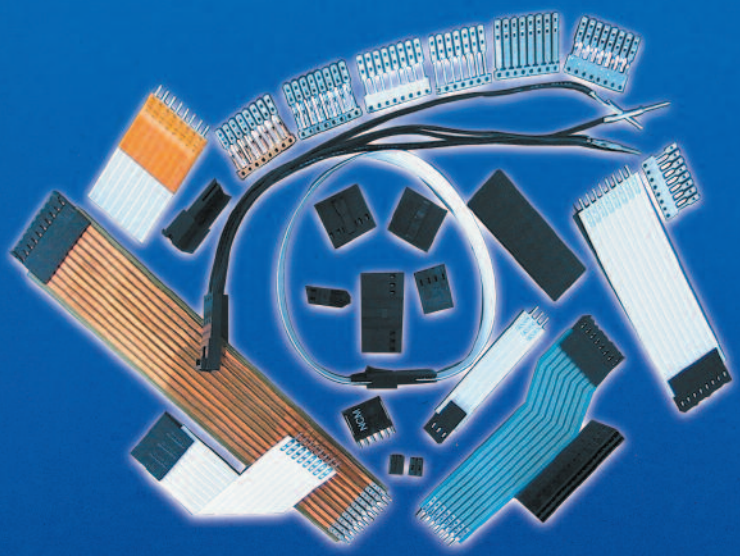
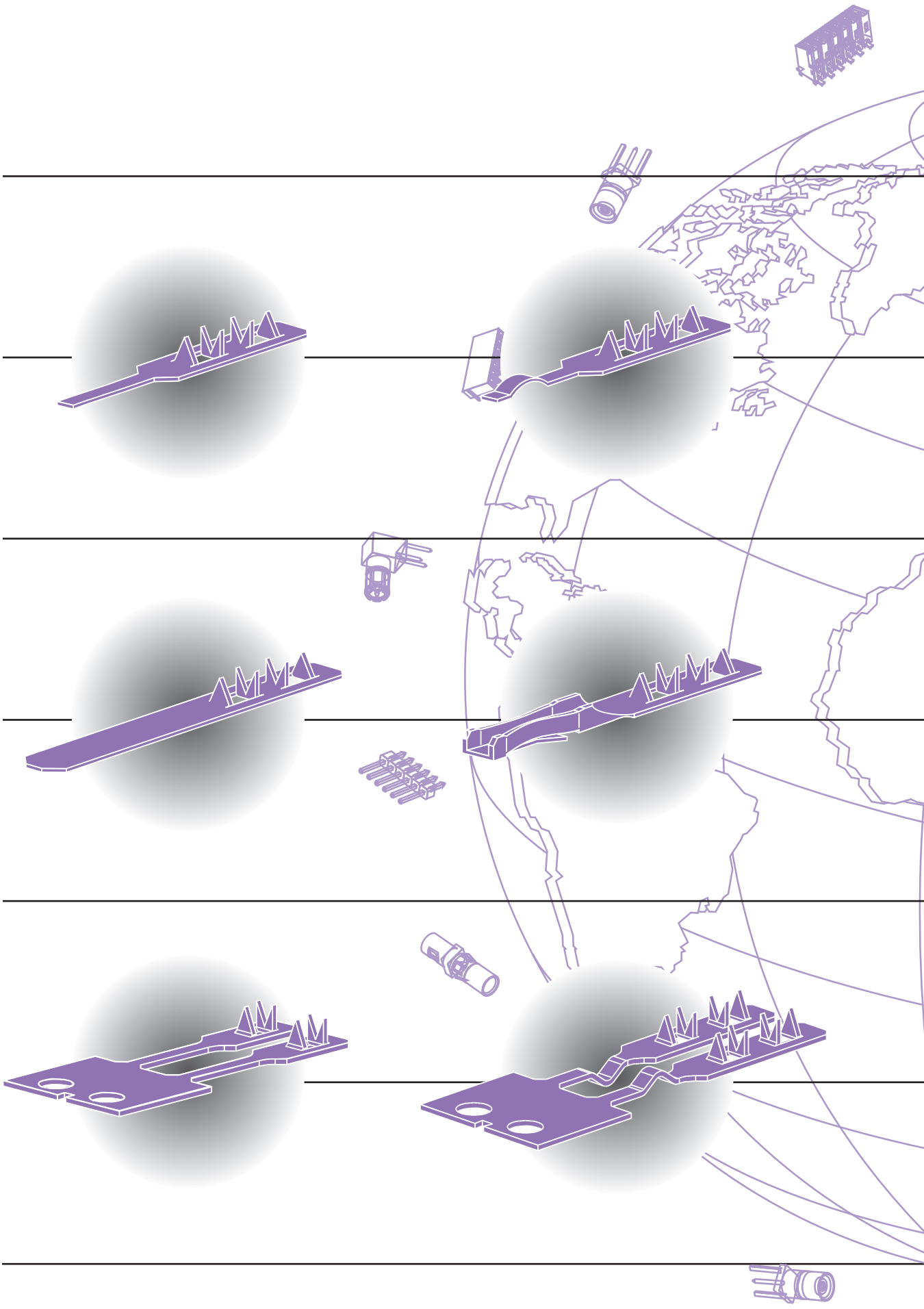
SELTRONICS® GMBH
ELEKTRONISCHE BAUTEILE & GERÄTE



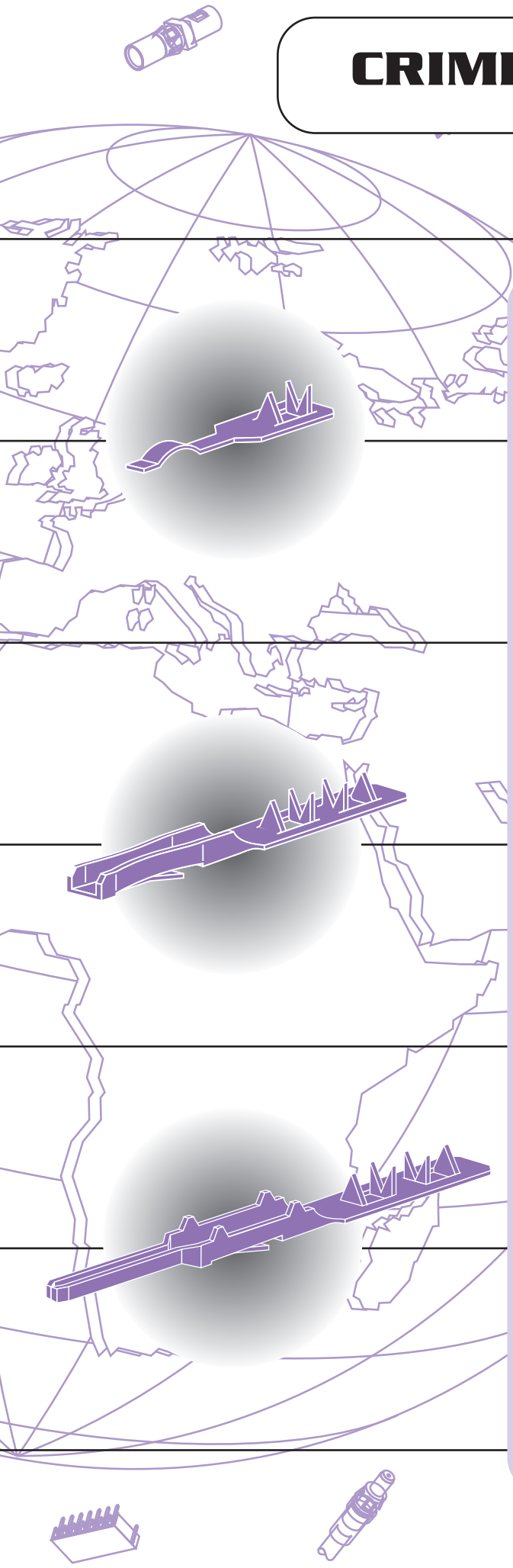
CRIMPFLEX® CONNECTORS

JULY 2007

CRIMPFLEX® connectors



CRIMPFLEX® connectors



TECHNICAL DATA

RoHS compliant

MATERIAL

- **Phosphor bronze**

MALE SOLDER TAB PLATING

- **The standard connector is tin plated**
  (thickness : Ni 2μ + Sn 5μ)

MALE PINS AND FEMALE CONTACTS PLATING

- **The standard connector is tin plated**
  (thickness : Ni 2μ + Sn 5μ)
- **Selective gold plating in mating area**
  (thickness : Ni 2μ + Au 0.15μ)
- **Other thickness plating available**

CERTIFICATIONS

- **UL : E 125469**
  (Component - Connectors For Use In Data, Signal, Control And Power Applications)

MECHANICAL SPECIFICATIONS

- **Crimp strength to laminated cable :**

➡ 15 N min. (3.3 lbs) perpendicular to the tracks
(breaking-up of the conductor)

➡ 50 N min. (11.2 lbs) parallel to the tracks
(breaking-up of the conductor)

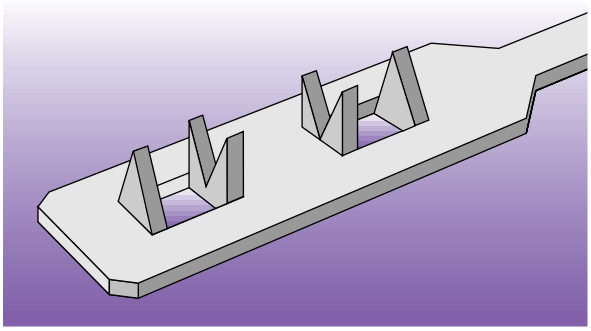
ELECTRICAL SPECIFICATIONS

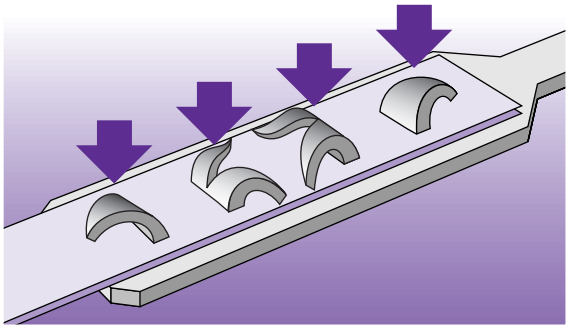
Contact resistance	5 m Ω max.
Contact resistance after environmental tests	6 m Ω max.
Insulation resistance	5.10^5 M Ω at 500 V
Withstanding voltage	1 100 V RMS
Capacitance between two contacts	4 pF max.
DC current rating per contact	3 A Continuous
AC current rating per contact	5 A Continuous

THERMAL SPECIFICATIONS

- **Connectors operating temperature**
  -55°C to +150°C

CRIMPFLEX® crimping





CRIMPFLEX® system patented

DESCRIPTION

Developed and patented by NICOMATIC, the CRIMPFLEX® connection system complies with the most rigorous electrical and mechanical requirements. The crimping of the contacts is obtained by piercing the conductor in 6 points. This ensures excellent mechanical retention by 2 points and electrical contact by 4 points with the lowest possible contact resistance.

CRIMPING ENVIRONMENT

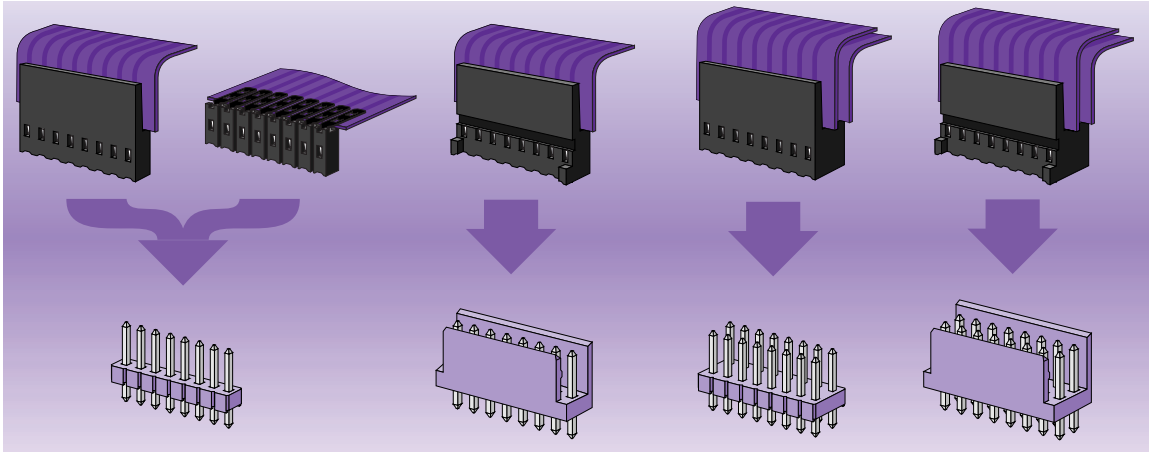
- Copper conductors, silver or carbon ink printed conductors, EL lamps.
- All types of flexible circuits whose thickness ranges from 75 μ to 350 μ (0.003 ” to 0.014”).
- Can pierce all kinds of supports : polyester, FR4, polyimide, PTFE, etc.

ADVANTAGES

- Use of contacts in reel at final pitch of 2.54 mm (0.100”).
- Mass termination of all contacts in one press stroke which saves time and allows more accuracy.
- Crimp is easily inspected.
- The housing is assembled after crimping.
- The width of the circuit is not limited by the width of the housing.
- The housing can be removed.
- The broadest range of connector solutions in the industry.

