Lumberg

passion for connections

Automotive

Sustainability: Third Generation

| at Lumberg

We are an independent, family-run company based in Germany – for over 90 years. Our success is based on sustainable performance, technical solution competence – and our "passion for connections".

With a track record of agile expertise, our products and systems solutions support an industrial environment – worldwide. We engineer and produce connectors and contact systems, electromechanical elements and mechatronic components of outstanding quality for your individual technical application. Our concentration on Automotive, Building Technology, Home Appliances and Communication Technology generates a high level of specialized user knowledge for your benefit.

IATF 16949

St. Clair Technologies Overall Excellence

DIN EN ISO 9001

Ford Q1 Preferred Supplier

DIN EN ISO 14001

Brose Key Supplier

DIN EN ISO 50001

Bosch Preferred Supplier

Our team of experts in automotive

Competence in Providing Solutions [connecting the world of tomorrow]

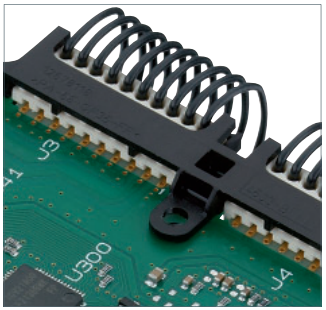
R & D:
Value Creating Innovation

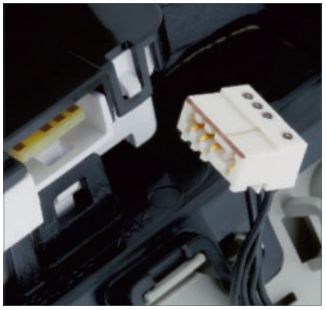
| by Lumberg

The right idea, a neat construction, fully-equipped laboratories and precise system measurements are the primary steps in our developing projects. With state-of-the-art methods and technologies, we mobilize our established development expertise and our passion for feasibility for your product. It is not only about the creation of unique quality products. It is also about finding an answer for challenges where others fail to find a solution.

With our engineering-based-on-partnership maxim we manifest detailed and integrated made-to-measure solutions for you. How? By applying our comprehensive Automotive know-how and pairing it with our electrical and electromechanical engineering profession.

From a first talk about technology to the development, the design and the construction of a pre-production prototype, we are a strong and reliable development partner. And we use creative thinking to turn even individual design and product requests into prime “Made by Lumberg” development quality at our R&D center.



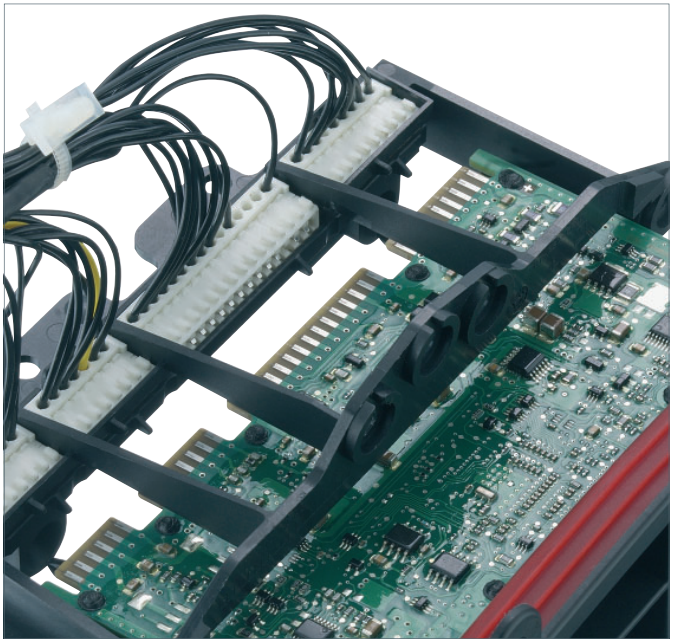


Direct Connectors [high-end interconnect systems]

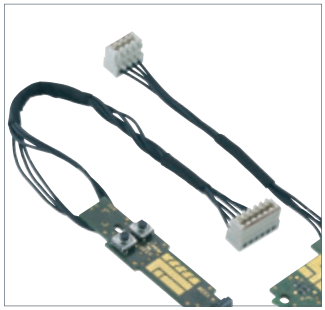
Quality: No Compromises

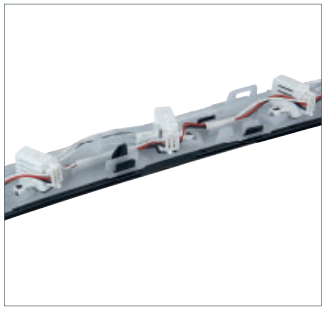
| by Lumberg

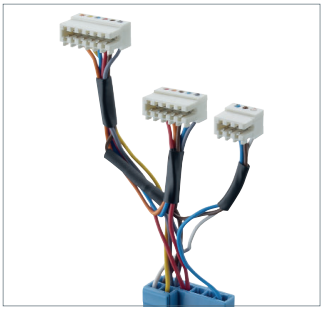
Connectors mating directly with the circuit board edge are highly beneficial when installation space is limited. We have implemented many space-saving applications using IDT in combination with modular direct mating systems, or even the respective guide frames for additional mechanical fixation or full modular assembly: the timely collaboration-based integration into your development processes is key here.



