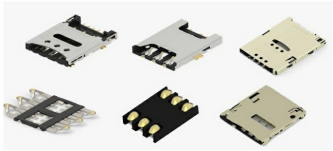
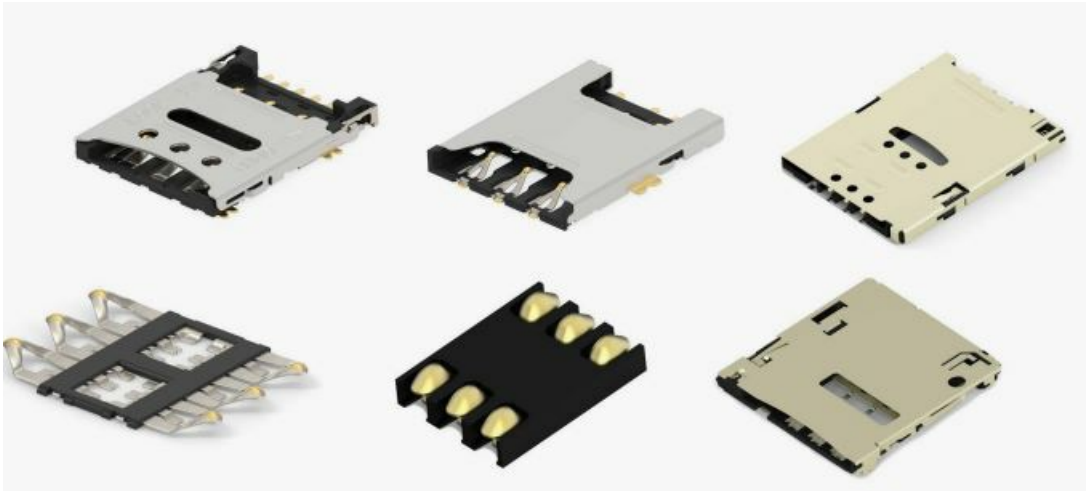


TE connectivity 1981959-1 SIM Card Connection User Guide

Contents

1 TE connectivity 1981959-1 SIM Card Connection User Guide
2 Product Information
3 Product Usage Instructions
4 CONSUMER ELECTRONICS
5 PUSH-PUSH TYPE
6 TECHNICAL SUPPORT CENTER
7 FREQUENTLY ASKED QUESTIONS
8 Documents / Resources
8.1 References
9 Related Posts

TE connectivity 1981959-1 SIM Card Connection User Guide



Product Information

Specifications

- Mini SIM (2FF) dimensions: 25L x 15W x 0.76H (mm)
- Micro SIM (3FF) dimensions: 15L x 12W x 0.76H (mm)
- Nano SIM (4FF) dimensions: 12.3L x 8.8W x 0.67H (mm)

Product Usage Instructions

Push-Push Type SIM Card Connectors
Push-push type SIM card connectors are designed for Mini SIM (2FF), Micro SIM (3FF), and Nano SIM (4FF) sizes. These connectors are characterized by their push-push mechanism, allowing users to extract the SIM card from the external portion of the device. The following models are available:

- 1981959-1 – Mini SIM (2FF), standard profile, 23.7mm height, 18.9mm length x 1.87mm width
- 2174918-1, 2174803-2, 2229333-2, 2822541-1 – Mini SIM (2FF), super low profile, anti-buckling, 26mm length x 17mm width, 1.4mm height
- 2336582-1 – Micro SIM (3FF), ultra low profile, anti-buckling, 15.98mm length x 15.1mm width, 1.27mm height
- NEW – Nano SIM (4FF), low-profile compact footprint, 13.72mm length x 13.09mm width, 1.37mm height

Push-Pull Type SIM Card Connectors
Push-pull type SIM card connectors require users to open the back shell of the device and manually pull out the SIM card. They are available for Mini SIM (2FF), Micro SIM (3FF), and Nano SIM (4FF) sizes. The following models are available:

- 1932768-1 – Mini SIM (2FF), super low profile, anti-buckling, 16.3mm length x 14.8mm width, 1.95mm height
- 2199337-5 – Micro SIM (3FF), ultra low profile (anti-buckling), 14.1mm length x 13.3mm width, 1.18mm height
- NEW – Nano SIM (4FF), low-profile compact footprint, 13.72mm length x 13.09mm width, 1.37mm height

Hinge Type SIM Card Connectors
Hinge type SIM card connectors are designed for Nano SIM (4FF) size. The following model is available:

