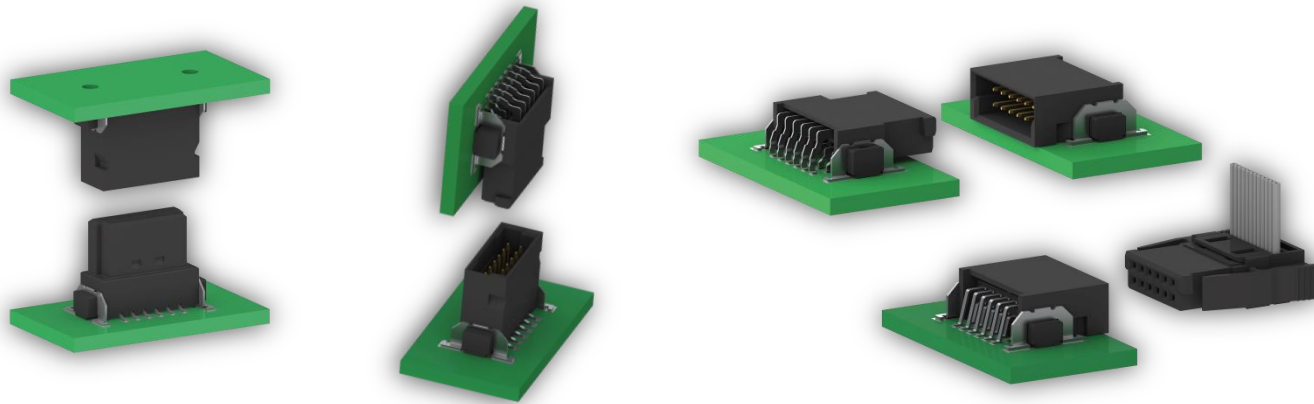


• • • ept *connectors*



One27

1.27 mm SMT for Board-to-Board-Applications

One 27 - Applications ...



Transportation



Automation



Medical



Energy

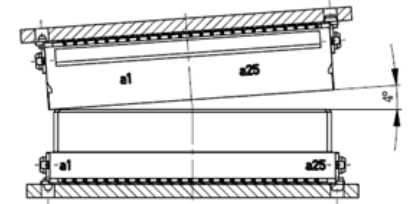
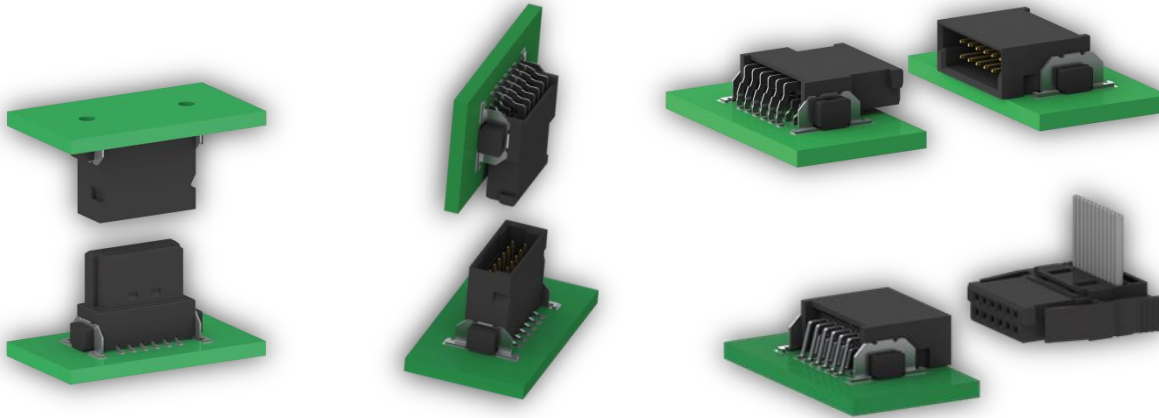


Instru-
mentation



Datacom

One 27 - Overview



- ✓ versatile → different types & pin counts
- ✓ small → pitch 1.27 mm
- ✓ robust → SMT fixing, design features
- ✓ ease of → SMT, tape on reel
- ✓ 2nd source → Erni SMC, Harting har-flex

- ✗ high-speed
- ✗ low quality requirement
- ✗ price only
- ✗ THT or press-fit



One 27 – Competitive Situation ...