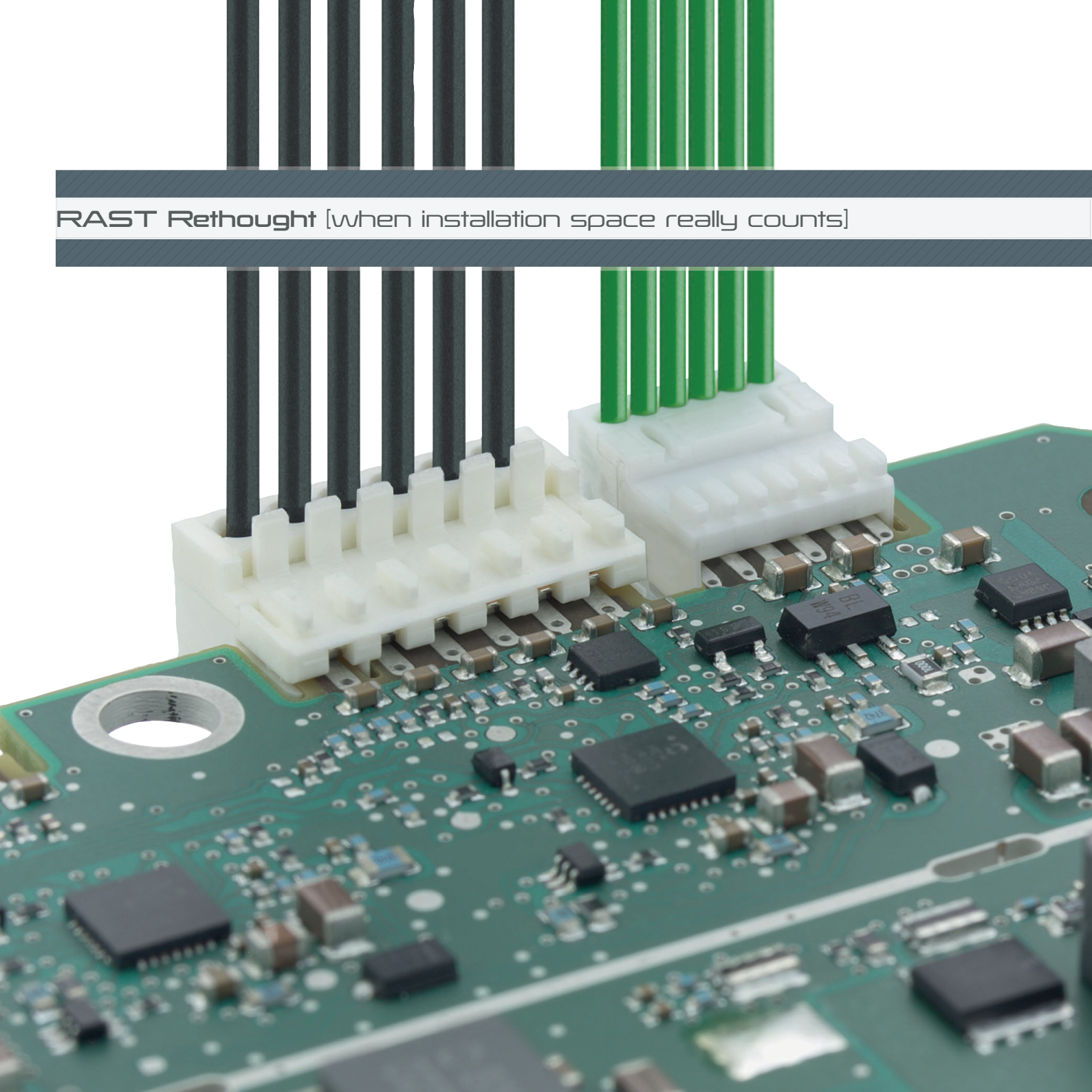
The automotive industry is currently focusing a great deal of attention on autonomous driving and safety systems – a similar revolution is in fact already taking place with the conversion of vehicle lighting to LEDs, which have a decisive influence on vehicle design today. Multi-pole direct connectors are also the solution here for developing space-saving designs.







RAST Rethought [when installation space really counts]



RAST 1.5: Top Miniaturization Achieved | new by Lumberg

„Home of the RAST Connector“ – Lumberg stands for this like no other connector manufacturer. RAST systems are the foundation of the company‘s success in automotive technology as well. In 1986, RAST 5 with a contact pitch of 5.0 mm made its debut. In the course of miniaturization, the RAST 2.5 system was introduced in 1993, which saved 72 % in size and opened up new applications, especially in automotive engineering.

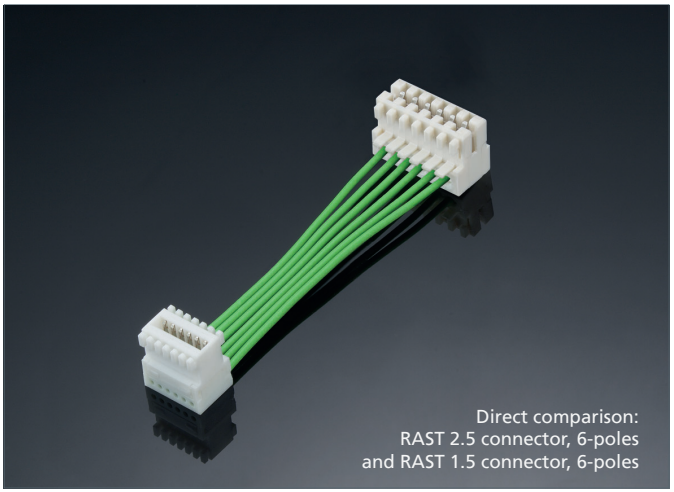
Now, for the first time, RAST 1.5 in IDT is being launched. Compared to RAST 2.5, it saves another 43 % in size.

The characteristic RAST coding is available as well as the option of fully automated cable assembly. The weight saving due to reduced conductor cross-sections is then 40 %.

RAST 2.5 for 1 mm PCBs | new by Lumberg

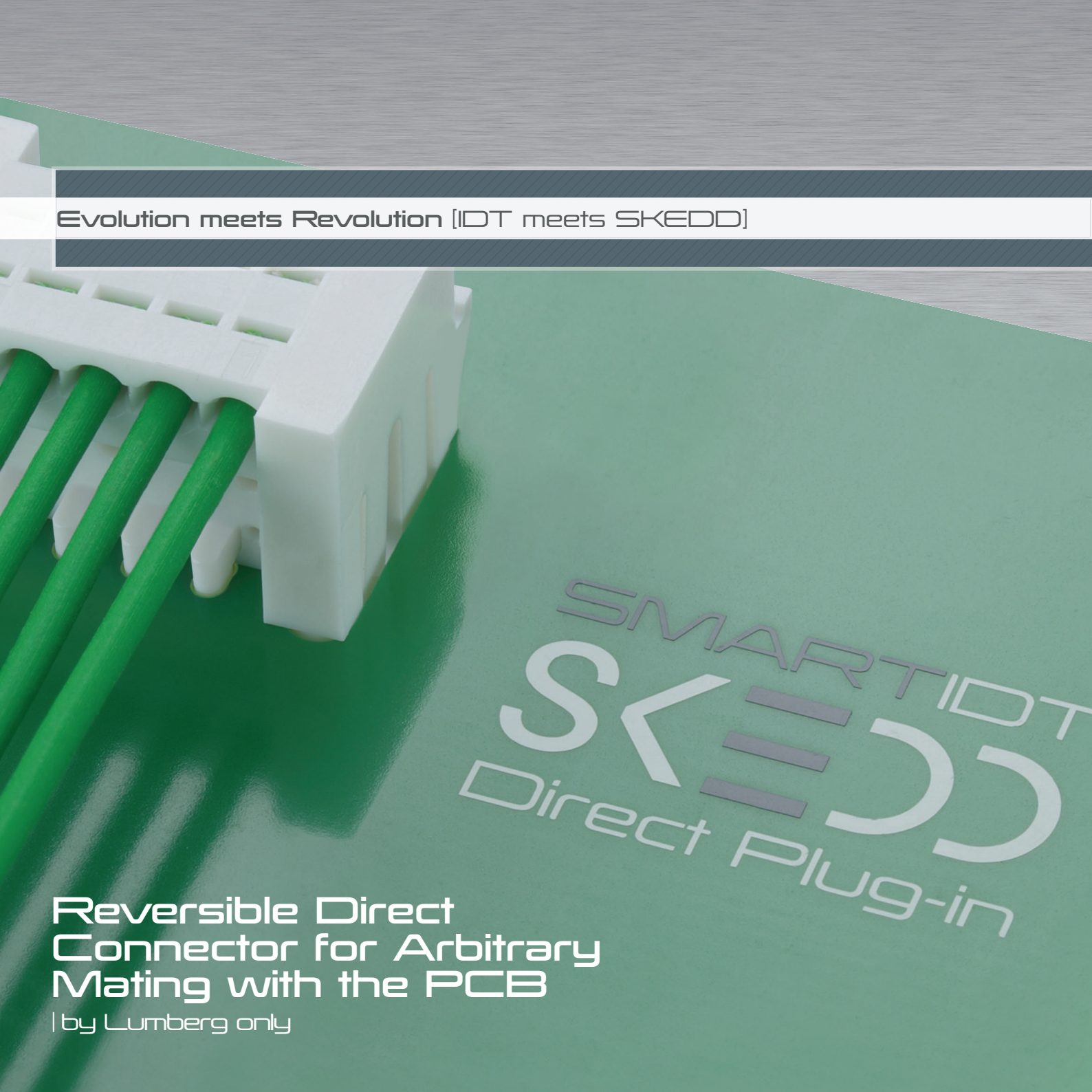
Consistent: The RAST-2.5 connector, which has proven itself a billion times over and can be used up to 4 A, has also been further developed. Increasingly, 1 mm PCBs are being used where there are challenges in terms of confined installation spaces, desired weight savings or optimization of cooling, for example in high-performance LED headlights.

