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micro-SIM Card Sockets, Push-Pull Style, 6- and 8-Circuit, 1.35, 1.40 and 1.45mm Heights, Halogen-free, Lead-free

78723 1.35mm Height, with Spring Tab

78727 1.40mm Height, with Detect Switch

78646 1.45mm Height, without Detect Switch

Realize high card-contact reliability and greater space savings in smartphones and portable handheld devices with the smallest and slimmest 1.35mm-height micro-SIM card socket

Delivering more vertical space and valuable PCB real-estate savings is Molex's latest addition to its expanded family of 3FF (3rd Form Factor) SIM card interconnects - the 1.35mm height micro-SIM card socket. The sleek, streamlined profile of the socket makes it ideal for use in ultra-slim smartphones, tablet PCs, GSM/UMTS* modems, WLAN (Wireless LAN) cards and more. Measuring only 14.42 (L) by 12.80 (W), the series 78723 socket is so compact it allows the slightly protruding end of a fully inserted micro-SIM card [15.12 (L) by 12.00mm (W)] to be withdrawn easily with the help of a very wide 'finger area' on the socket.

A hallmark of this connector is its shell-spring-tab. This metal feature gives the socket a high contact normal-force (0.30N) for enhanced card contact and electrical reliability when a micro-SIM card is inserted. A unique feature of this socket is its dual 'shell-bends' at the rear connector. One of these is located at the extreme corner of the socket corresponding to the perpendicular edge of the micro-SIM card; the other, on its opposite edge, is slightly angled to fit the chamfered edge of a fully inserted micro-SIM card. Integral to the socket shell, these features serve as card polarization and barriers to contact damage upon mis-insertion of micro-SIM cards. When soldered to the PCB, they provide added stability to the socket during card insertion and withdrawal.

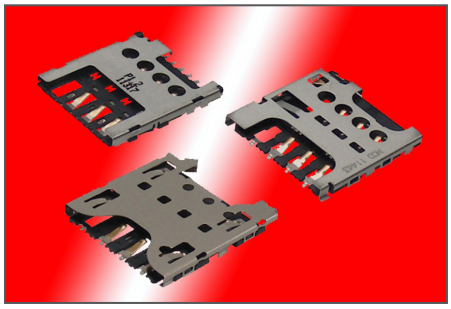
The series 78723 socket has an anti-shorting feature which is distinct from that of the series 78646 socket. Like the 78727 series, the 78723 socket uses raised housing walls as contact barriers to insulate any exposed SIM card contact pads from shorting with the socket's metal shell around them. The series 78646 socket, however, prevents shorting by use of a kinked metal-shell feature to confine any lateral movements of potentially exposed SIM cards.

The socket terminals have rounded profiles to facilitate smooth card entry and exit from the socket. They are aligned in reversed direction to prevent contact stubbing and allow gradual 'lead-in' of the inserted card. When entering the socket the card makes initial contact with the terminal body before gliding over its rounded tip and establishes electrical contact immediately. All Molex micro-SIM cards have this terminal geometry for enhanced contact reliability. The socket has 6 integral solder tabs on the shell to provide robust PCB hold-down during soldering.

All 3 series of micro-SIM card sockets have insertmolded LCP housings to maintain design and dimension precisions as well as to withstand high-temperature operations. The sockets are offered in standard 6-circuit configuration. Customers can request for an 8-circuit option if needed. Parts are shipped in tape-on-reel packaging.

All Molex micro-SIM sockets are halogen-free, ELVand RoHS-compliant for environmental sustainability.

For more information, visit our website at:
www.molex.com/link/micro-sim.html



1.35mm height micro-SIM Card Socket (middle) with variant 1.45mm (left) and 1.40mm (right) profile height versions

*GSM/UMTS - Global System for Mobile Communications/Universal Mobile Telecommunications System

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Features and Benefits

Extremely small connector footprint provides superb PCB real-estate savings especially for tight packaging applications

Lowest profile connector height of 1.35mm offers maximum vertical space saving for ultra-slim handheld devices

Dual (90°) angular card-polarization features on metal shell prevent insertion and over-insertion of wrongly oriented micro-SIM card

Integral metal-shell spring tab ensures high normal force (0.30N) and good electrical contact with inserted micro-SIM card