Female contacts

TYPICAL CONTACT APPLICATION



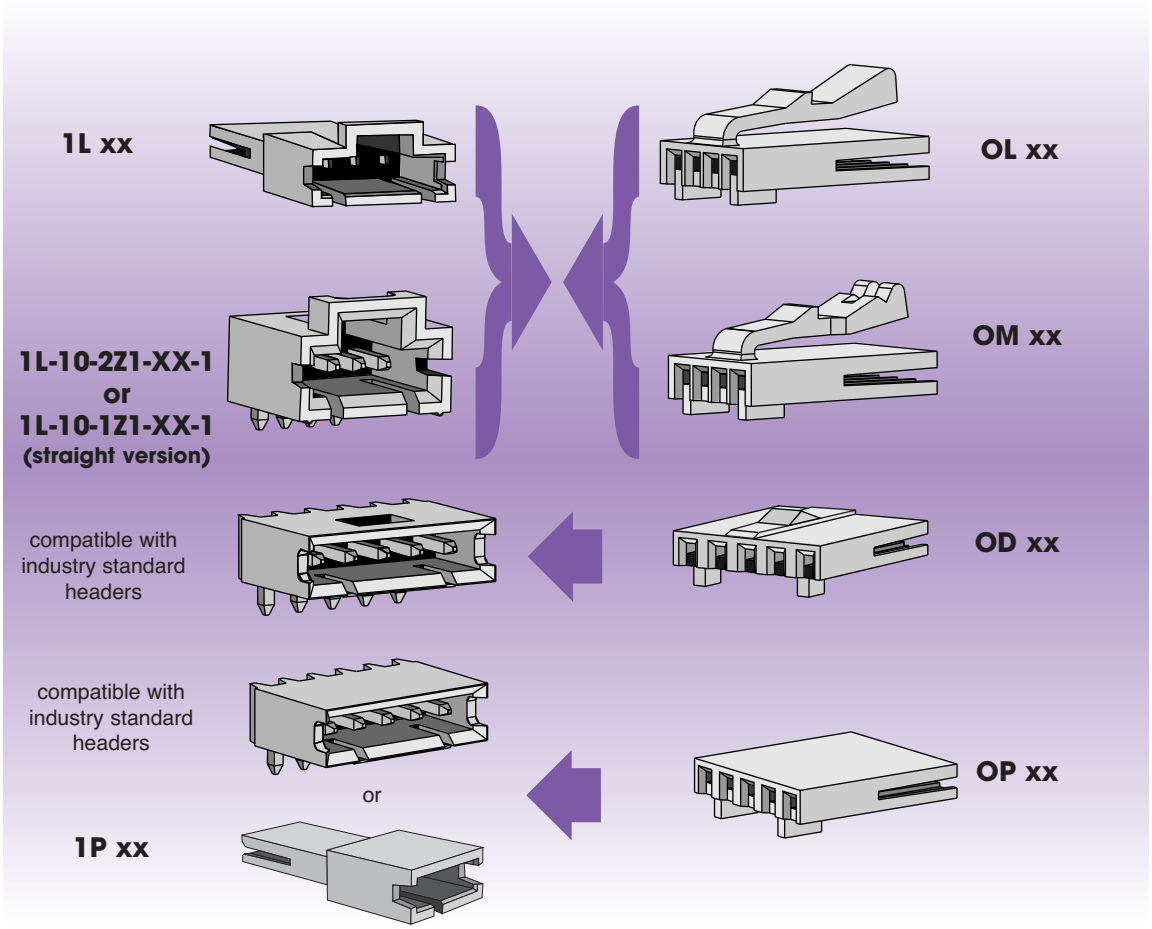
Straight single row standard header (refer to page 34)

Straight single row walled header (refer to page 35)

Straight double row standard header (refer to page 34)

Straight double row walled header (refer to page 35)

The length of the pin on mating side must range from 4.5 mm to 7 mm.

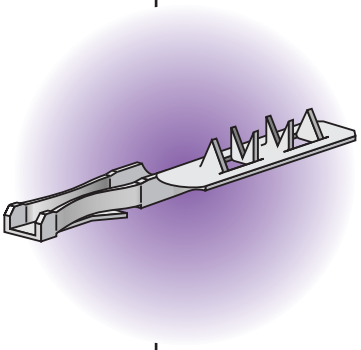


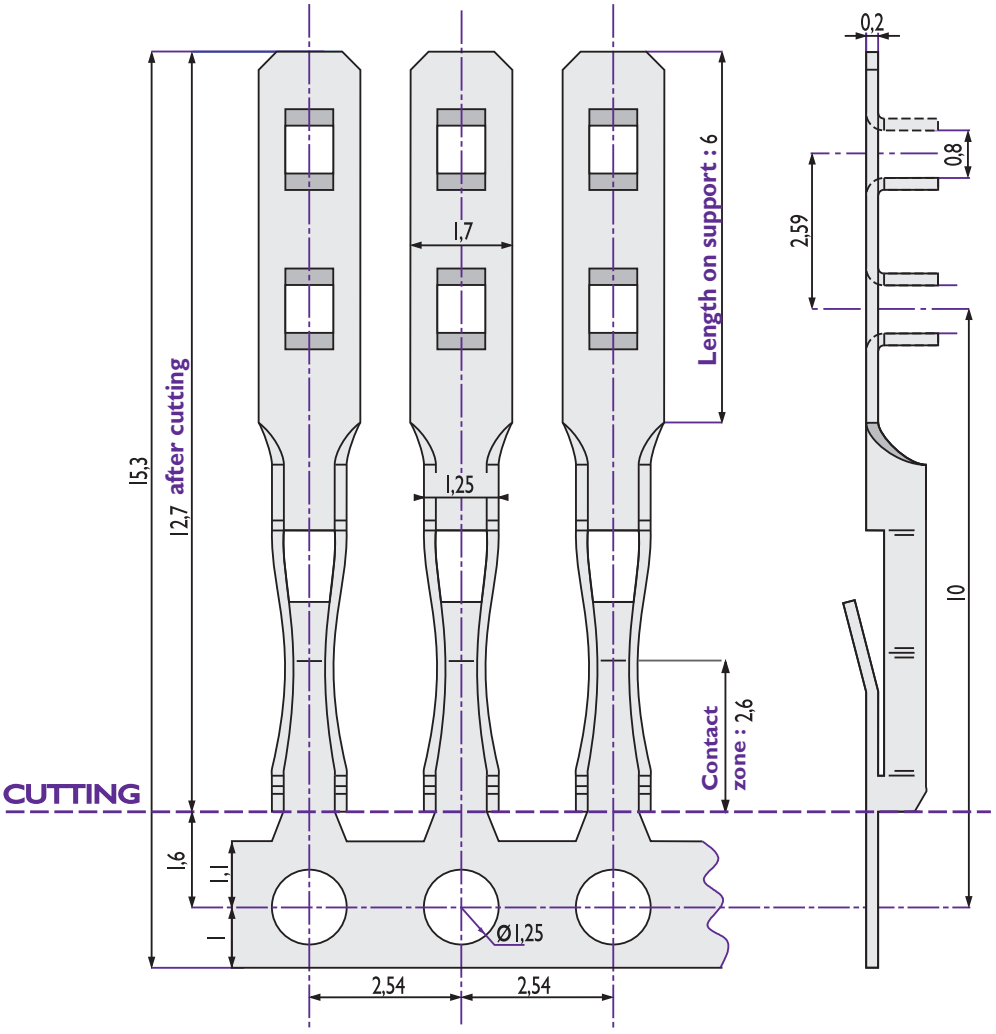
Female contacts

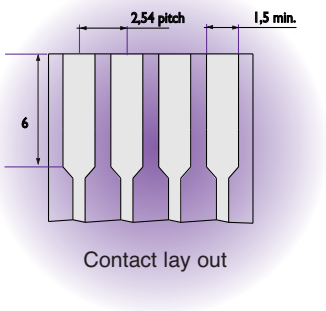
LOW INSERTION FORCE
REF. 11506

- Au = 1.5 N max (5.5 oz)
- Sn = 3 N max (11 oz)

Number of mating cycles = 500
Number of mating cycles = 50







Contact lay out

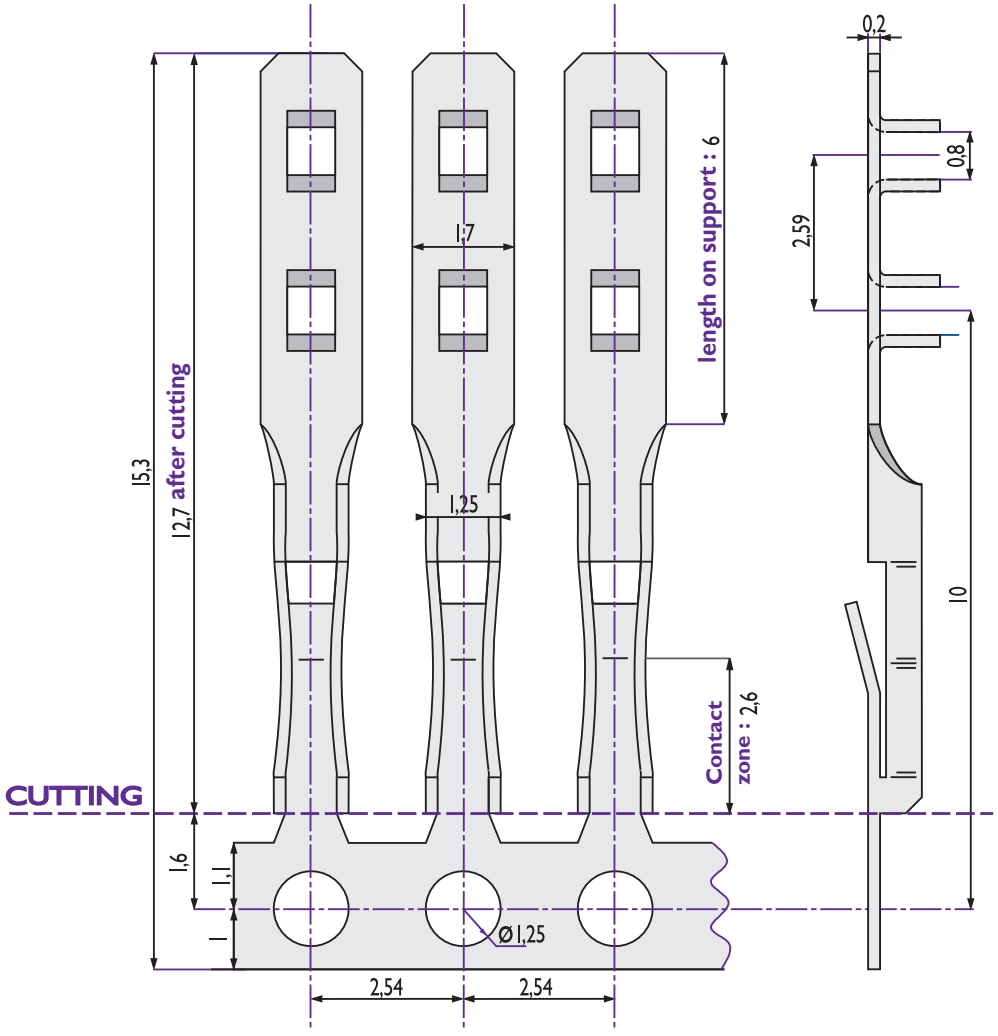
REF.	PLATING	REEL
11506-12	Tin plated	35 000 contacts
11506-32	Selective gold plated	35 000 contacts
OTHER PLATINGS ON REQUEST		

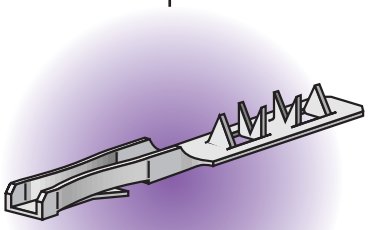
Dimensions in mm

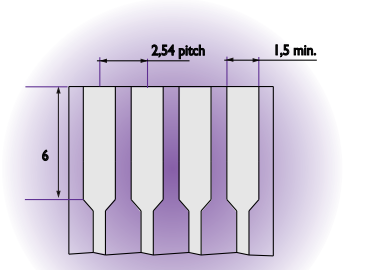
Female contacts

HIGH INSERTION FORCE
REF. 10025

- Increased retention for high vibration applications.
- Recommended for a small amount of contacts (2 to 10 contacts).







Contact lay out

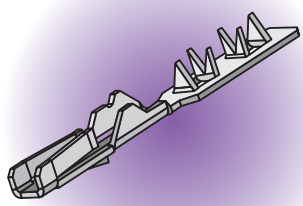
Dimensions in mm

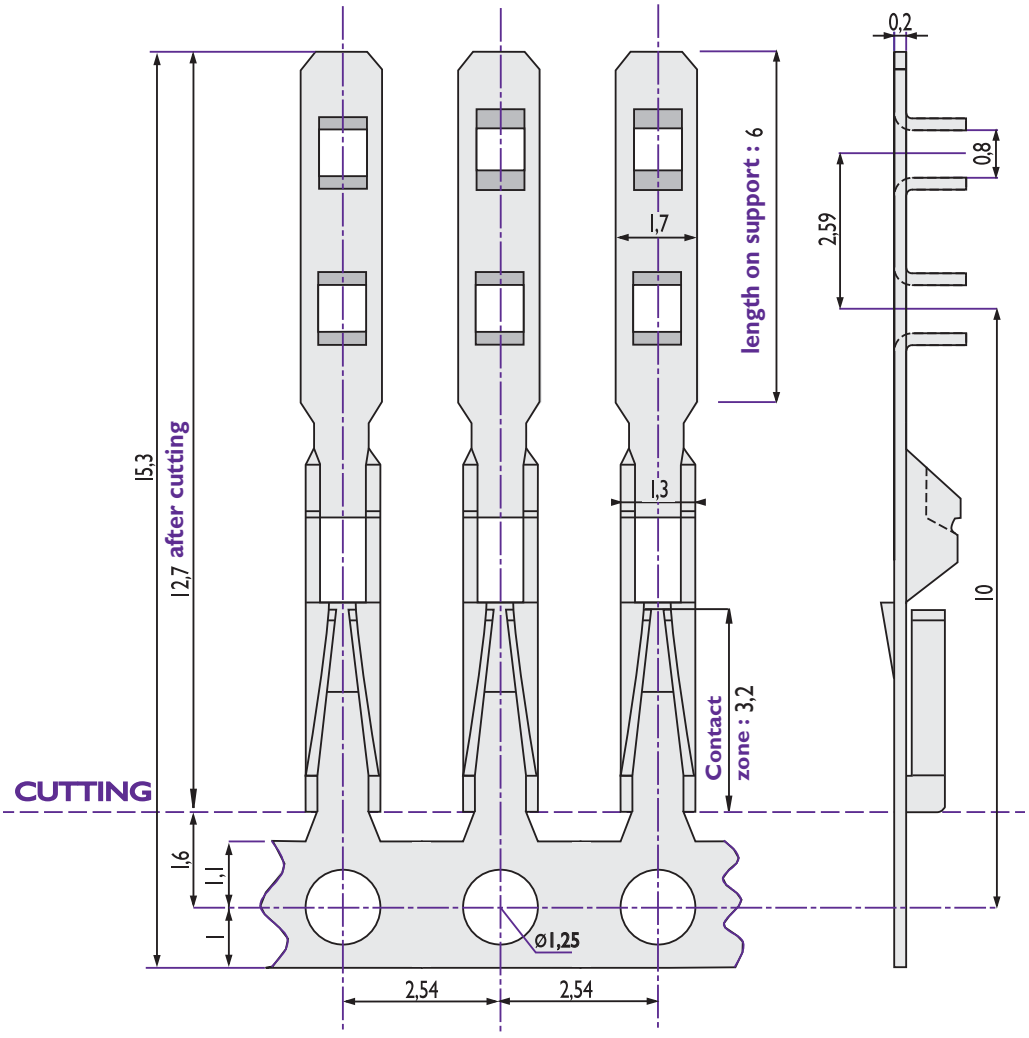
REF.	PLATING	REEL
10025-12	Tin plated	35 000 contacts
10025-32	Selective gold plated	35 000 contacts
OTHER PLATINGS ON REQUEST		

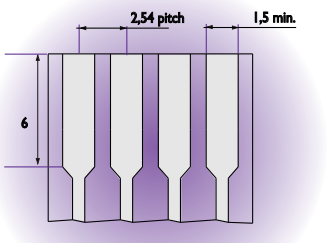
Female contacts

HI-FLEX REF. 14106

- The Hi-Flex female contact is designed to offer a stable insertion force and low contact resistance over a larger number of mating cycles.
- More resistant to damage by bent or angled pins, primarily on test devices.