The connector now comes with a familiar layout: with contact spacing of 2.5 mm, with secure latching on the 1 mm PCB – and of course with the great advantage of economical and efficient automated cable assembly using IDT.



Direct comparison:
RAST 2.5 connector, 6-poles
and RAST 1.5 connector, 6-poles

Evolution meets Revolution [IDT meets SKEDD]

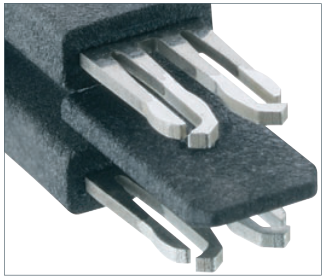


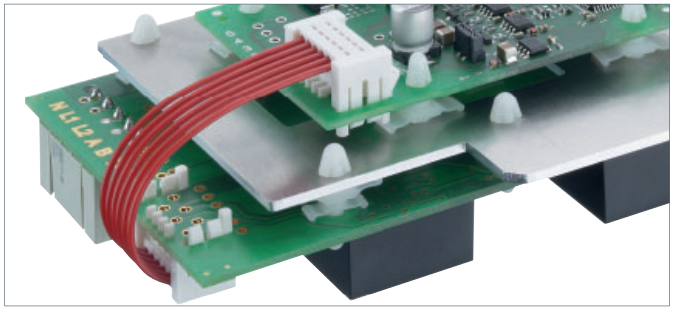
Reversible Direct Connector for Arbitrary Mating with the PCB

| by Lumberg only

SmartSKEDD: While direct contacting on the edge of the printed circuit board with RAST connectors is one of our domains, and press-fit technology as an irreversible, solderless connection is our compulsory program, a new type of connector has been added to this line-up: the direct connector for multiple plug-ins and plug-outs that can mate without a corresponding part anywhere on the printed circuit board using Insulation Displacement Technology.

SKEDD technology makes this possible. The individual contact comprises two contact tongues which, when inserted into a plated-through hole in the PCB, retract evenly and produce a solderless, reliable mechanical electrical connection.





Extra robust and reliable:
SnapFit locking

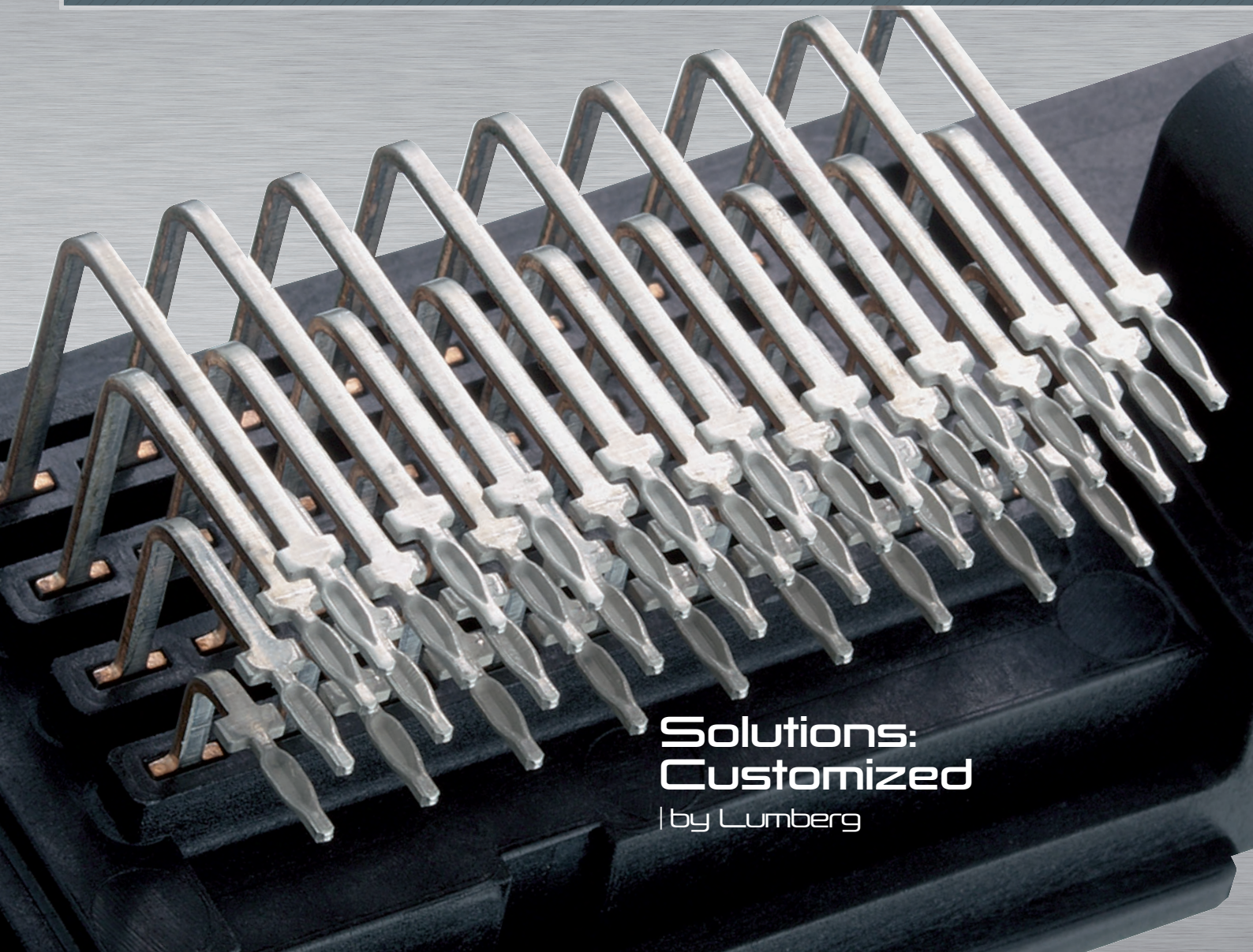
Three solid pins on each casing guarantee a secure positioning and prevent mismating. And there is more: each side of the connector features two snap-fits that lock – or rather: snap – the connector tightly onto the PCB. To release the connector, simply press on the primary lock.

Connectors can be mated without tools, for total convenience when mounting entire sub-assemblies. This enables completely new designs since they can be used right in the middle of a printed circuit board, even on the reverse. Here, reversible mating also facilitates for the first time a simple exchange of components as is required, for example, during servicing. In combination with Insulation Displacement Technology which draws on all advantages offered by automated cable assembly and vouches for the convenient production of even large quantities, our unparalleled solution that literally centers your ideas on the PCB is really smart – or simply: SmartSKEDD.