Fully compatible in

- footprint design (PCB)
- mating & unmating



» SMC



» har-flex

W+P PRODUCTS



Chinese Sources

NOT compatible, but comparable in

- versatility of pin-count
- versatility in types
- size / pitch



PRODUCTS RESOURCES APPLICATIONS PRESS COMPANY SEARCH

Products > Board/Wire to Board Connectors > 1.27mm Board to Board Signal > MINITEK127@ 1.27mm

MINITEK127@ 1.27MM

OVERVIEW





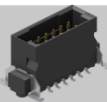
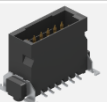
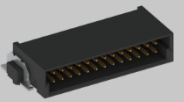
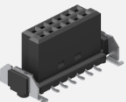



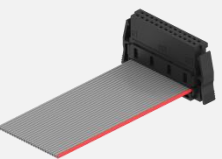
Minitek127® is an extensive modular range of 1.27mm pitch connectors for all types of wire board and cable to board applications. It includes straight and right angle, surface mount through mount, pin headers and board receptacles in different plating variations and positions numbers up to 100. The product line also include IDC version.

Target Markets/Applications

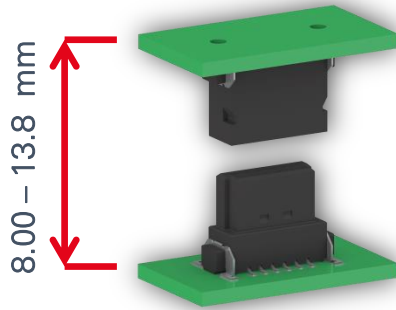
- Communication
- Data
- Industrial Controls
- Instrumentation & test equipment
- Vending machines
- POS (Point Of Sale) equipment
- Automotive Electronics
- Medical equipment



One 27 - Versatility ...

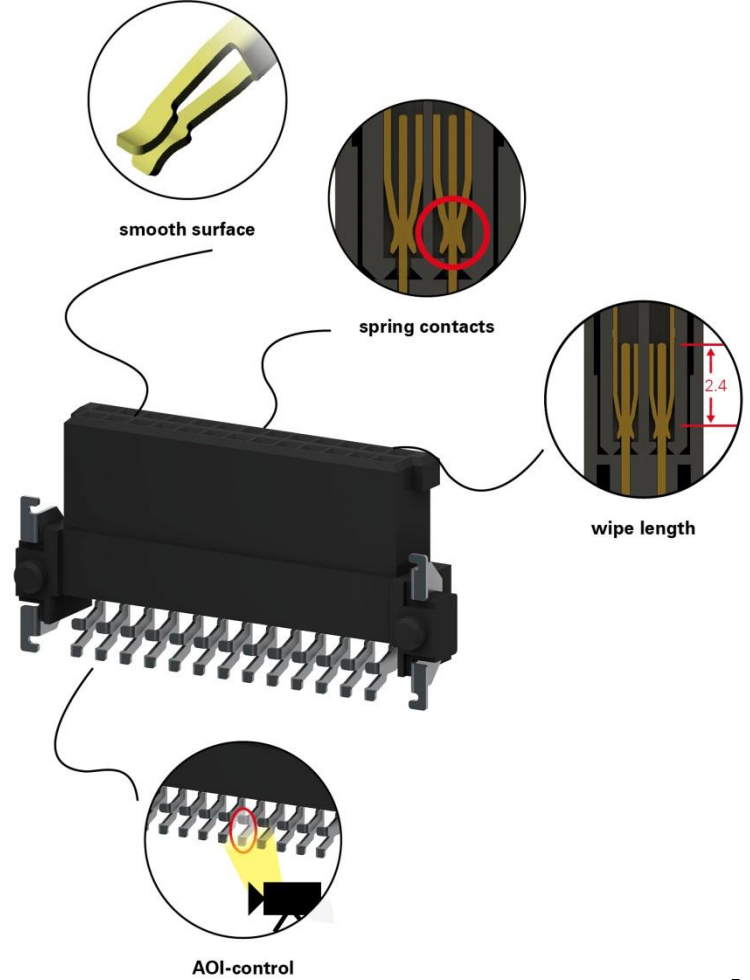
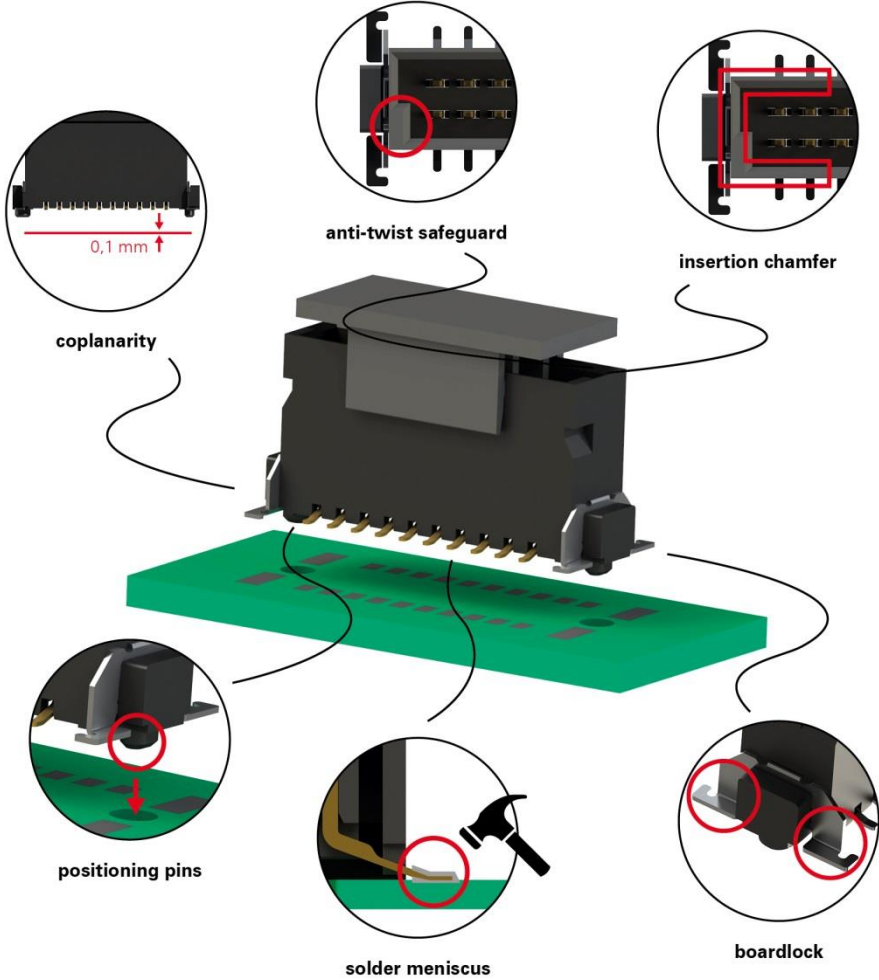
Type of One27 connector		Height (mm)	Number of pins	Mating configuration			
							
