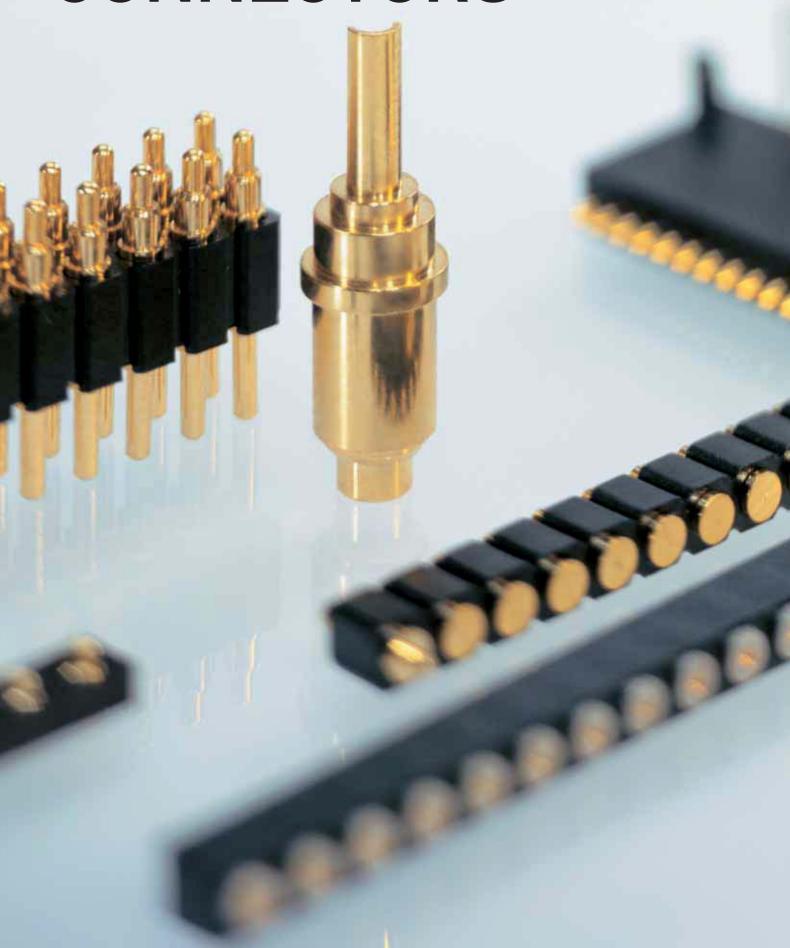
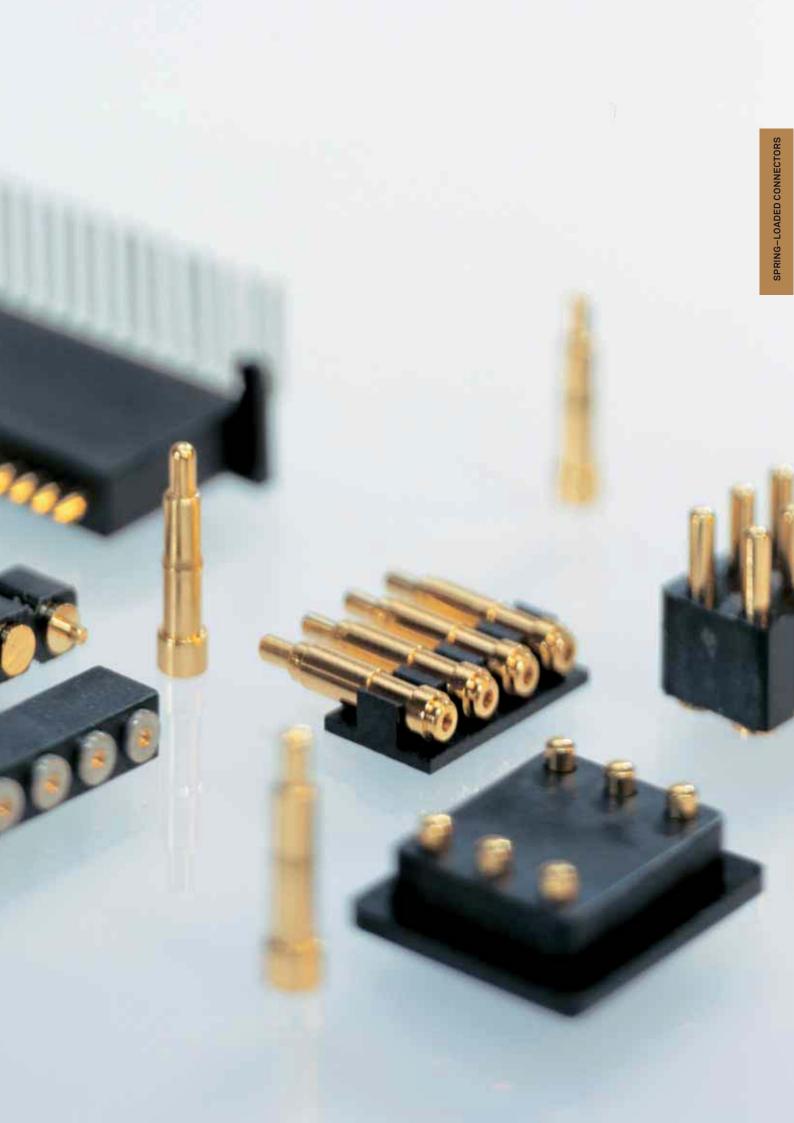