Contact lay out

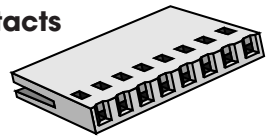
REF.	PLATING	REEL
14106-12	Tin plated	35 000 contacts
14106-32	Selective gold plated	35 000 contacts
OTHER PLATINGS ON REQUEST		

Dimensions in mm

Male pins

TYPICAL MALE PINS APPLICATION

OF xx + Female contacts



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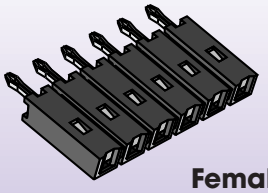
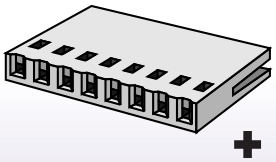


Female Header



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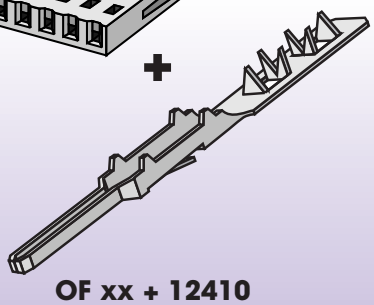
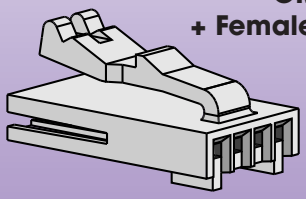
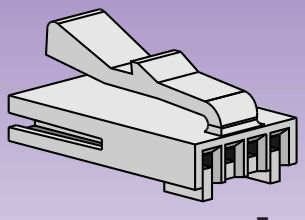


OF xx + 12410

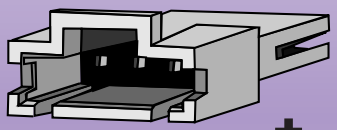
OM xx + Female contacts



OR



OL xx + Female contacts



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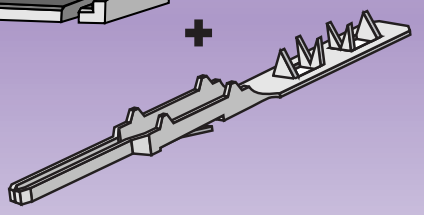
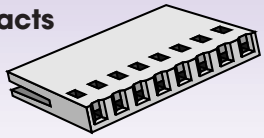


1L xx + 12410 or 13756

OF xx + Female contacts



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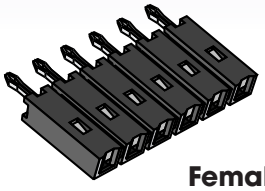
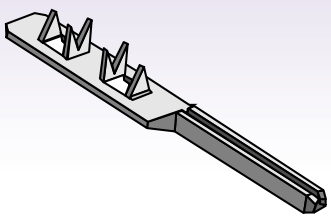


Female Header

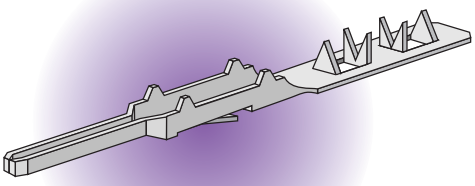


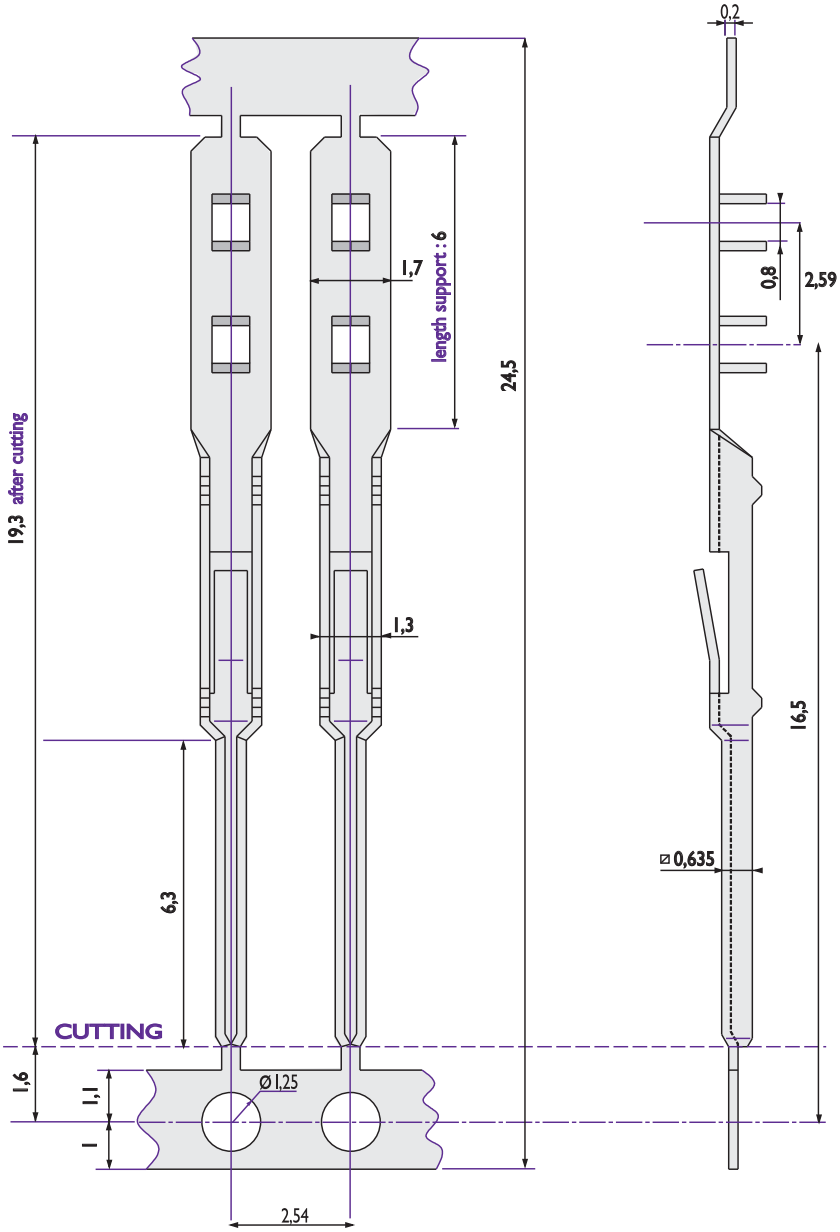
13595

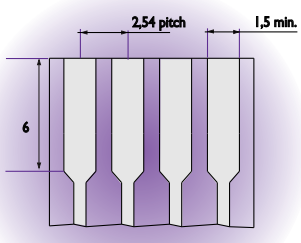
Male pins

0.635 MM (.025") SQUARE MALE REF. 12410

- The square male contact will mate with female connectors designed to accept a 0.635 mm (.025") pin header.







Contact lay out

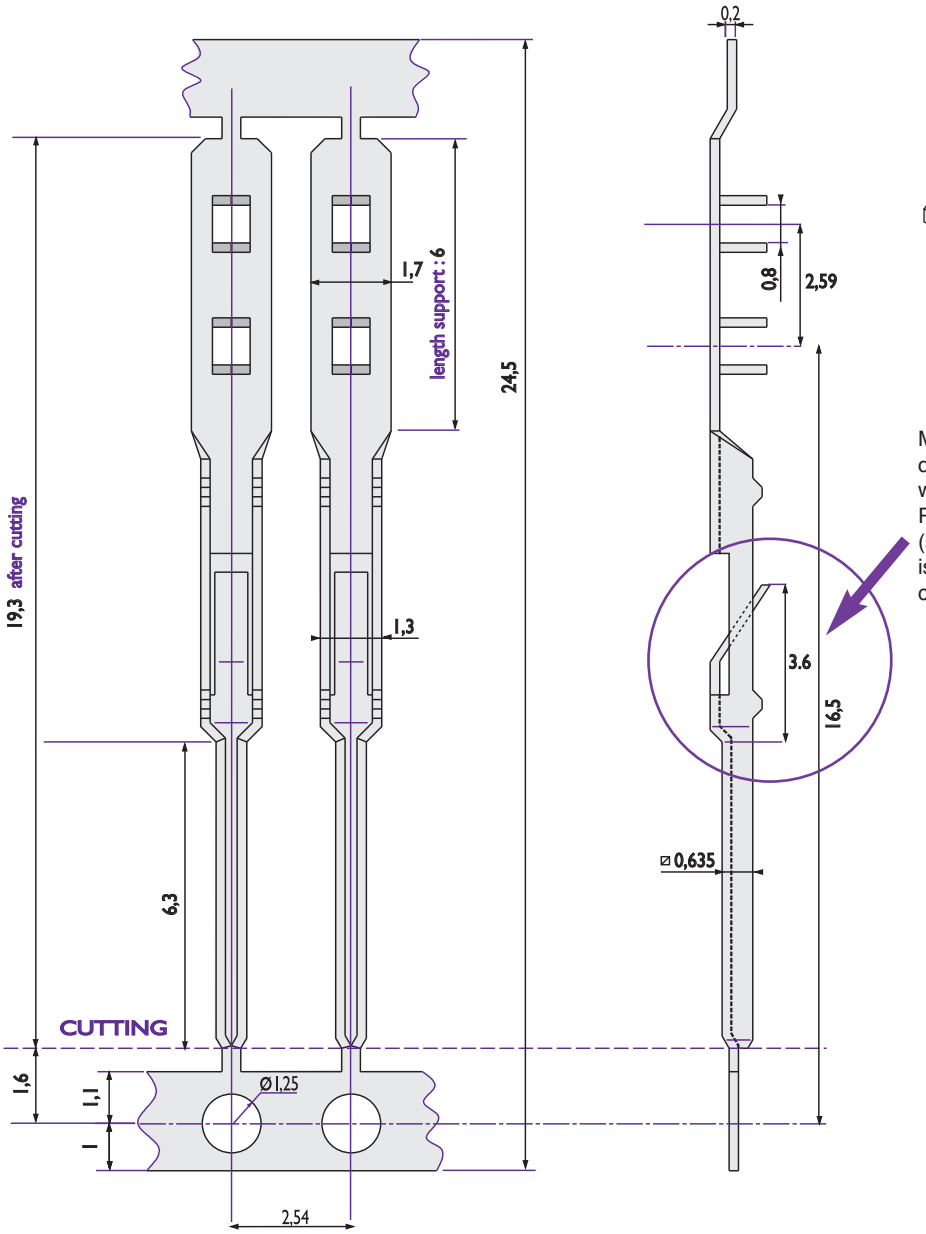
REF.	PLATING	REEL
12410-12	Tin plated	35 000 contacts
12410-32	Selective gold plated	35 000 contacts
OTHER PLATINGS ON REQUEST		

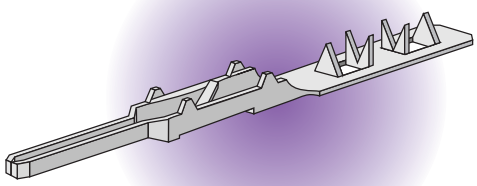
Dimensions in mm

Male pins

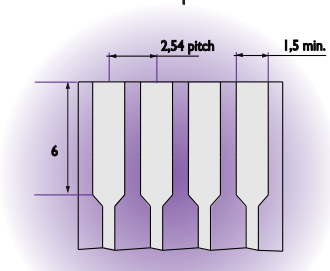
0.635 MM (.025") REVERSE SQUARE MALE REF. 13756

- The square male contact will mate with most female connectors designed to accept a 0.635 mm (.025") pin header.
- This contact is available by special order only.