Anti-short feature with raised housing walls of the socket insulates any exposed edge of (improperly pared) SIM card contact pads from shorting with the surrounding shell

Soldering features on metal shell provide robust PCB hold-down of both 6- and 8-circuit sockets

Specifications

Reference Information
Packaging: Embossed Tape on Reel
Use With: micro-SIM card
Designed In: mm
RoHS: Yes
Halogen Free: Yes
Glow Wire Compliant: No

Electrical
Voltage (max.):
5V DC (78723), 10V DC (78727), 15V DC (78646)
Current (max.): 0.5A per contact
Low Level Contact Resistance (max.):
100 milliohms
Dielectric Withstanding Voltage:
500 VAC
Insulation Resistance (min.):
1000 megaohms

Mechanical
Contact Normal Force (min.):
0.30N (78723 and 78727)
0.20N at min. deflection (78646)
Card Insertion Force (max.):
8N (78723), 10N (78727)
Card Withdrawal Force (min.):
0.70N (78723)
0.5N (78727)
Durability (max.):
500 cycles at 100 milliohms (78723 and 78727)
1500 cycles at 100 milliohms (78646)

Physical
Housing:
LCP (glass-filled), UL94V-0, Black
Contact: Copper Alloy
Metal Shell: Stainless Steel
Plating:
Contact Area — 0.38µm (15µ") Gold (Au)
Solder Tail — 1.27µm (50µ") Matte Tin (Sn)
Underplating — 1.27µm (50µ") Nickel (Ni)
Shell Solder Tab:
1.27µm (50µ") Matte Tin (Sn) over 1.27µm (50µ") Nickel (Ni) underplate
Detect Contact:
0.127µm (5µ") Gold (Au) over 1.27µm (50µ") Nickel (Ni) underplate (78727)
Detect Spring:
0.127µm (5µ") Gold (Au) over 1.27µm (50µ") Nickel (Ni) underplate (78727)
Operating Temperature:
-40 to +85°C (78723 and 78727)
-30 to +85°C (78646)

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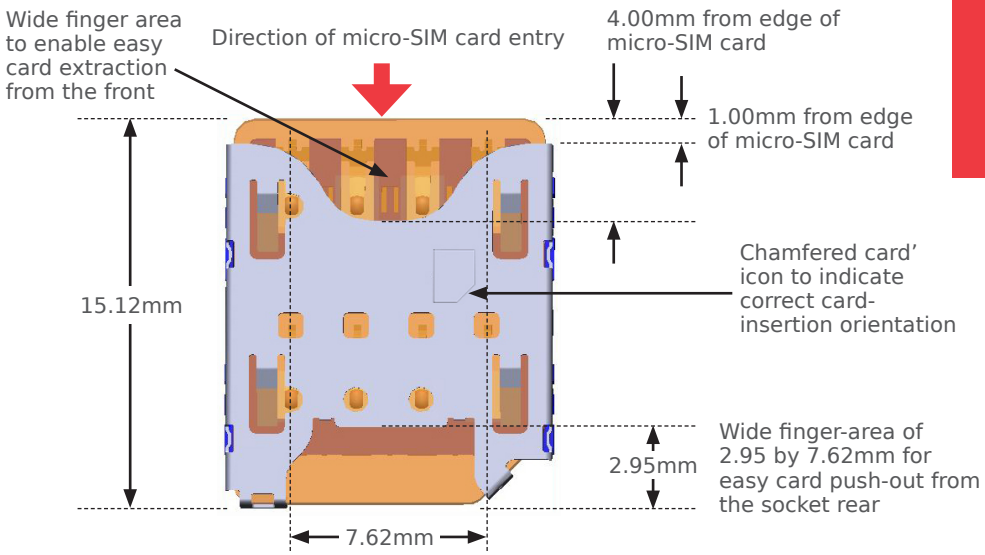
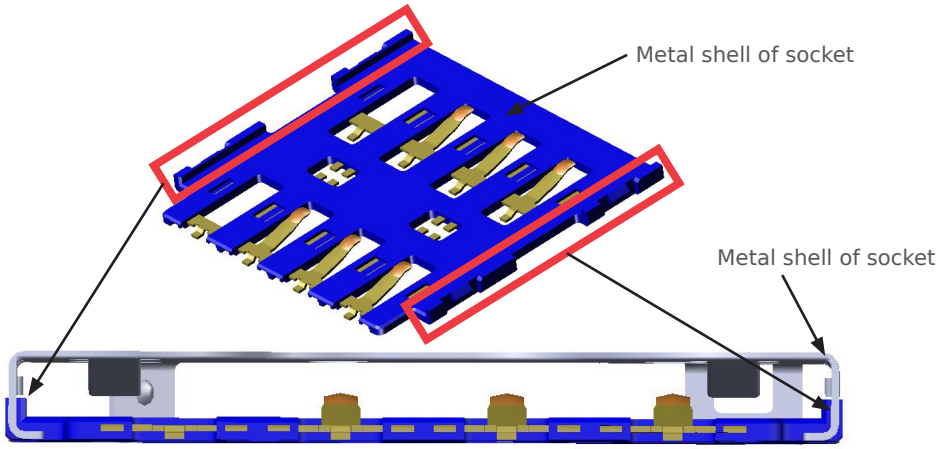
Product Features