# preci-dip

swiss world connects







# QUICK SELECTOR CHART SPRING-LOADED CONNECTORS AND PAD CONNECTORS

WWW.PRECIDIP.COM TEL +41 32 421 04 00 SALES@PRECIDIP.COM

GRID	1.25 mm	2 mm	2.54 mm
	SINGLE ROW	SINGLE ROW DOUBLE ROW	SINGLE ROW DOUBLE ROW
SLC CONNECTORS		SEE PAG	βE
Straight solder tail	32		34 34
Right angle solder tail	32		
Surface mount perpendicular		33 33	35, 36 35, 36
Surface mount perpendicular with positioning pins			37 37
Surface mount parallel	•		38
SIM card socket			38
PAD CONNECTORS			•
Surface mount perpendicular			39 39
Surface mount parallel			39



SPRING-LOADED CONNECTORS PAD CONNECTORS

GENERAL SPECIFICATIONS

WWW.PRECIDIP.COM TEL +41 32 421 04 00 SALES@PRECIDIP.COM

The values listed below are general specs applying for PRECI-DIP spring-loaded connectors. Please see individual catalog page for additional and product specific technical data.

OPERATING TEMPERATURE RANGE -55 ... +125 °C (-55 °... +85 °C with music wire spring)

CLIMATIC CATEGORY (IEC) 55/85/21

**OPERATING HUMIDITY RANGE** Annual mean 75%

MAX. WORKING VOLTAGE 100 VRMs/150 VDC (2.54 mm grid)



PRECI-DIP connectors designated «Series Preci-Dip Connector» are recognized by UL LLC and listed under «Connectors for Use

in Data, Signal, Control and Power Applications », File Nr. E174442.

#### MECHANICAL CHARACTERISTICS

	BASIC	LOW RESISTANCE	LOW RESISTANCE
	HOLLOW PISTON TYPE	SHAPED PISTON TYPE	CLIP IN-LINE DESIGN TYPE
MIN. INITIAL HEIGHT	3 mm	6 mm	10 mm
STROKE/HEIGHT RATIO	Max. 0.3	Max. 0.2	Max. 0.15
MAX STROKE	2 mm	2 mm	1.5 mm
MIN. INITIAL SPRING FORCE	0.2 N	0.2 N	0.2 N

#### **ELECTRICAL CHARACTERISTICS**

insulation resistance between any two adjacent contacts  $\,$   $\,$  Min. 10'000  $\,$  M  $\Omega$  at 500 Vac

CAPACITANCE BETWEEN ANY TWO ADJACENT CONTACTS Max. 1 pF

#### **ENVIRONMENTAL CHARACTERISTICS**

The sockets withstand the following environmental tests without mechanical and electrical defects:

- Dry heat steady state IEC 60512-11-9.11i / 60068-2-2.Bb: 125 °C, 16 h
- Damp heat cyclic IEC 60512-11-12.11m / 60068-2-30.Db: 25/55 °C, 90 100 %rH, 1 cycle of 24 h
- Cold steady state IEC 60512-11-10.11j / 60068-2-1.A: -55 °C, 2 h
- $\bullet$  Thermal shock IEC 60512-11-4.11d / 60068-2-14.Na: -55/125 °C, 5 cycles 30 min
- Sinusoidal vibrations IEC 60512-6-4.6d / 60068-2-6.Fc: 10 to 500 Hz, 10 g, 1 octave/min, 10 cycles for each axis
- Shock IEC 60512-6-3.6c / 60068-2-27.Ea: 50 g, 11 ms, 3 shocks in three axis During the above two tests, no contact interruption  $\gt$ 50 ns does appear.
- $\bullet$  Solderability J-STD-002A, Test A, 245 °C, 5 s, solder alloy SnAg3.8Cu0.7
- Resistance to soldering heat J-STD-020C, 260 °C, 20 s
- Moisture sensitivity J-STD-020C level 1



1.25 mm GRID / SINGLE ROW / SOLDER TAIL

WWW.PRECIDIP.COM TEL +41 32 421 04 00 SALES@PRECIDIP.COM

Fine pitch connectors with spring-loaded contacts (SLC), solder tail. High-rel contacts with clip, patented in-line design.

#### TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR Black glass filled polyester PCT-GF30-FR

FLAMMABILITY UL 94V-0

PISTON AND BARRELBrass CuZn36Pb3 (C36000)CONTACT CLIPBeryllium copper (C17200)

Stainless steel X12 CrNi177, DIN 17224

MAX. STROKE 1.4 mm

**FORCES** 0.2 N initial 0.36 N at 1/2 stroke

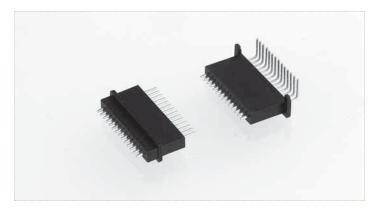
MECHANICAL LIFE 40'000 cycles
OPERATING CURRENT Max. 2 A

**CONTACT RESISTANCE** 20 m $\Omega$  (static measurement, halfway position)

#### ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODE PIN PISTON

28 Tin 0.3 μm min. gold



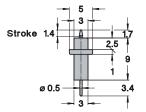
See page 178 for plating specs.
Surface mount miniature SLC connectors available on request.
Please consult.

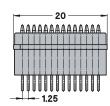
#### 8PD-28-0014-01-812

Straight SLC connector, solder tail, single row

Standard number of contacts: 14

Please consult for other pin number or partially equipped connectors



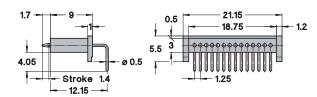


#### 8PC-28-0014-01-828

Right angle SLC connector, solder tail, single row

Standard number of contacts: 14

Please consult for other pin number or partially equipped connectors





2 mm GRID / SINGLE ROW / DOUBLE ROW / SURFACE MOUNT

WWW.PRECIDIP.COM TEL +41 32 421 04 00 SALES@PRECIDIP.COM

Basic modular connectors with spring-loaded contacts (SLC), surface mount. Contacts with shaped piston design for low profile.

#### TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR Black glass filled polyester LCP-GF30-FR

FLAMMABILITY UL 94V-0

PISTON AND BARREL Brass CuZn36Pb3 (C36000)

SPRING Stainless steel X12 CrNi177, DIN 17224

MAX. STROKE 1.1 / 1.4 mm according to total height

FORCES 0.25 N initial 0.7 N at 0.7 mm stroke

MECHANICAL LIFE 50'000 cycles

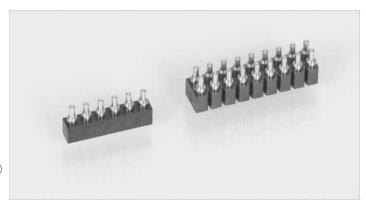
OPERATING CURRENT Max. 3.5 A / 7A peak

 $\textbf{contact resistance} \qquad \textbf{10 m} \Omega \text{ (static measurement, halfway position)}$ 

**COPLANARITY SMD TERMINATIONS**Max. 0.1 mm (measured on 25 mm long connectors)

#### ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODEBARRELPISTONS10.25 µm gold0.5 µm gold



See page 178 for plating specs.

**NNN number of poles.** Replace **NNN** with the requested number of poles, e.g. 821-SS-**NNN**-30-012101 for a single row version with 16 pins becomes 821-SS-0**16**-30-012101.

#### Bulk: T & R Packaging with pick & place cap\*:

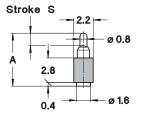
821-S1-NNN-30-XXX101 821-S1-NNN-30-XXX191

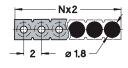
Surface mount SLC connector, low profile, single row

**AVAILABILITY FROM** 2 to 10 contacts

(standard number of contacts: 10)

\*Please consult **www.precidip.com** for availability size of tape, size of reel, number of components per reel and packing units.





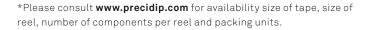
#### Bulk: T & R Packaging with pick & place cap\*:

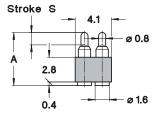
823-S1-NNN-30-XXX101 823-S1-NNN-30-XXX191

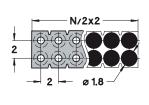
Surface mount SLC connector, low profile, double row

**AVAILABILITY FROM** 4 to 20 contacts

(standard number of contacts: 20)







INITIAL HEIGHT A (mm)	STROKE S (mm)	XXX CODE
5	1.1	012
5.5	1.1	013
6	1.4	014
6.5	1 4	015



2.54 mm GRID / SINGLE ROW / DOUBLE ROW / SOLDER TAIL

WWW.PRECIDIP.COM TEL +41 32 421 04 00 SALES@PRECIDIP.COM

Low resistance modular connectors with spring-loaded contacts (SLC), solder tail. Contacts with improved, shaped piston design.

#### TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR Black glass filled polyester PCT-GF30-FR

FLAMMABILITY UL 94V-0

PISTON AND BARREL Brass CuZn36Pb3 (C36000)

SPRING Brass CuZn36Pb3 (C36000)

Music wire DIN 17223, gold plated

MAX. STROKE 1.4 mm

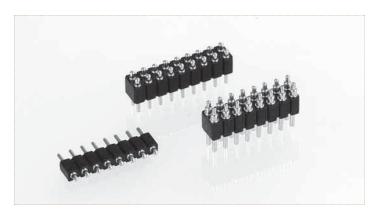
**FORCES** 0.25 N initial 0.85 N at  $^{1}/_{2}$  stroke

MECHANICAL LIFE50'000 cyclesOPERATING CURRENTMax. 3.5 A

contact resistance  $10 \text{ m}\Omega$  (static measurement, halfway position)

#### ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODE	BARREL	PISTON
S1	0.25 µm gold	0.5 µm gold
SS	0.5 μm gold	0.5 µm gold



See page 178 for plating specs.

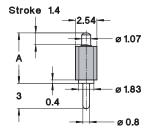
**NNN number of poles:** Replace **NNN** with the requested number of poles, e.g. 813-S1-**NNN**-10-014101 for a double row version with 16 pins becomes 813-S1-0**16**-10-014101.