	Male low-profile	1.75	12 ... 80	✓		✓	✓
	Male mid-profile	3.25	12 ... 80	✓		✓	✓
	Male angled		12 ... 80		✓	✓	✓
	Female low-profile	6.25	12 ... 80	✓		✓	
	Female mid-profile	9.05	12 ... 80	✓		✓	
	Female angled		12 ... 80		✓	✓	
	Female IDC		12 ... 80				✓
	Female IDC pre-assembled with cable		12 ... 80				✓

One 27 – PCB Distances ...



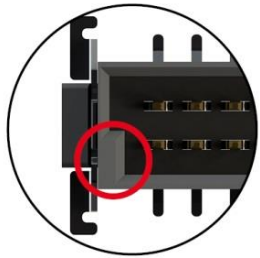
PCB Distance min. – max.	Male Connector Height	Female Connector Height
8.00 – 9.50 mm	low profile 1.75 mm	low profile 6.25 mm
9.50 – 11.00 mm	mid profile 3.25 mm	low profile 6.25 mm
10.75 – 12.25 mm	low profile 1.75 mm	mid profile 9.05 mm
12.25 – 13.80 mm	mid profile 3.25 mm	mid profile 9.05 mm

One 27 – Robustness ...

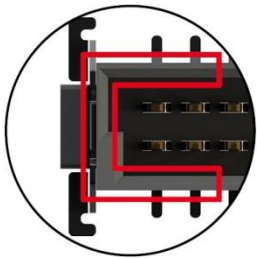


One 27 – Robustness ...

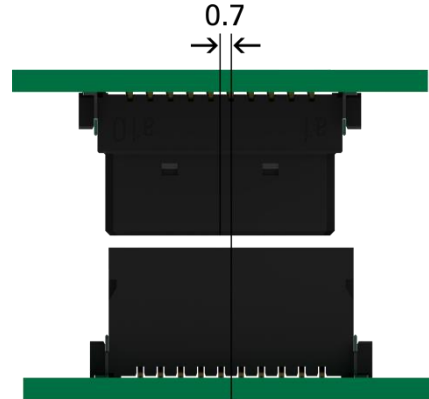
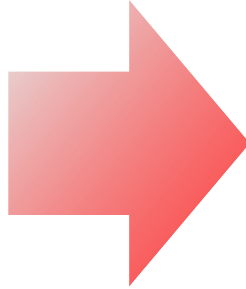
Allowed misalignment tolerances longitudinal and transverse axes: ± 0.7 mm



