



**Featuring superior reliability for smartphones and tablet devices, the Nano-SIM card socket mates seamlessly with standard Nano-SIM as well as specially fitted micro-SIM cards**

The continued miniaturization of Subscriber Identity Module (SIM) cards with the introduction of Nano-SIM – a 4th generation SIM card standard - to make PCB space for more electronic components, a larger battery and slimmer phone design, has left micro-SIM card users with existing cards that are too big and too thick to fit standard sized Nano-SIM card sockets. Some users have resorted to trimming their micro-SIM cards to fit the smaller socket but realize their micro-SIM cards are still too thick to fit sockets that accept only standard, 0.67mm height Nano-SIM cards.

Molex has designed a Nano-SIM card socket shell with a 1.30mm profile height to enable use of standard height (0.67mm) Nano-SIM cards as well as the thicker (0.76mm) specially fitted micro-SIM cards. The series is used with a 0.30mm block-style SIM connector (series 78545) to provide a high contact normal force (0.30N) that ensures card-to-socket contact integrity and electrical reliability.

The 3-piece socket design with its separate block-style SIM connector and the ejector tray lowers the risk of SMT warpage especially during high IR-processing temperatures.

This compact set of components comes complete with card polarization and detection, as well as tray-locking features. Removal of SIM card is easy. Simply insert a paper clip (with 0.80mm diameter) into the pin-hole located on the right of the tray cover and the tray ejects instantly.

All parts are halogen-free for environmental sustainability and are shipped in embossed tape-on-reel packaging.

For more information, visit our website at: [www.molex.com/link/nanosim.html](http://www.molex.com/link/nanosim.html)

## Block-style SIM Connector with Nano-SIM Card Socket Shell

(For use with customer-supplied ejector tray)

**78545** SIM Connector, Block-style, 0.30mm height

**78790** Nano-SIM Card Socket Shell, 1.30mm height

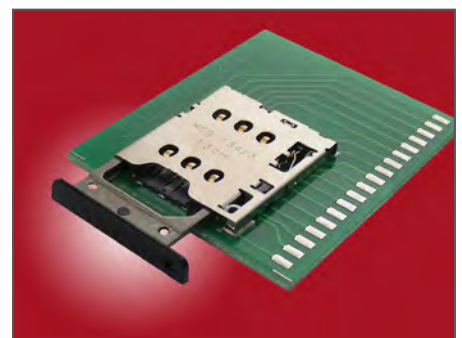
**Use with** Ejector Tray (customer-supplied, customizable upon request)



Nano-SIM Card Socket Shell, 1.30mm height (Series 78790)



Block-Style SIM Connector, 0.30mm height (Series 78545)



Recommended assembly with SIM connector and Nano-SIM card socket shell fitted with customer-supplied ejector tray

### Features and Benefits

#### Block-Style SIM Connector (Series 78545)

High Contact Normal Force (0.30N)	Improves card-to-socket (electrical) contact when used with card and socket shell
0.38micron Gold (Au) on contact and 0.05micron Gold-flash on soldertail	Ensures high connector reliability by providing a stable and low contact resistance over the operating life of applications
0.30mm connector height	For maximum vertical space savings in low-profile applications
Rounded geometry of contact terminals	Ensures smooth gliding action of the SIM card during insertion
Halogen-free, lead-free	For environmental sustainability

### Specifications

#### Block-Style SIM Connector (Series 78545)

##### Reference Information

Packaging: Embossed Tape-on-Reel  
 Use With:  
 Nano-SIM or modified micro-SIM cards  
 Terminal Used: Copper Alloy  
 Designed In: Millimeters  
 RoHS: Yes  
 Halogen Free: Yes  
 Glow Wire Compliant: No

##### Electrical

Voltage (max.): 15V DC  
 Current (max.): 0.5A per contact  
 Low Level Contact Resistance (max.):  
 100 milliohm initial  
 Dielectric Withstanding Voltage:  
 500V AC  
 Insulation Resistance (min.):  
 1000 Megohm

##### Mechanical

Contact Normal Force: (min.) 0.30N  
 Tray Insertion Force with card (min.):  
 0.30N  
 Tray Withdrawal Force with card (max.):  
 20N  
 Solder Joint Peel Strength (min.): 20N  
 Durability:  
 240-550 cycles per hour to 500  
 cycles