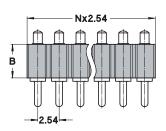
#### 811-S1-**NNN**-10-**XXX**101

Straight SLC connector, low profile, solder tail, single row

**AVAILABILITY FROM** 2 to 64 contacts

(standard number of contacts: 64)



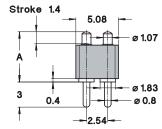


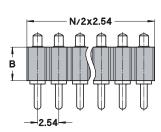
#### 813-S1-**NNN**-10-**XXX**101

Straight SLC connector, low profile, solder tail, double row

**AVAILABILITY FROM** 4 to 72 contacts

(standard number of contacts: 72)



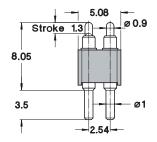


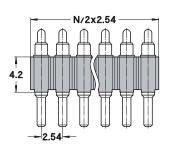
#### 813-SS-**NNN**-10-474101

Straight SLC connector, solder tail, double row

**AVAILABILITY FROM** 4 to 64 contacts

(standard number of contacts: 64)





INITIAL HEIGHT A (mm)	PLASTIC BODY HEIGHT B (mm)	XXX CODE
6	4	014
6.5	4	015
7	4	016
7.5	4	017



2.54 mm GRID / SINGLE ROW / DOUBLE ROW /SURFACE MOUNT

WWW.PRECIDIP.COM TEL +41 32 421 04 00 SALES@PRECIDIP.COM

Basic modular connectors with spring-loaded contacts (SLC), surface mount. Contacts with hollow piston design for low profile.

#### TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR Black glass filled polyester PCT-GF30-FR

FLAMMABILITY UL 94V-0

PISTON AND BARREL Brass CuZn36Pb3 (C36000)

SPRING Stainless steel X12 CrNi177, DIN 17224

(Music wire DIN 17223, gold plated for 811...008101)

**MAX. STROKE** 1.4 mm (1 mm for 811-...-008101

and 1.15 mm for 811/813-...-001101)

**FORCES** 0.25 N initial 0.6 N at  $^{1}/_{2}$  stroke

MECHANICAL LIFE 100'000 cycles
OPERATING CURRENT Max. 3.5 A

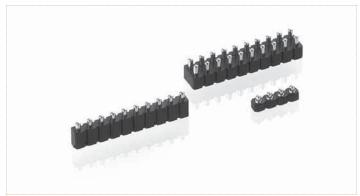
**CONTACT RESISTANCE** 15 m $\Omega$  (static measurement, halfway position)

COPLANARITY SMD TERMINATIONS

Max. 0.1 mm (measured on 25 mm long connectors)

#### ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODEBARRELPISTONSS0.5 μm gold0.5 μm gold



See page 178 for plating specs.

**NNN number of poles.** Replace **NNN** with the requested number of poles, e.g. 811-SS-**NNN**-30-002101 for a single row version with 16 pins becomes 811-SS-0**16**-30-002101.

#### Bulk: T & R Packaging with pick & place cap\*:

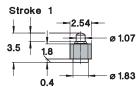
811-SS-NNN-30-008101 811-SS-NNN-30-008191

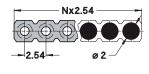
Surface mount SLC connector, very low profile, single row

AVAILABILITY FROM 2 to 10 contacts

(standard number of contacts: 10)

\*Please consult **www.precidip.com** for availability size of tape, size of reel, number of components per reel and packing units.





#### Bulk: T & R Packaging with pick & place cap\*:

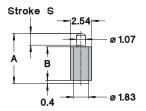
811-SS-**NNN**-30-**XXX**101 811-SS-**NNN**-30-**XXX**191

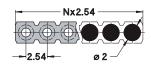
Surface mount SLC connector, low profile, single row

**AVAILABILITY FROM** 2 to 10 contacts

(standard number of contacts: 10)







#### Bulk: T & R Packaging with pick & place cap\*:

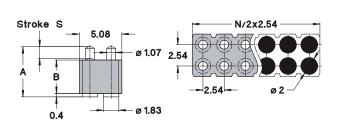
813-SS-**NNN**-30**-XXX**101 813-SS-**NNN**-30**-XXX**191

Surface mount SLC connector, low profile, double row

AVAILABILITY FROM 4 to 20 contacts

(standard number of contacts: 20)

\*Please consult **www.precidip.com** for availability size of tape, size of reel, number of components per reel and packing units.