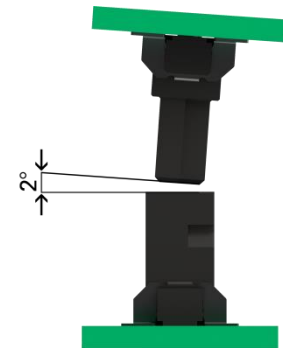
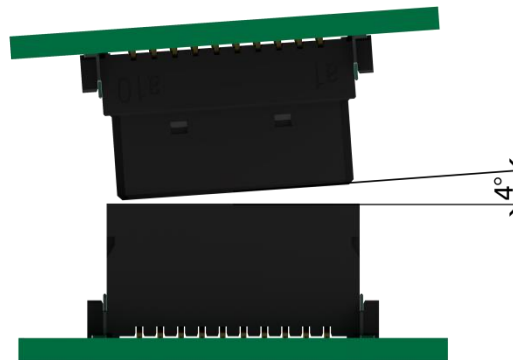
anti-twist safeguard



insertion chamfer

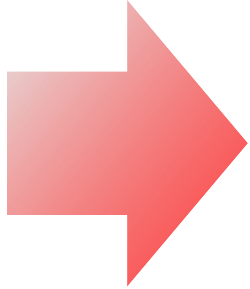


Allowed angular inclination tolerances longitudinal: $\pm 4^\circ$; transverse: $\pm 2^\circ$



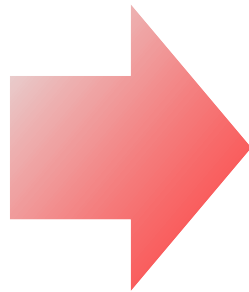
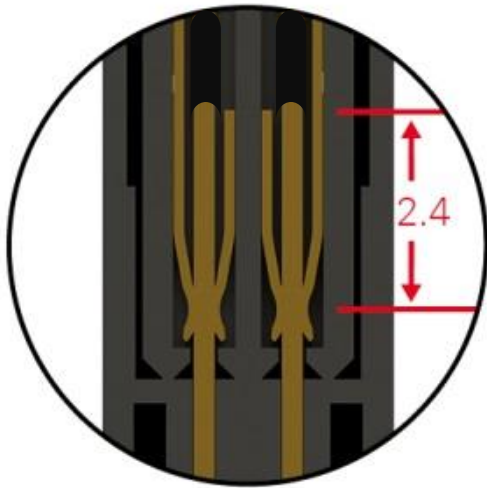
One 27 – Robustness ...

boardlock









One 27 – Robustness ...

wipe length

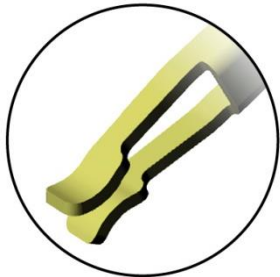


One 27 – Durability ...

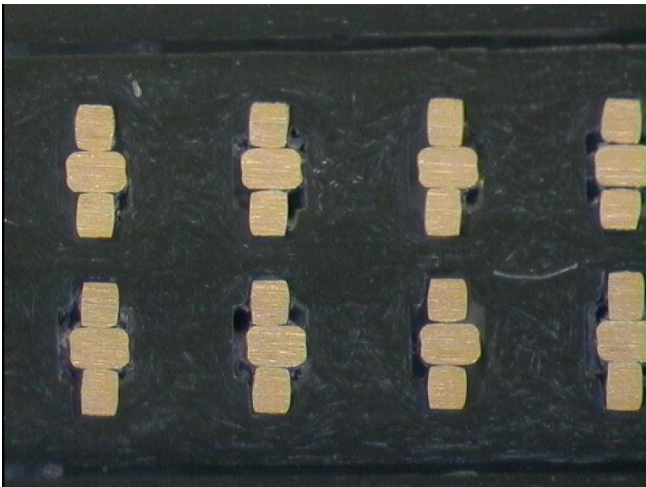
SUPPLIER	Quality Classes	Mating Cycles	Plating Surface	Test Report
	I	500	Au over PdNi	✓
	I	500	Au over PdNi	✓
	I, II, S4	500, 250, S4	Au over PdNi	✓
	5 different	n/a	Au from flash (0.05 um) thru 1.27 um	✗
	2 different	n/a	Au selective Au	✗
	7 different	n/a	Au: flash thru 0.8 um Sn	✗

One 27 – Pin Design ...

ept



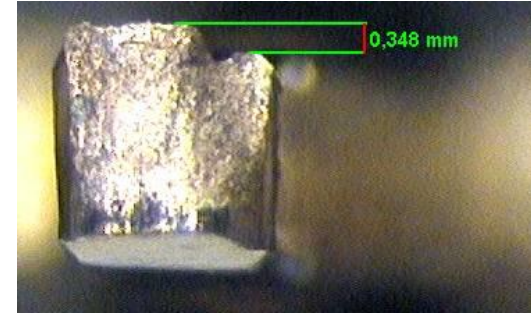
Competitor



One 27 – Pin Design ...