Male pin difference with REF. 12410 (see page 13) is the reverse clip



Contact lay out

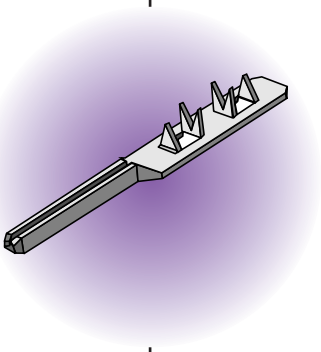
Dimensions in mm

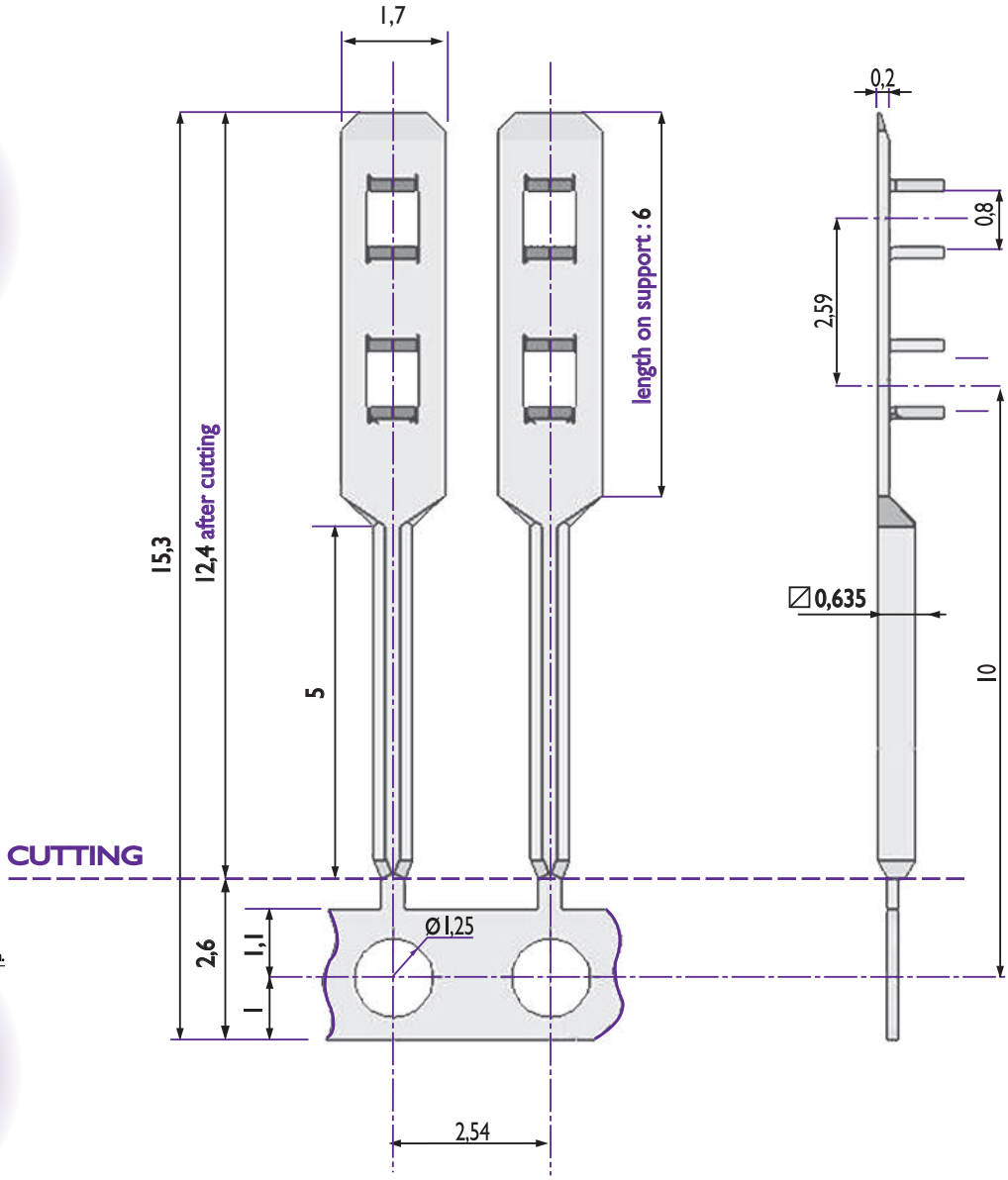
REF.	PLATING	REEL
13756-12	Tin plated	35 000 contacts
13756-32	Selective gold plated	35 000 contacts
OTHER PLATINGS ON REQUEST		

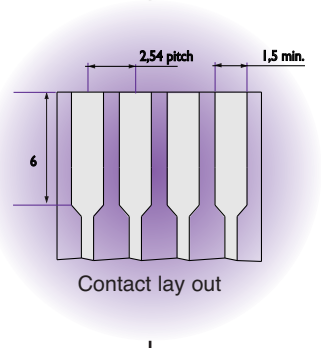
Male pins

SHORT SQUARE MALE PIN REF. 13595

- This square male pin allows for the cost effective mating to a female connector or header for use with 0.025" square pins without the use of a housing.







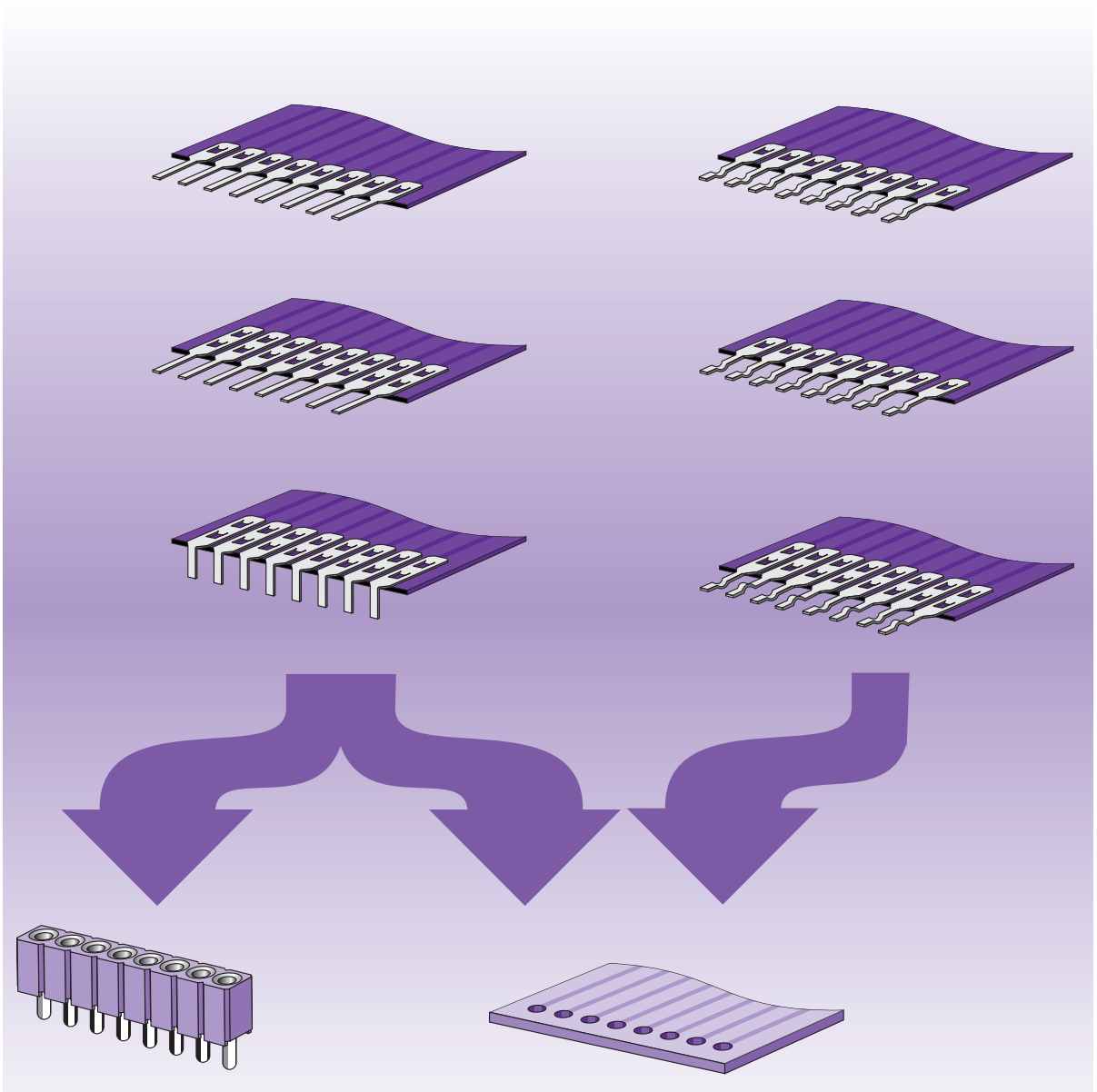
Contact lay out

REF.	PLATING	REEL
13595-12	Tin plated	35 000 contacts
OTHER PLATINGS ON REQUEST		

Dimensions in mm

Male solder tabs

SOLDER TABS ENVIRONMENT



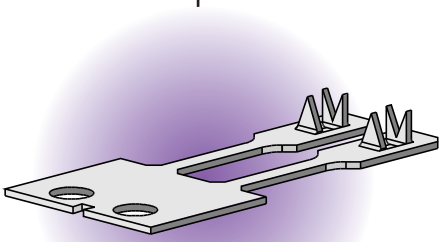
I.C. socket, wipe contacts with single or double point

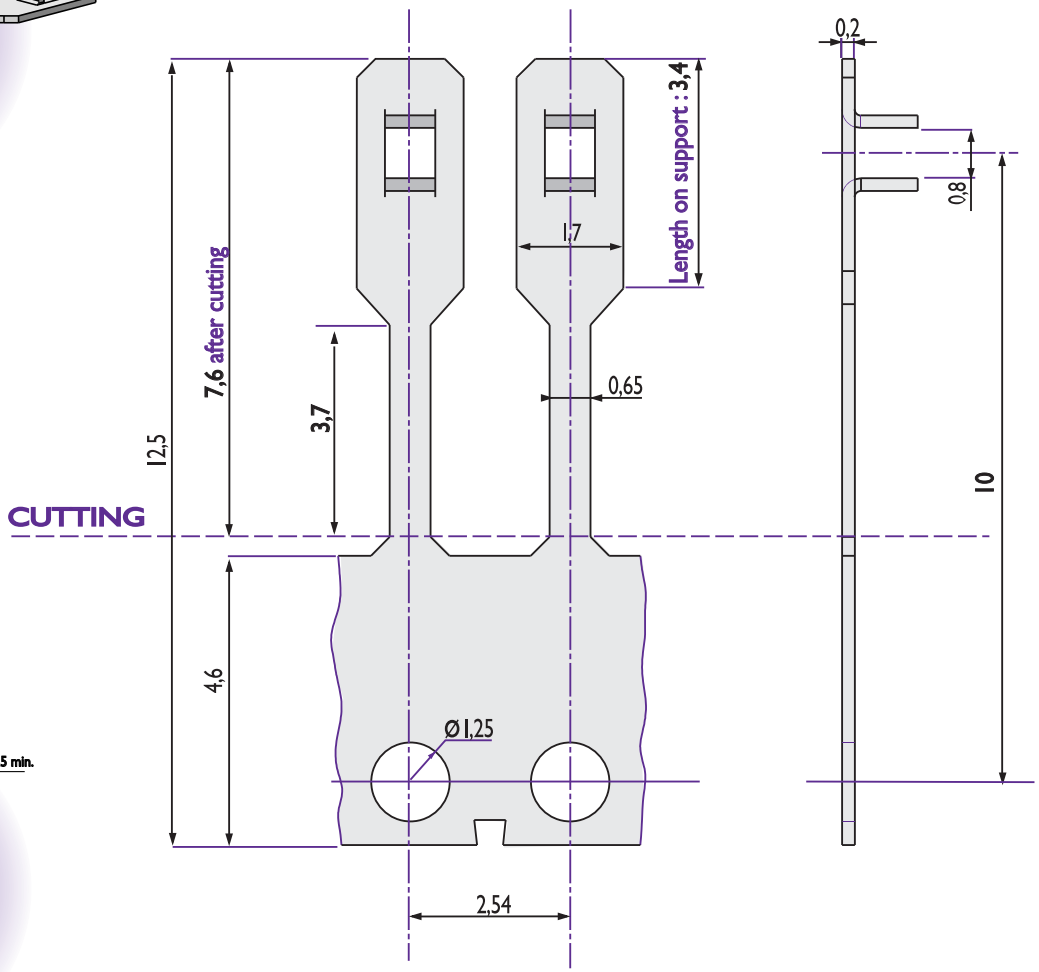
Directly soldered onto printed circuit, hole dia. 0.8mm

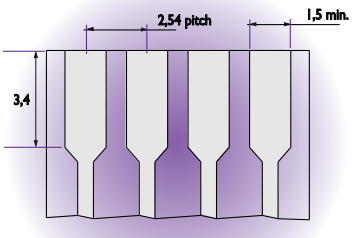
Male solder tabs

STANDARD SHORT MALE SOLDER TAB REF. 10141

- Widely used in applications with restricted crimped areas requiring male solder tabs.
- To solder or to fit into I.C. sockets or wipe contacts.







Contact lay out

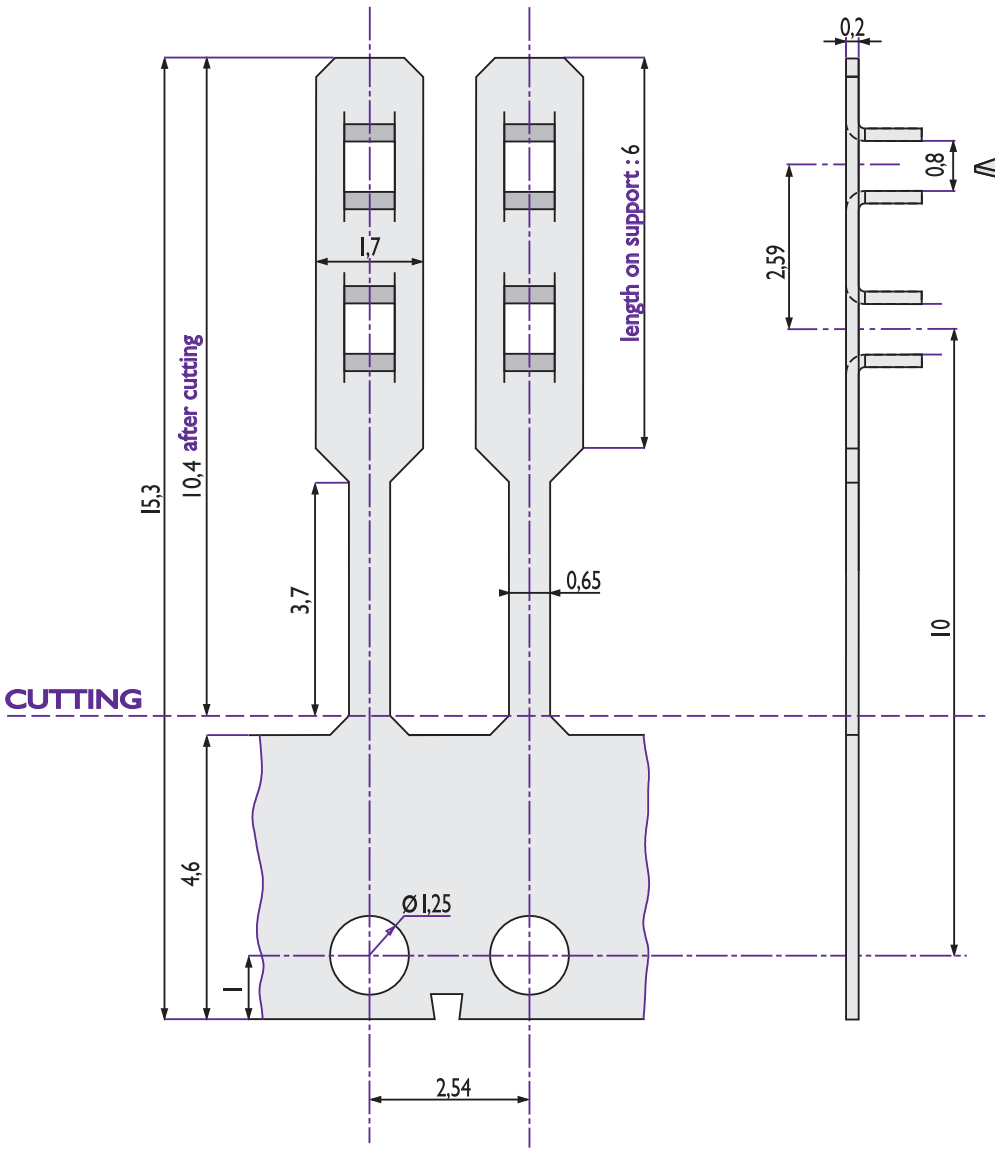
REF.	PLATING	REEL
10141-12	Tin plated	35 000 contacts
OTHER PLATINGS ON REQUEST		