If a secondary lock is what you need – as is standard under LV 214 – or if your application just calls for that extra measure of retention, you can count on a pre-assembled central pin which increases the retaining force of the entire system to almost 100 N.

technical data
see page 27

Press-fit Technology [solderless connection]



Solutions: Customized

| by Lumberg

Press-fit technology is a superior solderless mechanical/electrical method with many benefits especially for the automotive industry. This connection is characterized by a defined deformation of the contact pins' press-fit zones whren pressed into the PCB's plated-through holes, as defined by IEC 60352-5.

This sealed, non-ageing connection eliminates corrosion and guarantees high mechanical stability. With improved FIT (Failure-in-Time) ratings of up to 30 times, this technology creates design opportunities and high packing densities for many automotive applications. The solderless method not only erases soldering costs: additionally, the PCB as well as adjacent components are no longer exposed to the stress caused from the high temperatures associated with soldering.

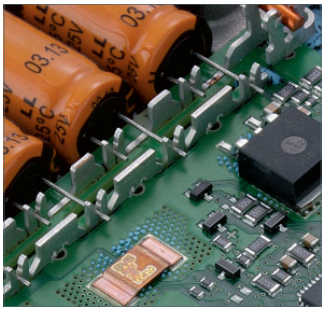
We precision-punch our press-fit contacts in-house and can customize them for use with your individual project, such as the integration into mechatronic sub-assemblies.

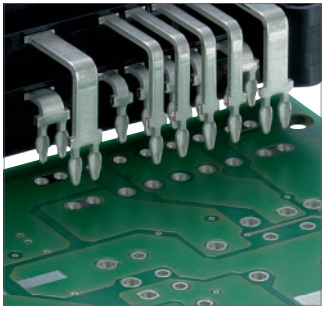
Space-saving – thanks to high packing densities

Design – individual

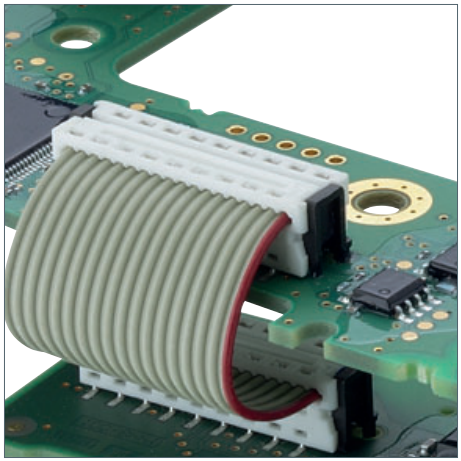
Processing – automatic

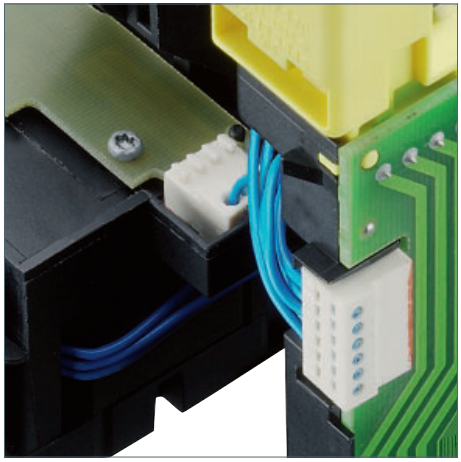
Connection – mechanical, durable, vibration-resistant






5600
5600

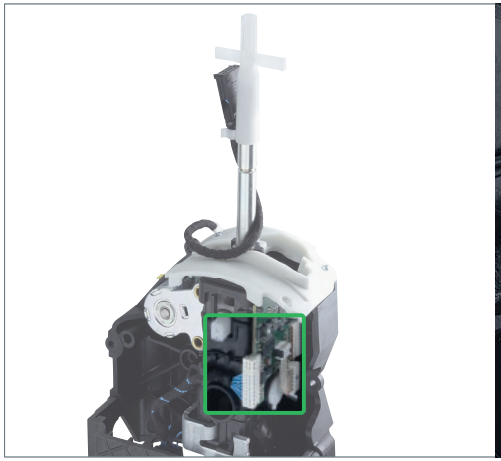


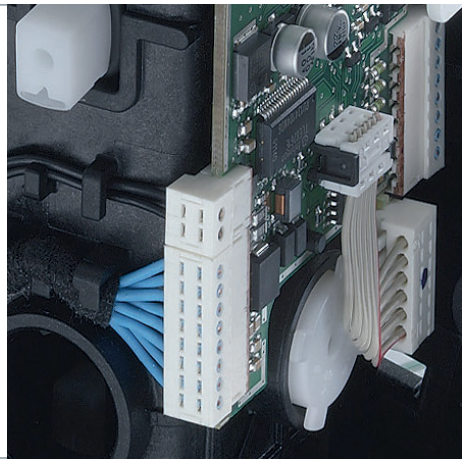



13:41
50 m
238.7 km
46502 km
km/h

Ideas

You know what to expect from us: a lot



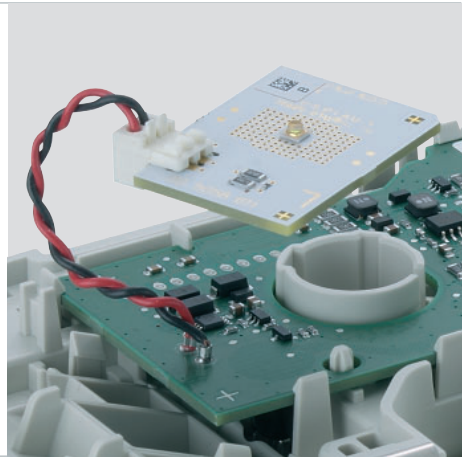


Agility

We have more speed, greater fl exibility, more individuality.

Our Success

We are on board of 800 car models from 100 makers.

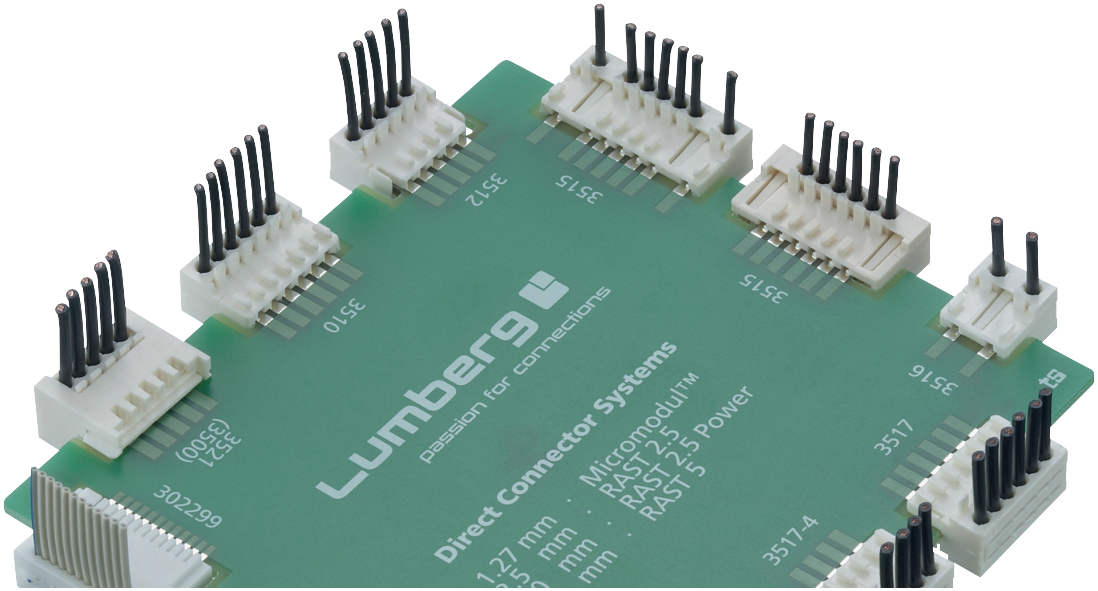


Your success

is based on
their skills.