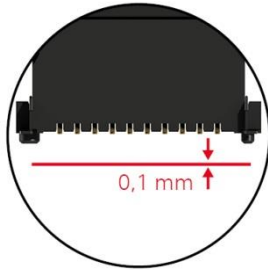


ept



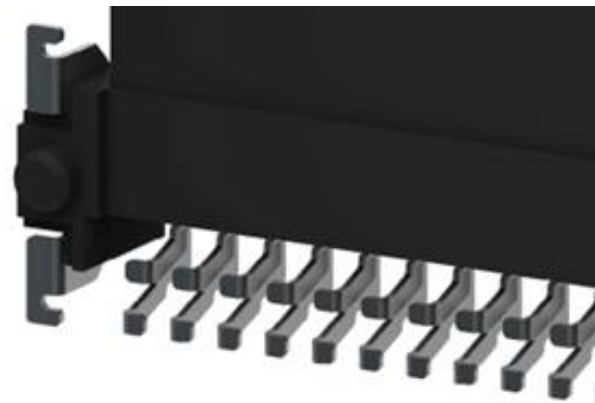
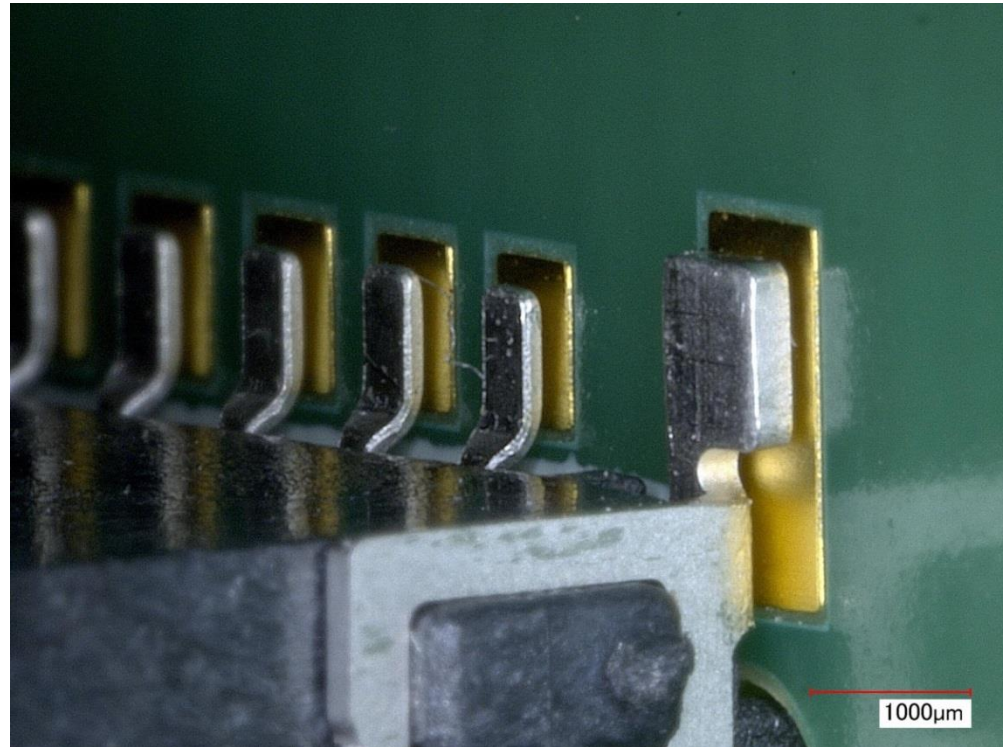
...ept

One 27 – Coplanarity ...



- ✓ 100% inspection with camera after assembly (not visual inspection)
- ✓ Pin design of angled version leads to higher coplanarity

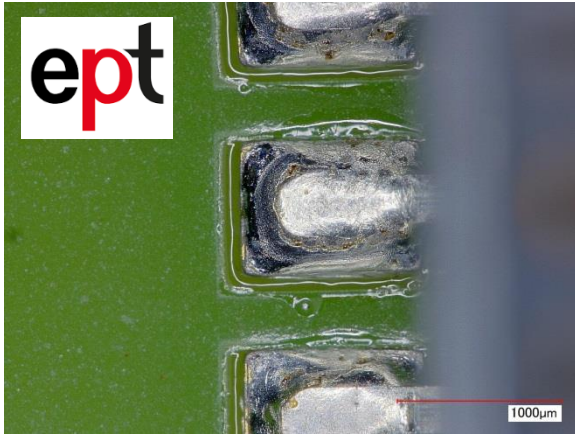
→ Measurement of competitive product: 0.23 mm !!