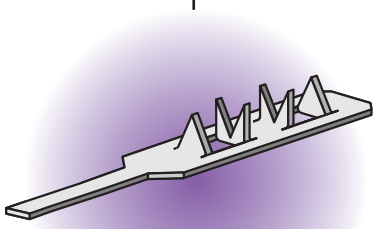
Dimensions in mm

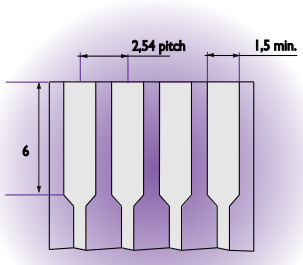
Male solder tabs

STANDARD MALE SOLDER TAB
REF. 10241

- Widely used in most applications on flexible supports requiring male solder tabs.
  To solder or to fit into I.C. sockets or wipe contacts.







Contact lay out

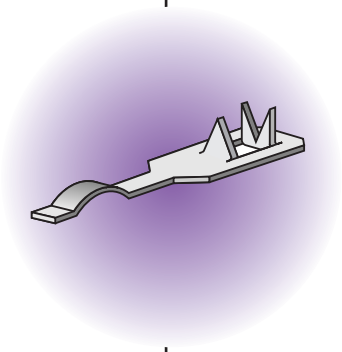
Dimensions in mm

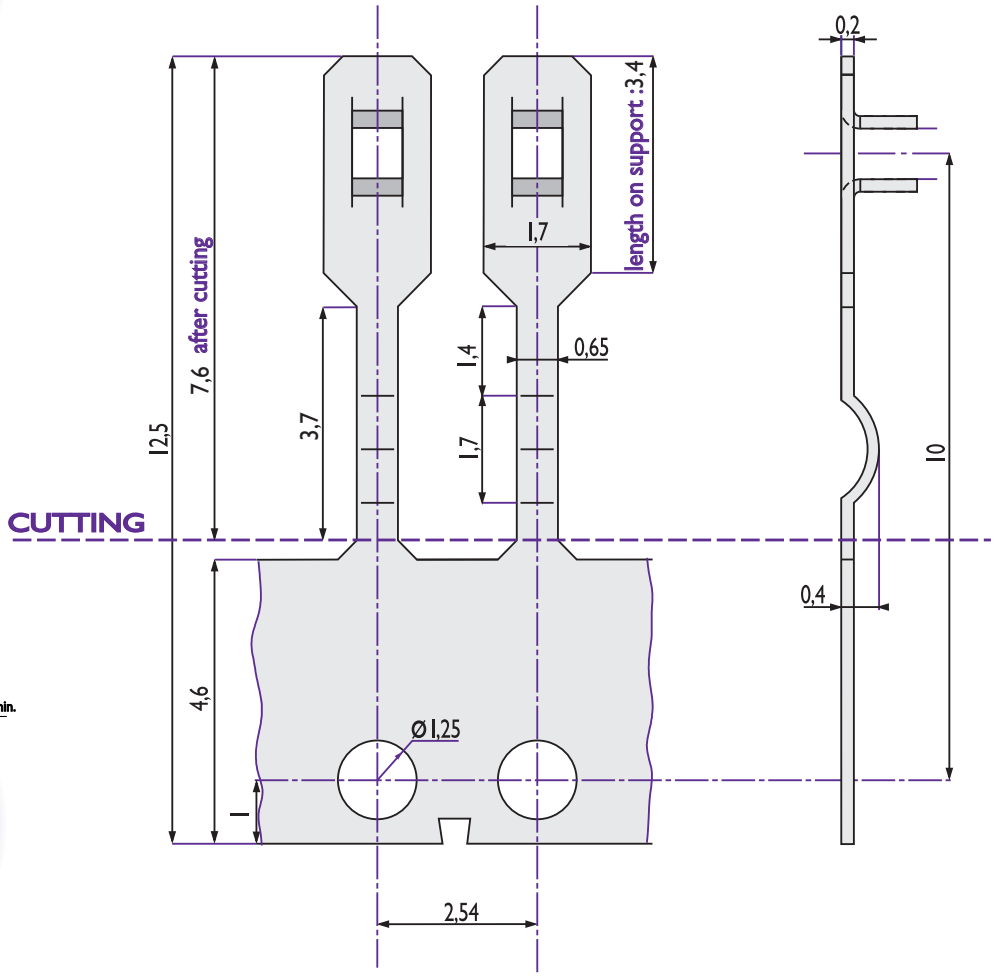
REF.	PLATING	REEL
10241-12	Tin plated	35 000 contacts
OTHER PLATINGS ON REQUEST		

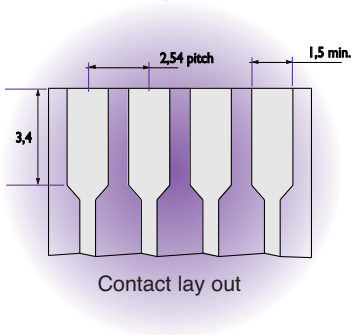
Male solder tabs

RETENTION SHORT MALE SOLDER TAB REF. 10067

- The crimped section is shorter to comply with high density packaging requirements.
- For use in tight fitting applications.







Contact lay out

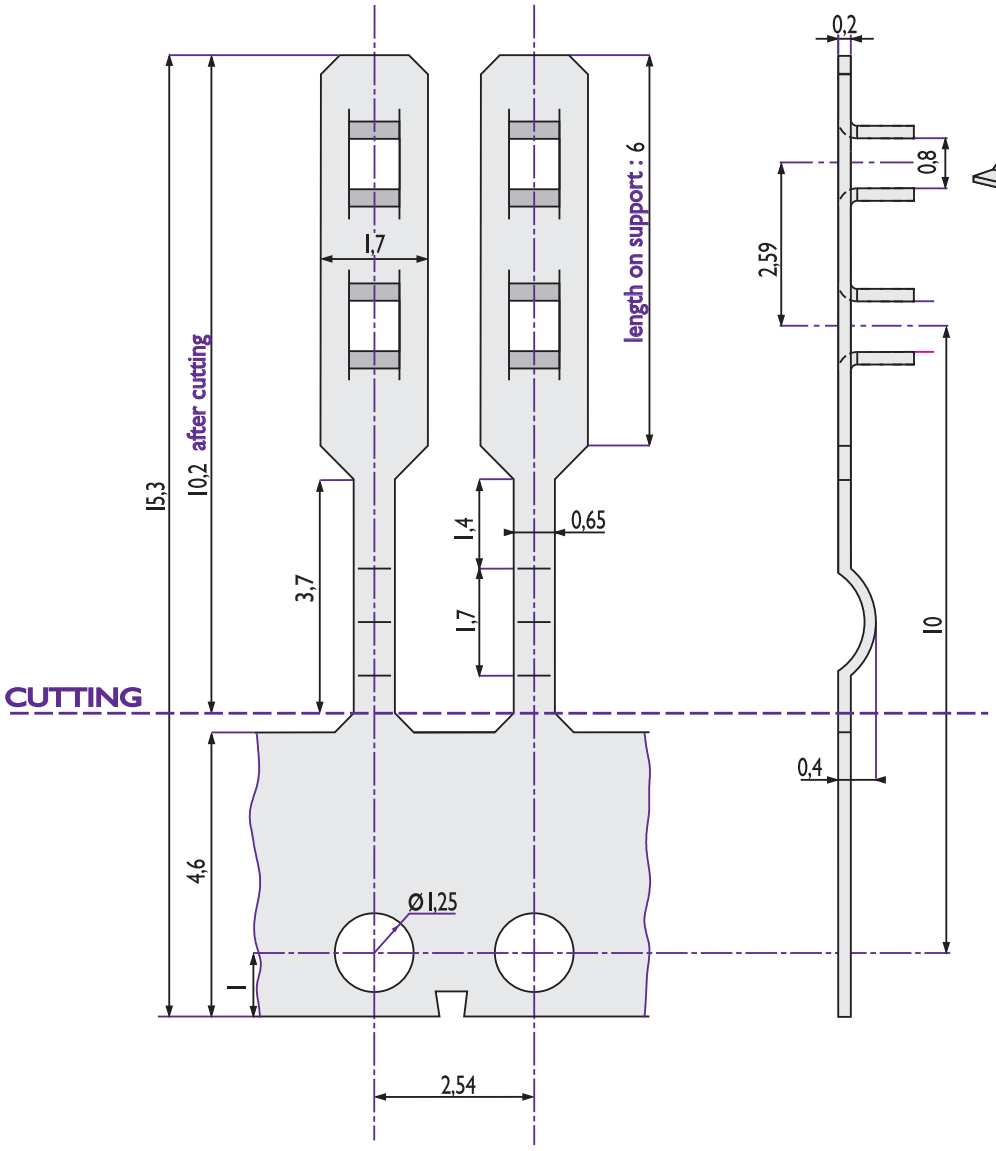
REF.	PLATING	REEL
10067-12	Tin plated	35 000 contacts
OTHER PLATINGS ON REQUEST		

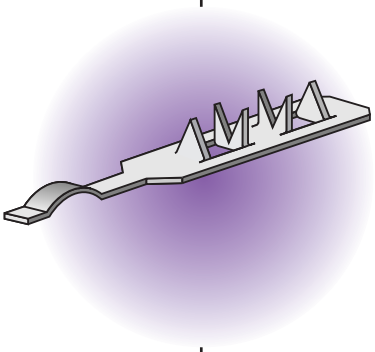
Dimensions in mm

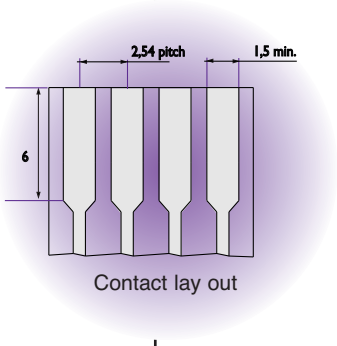
Male solder tabs

RETENTION MALE SOLDER TAB
REF. 10167

- The curved shape ensures firm holding of the contacts in the printed circuit and provides retention during wave-soldering.







Contact lay out

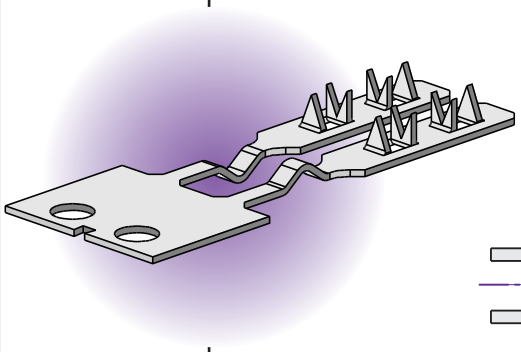
Dimensions in mm

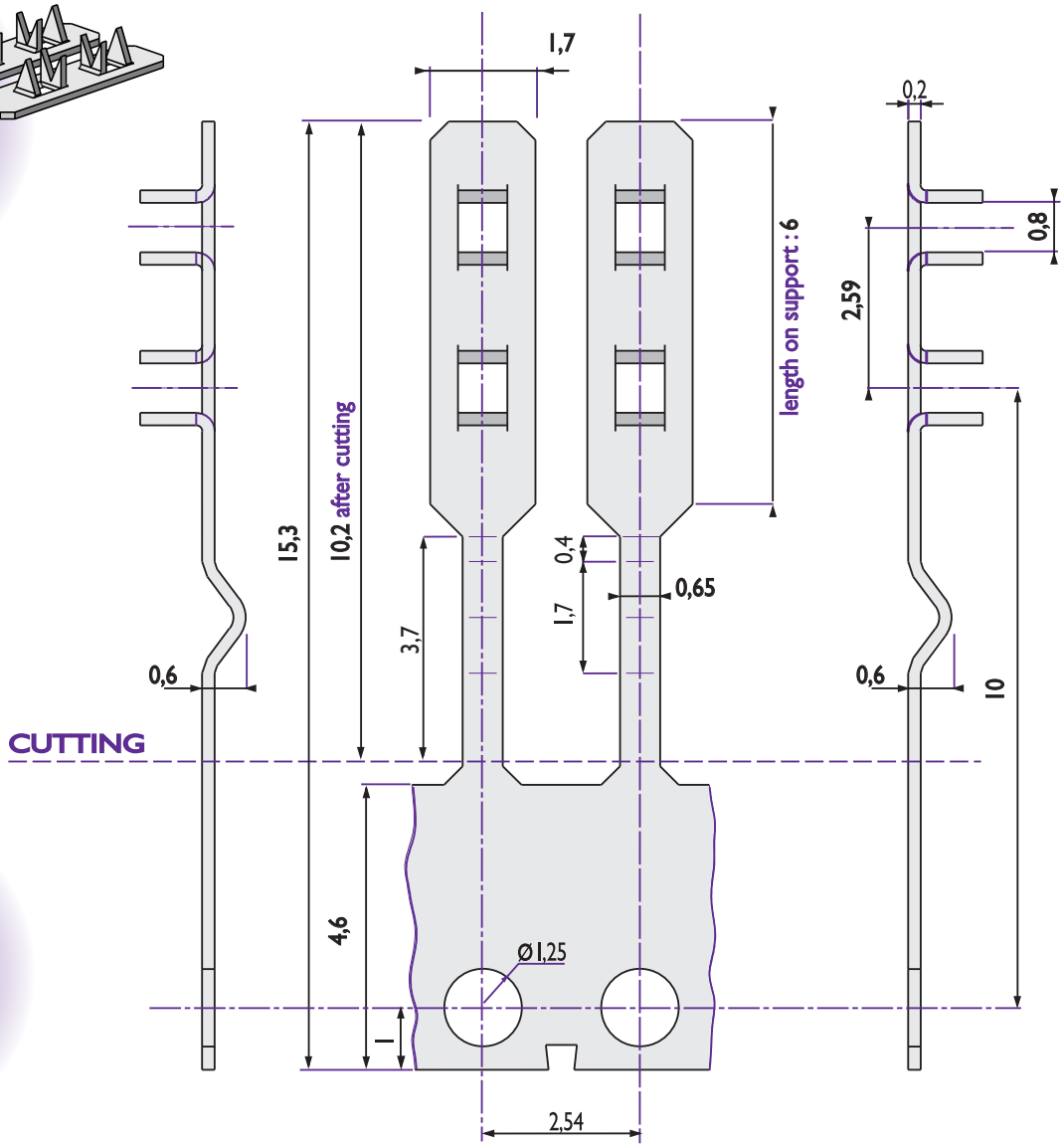
REF.	PLATING	REEL
10167-12	Tin plated	35 000 contacts
OTHER PLATINGS ON REQUEST		

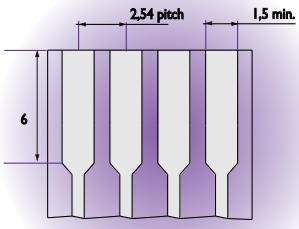
Male solder tabs

DOUBLE RETENTION MALE SOLDER TAB REF. 12887

- Each pin is formed in an opposite direction to give excellent retention during soldering.