INITIAL HEIGHT A (mm)	STROKE S (mm)	PLASTIC BODY HEIGHT B (mm)	XXX CODE
4.5	1.15	2.95	001
5	1.4	2.95	002
5.5	1.4	2.95	003
6	1.4	4	004
6.5	1.4	4	005
7	1.4	4	006
7.5	1.4	4	007



2.54 mm GRID / SINGLE ROW / DOUBLE ROW / SURFACE MOUNT

WWW.PRECIDIP.COM TEL +41 32 421 04 00 SALES@PRECIDIP.COM

Low resistance modular connectors with spring-loaded contacts (SLC), surface mount. Contacts with improved shaped piston design.

#### TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR Black glass filled polyester PCT-GF30-FR

FLAMMABILITY UL 94V-0

PISTON AND BARREL Brass CuZn36Pb3 (C36000)

SPRING Brass CuZn36Pb3 (C36000)

Music wire DIN 17223, gold plated

MAX. STROKE 1.4 mm

**FORCES** 0.25 N initial 0.85 N at <sup>1</sup>/<sub>2</sub> stroke

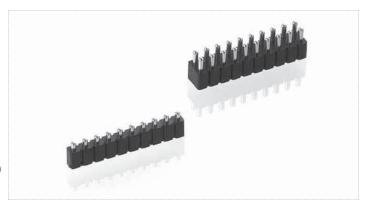
MECHANICAL LIFE50'000 cyclesOPERATING CURRENTMax. 3.5 A

contact resistance  $10 \text{ m}\Omega$  (static measurement, halfway position)

**COPLANARITY SMD TERMINATIONS**Max. 0.1 mm (measured on 25 mm long connectors)

#### ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODEBARRELPISTONS10.25 µm gold0.5 µm gold



See page 178 for plating specs.

**NNN number of poles.** Replace **NNN** with the requested number of poles, e.g. 813-S1-**NNN**-30-014101 for a double row version with 16 pins becomes 813-S1-0**16**-30-014101.

Bulk: T & R Packaging with pick & place cap\*:

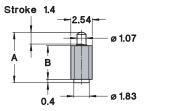
811-S1-NNN-30-XXX101 811-S1-NNN-30-XXX191

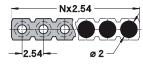
Surface mount SLC connector, low profile, single row

AVAILABILITY FROM 2 to 10 contacts

(standard number of contacts: 10)

\*Please consult **www.precidip.com** for availability size of tape, size of reel, number of components per reel and packing units.





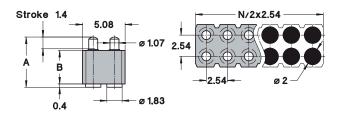
# Bulk: T & R Packaging with pick & place cap\*: 813-S1-NNN-30-XXX101 813-S1-NNN-30-XXX191

Surface mount SLC connector, low profile, double row

AVAILABILITY FROM 4 to 20 contacts

(standard number of contacts: 20)

\*Please consult **www.precidip.com** for availability size of tape, size of reel, number of components per reel and packing units.



INI	ΓΙΑL HEIGHT A (mm)	PLASTIC BODY HEIGHT B (mm)	XXX CODI
6		4	014
6.5	)	4	015
7		4	016
7.5		Δ	017



2.54 mm GRID / SINGLE ROW / DOUBLE ROW / SURFACE MOUNT

WWW.PRECIDIP.COM TEL +41 32 421 04 00 SALES@PRECIDIP.COM

Basic modular connectors with spring-loaded contacts (SLC), surface mount with positioning pins. Contacts with hollow piston design for low profile.

#### TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR Black glass filled polyester PCT-GF30-FR

FLAMMABILITY UL 94V-0

PISTON AND BARREL Brass CuZn36Pb3 (C36000)

 SPRING
 Stainless steel X12 CrNi177, DIN 17224

 MAX. STROKE
 1.4 mm (1.15 mm for 811/813-...-021101)

 FORCES
 0.25 N initial
 0.6 N at  $^{1}/_{2}$  stroke

MECHANICAL LIFE100'000 cyclesOPERATING CURRENTMax. 3.5 A

contact resistance  $15 \text{ m}\Omega$  (static measurement, halfway position)

**COPLANARITY SMD TERMINATIONS**Max. 0.1 mm (measured on 25 mm long connectors)

#### ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODE BARREL PISTON SS 0.5  $\mu$ m gold 0.5  $\mu$ m gold



See page 178 for plating specs.

