

# AVX MOBO® Spring Contact Interconnect Solutions



Version 13.8

**AVX** INTERCONNECT  
A KYOCERA GROUP COMPANY

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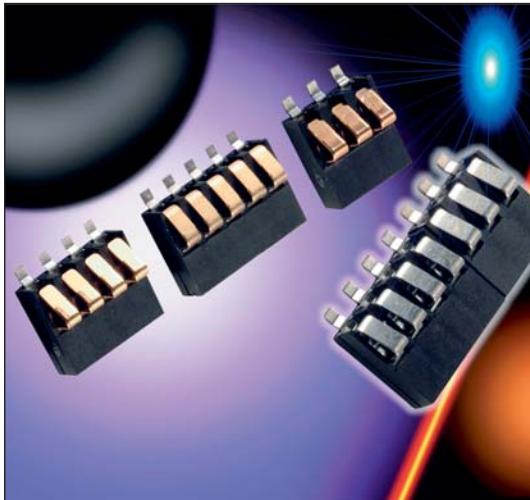
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# 9155 Standard Battery



## GENERAL DESCRIPTION

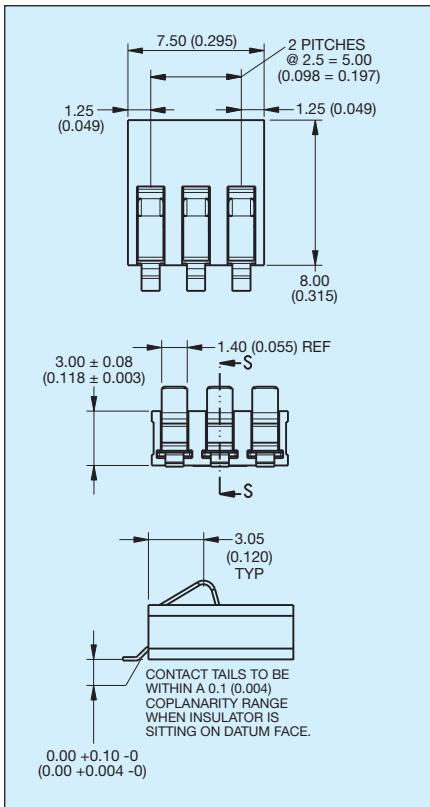
The standard battery connector is specifically designed for mobile equipment. The connectors are available in 3, 4 and 5 contact positions all on a 2.50mm pitch. The insulator height provides a 3mm spacing, with various contact nose heights from 1.20mm to 2.60mm, to provide spacing options to the end user.

All contacts are stamped and are rated to 3A, with Gold plating. Parts are supplied in tape and reel for automatic pick and place. Optional retaining brackets are available to provide greater strength when connected to the PCB. Whatever your requirements, the 9155 series Battery Connector can also be customized to suit your applications.

## APPLICATIONS

- Mobile Phones
- PDA
- Medical
- PMR
- Industrial

### 3 Way Battery Connector

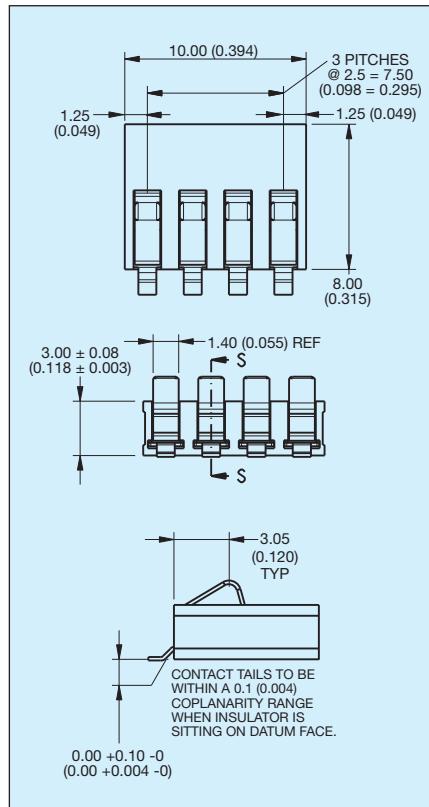


### KEY FEATURES AND BENEFITS

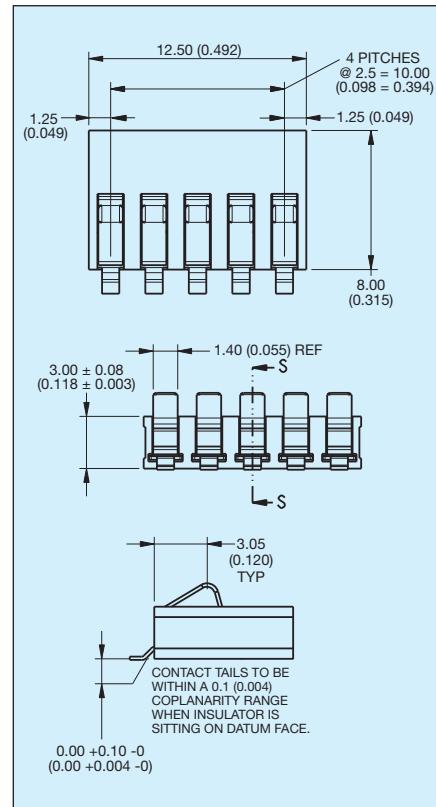
- Suitable for 5000 mechanical cycles.
- Variety of contact heights offered to suit different mechanical designs.
- Connectors can be end to end stackable.
- RoHS Compliant available.