Compact connector footprint: 1.35mm Height micro-SIM card socket (Series 78723)



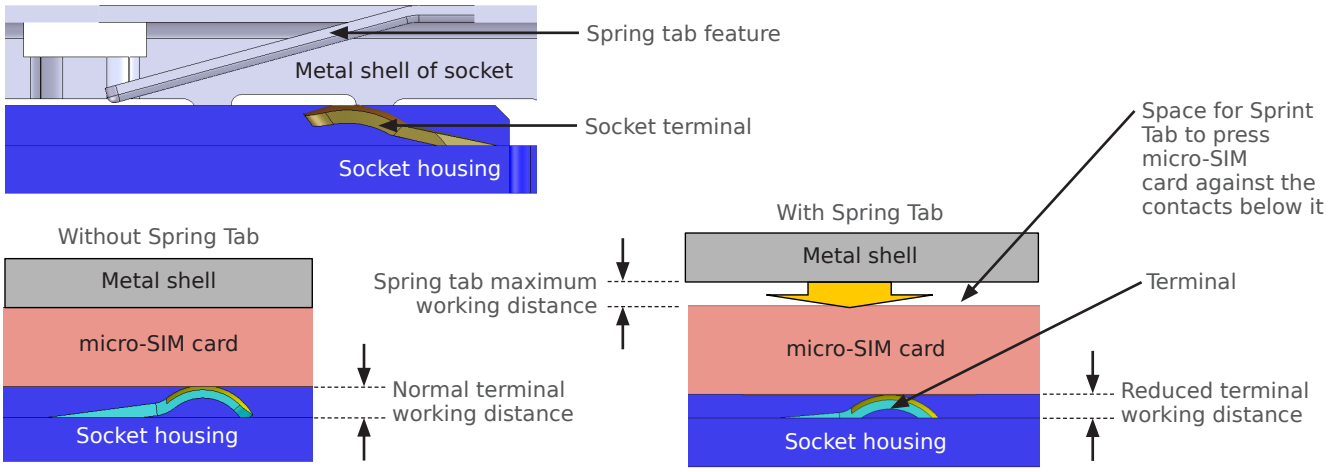
Dimensions of Series 78723 micro-SIM card socket showing compact socket design and PCB real-estate savings when mated

Anti-short feature: 1.35mm Height micro-SIM card socket (Series 78723)



Cross-sectional diagram of the series 78723 micro-SIM card socket showing raised housing-walls to provide anti-short insulation features

High contact normal-force Feature: 1.35mm Height micro-SIM card socket (Series 78723)



By incorporating spring tabs, terminals can achieve a required minimum normal force of 0.30N to improve card-to-socket electrical contact