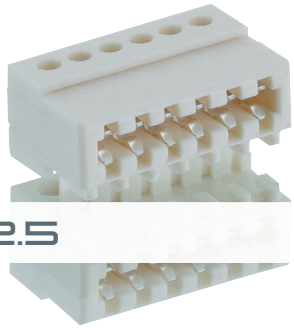
Lumberg

passion for connections



Automotive Connector Systems

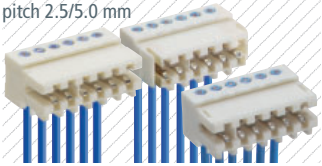
RAST 2.5



- Insulation Displacement Technology (IDT)
- Keying to avoid mismating according to RAST 2.5 standards
- Locking options
- For signal and load currents up to 4 A
- According to automotive standards

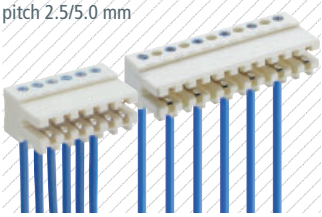
3510–3518

RAST 2.5 connectors, direct mating, with/without locking
3517-4 with enhanced locking
3517-5 for 1 mm pr. circuit boards
pitch 2.5/5.0 mm



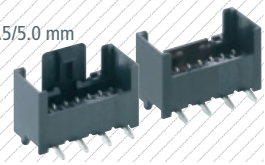
3520–3523

RAST 2.5 connectors, direct or indirect mating, with/without locking
pitch 2.5/5.0 mm



355095–355395

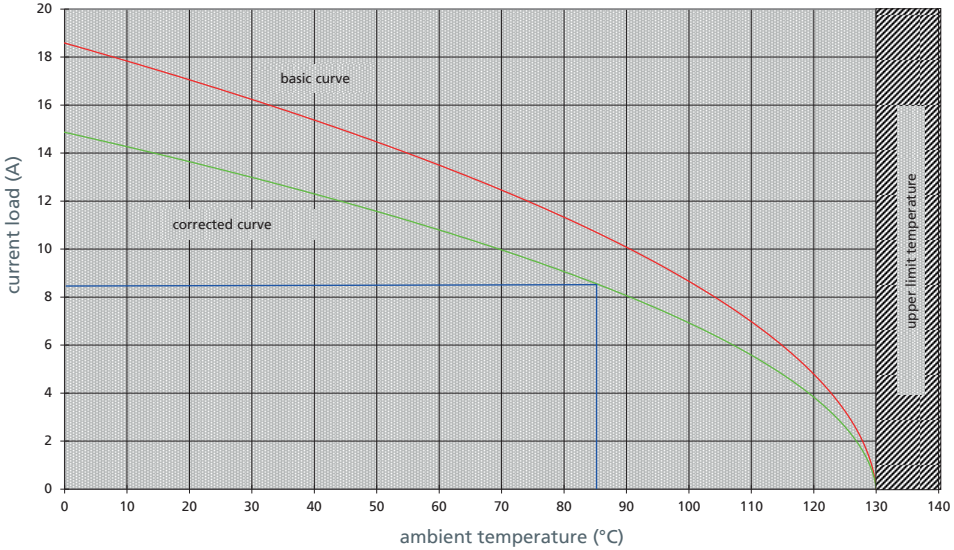
RAST 2.5 plus™ pin header, upright, in surface mount technology (SMT), with/without locking latch, with one or two positioning spigots and with double-sided keying
pitch 2.5/5.0 mm



3510–3518 · 3520–3523	
TEMPERATURE RANGE	-40 °C/+130 °C
MATERIALS	
Insulating body 35..(-...) (S...V...)	PBT, V0 according to UL 94
Insulating body 35..(-...) M12(S...V...)	PA, V2 according to UL 94
Contact spring 35..(-...) (M...S...)	CuSn, tin-plated
Contact spring 35..(-...) (M...S...)V03	CuSn, tin-plated (Sn/Ag)
Contact spring 35..(-...) (M...S...)V102	CuSn, pre-nickel and gold-plated
MECHANICAL DATA	
Insertion force/contact	≤ 4.0 N (**3517-5** ≤ 7.0 N)
Withdrawal force/contact	≥ 0.5 N
Retaining force/lock	≥ 6.0 N (**3517-4** 13.4 N, **3517-5** 13.0 N)
Mating with	printed circuit board 1.5 ± 0.14 mm (**3517-5** 1.0 ± 0.14 mm) (**352...** pin headers 354... and 355... and pin headers acc. to RAST 2.5 standard)
CONNECTABLE CONDUCTORS INSULATION DISPLACEMENT TERMINAL	
Section 35..(-...) (M...V...)	0.22–0.38 mm²
Section 35..(-...) (M...)S01(V...)	0.34 mm² (7 wires)
Section 35..(-...) (M...)S02(V...)	0.14–0.22 mm²
Section 35..(-...) (M...)S03(V...)	0.22–0.38 mm²
Insulation diameter	≤ 1.6 mm
ELECTRICAL DATA	
Contact resistance	≤ 5 mΩ
Rated current	4 A at T_{amb} 60 °C 2 A at T_{amb} 100 °C
Rated voltage	32/250 V AC
Material group	IIIa (IEC)/2 (UL) (CTI ≥ 250)
Creepage distance	0.6/3.1 mm
Clearance	0.6/3.1 mm
Insulation resistance	> 1 GΩ