### 4 Way Battery Connector



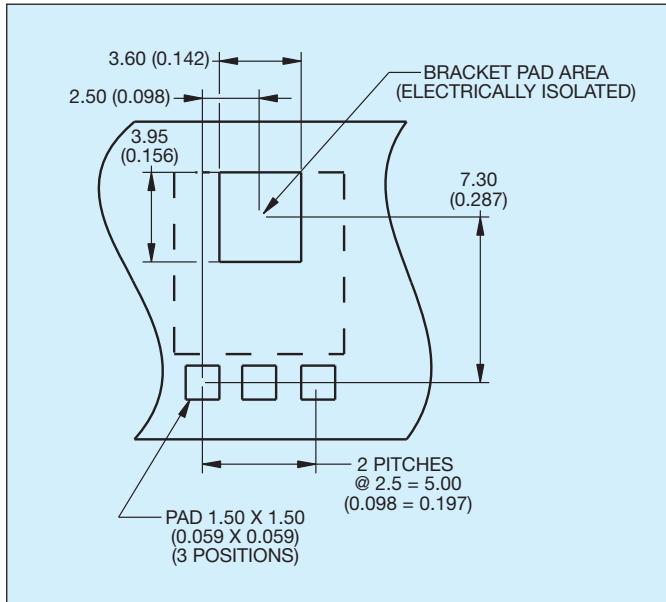
### 5 Way Battery Connector



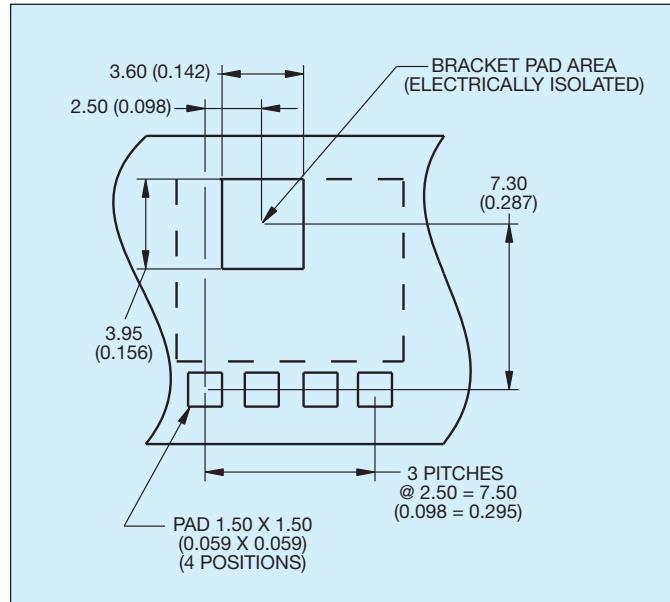
# 9155 Standard Battery



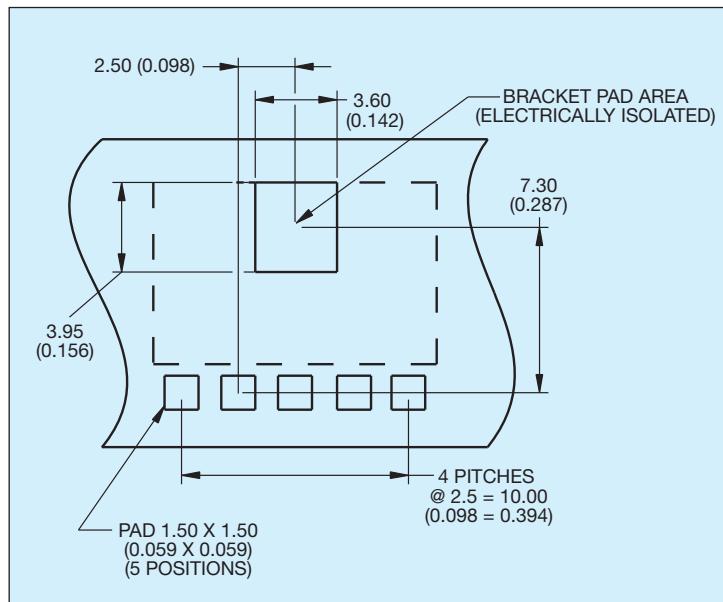
## 3 Way PCB Board Layout



## 4 Way PCB Board Layout



## 5 Way PCB Board Layout



## HOW TO ORDER

**00**

**9155**

**003**

**00**

**1**

**01**

**6**

**Prefix**  
00 = Standard  
58 = Special

**Series**

**No of Ways**  
3 = 003  
4 = 004  
5 = 005

**Standard Battery Connector**  
00 = Standard Force

**Contact Height**  
1 = 1.20 (0.047) / 1.50 (0.059)  
2 = 1.80 (0.071) / 2.10 (0.083)  
3 = 2.30 (0.091) / 2.60 (0.102)

**Bracket**  
01 = With Bracket

**Plating Option**  
6 = 0.4µm Selective Gold, Pure Tin Tail  
8 = 0.8µm Selective Gold, Pure Tin Tail



# 9155 Size Reduced Battery Connector /AVX



## GENERAL DESCRIPTION

The newest product in AVX's Interconnect family of battery connectors saves 50% in