Contact lay out

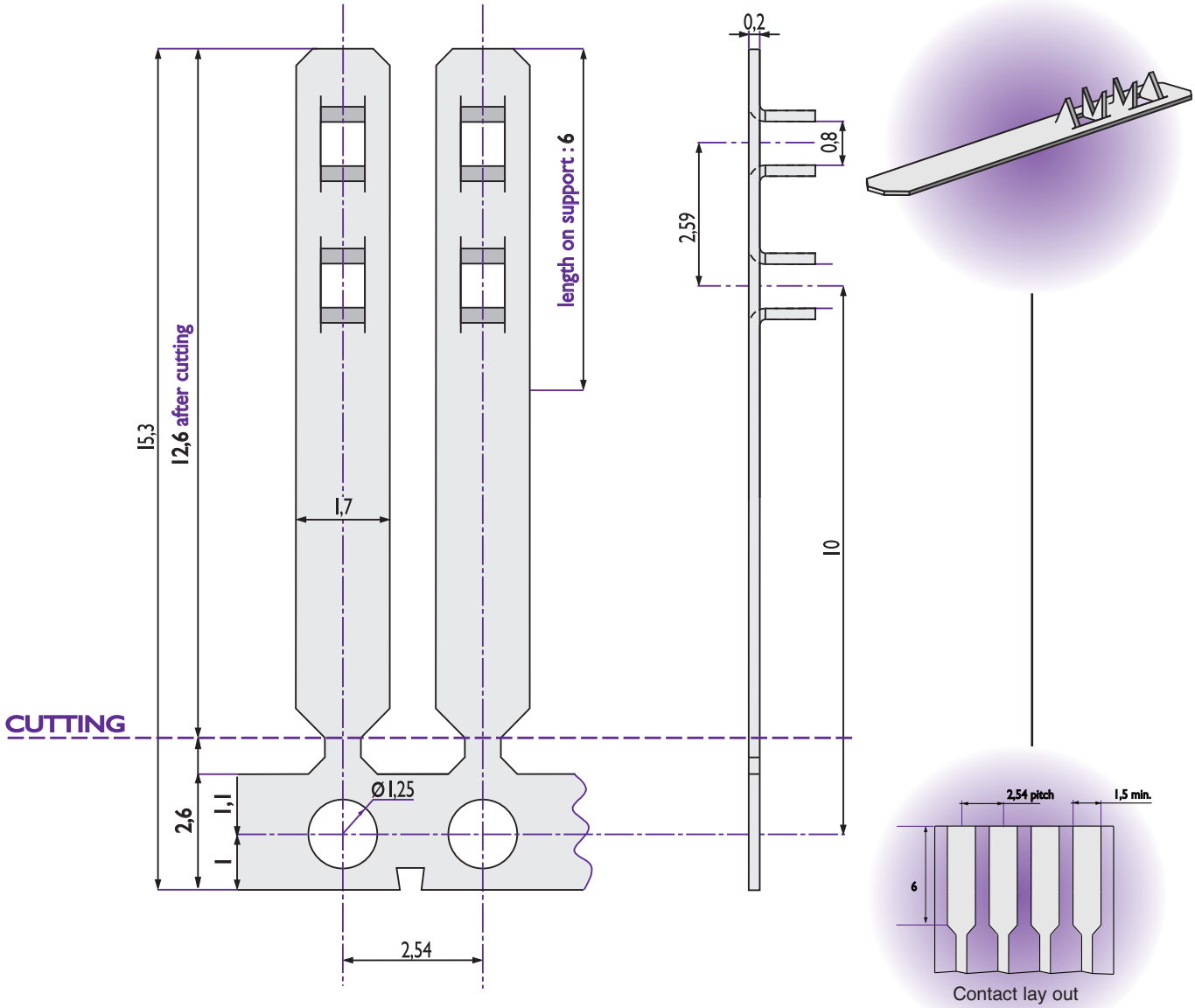
REF.	PLATING	REEL
12887-12	Tin plated	35 000 contacts
OTHER PLATINGS ON REQUEST		

Dimensions in mm

Male solder tabs

LONG MALE SOLDER TAB
REF. 11612

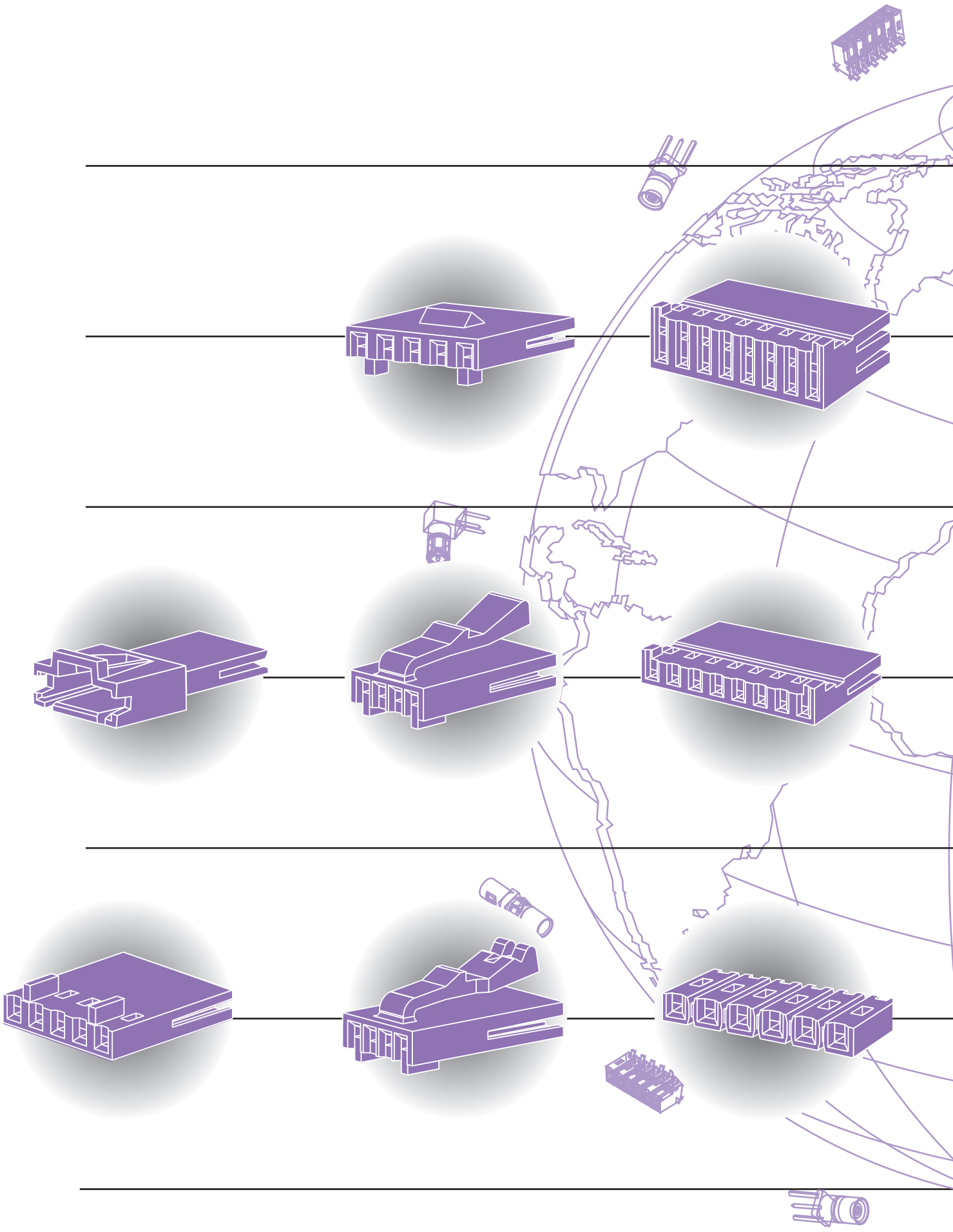
- The long solder tab allows connection in screw terminal blocks.
- Used for connections to EL lamps.



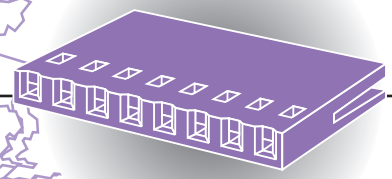
Contact lay out

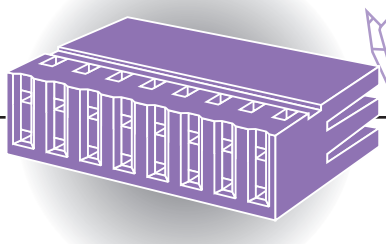
Dimensions in mm

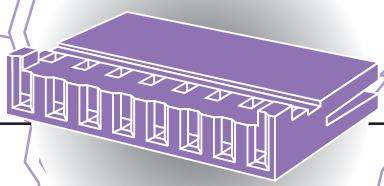
REF.	PLATING	REEL
11612-12	Tin plated	35 000 contacts
OTHER PLATINGS ON REQUEST		



CRIMPFLEX® housings







TECHNICAL DATA

MATERIAL

- Thermoplastic w/glass fiber
- Classified UL 94V-0

RoHS compliant

CERTIFICATIONS

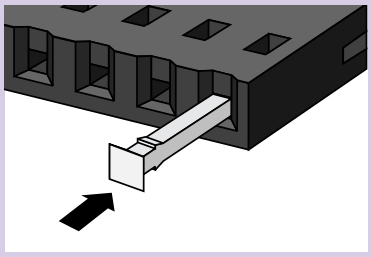
- **UL : E 125469**
  (Component - Connectors For Use In Data, Signal, Control And Power Applications)

THERMAL SPECIFICATIONS

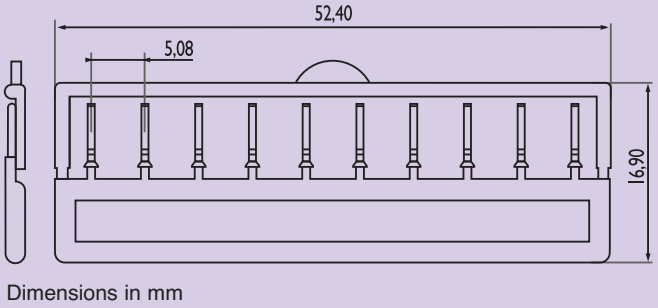
- **Operating temperature**
  - 55° C to + 150° C

ACCESSORIES

POLARIZATION KEYS
REF. PHK-10 (BLACK) OR PHK-101 (WHITE)



- Keys to plug into the housings to ensure polarization.
- Can be used with the NICOMATIC PCB Connector female range. (refer to page 34)
- Available in black or in white colour



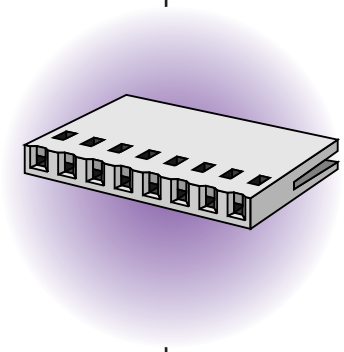
Dimensions in mm

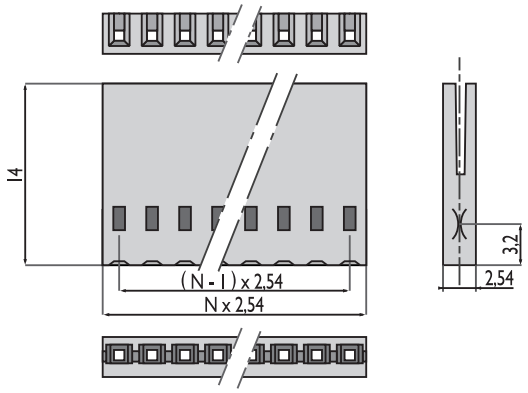
Information : All female housings are end to end stackable. OF xx and 7F10 xx housings are side to side and end to end stackable.

CRIMPFLEX® housings

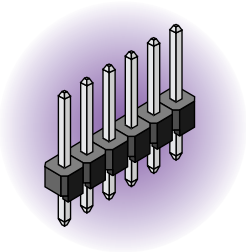
HOUSING SERIES OF xx

- Removable connection with all types of 0.635 mm (.025") square or round pin headers.
- Housings are side to side and end to end stackable.
- Standard single housing for use with all female contacts or long male pins.