- NEW – Nano SIM (4FF), 14mm length x 11.54mm width, 1.4mm height

5-Directional Type SIM Card Connectors
5-directional type SIM card connectors are available for Mini SIM (2FF) size. The following models are available:

- 2-1705300-8 – Mini SIM (2FF), 14mm length x 11.54mm width, 3.5mm height
- 1-1705300-5 – Mini SIM (2FF), 10mm length x 7.6mm width, 2.2mm height

Block Type SIM Card Connectors
Block type SIM card connectors are compatible with Mini SIM (2FF), Micro SIM (3FF), and Nano SIM (4FF) sizes. The following model is available:

- 2309923-2 – Block SIM side entry, anti-buckling, 8mm length x 8.2mm width, Mini SIM (2FF) or Micro SIM (3FF) height: 0.87mm, Nano SIM (4FF) height: 1.4mm

SIM CARD CONNECTORS QUICK REFERENCE GUIDE
SIM (Subscriber Identity Module) and UIM (Universal Identity Module) cards are widely used in a variety of mobile applications, including, billing, security and number storage purposes in mobile devices. The SIM card parameters are defined by ISO, ETSI and GSM standards.

SIZE COMPARISON:
MINI SIM (2FF) VS MICRO SIM (3FF) VS NANO SIM (4FF)

*FF = Form Factor

APPLICATIONS AND INDUSTRIES
As the Internet of Things (IoT) market space continues to grow and electronics applications continue to focus on mobility, the need for cellular connections to the internet continues to increase. A SIM card connector is required whenever the wireless connection needs to be made through a cellular network system. As electronic devices become smaller and our world becomes increasingly mobile, the demand for SIM cards in consumer, industrial, and medical applications is on the rise. TE is ready to meet this increased demand as the electronics market continues to mature.

CONSUMER ELECTRONICS

- Wearable devices
- Mobile phones
- Tablets
- Ultra-portable devices
- Routers
- Portable GSM modems

IoT (INTERNET OF THINGS)



- Fleet telematics
- Smart Transportation
- EV charging stations
- Smart health
- Vehicle trackers
- Smart meters

PUSH-PUSH TYPE

P/N	Picture	Applicable SIM Size	Height	Length x Width	Description	Features and Benefits	Product Differentiation
1981959-1		Mini SIM 2FF	1.87 mm	23.7 mm x 18.9 mm	Push-push SIM, standard profile	• Push to insert, push to eject mechanism provides better card handling for the end user • Push-push function allows convenient SIM card insertion and ejection - helping to minimize card jamming • Card detect switch that senses card removal • The push-push function helps to enable placement in hard-to-reach areas • Error proofing function helps to prevent inserting card in the wrong direction	-
2174918-1		Mini SIM 2FF	1.4 mm	26 mm x 17 mm	Push-push SIM, super low profile		• Low-profile - saves PCB space • Dual slanted contacts provide strong mating force and helps minimize contact jams
2174803-2 2229333-2 2822541-1 Anti-buckling		Micro SIM 3FF	1.27 mm	15.98 mm x 15.1 mm	Push-push SIM, Ultra low profile		• Low-profile - saves PCB space • Dual-slanted contacts provide strong mating force and helps minimize contact jams • 2822541-1 adds an anti-buckling feature
NEW 2336582-1 Anti-buckling		Nano SIM 4FF	1.37 mm	13.72 mm x 13.09 mm	Push-push SIM, Low-Profile Compact Footprint		• Low-profile and small footprint - saves PCB space • Anti-crush pin design to protect contact pins from being damaged while inserting SIM card • Two protrusions on the bottom serve as positioning features, increasing stability

1932768-1		Mini SIM 2FF	1.95 mm	16.3 mm x 14.8 mm	Super low profile SIM with flange (big shield)	• Card guidance feature and card stop feature confirm full insertion, helping to provide proper fixation of the SIM card • Card is typically located inside the device shell • Device shell must be opened to extract the card • Manual card insertion and extraction • Full single clip helps to provide shielding and helps to prevent card bending. This ensures a stable connection with all card types	• Holes under the connector allow for automated testing - helping to reduce in-place cost • Shield helps protect against EMI, RF distortion, and card bend • Preloaded anti-lifting contacts (contact tip is round) helps to prevent contacts from buckling • Can mount components under the connector to help save board space
2199337-5 Anti-buckling		Micro SIM 3FF	1.18 mm	14.1 mm x 13.3 mm	Push-pull SIM, ultra low profile (anti-buckling)		• Low-profile - saves PCB space • Contact design prevents buckling in use of a nano SIM card in an adapter • Card detect switch that senses card removal
NEW 2452808-1		Nano SIM 4FF	1.37 mm	13.72 mm x 13.09 mm	Push-pull SIM, Low-Profile Compact Footprint		• Low-profile and small footprint - helps to save PCB space • Simpler structure • Stronger structure due to molding process for housing and contact • Solder pins on side • Card detect switch that senses card removal