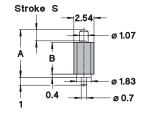
**NNN number of poles.** Replace **NNN** with the requested number of poles, e.g. 813-SS-**NNN**-30-021101 for a double row version with 16 pins becomes 813-SS-016-30-021101.

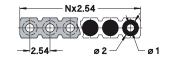
#### 811-SS-**NNN**-30-**XXX**101

Surface mount SLC connector, low profile, single row, with 2 positioning pins

**AVAILABILITY FROM** 2 to 10 contacts

(standard number of contacts: 10)



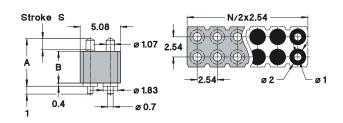


#### 813-SS-**NNN**-30-**XXX**101

Surface mount SLC connector, double row, with 4 positioning pins

**AVAILABILITY FROM** 4 to 20 contacts

(standard number of contacts: 20)



INITIAL HEIGHT A (mm)	STROKE S (mm)	PLASTIC BODY HEIGHT B (mm)	XXX CODE
4.5	1.15	2.95	021
5	1.4	2.95	022
5.5	1.4	2.95	023
6	1.4	4	024
6.5	1.4	4	025
7	1.4	4	026
7.5	1.4	4	027
7 7.5		4	026 027



2.54 mm GRID / SINGLE ROW / DOUBLE ROW / SURFACE MOUNT

WWW.PRECIDIP.COM TEL +41 32 421 04 00 SALES@PRECIDIP.COM

Connectors with spring-loaded contacts (SLC), surface mount.

#### TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR Black glass filled polyester PCT-GF30-FR

FLAMMABILITY UL 94V-0

PISTON

AND BARREL Brass CuZn36Pb3 (C36000)

8PM...131 8PM...260 8PM...219 SPRING Music wire Stainless steel X12 Stainless steel X12 DIN 17723 CrNi177 CrNi177 DIN 17224 DIN 17224 gold plated MAX. STROKE 1.5 mm 1.5 mm 1 mm FORCES 0.2 N initial 0.25 N initial 0.25 N initial 0.9 N at 1/2 stroke  $0.95~N~at~^{1}/_{2}~stroke$  $0.6\ N$  at  $^{1}/_{2}$  stroke

MECHANICAL
LIFE 50'000 cycles 50'000 cycles 100'000 cycles

RESISTANCE (static measurement, halfway position)

COPLANARITY

**SMD TERMINATIONS** Max 0.1 mm (measured on 25 mm long connectors)



Other plating on request (see page 178 for plating specs). **NN number of poles.** Replace **NN** with the requested number of poles, e.g. 8PM-11-00**NN**-02-131 with 5 pins becomes 8PM-11-00**05**-02-131.

#### **ORDERING INFORMATION ROHS COMPLIANT PARTS**

PLATING CODE	BARREL	PISTON
11	0.25 μm gold	0.25 µm gold
SS	0.5 µm gold	0.5 µm gold

#### Bulk: T & R Packaging\*:

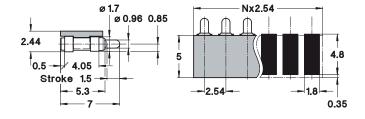
8PM-11-00**NN**-02-260 8PM-11-00**NN**-02-260191

Parallel surface mount SLC connector for pick & place automatic assembly

**AVAILABILITY FROM** 2 to 10 contacts

(standard number of contacts: 10)

\*Please consult **www.precidip.com** for availability size of tape, size of reel, number of components per reel and packing units.