##### Physical

Housing:  
 LCP, UL94V-0, Glass-filled, Black  
 Contact: Copper Alloy  
 Plating:  
 Contact Area —  
 0.38 $\mu$ m (15 $\mu$ " ) Gold (Au)  
 Solder Tail Area —  
 0.05 $\mu$ m (2 $\mu$ " ) Gold (Au) Flash  
 Other Areas —  
 Nickel (Ni) Plating  
 Underplating —  
 2.00 $\mu$ m ( $\mu$ " ) Nickel (Ni)  
 Operating Temperature:  
 -30 to +85°C

### Features and Benefits

#### Socket Shell (Series 78790)

1.30mm socket shell profile height	Accepts both standard 0.67mm Nano-SIM as well as modified, 0.76mm height micro-SIM cards
Miniature socket footprint	Frees up expensive PCB real estate for maximum space and cost savings
Tray lock feature	Ensures secure locking of tray when inserted
Detect Switch with First-Mate-Last-Break capability	For reliable tray and SIM card detection
Integral shell tabs and stainless steel tab on shaft housing	Reinforces soldering hold-down of socket and housing components
Card polarization features	Ensure correct card orientation when used with socket

### Specifications

#### Socket Shell (Series 78790)

##### Reference Information

Packaging: Embossed Tape-on-Reel  
 Use With:  
 Nano-SIM or modified micro-SIM cards  
 Terminal Used: Copper Alloy  
 Designed In: Millimeters  
 RoHS: Yes  
 Halogen Free: Yes  
 Glow Wire Compliant: No

##### Electrical

Voltage (max.): 10V DC  
 Current (max.): 0.5A per contact  
 Low Level Contact Resistance (max.):  
 100 milliohm initial  
 Dielectric Withstanding Voltage:  
 500V AC  
 Insulation Resistance (min.):  
 1000 Megohm

##### Mechanical

Contact Normal Force: (min.) 0.30N  
 Tray Insertion Force with card (min.):  
 0.30N  
 Tray Withdrawal Force with card (max.):  
 20N  
 Durability:  
 1000 cycles at rate of 720 cycles per hour max.

##### Physical

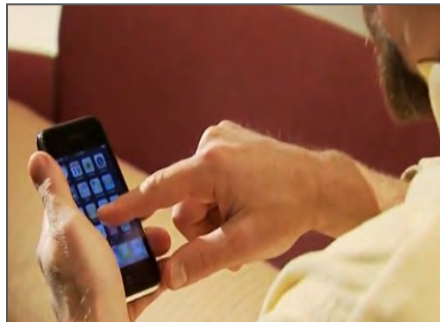
Housing: Insert mold, LCP, UL94V-0  
 Contact: Copper Alloy  
 Plating  
 (Detect Spring of 78790 Socket):  
 Contact Area —  
 0.127 $\mu$ m (5 $\mu$ in) Gold (Au)  
 Solder Tail Area —  
 1.27 $\mu$ m (50 $\mu$ in) Tin (Sn)  
 Underplating —  
 1.27 $\mu$ m (50 $\mu$ in) Nickel (Ni)  
 Plating (Shell of 78790 Socket):  
 Contact and Soldering Area —  
 0.025 $\mu$ m (1 $\mu$ in) Gold (Au)  
 Underplating —  
 1.27 $\mu$ m (50 $\mu$ in) Nickel (Ni)  
 Plating (Shaft of 78790 Socket):  
 Solder Tail Area —  
 1.27 $\mu$ m (50 $\mu$ in) Tin (Sn)  
 Operating Temperature:  
 -40 to +85°C

## Applications

- Smartphones and mobile devices
- SIM cards
  - Other mobile devices



Tablet PCs



Smartphones

## Block-style SIM Connector with Nano-SIM Card Socket Shell



Mobile Wi-Fi\* devices

## Ordering Information

Order No.	Component	Profile Height (mm)	Number of soldering points
<a href="#">78545-0010</a>	Block-style SIM connector, 0.30mm height	0.30mm	6
<a href="#">78790-1001</a>	Nano-SIM card socket shell with detect switch (tray supplied by customer)	1.30mm	7

\*Wi-Fi is a registered trademark of the Wi-Fi Alliance

[www.molex.com/link/nanosim.html](http://www.molex.com/link/nanosim.html)