volume over the initial 9155 series compression connectors as illustrated in the photograph. These connectors are rated at a full 3 amps per contact on 2.5mm centers. Sizes range from 2 positions through 5 positions and are end to end stackable.

## APPLICATIONS

- Cellular Phones
- Handheld Devices
- Industrial Modules
- Medical Electronics

## KEY FEATURES AND BENEFITS

- 2.4mm insulator height
- 3 amps/contact
- Large SMT mounting area for positive mechanical attachment
- 5k mating cycles
- End-to-end stackable



## HOW TO ORDER

00  
Prefix

9155  
Series

003  
No. of Ways

201  
Reduced Size Battery Connector

XXX  
Plating Option

Code	No. of Ways	Reel Qty	Packing Qty
002	2	2000	2000
003	3	2000	2000
004	4	2000	2000
005	5	2000	2000

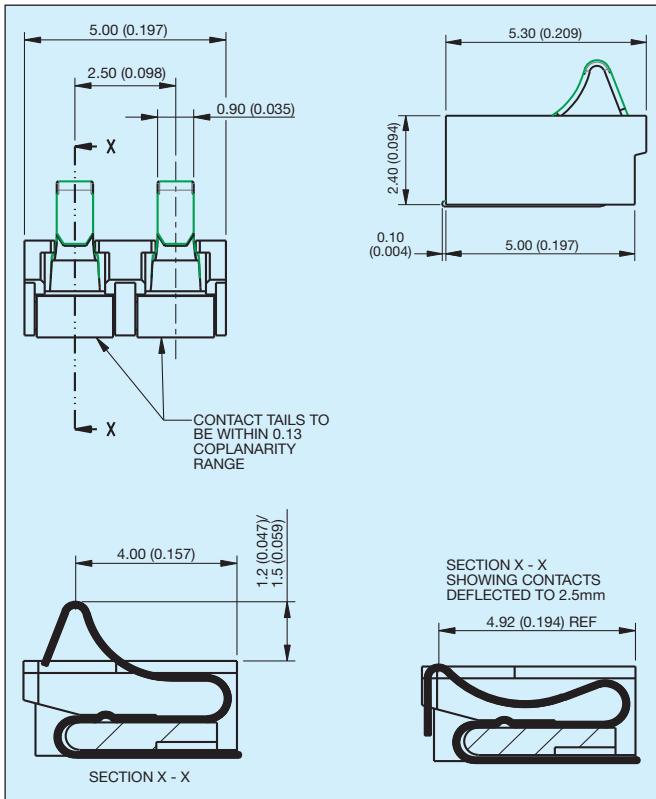
Code	Description
201	Reduced Size Battery Connector

Code	Description
006	0.4µm Selective Gold, Pure Tin Tail
008	0.8µm Selective Gold, Pure Tin Tail