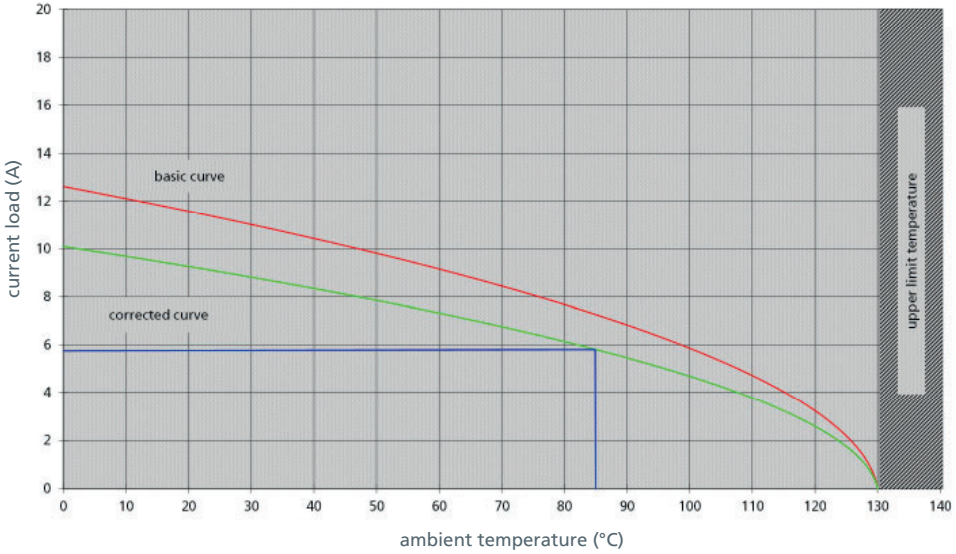
Derating Curve 3510 02 S03V03

all contacts loaded (measured at inner contacts), direct mating on printed circuit board FR4 double-sided 35 µm; conductor section 0.35 mm²



Derating Curve 3510 09 S03V03

all contacts loaded (measured at inner contacts), direct mating on printed circuit board FR4 double-sided 35 µm; conductor section 0.35 mm²



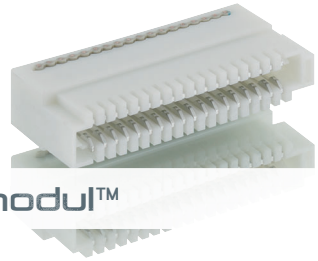
Automotive Standards Testing for RAST 2.5 Connector

In addition to passing the in-house standards of our automotive clients, LV 214 is frequently referred to as a general standard which, however, can be applied for RAST connectors to a certain degree only as it targets connector housings into which crimp contacts are individually placed. With the RAST 2.5 system, however, the insulation displacement contacts a single unit with the insulating body. Consequently, certain test groups (PG) that cater to the housing or the separate crimp contact, are uncalled-for due to the system's design, such as PG 6, 7, 8 and 20 A. Other test groups, on the other hand, rely on the customized PCB design, such as for example PG 9 and 11. Please refer to our guidelines for the PCB design. We are happy to perform testing according to your specifications. PG 22 A – chemical resistance – depends on your operational environment. For this, we will gladly perform testing using your preferred test medium.

The RAST 2.5 connector system achieved positive test ratings with a 5-pole connector (models 3510, 3512, 3515, 3517, 3521 in V102 versions, i.e. 0.8 µm selectively gold plated) in the relevant test groups based on the latest 2010 version of LV 214: on top of the mechanical test groups 1 to 5 that were passed, this also includes PG 10 to 13 as well as 15, 16 and 21 A and the particularly wide-ranging PG 19 (environmental simulation). Our in-house laboratory has lined up the test setup for PG 17 (dynamic stress) as well as 20 A.

TEST SEQUENCE	TEST
PG 0	Incoming inspection
PG 1	Dimensions
PG 2	Material and plating analysis, contacts
PG 3	Material and plating analysis, housing
PG 4	Dimensional contact security
PG 5	Contact force diagram
PG 6	Reciprocation between housing and contacts
PG 7	Handling and functional security of housing
PG 8	Insertion and housing forces of contact elements
PG 9	Plug-in angle
PG 10	Wire extraction force
PG 11	Insertion and withdrawal forces, mating cycles
PG 12	Derating
PG 13	Derating influence of housing
PG 14	Thermal time constant
PG 15	Electrical stress test
PG 16	Fretting corrosion
PG 17	Dynamical stress
PG 18	Coastal climate stress
PG 19	Environmental simulation
PG 20 A	Climate stress to housing
PG 21 A	Long time temperature tests
PG 22 A	Chemical resistance

PITCH 1.27 mm



Micromodul™

- Direct and indirect mating
- Ideal space saving cable-to-board connections
- Insulation displacement technology (IDT)
- Tab headers for THT or SMT soldering
- For signal and low load currents up to 1.2 A

302299

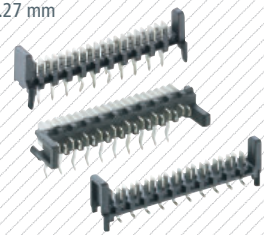
Micromodul™ connectors, direct mating pitch 1.27 mm

MICA · MICAL...

Micromodul™ connectors, indirect mating pitch 1.27 mm

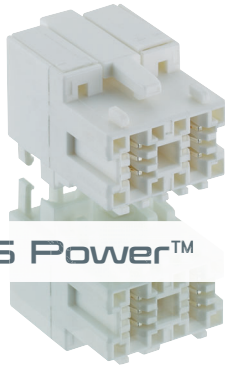
MICS...

Micromodul™ tab headers, THT and SMT pitch 1.27 mm



	302299	MICA · MICAL
POLES	4–22 (all even)	4–22, 26 (all even)
TEMPERATURE RANGE	-40 °C/+130 °C	-40 °C/+120 °C
MATERIALS		
Insulating body	PA GF, V0 according to UL 94	**MICA:** PBT GF, V0 according to UL 94
		MICAL: PBT, V0 according to UL 94
Contact spring	CuSn, pre-nickel and tin-plated	CuSn, tin-plated
Contact spring gold-plated	**302299 V122**: CuSn, pre-nickel and gold-plated in contact area, tin-plated in insulation displacement area	**MICA SEL 0,8 AU**: CuSn, gold-plated in contact area, tin-plated in insulation displacement area
MECHANICAL DATA		
Insertion force/contact	< 1.3 N	≤ 1.5 N
Withdrawal force/contact	> 0.3 N	> 0.4 N
Mating with	printed circuit board 1.6 ± 0.14 mm	tab headers MICS...
CONNECTABLE CONDUCTORS INSULATION DISPLACEMENT TERMINAL		
Flat cable	1.27 mm	1.27 mm
Section	AWG 28 (0.090 mm²) upto AWG 26 (0.140 mm²)	AWG 28 (0.090 mm²) up to AWG 26 (0.140 mm²)
Approved cables on the Internet site www.lumberg.com		
ELECTRICAL DATA		
Contact resistance	≤ 5 mΩ	≤ 10 mΩ
Rated current	1.2 A at T_{amb} 85 °C	1.2 A
Rated voltage	125 V AC	32 V AC (250 V AC)
Material group	I (IEC)/0 (UL) (CTI ≥ 600)	IIIa (IEC)/3 (UL) (CTI ≥ 175)
Creepage distance	0.79 mm	0.54 mm
Clearance	0.79 mm	0.54 mm
Insulation resistance	≥ 1 GΩ	> 1 GΩ

PITCH 7.5 mm



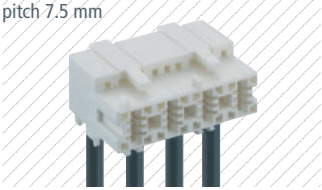
RAST 7.5 Power™

- Indirect mating
- Insulation Displacement Technology (IDT), AWG 14/2.5 mm²
- For load currents up to 25 A
- According to automotive standards

