

Molex's push-push micro-SIM connectors provide superior electrical reliability and card retention compared to competitive versions for applications such as smart phones and tablet PCs

The recent move from 2G to 3G and 4G/LTE networks combined with the continuing downsizing of mobile equipment has given rise to a new smaller form factor of the Subscriber Identification Module (SIM) format called micro-SIM. This latest edition to the SIM family is 52% smaller than its predecessor the Mini-SIM. Molex has been an early leader in connector designs for the new micro-SIM format. The competition has quickly followed, focused primarily on trying to reduce the profile height.

Molex has also focused on compactness for our micro-SIM connector designs, but more importantly, on reliability. The micro-SIM format, unlike microSD, does not have an independent locking mechanism to help provide card retention. That has required makers to build contact retention and reliability into the terminal design.

Molex's new 503960 micro-SIM version is the only version on the market that has been independently tested by some of the major mobile manufacturers to achieve a contact force of 0.3N. The design accomplishes this through a unique contact-to-pad arrangement.

Molex's new 104118 micro-SIM version has a unique detect switch design built into it to offer reliability in the area of card retention. The detect terminal for this version exerts its spring force on the cam instead of the card, which reduces outward force on the card and provides additional card retention assurance in cases of shock or vibration. The 503960 version comes in the industry-standard 6-circuit style, while the 104118 version includes 8-circuits to support applications requiring additional pin assignments.

For additional information visit: www.molex.com/link/micro-sim.html

micro-SIM Card Sockets, Push-Push, Normal Mount, With Detect Switch, 1.42 and 1.60mm Height

503960 6-circuit, 1.42mm Height

104118 8-circuit, 1.60mm Height



Molex Push-Push micro-SIM connectors, 104118 series (upper left) and 503960 (bottom right)

FEATURES AND BENEFITS

Features

- Compact card sockets with small footprint and low profile height
- Contact layout arrangement designed for highest level of contact force (503960)
- Double-cantilever inner-bend terminal design (104118)
- Reversed terminal-beam design with gradual lead-in (503960)
- Card polarization features
- Eight PCB hold-down points (503960/104118) and through-hole solder tabs (104118)

Benefits

- Optimum PCB real estate and vertical space savings
- Reliable electrical performance when subjected to shock or vibration
- Secure electrical reliability over multiple mating cycles, and prevents terminal stubbing
- Prevents contact stubbing during insertion; ensures smooth insertion and withdrawal of card
- Prevents micro-SIM card from being inserted in the wrong direction
- Secure PCB retention

SPECIFICATIONS

Reference Information

- Packaging: Embossed tape
- Designed In: mm
- ROHS: Yes
- Halogen Free: Yes

Mechanical

- Card Insertion/Retention Force: 503960:15N max.
104118: 5 +/-2N
- Durability: 503960: 2,000 cycles
104118: 5,000 cycles

Electrical

- Voltage (max.): 10V
- Current (max.): 0.5A max.
- Contact Resistance: 100 milliohms max.
- Dielectric Withstanding Voltage: 500V AC
- Insulation Resistance: 1,000 Megohms minimum

Physical

- Housing: LCP (glass-filled); UL 94V-0, Black
- Contact: 503960: Phosphor Bronze
104118: Copper Alloy
- Plating:
 - Contact Area: Gold
 - Solder Tail Area: Gold
 - Underplating: Nickel
- Operating Temperature: -25 to +85°C

MARKETS AND APPLICATIONS

- Mobile phones
- Smart phones
- Tablet PCs
- Navigation tracking devices



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Push-Push, Normal Mount,
With Detect Switch, 1.42
and 1.60mm Height**

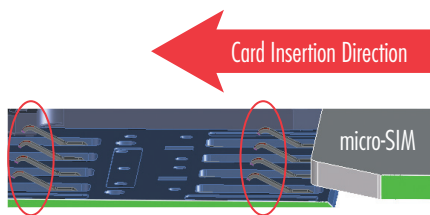
503960 6-circuit, 1.42mm
Height

104118 8-circuit, 1.60mm
Height

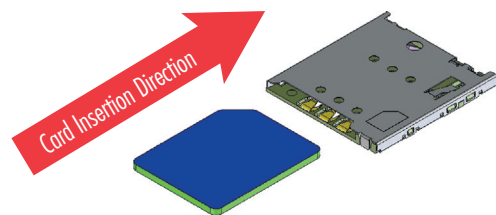
ADDITIONAL FEATURES

Anti-Stubbing Feature

104118



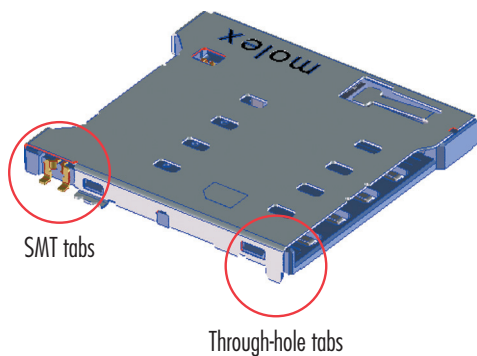
503960



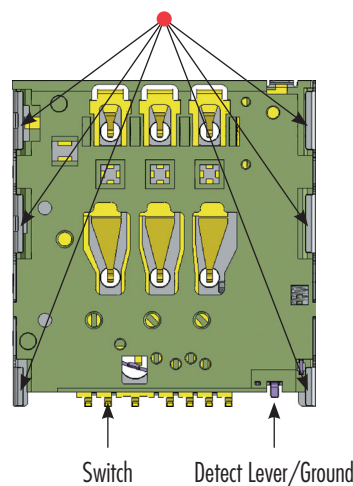
A reversed terminal design on the 503960 and double-cantilever terminal design on the 104118 micro-SIM sockets provide a gradual lead-in that prevents contact stubbing during insertion, while ensuring smooth insertion and withdrawal of the card.

PCB Hold-Down Features

104118



503960



The 104118 version also includes front through-hole solder tabs to provide additional PCB hold-down protection.

In addition to terminal soldering points, both the 503960 and 104118 versions include eight soldering points (six solder tabs plus detect terminal and switch soldering points) to provide secure PCB hold-down.