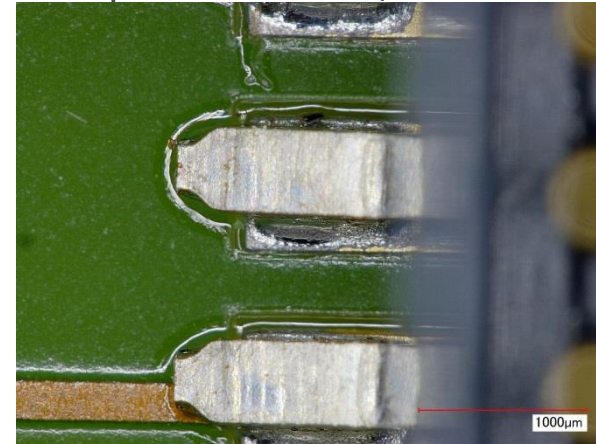
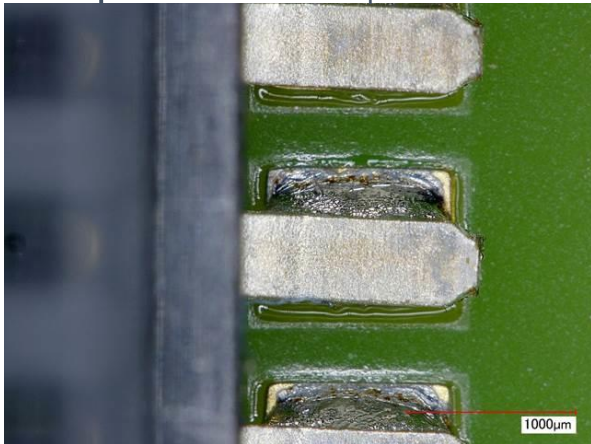
One 27 – Soldering ...



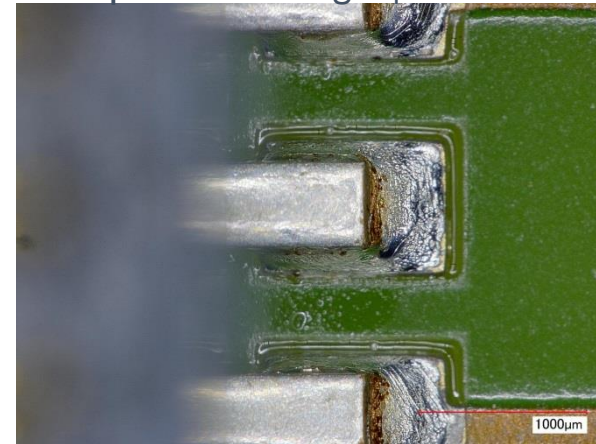
Competitor 1: low profile ML



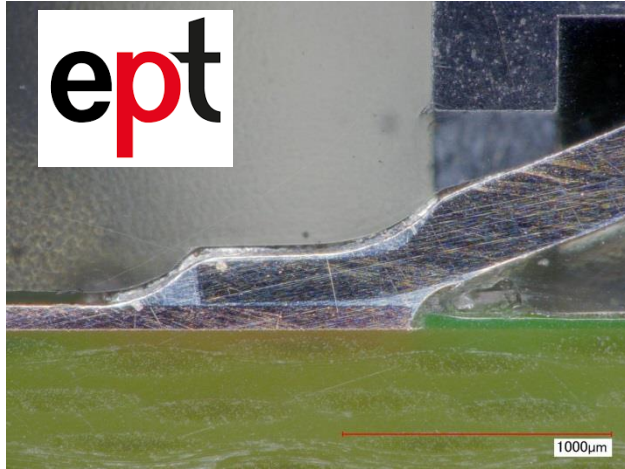
Competitor 2: low profile FL



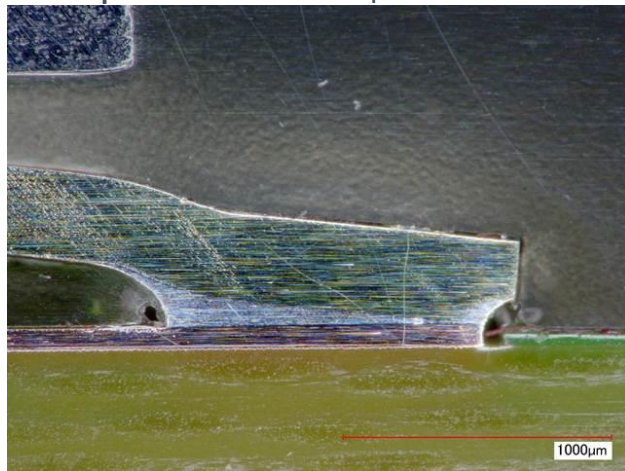
Competitor 3: high profile ML



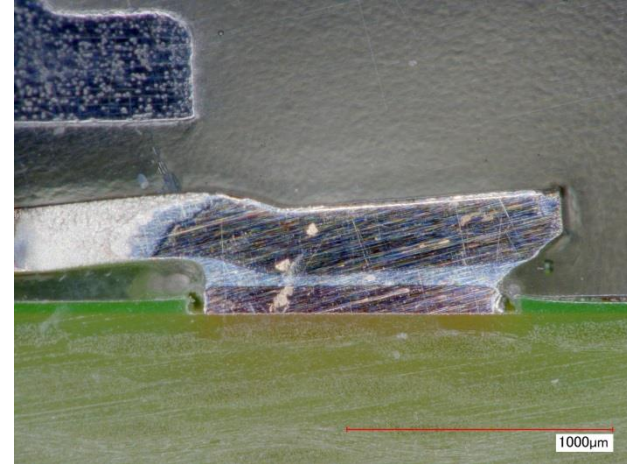
One 27 – Soldering ...