# Bulk: T & R Packaging\*:

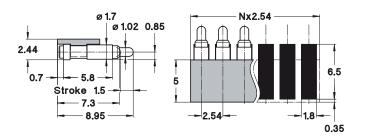
8PM-11-00**NN**-02-131 8PM-11-00**NN**-02-131191

Parallel surface mount SLC connector for pick & place automatic assembly

**AVAILABILITY FROM** 2 to 10 contacts

(standard number of contacts: 10)

\*Please consult **www.precidip.com** for availability size of tape, size of reel, number of components per reel and packing units.



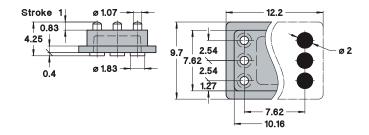
### Bulk: T & R Packaging\*:

8PM-SS-0006-02-219 8PM-SS-0006-02-219191

SLC connector for chipcards with contacting pads

acc. to ISO 7816

Standard number of contacts: 6



<sup>\*</sup>Please consult **www.precidip.com** for availability size of tape, size of reel, number of components per reel and packing units.



### PAD CONNECTORS

SINGLE ROW / DOUBLE ROW / SURFACE MOUNT

WWW.PRECIDIP.COM TEL +41 32 421 04 00 SALES@PRECIDIP.COM

Pad connectors with fixed contacts, counterparts for spring-loaded connectors.

#### TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 31)

INSULATOR Black glass filled polyester PCT-GF30-FR

FLAMMABILITY UL 94V-0

CONTACT Brass CuZn36Pb3 (C36000)

CONTACTING AREA Ø 1.5 mm

OPERATING CURRENT Max. 3.5 A

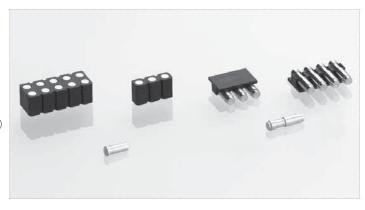
DIELECTRIC STRENGTH MIN. 1'000 VRMS

COPLANARITY SMD TERMINATIONS

rions Max. 0.1 mm (measured on 25 mm long connectors)

#### ORDERING INFORMATION ROHS COMPLIANT PARTS

PLATING CODETERMINATIONCONTACTING AREA10, 110.25 µm gold0.25 µm gold



See page 178 for plating specs.

**NNN / NN number of poles.** Replace **NNN** or **NN** with the requested number of poles, e.g. 802-10-**NNN**-30-507101 for a double row version with 20 pins becomes 802-10-0**20**-30-507101.

Bulk: T & R Packaging\*:

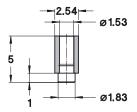
800-10-**NNN**-30-507101 800-10-**NNN**-30-507191

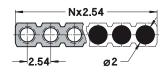
SMD pad connector, single row, perpendicular mount

**AVAILABILITY FROM** 2 to 10 contacts

(standard number of contacts: 10)

\*Please consult **www.precidip.com** for availability size of tape, size of reel, number of components per reel and packing units.





Bulk: T & R Packaging\*:

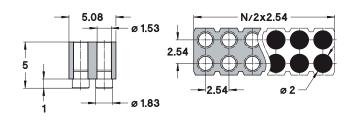
802-10-**NNN**-30-507101 802-10-**NNN**-30-507191

SMD pad connector, double row, perpendicular mount

AVAILABILITY FROM 4 to 20 contacts

(standard number of contacts: 20)

\*Please consult **www.precidip.com** for availability size of tape, size of reel, number of components per reel and packing units.



Bulk: T & R Packaging\*:

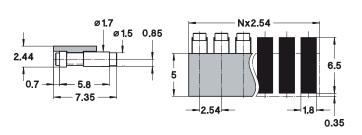
8MM-11-00**NN**-02-131 8MM-11-00**NN**-02-131191

SMD pad connector, single row, parallel mount

**AVAILABILITY FROM** 2 to 10 contacts

(standard number of contacts: 10)

\*Please consult **www.precidip.com** for availability size of tape, size of reel, number of components per reel and packing units.



# www.precidip.com