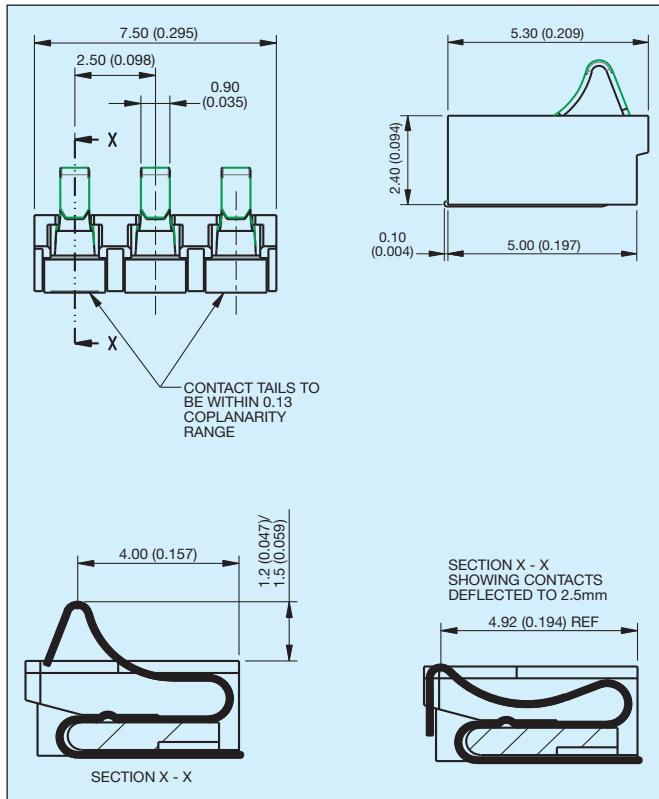
# 9155 Size Reduced Battery Connector



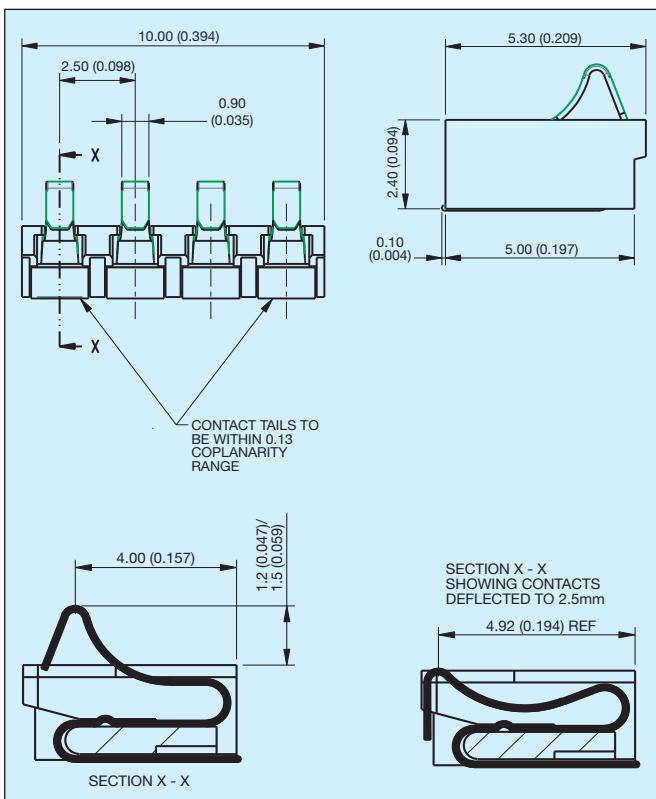
## 2 Way Reduced Battery Connector



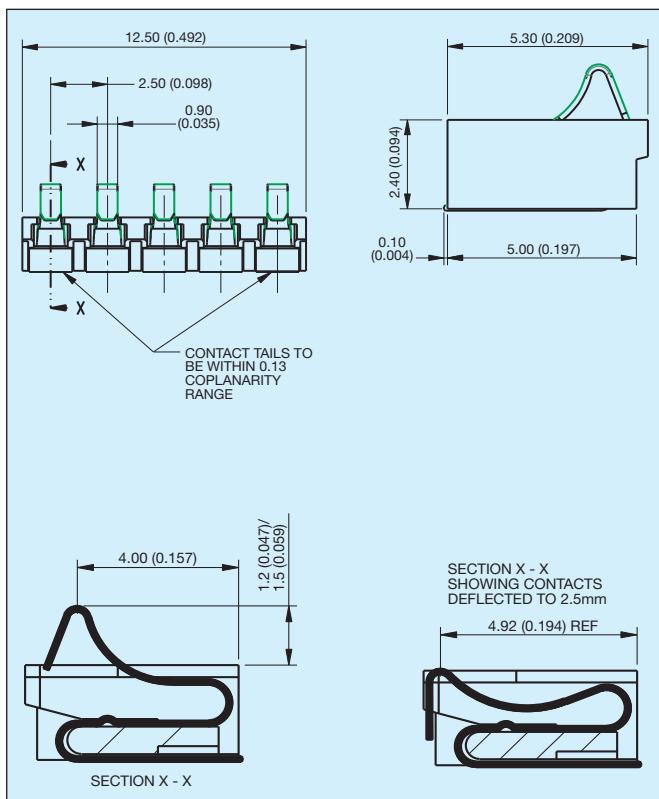
## 3 Way Reduced Battery Connector



## 4 Way Reduced Battery Connector

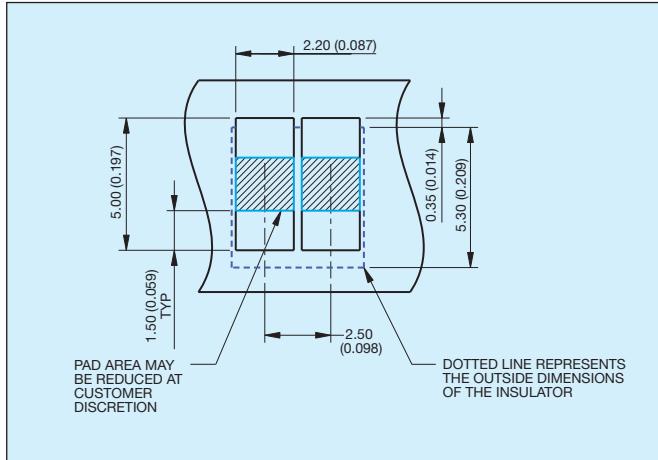


## 5 Way Reduced Battery Connector

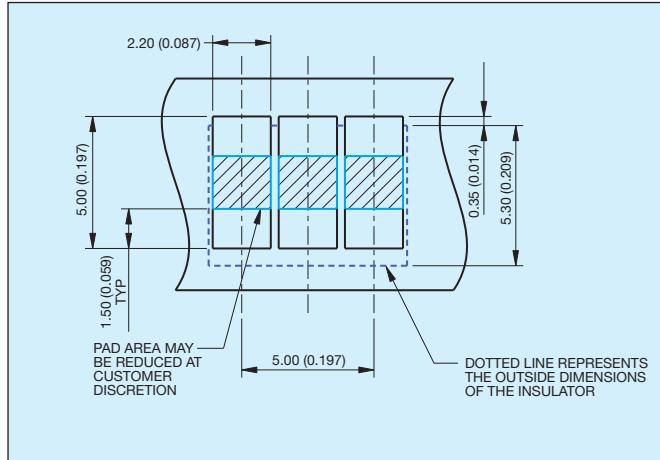


# 9155 Size Reduced Battery Connector

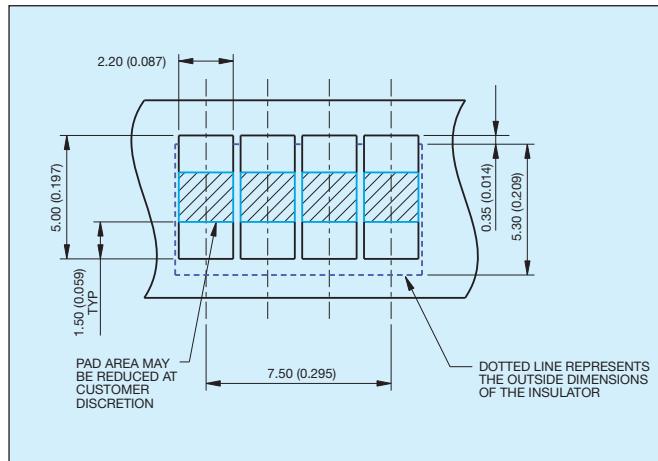
## 2 Way Reduced Battery Connector PCB Layout



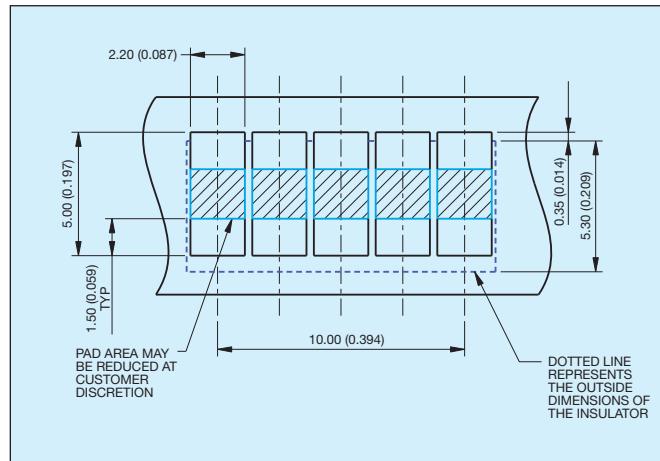
## 3 Way Reduced Battery Connector PCB Layout



## 4 Way Reduced Battery Connector PCB Layout



## 5 Way Reduced Battery Connector PCB Layout



# 9155 Ultra-Low Profile Battery



## GENERAL DESCRIPTION

The AVX Interconnect group has released a new ultra-low profile 3 amp per contact connector for battery pack or slide-in module applications. The compressed "Z" axis height of 1.3mm leads the industry from a profile standpoint. The initial product is in a 2 & 3 position configuration with other sizes expected to follow. The connector has an integral end block to act as a mechanical stop.



