# SEK 18 male low profile solder and press-in

RoHS compliant

## 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 | |
| Working current acc. to IEC 60512-2 | See derating diagram | |
| Contact resistance | max. 20mOhm | |
| Insulation resistance | min. 10°Ohm | |
| Temperature range | -55°C ... +125°C (solder) | |
| | -55°C ... +105°C (press-in) | |
| Termination technology | solder, press-in | |
| 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-poles max. 68N for PL1-2 / 102N for PL3 |
| | 14-pole max. 28N for PL1-2 / 42 for PL3 | ; 40-poles max. 80N for PL1-2 / 120N for PL3 |
| | 16-pole max. 32N for PL1-2 / 48N for PL3 | ; 50-poles max. 100N for PL1-2 / 150N for PL3 |
| | 20-pole max. 40N for PL1-2 / 60N for PL3 | ; 60-poles max. 120N for PL1-2 / 180N for PL3 |
| | 26-pole max. 52N for PL1-2 / 78N for PL3 | ; 64-poles 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 | E 102079 | |
| RoHS - compliant | Yes | |
| Leadfree | Yes | |
| Hot plugging | No | |

## Insulator material

| | |
|---|---|
| Material | PBT (thermoplastics, glass fiber reinforcement 30%) |
| Color | black (RAL 7001) or grey (RAL 7032) for solder |
| | grey (RAL 7053) for press-in |
| UL classification | UL94-V0 |
| Material group acc. IEC 60664-1 | IIIa (175 < CTI < 400) |
| NF F 16-101 classification | I3,F3 |

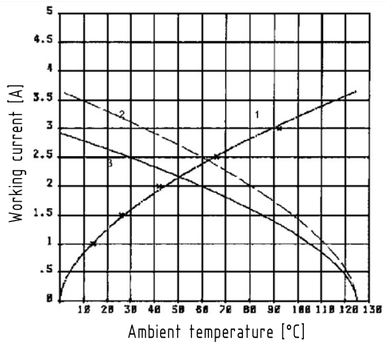
## Contact material

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

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

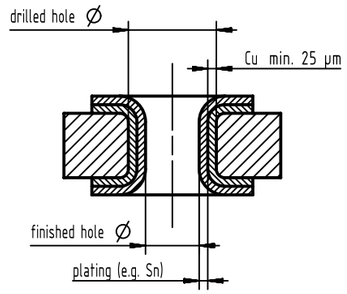
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals.
The current capacity-curve is valid for continuous, not interrupted current-loaded contacts of connectors when simultaneous power on all contacts is given without exceeding the maximum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




## Recommended configuration of plated through holes for press-in termination

In addition to the hot-air-level (HAL), other PCB surfaces are getting more important. Due to their different properties - such as mechanical strength and coefficient of friction - we recommend the following configuration of PCB through holes.




| | | |
|---|---|---|
| Tin plated PCB (HAL) acc. to EN 60352-5 | Drilled hole Ø | 1,15-0,03 mm |
| | Cu | min. 25 µm |
| | Sn | max. 15 µm |
| | plated hole Ø | 0,94 - 1,09 mm |
| Chemical tin plated PCB | Drilled hole Ø | 1,15-0,03 mm |
| | Cu | min. 25 µm |
| | Sn | min. 0,8µm |
| | plated hole Ø | 1,00 - 1,10 mm |
| Gold /Nickel plated PCB | Drilled hole Ø | 1,15-0,03 mm |
| | Cu | min. 25 µm |
| | Ni | 3 - 7 µm |
| | Au | 0,05 - 0,12 µm |
| | plated hole Ø | 1,00 - 1,10 mm |
| Silver plated PCB | Drilled hole Ø | 1,15-0,03 mm |
| | Cu | min. 25 µm |
| | Ag | 0,1 - 0,3 µm |
| | plated hole Ø | 1,00 - 1,10 mm |
| Copper plated PCB (OSP) | Drilled hole Ø | 1,15-0,03 mm |
| | Cu | min. 25 µm |
| | plated hole Ø | 1,00 - 1,10 mm |

## Assembly instructions

It is highly recommended to use HARTING press-in tools to ensure a reliable press-in process. Please refer to the catalogue for tools, machines and further information about the press-in process.

## Soldering instructions

The connectors should be protected when being soldered in a dip, flow or film soldering baths. Otherwise, they might become contaminated as a result of soldering operations or deformed as a result of overheating.

(1) For prototypes and short runs protect the connectors with an industrial adhesive tape, e.g. Tesaband 4331 (www.tesa.de).
Cover the underside of the connector moulding and the adjacent parts of the pcb as well as the open sides of the connector. This will prevent heat and gases of the soldering apparatus from damaging the connector. About 140 + 5 mm of the tape should suffice.

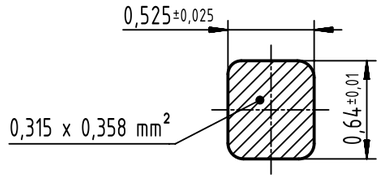
(2) For large series a jig is recommended. Its protective cover with a fast action mechanical locking device shields the connectors from gas and heat generated by the soldering apparatus. As an additional protection a foil can be used for covering the parts that should not be soldered.

## 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

## Cross section of solder terminations




All Dimensions in mm
Original Size DIN A3

| | | | | |
|---|---|---|---|---|
| Scale 1:1 | Free size tol. | | | Ref. Sub. DS 09181100001 / 500000101780 / 2016-07-25 |
| Created by STORCK | Inspected by LEHNERT | Standardisation HOFFMANN | Date 2016-09-05 | State Final Release |
| Title SEK 18 male low profile solder and press-in | | | | Doc-Key / ECM-Nr. 100554984/UGD/001/F 500000107692 |
| Type DS | Number 09181100001 | | Rev. F | Page 1/1 |

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A3

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**Телефон:** 8 (812) 309 58 32 (многоканальный)
**Факс:** 8 (812) 320-02-42
**Электронная почта:** org@eplast1.ru
**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.