Competitor 2: low profile ML



Competitor 1: low profile FL



Competitor 3: high profile ML



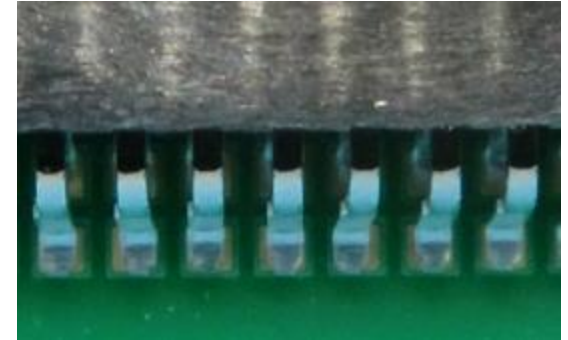
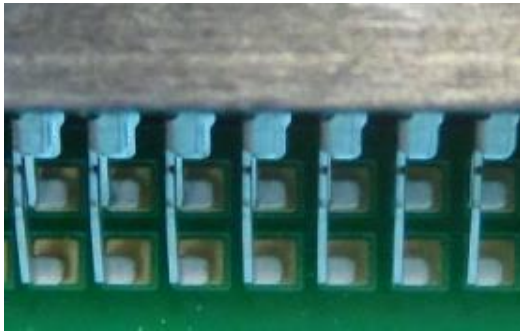
One 27 – Inspection ...



ept

Competitor 1










Competitor 2



One 27 – IDC female ...

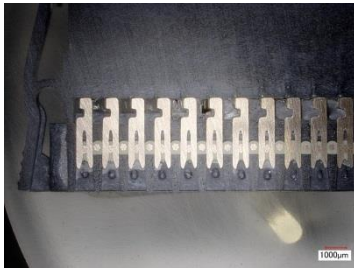
- Flat ribbon cable AWG 30/7 (manufacturers recommended)
- Different cable types and assemblies available
- Recommendations for cable assembly from ept
- 12, 20, ..., 68, 80 pin



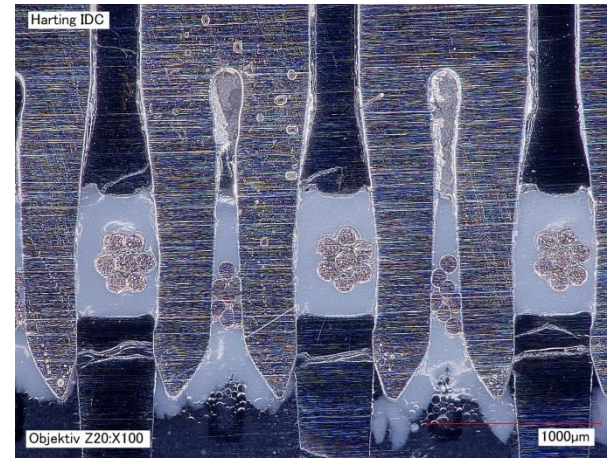
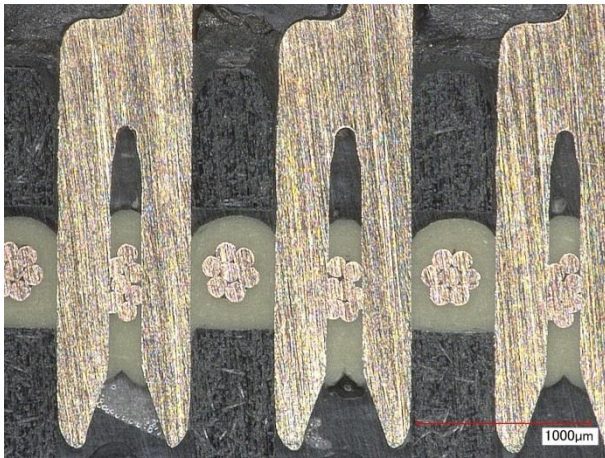
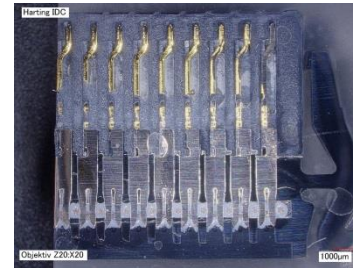
Supplier	w/o cable	w/ cable	red wire position	Remarks
	 cable recommendation		a1	-
			b1	-
			a1	stress relief available

One 27 – IDC female ...