3723

RAST-7.5-Power™ connector, indirect mating, insulation displacement technology, with exterior locking

pitch 7.5 mm



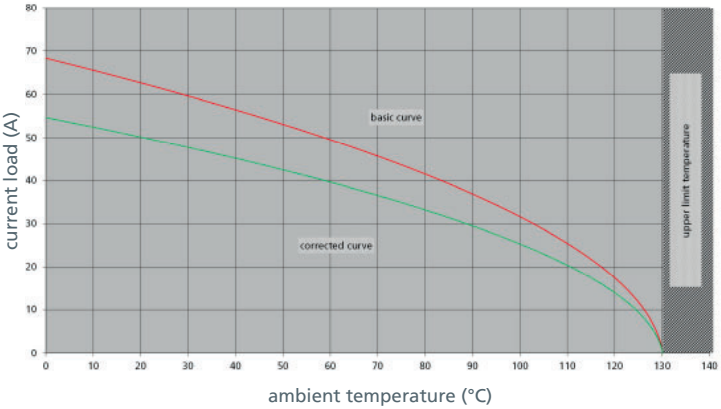
3741

RAST-7.5-Power™ tab header, upright with spigot

pitch 7.5 mm

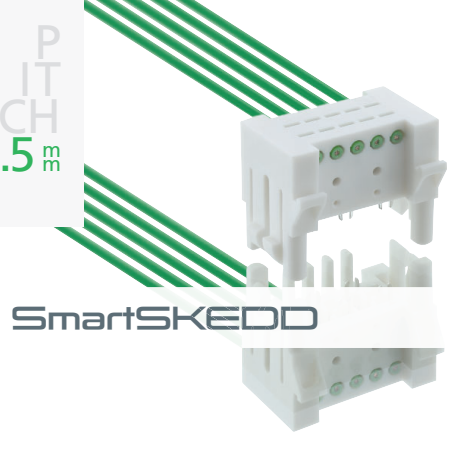
Derating Curve 3723

indirect mating on tab header 3741; conductor section AWG 14



	3723
POLES	2–4
TEMPERATURE RANGE	-40 °C/+130 °C
MATERIALS	
Insulating body	PA, V2 according to UL 94
Contact spring	CuNiSi, silver-plated
MECHANICAL DATA	
Insertion force	≤ 95 N (2 pole version)
Withdrawal force	≥ 45 N (2 pole version)
Mating with	tab 6.3 x 0.8 mm mm according to DIN 46244, tab header 3741
CONNECTABLE CONDUCTORS INSULATION DISPLACEMENT TERMINAL	
Section	AWG 14 (2.5 mm²)
Insulation diameter	3.6 mm
Approved cables on the Internet site www.lumberg.com	
Proposed keyings on the Internet site www.lumberg.com	
ELECTRICAL DATA	
Contact resistance	≤ 5 mΩ
Rated current	25 A at T_{amb} 85 °C
Rated voltage	500 V AC
Material group	IIIa (IEC)/2 (UL) (CTI ≥ 250)
Creepage distance	5.7 mm
Clearance	5.7 mm
Insulation resistance	> 10 GΩ

PITCH 2.5 mm



- Direct mating
- Insulation displacement technology (IDT)
- Multiple pluggable
- Exceptional retaining forces
- For signal and load currents up to 4 A

733500

SmartSKEDD connector, direct mating, insulation displacement technology, with keying pins, positioning spigot and double locking on the printed circuit board

pitch 2.5 mm

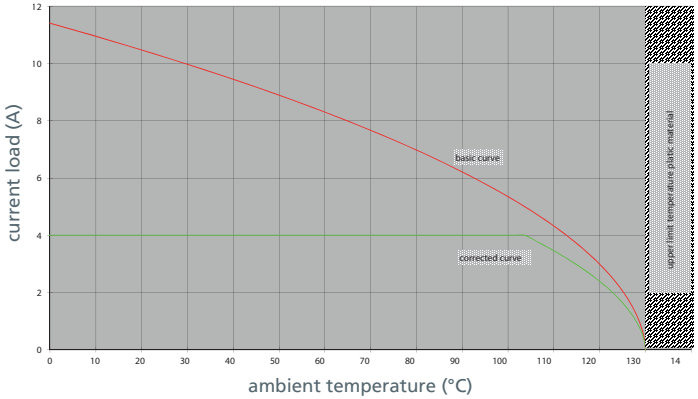
733520

SmartSKEDD connector, direct mating, insulation displacement technology, with keying pins, positioning spigot and locking on the printed circuit board

pitch 2.5 mm

Derating Curve 7335...

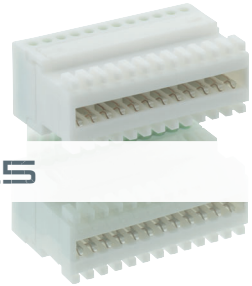
4 pole with wire cross section 0.38 mm², mated on FR4 70 µm Cu



	733500 · 733520	
POLES	3–11	3–13
TEMPERATURE RANGE[1]	-40 °C/+130 °C	
WERKSTOFFE		
Housing[2]	PBT, halogen-free, V0 acc. to UL 94	
Locking Pin[2]	PBT, halogen-free, V0 acc. to UL 94	
Contact Spring	CuSn, silver-plated	
MECHANICAL DATA		
Insertion force/contact	≤ 3 N	
Withdrawal force/contact	≥ 3 N	
Retaining force/locking	≥ 90 N	≥ 50 N
Mating with	printed circuit board 1.6 ± 0.14 mm	
CONNECTABLE CONDUCTORS INSULATION DISPLACEMENT TERMINAL		
Section[3]	0.22–0.38 mm²	
Insulation diameter	≤ 1.6 mm	
ELECTRICAL DATA		
Contact resistance	≤ 5 mΩ	
Rated current	4 A at T_{amb} 85 °C	
Rated voltage[4]	50 V AC	
Material group[4]	I (IEC)/0 (UL) (CTI ≥ 600)	
Creepage distance	0.6 mm	
Clearance	0.6 mm	
Insulation resistance	> 1 GΩ	

1 upper limit temperature (housing) RTI (electr.) acc. UL-Yellow-Card
2 material halogen-free, GWFI 850°C (0.40 mm), GWIT 775°C (0.40 mm)
3 cable construction and approved cables on request
4 acc. to IEC 60664/DIN EN 60664/CTI, UL-Classification acc. ANSI/UL 746A

PITCH 1.5 mm



RAST 1.5

- Direct and indirect mating
- Insulation displacement technology (IDT)
- Keying to avoid mismating, double-sided keying
- For signal and low load currents up to 3 A

332100

RAST 2.5 connectors for direct and indirect mating, insulation displacement technology (IDT)

contact pitch 1.5 mm

331000

RAST 2.5 connectors for direct mating, insulation displacement technology (IDT), with or without closed sides

contact pitch 1.5 mm

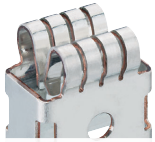
335095

Pin headers for indirect mating, upright, in surface mount technology (SMT)

contact pitch 1.5 mm
(in preparation)