→ Mates with headers (tin or gold plated)
ref. 12-17-111-xx-1
ref. 12-17-141-xx-1
(refer to page 34)

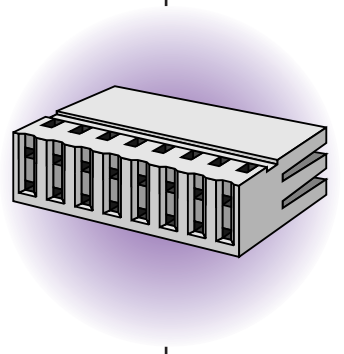


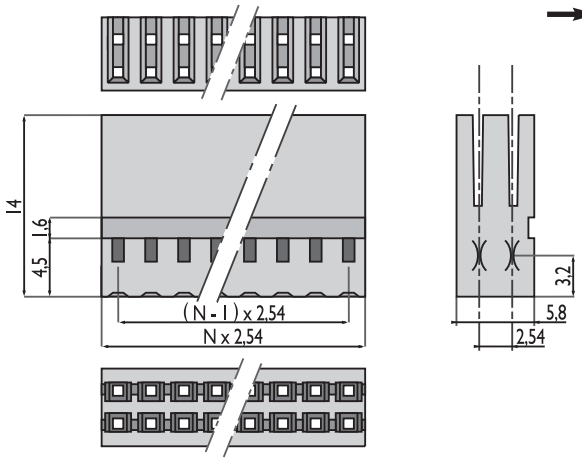
POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
NO	NO	1	02 → 25 (on request : 26 → 51)

Dimensions in mm

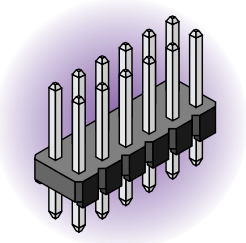
HOUSING SERIES 4F xx

- This housing allows connection of a double row flexcable jumper onto a 2 rows, 0.635 mm (.025") square or round pin header.
- Housings are end to end stackable.





→ Mates with headers (tin or gold plated)
ref. 16-17-111-xx-1
ref. 16-17-141-xx-1
(refer to page 34)



POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
NO	NO	2	04 → 50

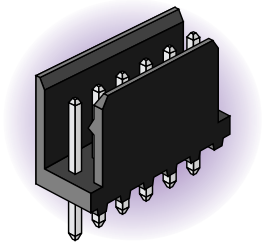
Dimensions in mm

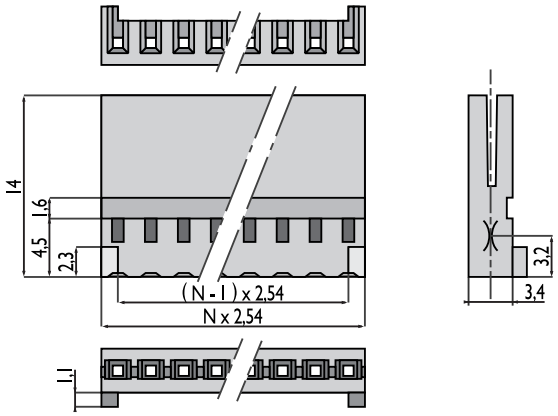
CRIMPFLEX® housings

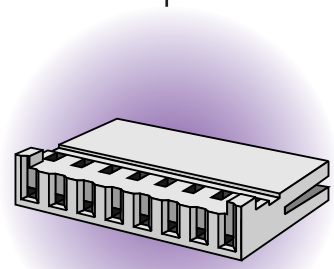
HOUSING SERIES 2E xx

- This housing is used with walled pin headers 1Y (refer to page 35).
- It allows polarization and locking.

→ Mates with walled headers
ref. 1Y-10-111-xx-1
ref. 1Y-10-141-xx-1
(refer to page 35)







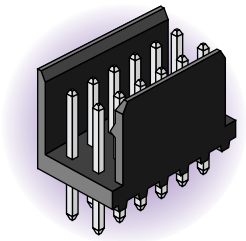
Dimensions in mm

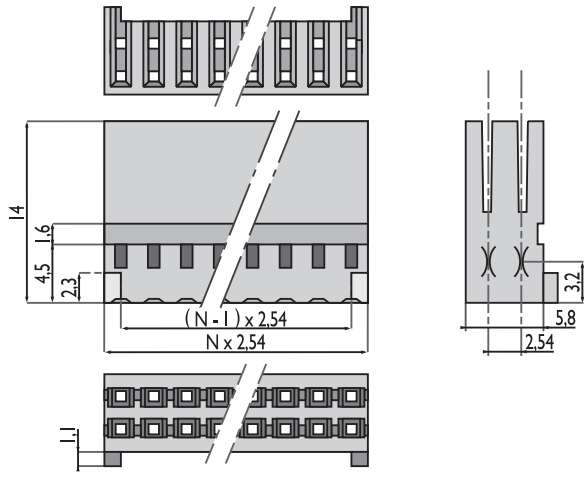
POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
YES	YES	1	02 → 25

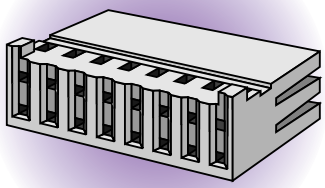
HOUSING SERIES 4E xx

- This housing is used with double row walled headers (refer to page 35).
- It allows polarization and locking.

→ Mates with walled headers
ref. 1Y-20-111-xx-1
ref. 1Y-20-141-xx-1
(refer to page 35)







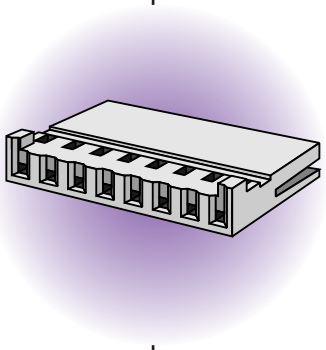
Dimensions in mm

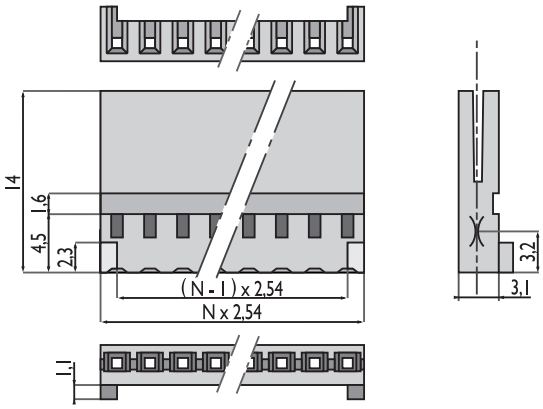
POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
YES	YES	2	04 → 50

CRIMPFLEX® housings

HOUSING SERIES 1E xx

- This housing is designed to mate to industry standard walled connectors.
- It allows polarization and locking.



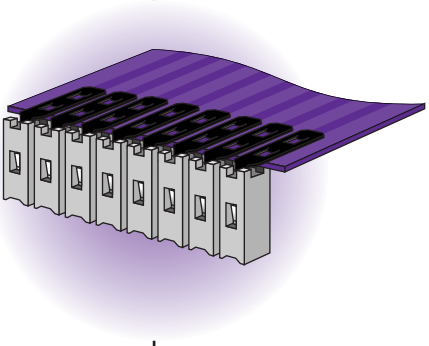


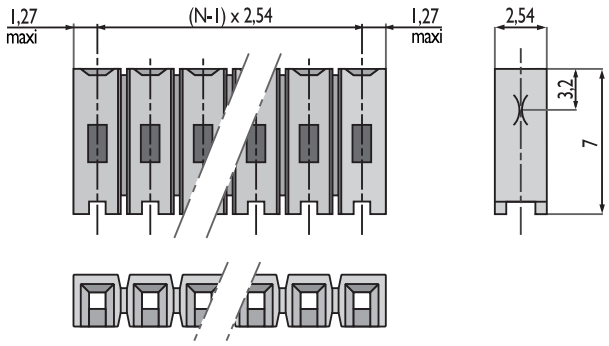
POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
YES	YES	I	02 → 25

Dimensions in mm

HOUSING SERIES 7F10 xx

- The low height of this housing allows right angle connection in high density packaging.
- Housings are side to side and end to end stackable.





POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
NO	NO	I	02 → 25

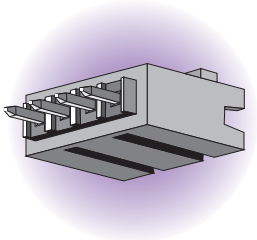
Dimensions in mm

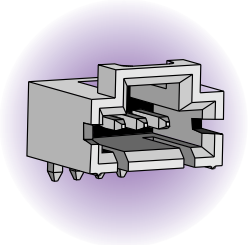
CRIMPFLEX® housings

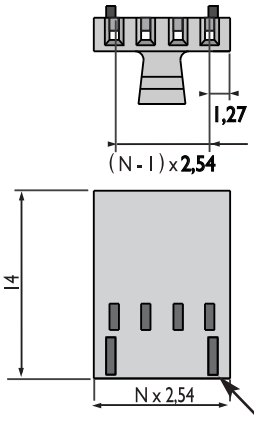
HOUSING SERIES OL xx

- Industry standard locking system that allows easy mating and unmating to a walled pin header.
- Optional : alternate part available on request to allow for latch to be oriented in either direction.

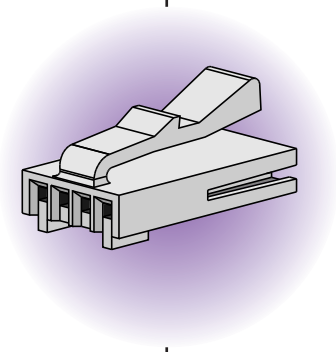
→ Mates with Male headers
ref. 1L-10-111-xx-1
ref. 1L-10-141-xx-1
(refer to page 37)







For ref. OL02 and OL03, only one guide



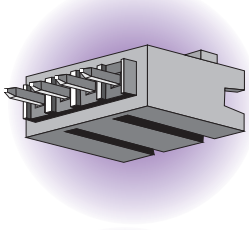
Dimensions in mm

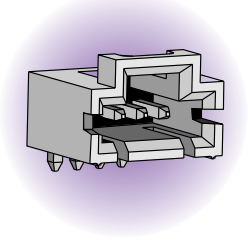
POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
YES	YES	I	02 → 25

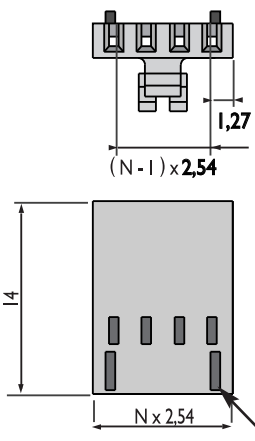
HOUSING SERIES OM xx

- Industry standard locking system that allows for easy mating and unmating to a walled pin header.
- The location of the latch is different from housing series OL in order to ensure a total compatibility with the different versions available on the market.
- Optional : alternate part available on request to allow for latch to be oriented in either direction.

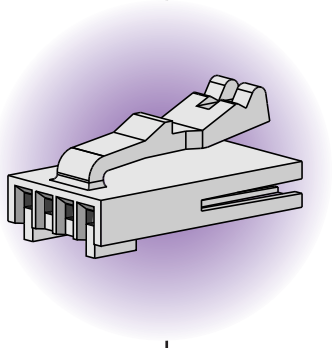
→ Mates with Male headers
ref. 1L-10-111-xx-1
ref. 1L-10-141-xx-1
(refer to page 37)







For ref. OM02 and OM03 : only one guide



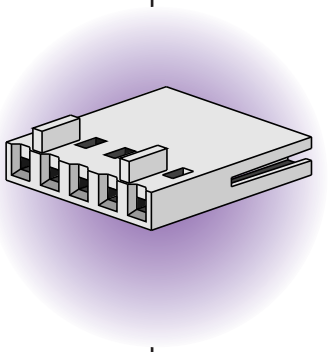
Dimensions in mm

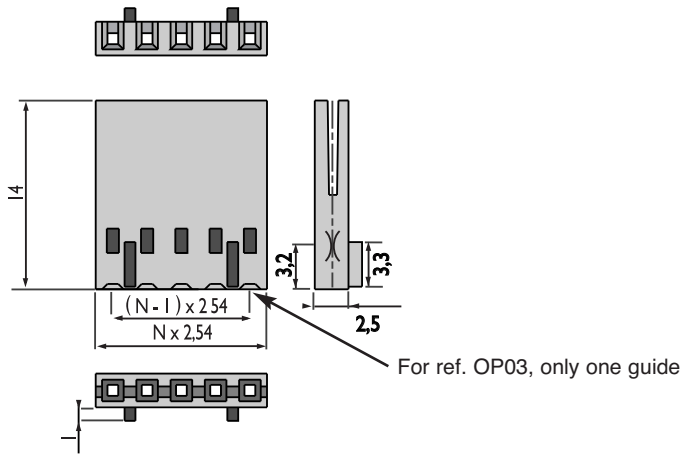
POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
YES	YES	I	02 → 25

CRIMPFLEX® housings

HOUSING SERIES OP xx

- Industry standard polarization feature.
- Optional : contacts can be inserted on the guide side and on the opposite side to the guide, from 4 to 25 ways.



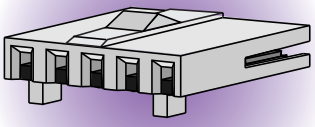


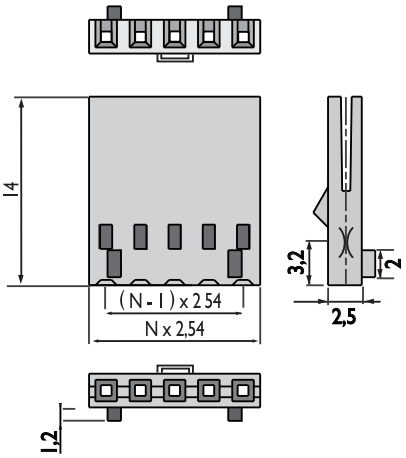
POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
YES	NO	I	02 → 25

Dimensions in mm

HOUSING SERIES OD xx

- Industry standard polarization feature.
- Optional : contacts can be inserted on the opposite side to the latch, from 4 to 25 ways.