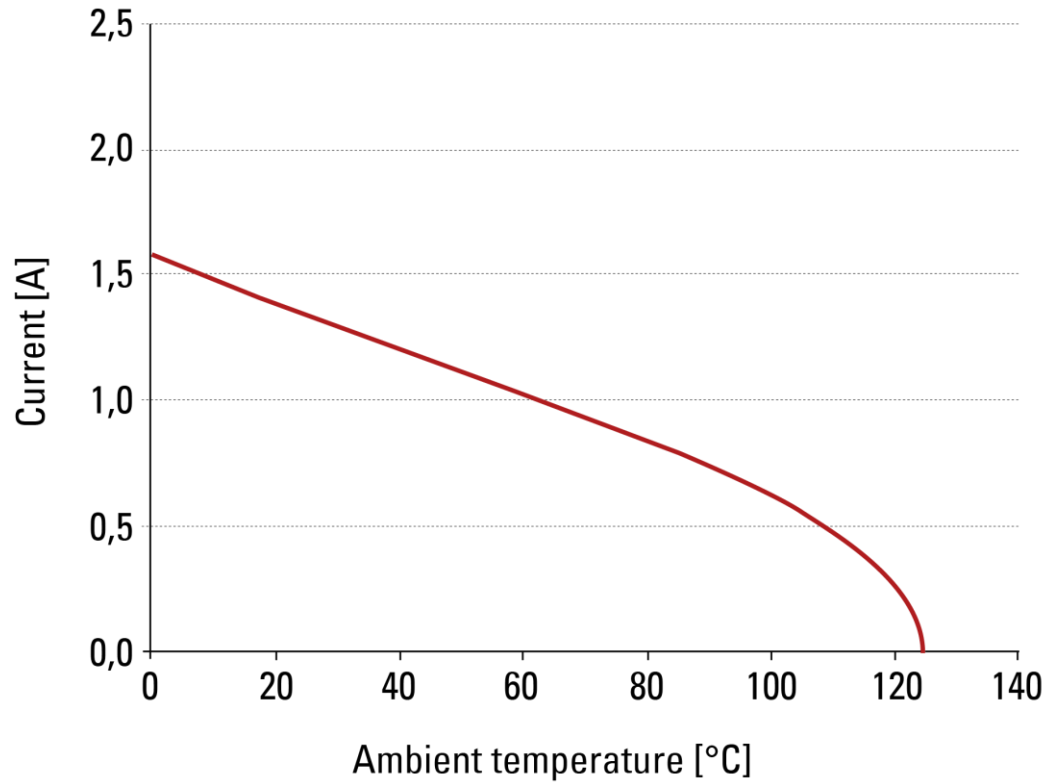
ept



Competitor



One 27 – Electrical Performance ...



1.4 Amp at 20°C

One 27 – Technical Specification



One27		
Technical Specifications	Test Standard	1.27 mm SMT Board-to-Board Connectors; IDC Cable Assembly
Number of pins		12 / 16 / 20 / 26 / 32 / 40 / 50 / 68 / 80
Termination		SMT
Operating temperature range		-55°C to +125°C (Board-to-Board Connectors)
Insulator material		LCP, UL 94 V-0
CTI value	IEC 60112	175
Contact material		Copper alloy
Contact surface		Au over PdNi over Ni / Au over NiP over Ni
Termination area		Sn
Pitch		1.27 mm
Mating force per pin		0.5 N
Seperating force per pin		0.5 N
Durability	IEC 60512-9-1:2010	Performance level I: 500 mating cycles
Coplanarity		max. 0.1 mm
Vibration, sinusoidal	IEC 60512-6-4:2002	10 – 200 Hz 20 g
Contact mating problems if vibrations occur, sinusoidal	IEC 60512-2-5:2003	< 1 μ s

One 27 – Technical Specification



One27		
Technical Specifications	Test Standard	1.27 mm SMT Board-to-Board Connectors; IDC Cable Assembly
Shock, semi-sinusoidal	IEC 60512-6-3:2002	50 g 11 ms
Contact mating problems if shocks occur, semi-sinusoidal	IEC 60512-2-5:2003	< 1 μ s
Operational current	IEC 60512-5-2:2002	max. 1.4 A at 20°C (50 pins)
Contact resistance	IEC 60512-2-1:2002	max. 25 m Ω max. 10 m Ω (Female IDC assembled with cable)
Clearance and creepage		min. 0.4 mm
Insulation resistance	IEC 60512-3-1:2002	max. 10 G Ω
Test voltage	IEC 60512-4-1:2003	500 VAC
Soldering temperature	JEDEC J-STD-020E	max. SMT reflow soldering temperature 20 – 40 s at 260°C
MSL	JEDEC J-STD-020E	1
Packaging		Tape and Reel, Tray (IDC female connector)
Assembly		Pick and Place
UL file		E130314
Environment		RoHS compliant

One 27 – Intermatability ...