## APPLICATIONS

- Cellular Phones
- Handheld Devices
- Industrial Modules
- Medical Electronics

## KEY FEATURES AND BENEFITS

- Ultra-Low Profile
- 3 amps/contact
- Integral End Stop
- 5k mating cycles



## HOW TO ORDER

00      9155  
Prefix      Series

003  
No. of Ways

101

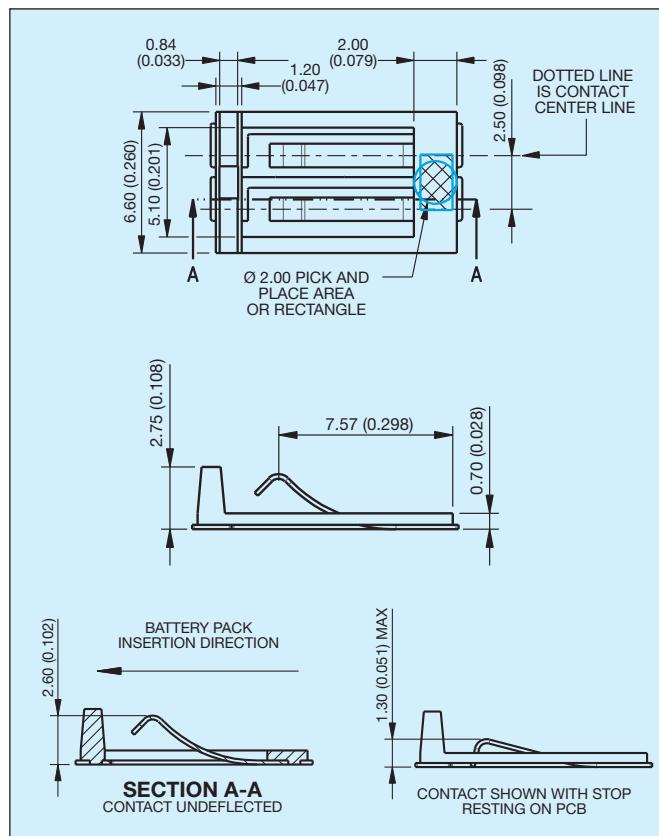
XXX  
Plating Option

Code	No. of Ways	Qty. Per Reel
002	2	1500
003	3	1200

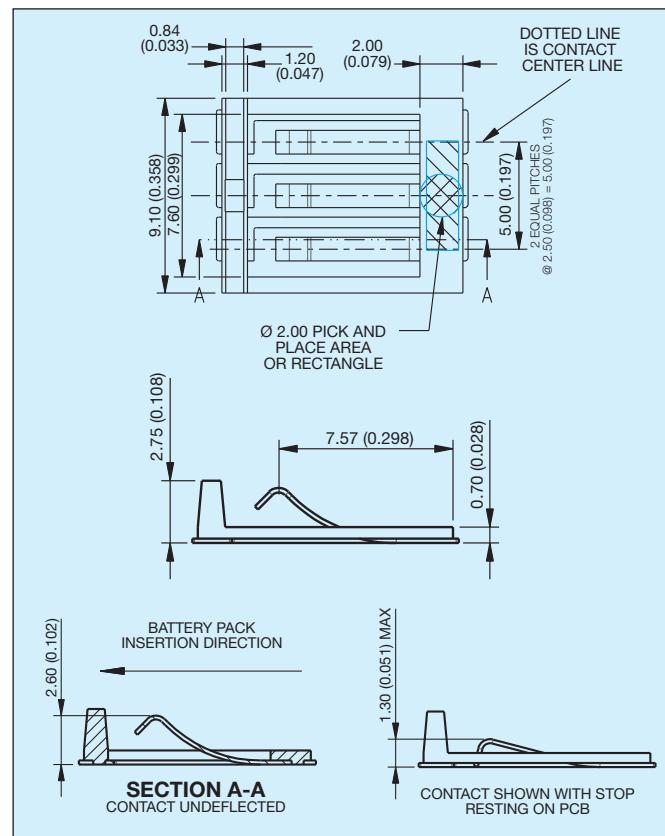
Code	Description	Operating Height
101	Low Profile Battery Connector	1.30 (0.051)

Code	Description
006	0.4μm Selective Gold, Pure Tin Tail
008	0.8μm Selective Gold, Pure Tin Tail