HINGE TYPE

P/N	Picture	Applicable SIM Size	Height	Length x Width	Description	Features and Benefits
NEW 2452796-1		Nano SIM 4FF	1.4 mm	14 mm x 11.54 mm	Hinge type SIM	• Space saving design • SIM card loads from the top of the connector • Card detect switch that senses card removal • Shell openings allow for automated testing - helping to reduce in-place cost • The hinge includes two protrusions to help secure the metal shell

5-DIRECTIONAL TYPE

P/N	Picture	Applicable SIM Size	Height	Length x Width	Description	Features and Benefits
2-1705300-8		Mini SIM 2FF	3.5 mm	14 mm x 11.54 mm	5 directional SIM	• Allows insertion of SIM card from 5 different directions • Allows expanded design flexibility • SIM card can be fixed with application's mechanical design
1-1705300-5		Mini SIM 2FF	2.2 mm	10 mm x 7.6 mm	5 directional SIM	

BLOCK TYPE

P/N	Picture	Applicable SIM Size	Height	Length x Width	Description	Features and Benefits
2309923-2 Anti-buckling		Mini SIM 2FF or Micro SIM 3FF or Nano SIM 4FF	0.87 mm	8 mm x 8.2 mm	Block SIM - Side Entry	• Anti-lifting contacts helps to reduce the risk of damaged contacts • Minimized connector layout minimizes the required space • Flexible layout allows use of several cards in one application • The card position can be fixed on the application side or by adding a shell as another component

TECHNICAL SUPPORT CENTER

- USA: 1.800.522.6752
- CANADA: 1 .905.475.6222
- MEXICO: 52.0.55.1106.0800
- LATIN/S. AMERICA: 54.0.11.4733.2200
- GERMANY: 49.0.6251.133.1999
- UK: 44.0.800.267666
- FRANCE: 33.0.1.3420.8686
- NETHERLANDS: 31.0.73.6246.999
- CHINA: 86.0.400.820.6015

Part numbers in this brochure are RoHS Compliant*, unless marked otherwise. *as defined www.te.com/leadfreete.com/products/SIMCardConnectors

FREQUENTLY ASKED QUESTIONS

How do I decide which type of SIM connector to choose?

The major difference in choosing between SIM connectors depends on the design of the customer device. Push-push or tray type SIM connectors allow users to extract the SIM card from the external portion of the device. Push-pull type, block type, and hinge type connectors require users to open the back shell of the device and manually pull out the SIM card.

What is the purpose of an 8 position SIM connector?

The extra two positions support an additional function like electronic payment.

What is the benefit of dual-slanted contact performance?

The dual-slanted design helps to minimize contact jam issues and creates a stronger mating performance, as demonstrated during the drop test.

When should I use a micro SIM connector?

When the device requires the use of a micro SIM card.

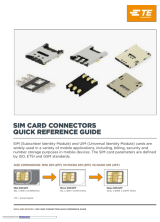
What’s the scalable height?

The scalable height is found when the SIM card connector is scalable by a different P/N, but the connector footprint stays the same. The benefit is enabling the customer to swap the product easier when a design change occurs, thereby helping to reduce the leadtime of TTM (Time To Market), TTV (Time To Value) and design cost.

How do I decide which type of SIM connector to choose?

The major difference in choosing between SIM connectors depends on the design of the customer device. Push-push or tray type SIM connectors allow users to extract the SIM card from the external portion of the device. Push-pull type, block type, and hinge type connectors require users to open the back shell of the device and manually pull out the SIM card.

Documents / Resources

	TE connectivity 1981959-1 SIM Card Connection [pdf] User Guide 1981959-1 SIM Card Connection, 1981959-1, SIM Card Connection, Card Connection, Connection

References

- Connectivity for Industrial and Commercial Transportation | TE Connectivity
- Notebooks and Ultraportable Devices | TE Connectivity
- Consumer Solutions: Wearables | TE Connectivity
- User Manual