	332100 · 331000
POLES	2–12
TEMPERATURE RANGE	-40 °C/+130 °C
MATERIALS	
Insulating body[1]	PA GF, V-0 according to UL 94
Contact spring	CuSn, tin-plated
MECHANICAL DATA	
Insertion force/contact	≤ 2.0 N
Withdrawal force/contact	≥ 0.3 N
Mating with	printed circuit board 1.5 ± 0.14 mm
	RAST 1.5 pin headers in preparation
CONNECTABLE CONDUCTORS FOR IDT AREA	
Section	0.22 mm²
Insulation diameter	≤ 1.2 mm
ELECTRICAL DATA	
Rated current	3 A at T_{amb} 85 °C
Rated voltage	50 V
Material group	I (IEC)/0 (UL) (CTI ≥ 600)
Creepage distance	0.6 mm
Clearance	0.2 mm (**331000** 0.5 mm)
Insulation resistance	> 1 GΩ

[1] Component glow wire resistant (GWT 750 °C), testing acc. to IEC 60695-2-11, assessment acc. to IEC 60335-1 (flame < 2 s)



High-Current Contacts

- High-current contact sockets
- Power phase connectors
- For PCBs or lead frames
- For load currents up to 200 A

4580 01 OP T0,8
4580 01 MP T0,8
4580 01 SP T0,8

4580 03 OP T0,8
4580 03 OP T2,0
4580 03 MP T0,8
4580 03 MP T2,0

4580 04 OP T1,0
4580 04 MP T1,0

Mating direction	top, bottom entry or sideways			top or bottom entry		top entry
Positioning pegs	without pin (**OP**)/ with pin (**MP**)			without pin (**OP**)/ with pin (**MP**)		without pin (**OP**)/ with pin (**MP**)
ENVIRONMENTAL CONDITIONS						
Temperature range	-40 °C/+120 °C			-40 °C/+120 °C		-40 °C/+120 °C
MATERIALS						
Contact	CuCr alloy, tin-plated			CuCr alloy, tin-plated		CuNiSi alloy, tin-plated
MECHANICAL DATA						
Mating with	**4580 01 OP/MP T0,8** tab contact 2.8–6.8 mm x 0.8 mm (0.5 mm in preperation) **4580 01 SP T0,8** tab contact 2.8–6.8 mm x 0.8 mm **OP/MP** - applicable for reflow soldering on circuit board and laser welding on busbar **SP** - applicable for THT-soldering on circuit board			**4580 03 ... T0,8** tab contact 5.3–7.2 mm x 0.8–1.5 mm **4580 03 ... T2,0** tab contact 5.3 mm x 1.5–2.0 mm - applicable for reflow soldering on circuit board and laser welding on busbar		**4580 04 ... T1,0** tab contact 8.0 mm x 1.0 mm - applicable for reflow soldering on circuit board and laser welding on busbar
Insertion force	top entry	32 ± 15 N		**4580 03 ... T0,8**		30 ± 10 N
	side entry	18 ± 10 N		tab contact 0.8 mm	22 ± 10 N	
	bottom entry	32 ± 15 N		tab contact 1.0 mm	22 ± 10 N	
				tab contact 1.5 mm	35 ± 10 N	
				4580 03 ... T2,0		
				top entry	35 ± 10 N	
				bottom entry	50 ± 10 N	
Withdrawal force	top entry	32 ± 10 N		6 +10/-3 N		10 ± 5 N
	side entry	15 ± 10 N				
	bottom entry	32 ± 10 N				
ELECTRICAL DATA (at T_{amb} 20 °C)						
Contact resistance	< 1 mΩ			< 0.5 mΩ		< 0.5 mΩ
Rated current[1]	≤ 56 A			≤ 60 A		75 A (up to 200 A)

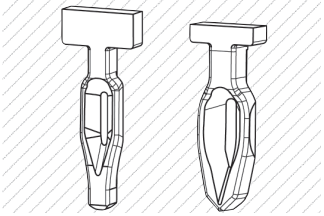
[1] depending on the connection to the printed circuit board/busbar, surroundings and heat dissipation

Press-fit Technology

- Solderless
- Proven geometries
- Free configuration optional
- Shock and vibration-resistant

7200 · 7201

Press-fit contacts, material thickness 0.6 mm and 0.8 mm



	7200 (EPZ 0.6)	7201 (EPZ 0.8)
SPECIFIC DATA PRESS-FIT (ZONE)		
Material	CuSn, alternativly CuCrAgFeTiSi	CuSn, alternativly CuCrAgFeTiSi
Surface	pre-nickel and tin-plated	pre-nickel and tin-plated
Material thickness	0.6 mm	0.8 mm
Press-in zone length	4.7 mm	4.7 mm
Construction contact side	geometric and service according to customer requirements	geometric and service according to customer requirements
SPECIFIC DATA PC-BOARD		
Material[1]	FR4 min. T_g (DSC)=150 °C	FR4 min. T_g (DSC)=150 °C
Surface	chem. tin-plated	chem. tin-plated
Thickness	1.6 mm ± 10 %	1.6 mm ± 10 %
Type[2]	multilayer	multilayer
Hole diameter without Cu plating with Cu plating and finishing	 Ø 1.15 ± 0.025 mm Ø 1.05 ± 0.05 mm	 Ø 1.6 ± 0.025 mm Ø 1.49 ± 0.05 mm
Copper coating thickness hole	30–50 µm	30–50 µm
MECHANICAL DATA		
Press-in force	75 ± 20 N	70 ± 20 N
Extraction force	80 ± 20 N	70 ± 20 N
FURTHER SPECIFICATIONS		
approved acc. to internal test specification (on request) subject to automotive requirements on the basis of IEC 60352-5		

[1] acc. to IPC-4101 C

[2] acc. to IPC-A600H Class 3, IPC-6011 Class 3, IPC-6012 C Class 3, IPC-TM-650 and Perfag 2F/3D

Efficient Harnessing

- Modular semi-automatic and fully automatic harnessing machines, flexibly extendible
- Harnessing solutions for all Lumberg systems in IDT
- Stroke capacity up to 14,400 contact per hour
- For low, middle or high volume productions

HZ...

Manual tongs for termination, keying, extending and decollacting of RAST and Micromodul™ connectors and connector chains

Stroke capa. up to 370 discrete conductor/h

KHP...

Knuckle-joint press for termination of RAST and Micromodul™ connectors

Stroke capacity ca 450 discrete conductor/h

VARICON...

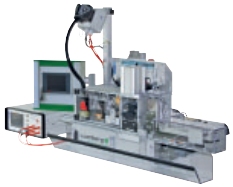
Fully automatic harnessing machines for termination of RAST and Micromodul connectors, for flexible harness configurations

- Highly efficient connector loading
- Highly efficient cable loading
- Flexible cable processing
- Quality assurance

Stroke capacity: up to 14.400 contacts/h

HA...e... HA...f...

Semi-automatic harnessing machines for termination of RAST and Micromodul™ connectors, modular set-up, flexible extendible stroke capa. up to 1,200 discrete conductor/h



Description	small base machine	larger base machine
	• These options are free configurable and upgradeable	
Storage of insertion patterns	•	•
Verification of insertion pattern and cable end positions	•	•
Automatic feeding of connectors	•	•
Removal Kit: cutting and vacuum extraction of connector chain inter-links		•
Cable color detection – 16 colors	•	•
Key cutting		•
Key test		•
Cable bending		•
High-voltage test		•

Lumberg

passion for connections

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