## 2 Way Low Profile Battery Connector



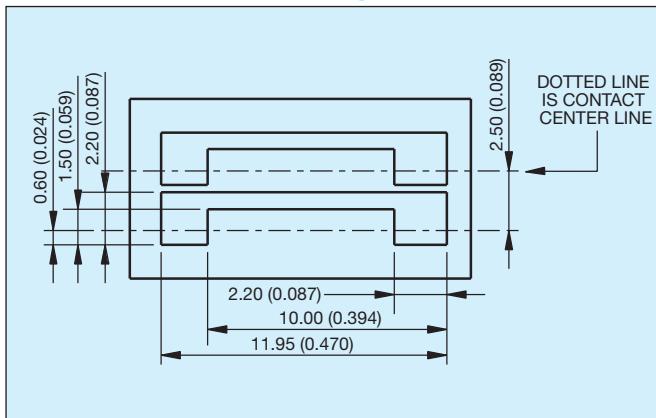
## 3 Way Low Profile Battery Connector



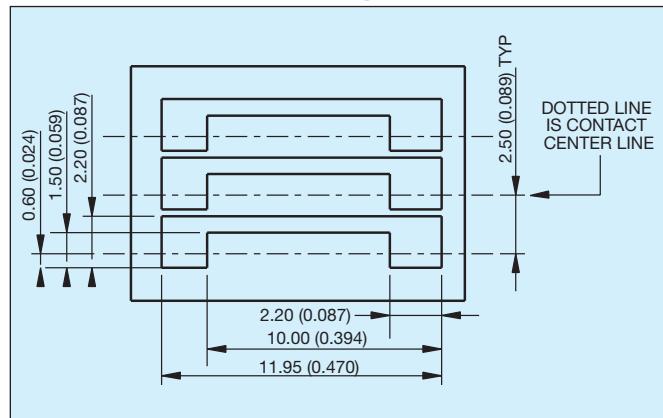
# 9155 Ultra-Low Profile Battery



**2 Way Low Profile Battery Connector  
PCB Layout**



**3 Way Low Profile Battery Connector  
PCB Layout**



# 9155 MOBO® Solderless Battery Connectors



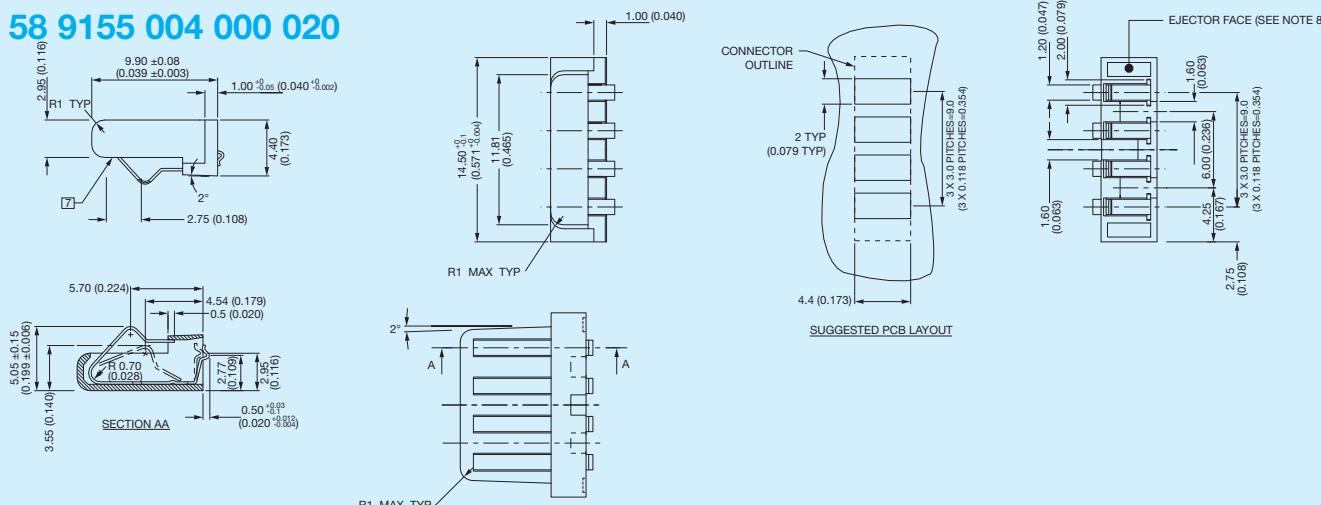
## GENERAL DESCRIPTION

As an addition to our range of Battery connectors we have added a solderless termination option. This option has the termination area gold plated and the contact form is compression to the PCB and to the Battery which is used in the end equipment.

