                      |
| 20       | 56 | 52,4 | 49,5 | 57 | 62 | 24 | 14                                       | 280                                | 16                                      |
| 16       | 44 | 40,4 | 37,5 | 45 | 50 | 24 | 14                                       | 280                                | 16                                      |
| 14       | 44 | 40,4 | 37,5 | 45 | 50 | 24 | 14                                       | 280                                | 16                                      |
| 10       | 44 | 40,4 | 37,5 | 45 | 50 | 24 | 14                                       | 280                                | 16                                      |
| 6        | 32 | 28,4 | 25,5 | 33 | 38 | 24 | 14                                       | 280                                | 16                                      |
| contacts | A  | B    | C    | D  | E  | F  | -trailer-<br>number of empty<br>cavities | number of<br>connector<br>per reel | -leader-<br>number of empty<br>cavities |

## Reel dimension



All Dimensions in mm  
Original Size DIN A3

Scale  
1:1

Free size tol.

Ref.

Sub.



All rights reserved  
Department EC PD - DE

Created by  
STORCK

Inspected by  
LEHNERT

Standardisation  
HOFFMANN

Date  
2018-02-13

State  
Final Release

Title  
SEK 19 male low profile connector solder angled

Type  
DS

Number  
09191230201

Doc-Key / ECM-Nr.  
100555122/UGD/001/F  
500000131326

Rev.  
F

Page  
2/2

HARTING Electronics GmbH  
D-32339 Espelkamp

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## HARTING:

[09195067323](#) [09195205323](#) [09195207323](#) [09195267323](#) [09195407323](#) [09195507323](#) [09195607323](#)  
[09195646323](#) [09195105323](#) [09195347323](#) [09195066323](#) [09195106323](#) [09195346323](#) [09195107323](#) [09195147323](#)  
[09195166323](#) [09195167323](#) [09195266323](#) [09195146323](#) [09195506323](#) [09195206323](#)

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А