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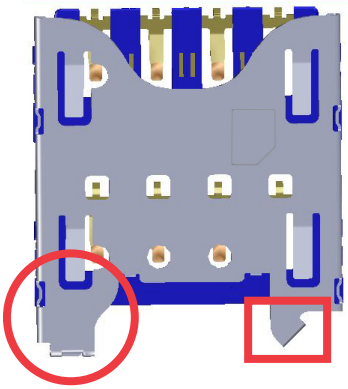
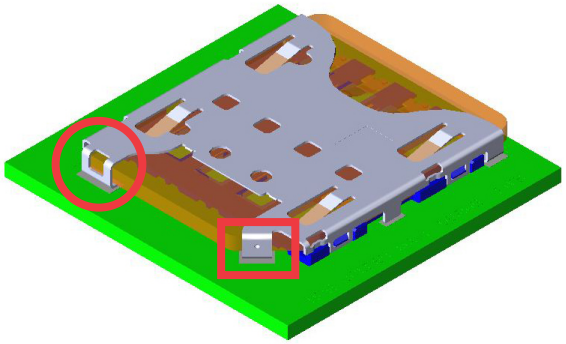
Product Features

Dual card-polarization features:
1.35mm Height micro-SIM card socket (Series 78723)



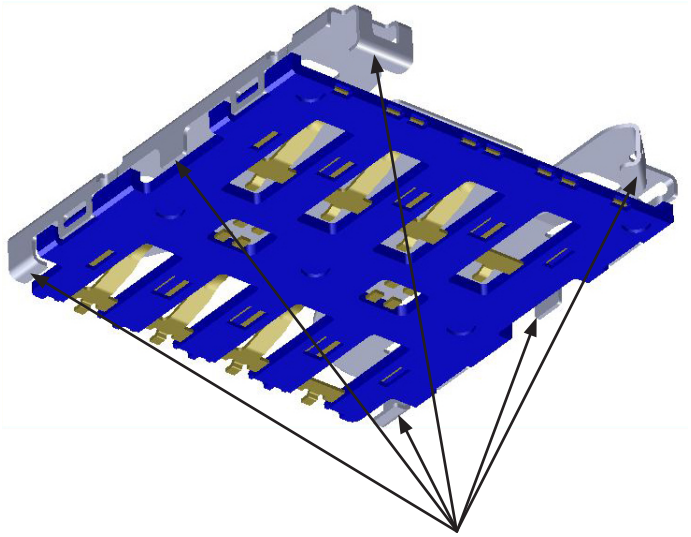
Two angled-shell, card-polarization features act as stoppers for the micro-SIM card



Both metal features are soldered to the PCB to give stability to the socket during card insertion and withdrawal

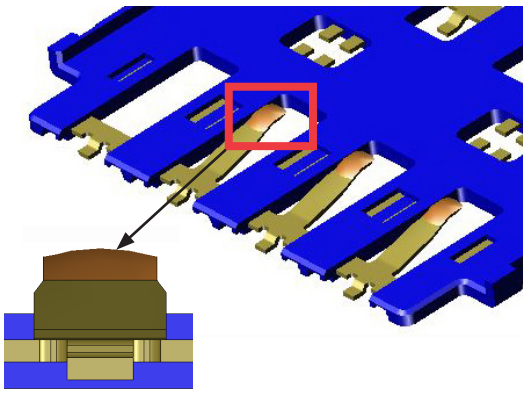
Card polarization features on the metal shell of series 78723 micro-SIM card sockets

Soldering Points and terminal geometry:
1.35mm Height micro-SIM card socket (Series 78723)

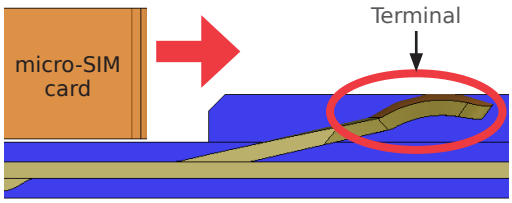


Metal shell tabs provide 6 soldering points

Soldering points of Series 78723 micro-SIM card socket for robust PCB hold-down



The rounded geometry of the terminal contacts enables smooth gliding action of the micro-SIM card during insertion



The orientation and tilt of the contact terminals ensure excellent electrical contact while preventing terminal stubbing

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Applications

Consumer
- Mobile phones
- Ultra-slim smart phones
- Tablet PCs
- GSM/UMTS modems
- PC cards
- Wireless LAN cards

Tablet PCs, mobile and smart phones

GSM / UMTS modems

Ordering Information

Order No.	Profile Height	Detect Switch	Circuits
78646-3001	1.45mm	Without	6 (Please contact Global Product Manager for 8-circuit version enquiries)
78723-1001	1.35mm		
78727-0001	1.40mm	With	

www.molex.com/link/micro-sim.html