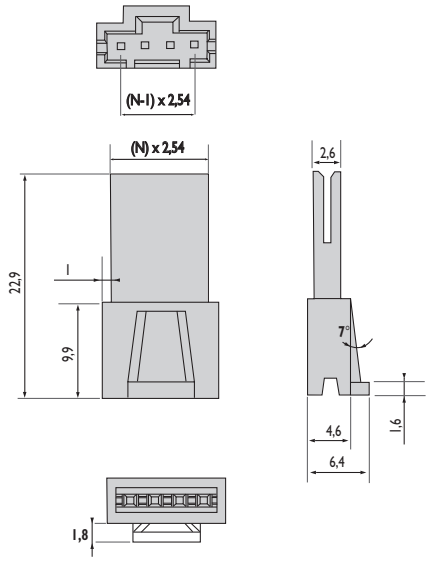
POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
YES	YES	I	03 → 25

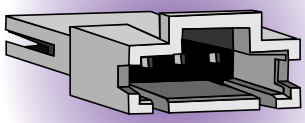
Dimensions in mm

CRIMPFLEX® housings

HOUSING SERIES 1L xx

- This housing allows industry standard polarization.
- It allows the locking of OM/OL xx female references (refer to page 25).
- Use with all square male pins.



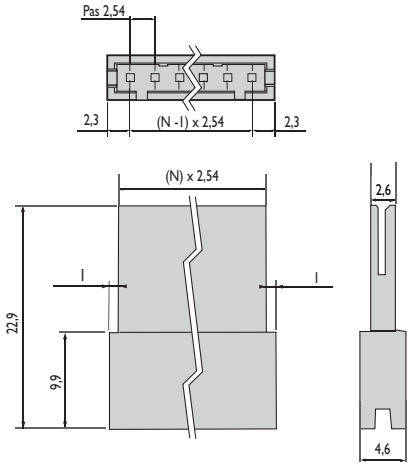


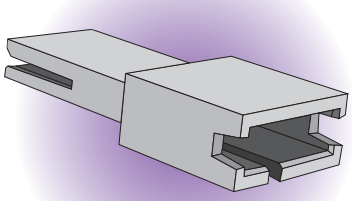
Dimensions in mm

POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
YES	YES	I	02 → 25

HOUSING SERIES 1P xx

- This housing allows the locking of OP xx industry standard polarized housing (refer to page 26).
- This housing is available by special order only.





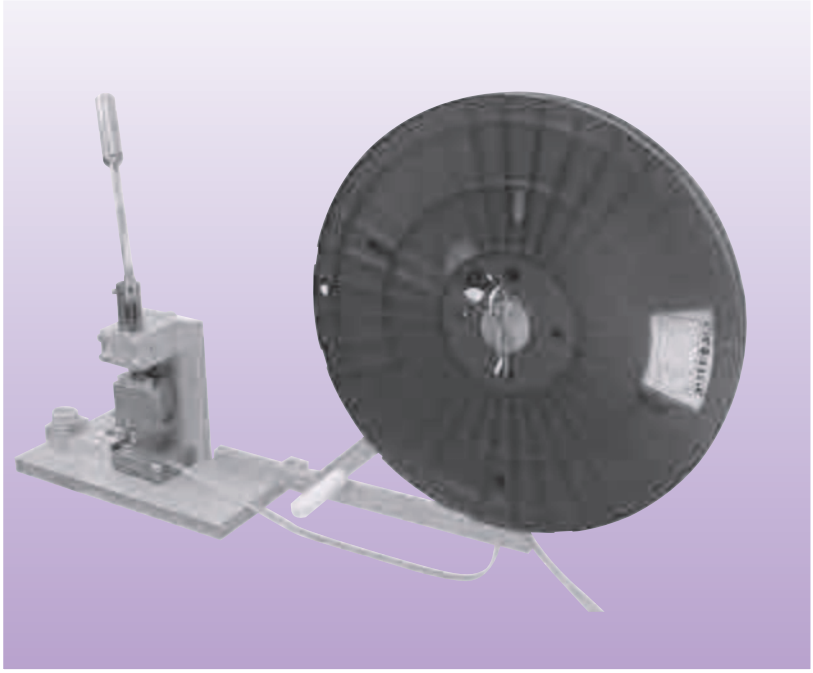
Dimensions in mm

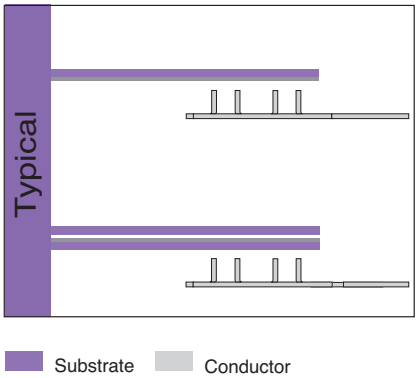
POLARIZATION	LOCKING SYSTEM	NUMBER OF ROWS	NUMBER OF WAYS XX
YES	NO	I	02 → 25

CRIMPFLEX® presses

Other documents : product data sheet & CrimpFlex® Crimping Guidelines

MANUAL PRESS REF. 10025-MO





GENERAL DATA

- Dimensions without reel (L x w x h) : 79 x 40 x 54 cm.
- Dimensions with reel (L x w x h) : 99 x 40 x 61 cm.
- Net weight : 27 kg, Gross weight : 38 kg.
- Approximate capacity : 7 cycles / minute.

OPERATION

- The contacts are moved forward from stop to stop by hand via the side loader.
- The graduated positions correspond to the number of contacts to crimp (1 to 25 points).
- The crimping is operated manually via the upper lever.

TOOLING

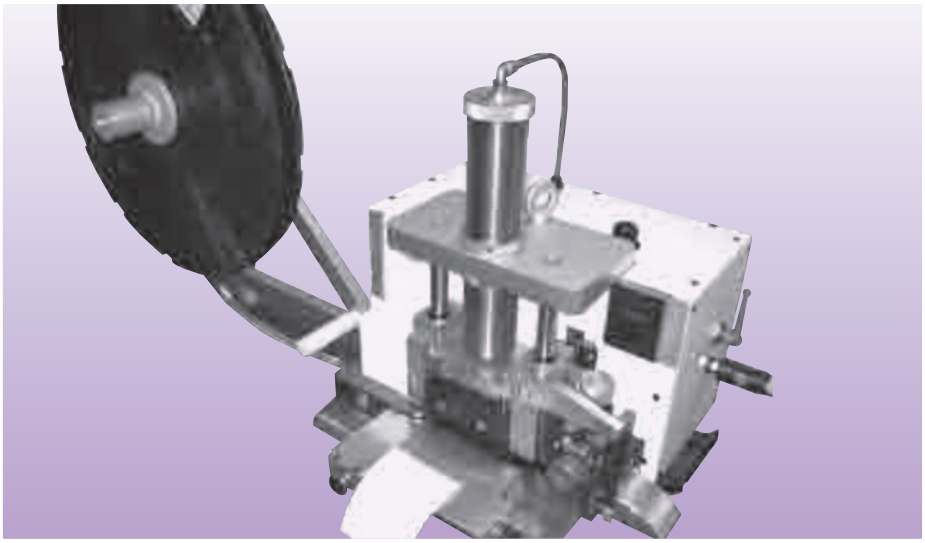
- This machine is delivered with 2 different toolings for solder tabs, male and female contacts. The change of tooling is simple and quick.
- 10025-MO (male & female tooling) - 10025-MO-F (female tooling) - 10025-MO-M (male tooling)
- Manual Press ref. 10025-SP is especially made for square male contacts 12410 and 13756.

PRESS		TOOLING	PART NUMBERS
10025-MO	10025-MOM	MALE	10141 – 10241 – 10067 – 10167 – 12887
	10025-MOF	FEMALE	10025 – 11506 – 11612 – 13595 – 14106
10025-SP		SQUARE MALE	12410 – 13756

CRIMPFLEX® presses

Other documents : product data sheet & CrimpFlex® Crimping Guidelines

PNEUMATIC PRESS REF. 10500-SA(P)



GENERAL DATA

- Dimensions without reel (L x w x h) : 83 x 44 x 61 cm.
- Dimensions with reel (L x w x h) : 103 x 44 x 61 cm.
- Packaging dimensions (L x w x h) : 84 x 40 x 57 cm.
- Net weight : 57 kg, Gross weight : 85 kg.
- Air pressure of 6 bars : dry air recommended, gauge G1/4.
- No electrical requirement.
- Approximate capacity : 30 cycles / minute.

OPERATION

- From 1 to 36 contacts are crimped at one time. The number of contacts to be crimped is determined by turning a dial on the front of the machine.
- This machine is also equipped with a downcounter which allows to pre-select a precise number of operations and stops automatically once it is back to zero.
- The press is operated by foot pedal.

TOOLING

- The machine can be delivered with three different tooling : one for male solder tabs, one for female contacts and one for square male pins.
- The change of tooling is simple and quick.

PRESS	TOOLING	PART NUMBERS
10500-SA	MALE	10141 – 10241 – 10067 – 10167 – 12887
	FEMALE	10025 – 11506 – 11612 – 13595 – 14106
10500-SAP	SQUARE MALE	12410 – 13756
	MALE	10141 – 10241 – 10067 – 10167 – 12887
	FEMALE	10025 – 11506 – 11612 – 13595 – 14106

Jumper Cables

RoHS compliant

TECHNICAL DATA

- **The flat cables used for NICOMATIC flexcable jumpers equipped with CRIMPFLEX® connectors, are made of two flat copper conductor laminated between two layers of polyester / adhesive insulation.**

DIMENSIONS

- **Bare copper conductors, section 1.57mm (width) x 0.076mm (thickness).**
- **Pitch : 2.54 mm.**
- **Number of conductors : 2 to 36*.**
- **Insulators thickness : 0.1 mm.**

* Higher number of conductors are available by special request

ELECTRICAL SPECIFICATIONS

Operating voltage	300 V RMS
Withstand voltage	1100 V RMS
AC current rating per conductor	3 A
Resistance	160 Ω /Km

CERTIFICATES

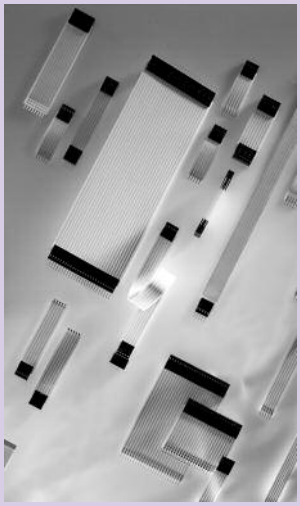
- **UL E 235596 / UL E 232912 / UL E 203388**
  (Appliance Wiring Material - Component)

THERMAL SPECIFICATIONS

CABLE	- 55° C to + 105° C
UL Flame rating	VW-1

MECHANICAL SPECIFICATIONS

Flex life	0 = once 25 mm = 10 million cycles



JUMPER CABLE CODES FOR PART NUMBERING SYSTEM ON PAGE 31

CONTACTS TABLE			
CODE	PART NUMBER	CODE	PART NUMBER
F1	10025-12	M4	12410-32
F2	10025-32	S1	10241-12
F3	11506-12	S2	10141-12
F4	11506-32	S3	10167-12
F5	14106-12	S4	10067-12
F6	14106-32	S5	12887-12
M1	13595-12	S6	11612-12
M3	12410-12	OTHERS ALSO POSSIBLE	

HOUSINGS TABLE			
CODE	PART NUMBER	CODE	PART NUMBER
V	IL xx	D	OD xx
H	OF xx	2	2E xx
N	OM xx	7	7F10 xx
L	OL xx	I	IE xx
P	OP xx	OTHERS ALSO POSSIBLE	

For Flex to discrete wire connection, please consult us.

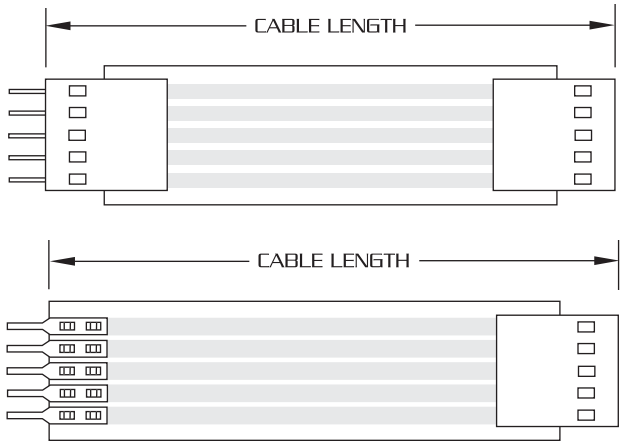
Jumper Cables

Part Numbering System Using the CRIMPFLEX® Connector System

LEFT END / RIGHT END

254 PW 14 E 0305 S1(B)(K)(W) F2 L(B)(K)(W)(R)

- **Pitch**
  254 – 2.54 mm
- **Style**
  PW – Standard White Polyester
- **Number of Conductors**
- **Conductor Size** (Bare)
  E – 0.076 mm x 1.57 mm
- **Length in mm**
  (Measured from End to End)



Connector Style
(Tin Plating Standard)

SOLDERTAB

- S1 – Standard Solder Tab, P/N 10241-12
- S5 – Double Retention Solder Tab, P/N 12887-12

FEMALE

- *F1X – High Insertion Force Female Contact, P/N 10025-12
- *F2X – High Insertion Force Female Contact, Selective gold plating, P/N 10025-32
- *F3X – Low Insertion Force Female Contact, P/N 11506-12
- *F5X – Hi Flex Female Contact, P/N 14106-12

MALE PIN

- *M1 –Short Square Male Pin, P/N 13595-12
- *M3X– Long Square Male Pin, P/N 12410-12
- *M4X– Long Square Male Pin, Selective gold plating, P/N 12410-32

***housing style must be specified, see below**

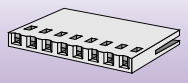
B : Bending to the crimping direction

C : Bending to the opposite side

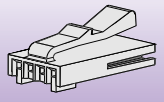
Options : B (-90° bending), C (+90° bending), K (polyimide insulator), R (crimping on the opposite side to the left), W (polyester insulator)

HOUSING - X

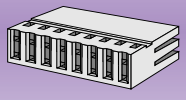
- H – Standard Housing, P/N OF-XX



- L – Latching Housing, P/N OL-XX

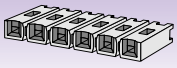


- 4 – Dual Row Housing, P/N 4F-XX

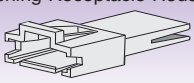


- D – Detent Style Housing, P/N OD-XX

- 7 – Low Profile Housing, P/N 7F10-XX



- V – Latching Receptacle Housing, P/N 1L-XX



— Other Options are Available, Please Contact the Factory or see page 30 —

Notes