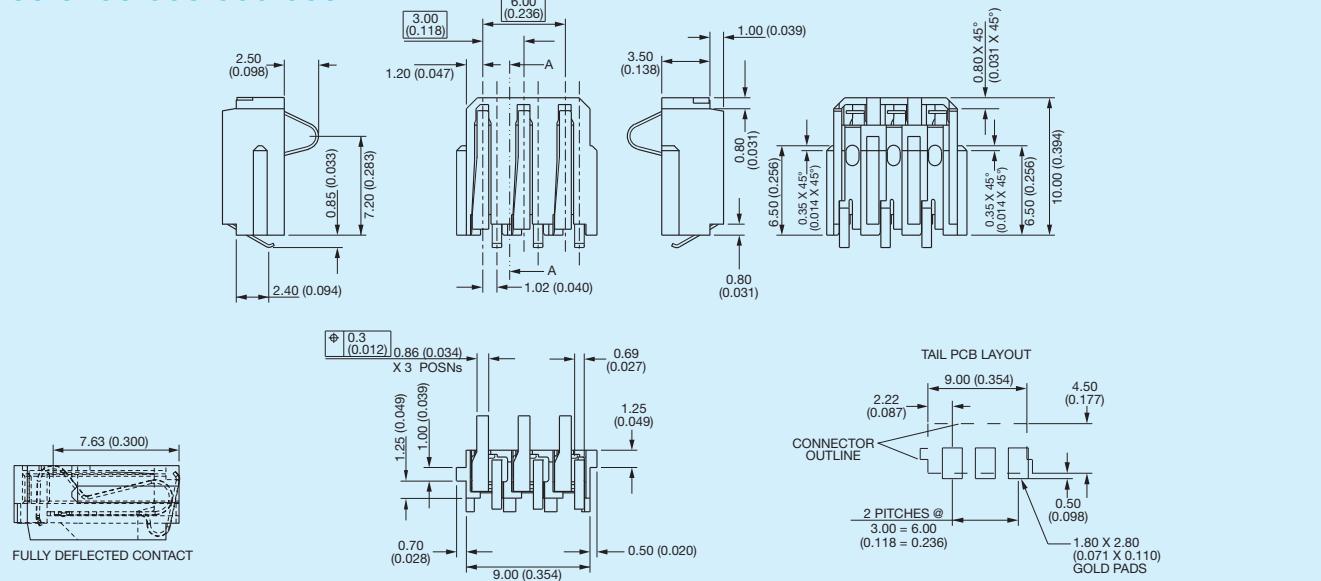
Rated at 3 Amps and 5,000 operations (the same as the SMT version). These battery connectors compliment the existing standard range of RoHS compliant components giving the designer an added option of the solderless termination.

When these connectors are held in place by the casing of the end equipment, the connection to the PCB is achieved by compressing the connector contacts against the PCB and against the actual battery. It is the housing which maintains the connection.

**58 9155 004 000 020**



**58 9155 003 000 053**



# 9155 MOBO® 3.0mm Pitch Right Angle Battery Connectors



## GENERAL DESCRIPTION

A further addition to the battery connector range offered by AVX is a 90 degree version. On a 3mm pitch, offered in 2 to 5 contact positions and rated as with all of the battery range at 3 amps. The connector's design is small and compact to minimize its profile yet stable while having a contact point 4.61mm above the PCB.

The stability comes from the addition of extra SMT anchor brackets that are in between the SMT contact pads and both at the front of the connector and within the row of the contact SMT pads.

As with the other 9155 series of battery connectors offered by AVX the 90 degree version is rated at 3 amps and 5000 mating cycles, RoHS compliant and using high temperature plastic enables the connectors to be processed at up to 260°C.

## APPLICATIONS

- Mobile phones
- Digital music players
- Hand held terminals
- Data terminals or any other small portable device

## FEATURES AND BENEFITS

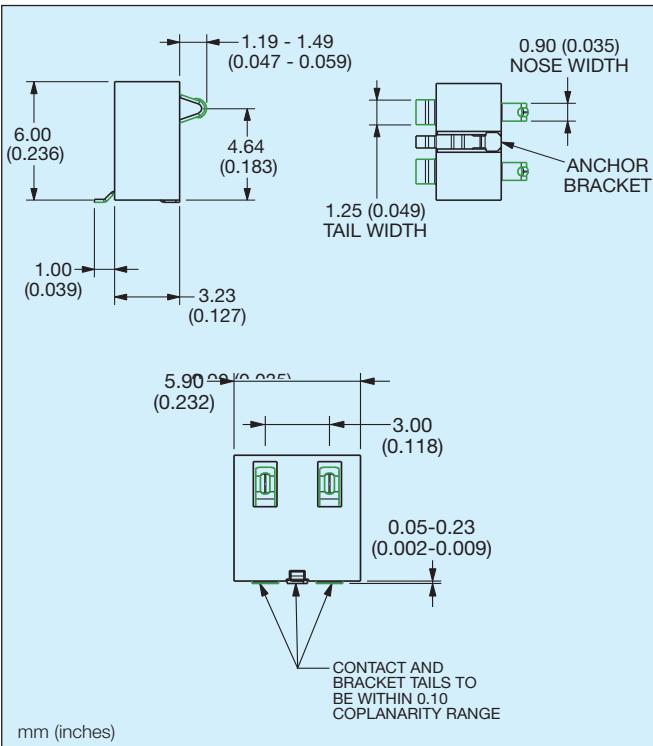
- Simple designed spring contact
- End to end stackable for larger pin counts
- Additional contact anchor brackets to added stability on the PCB
- Robust to shock and vibration
- Selectively plated contact area



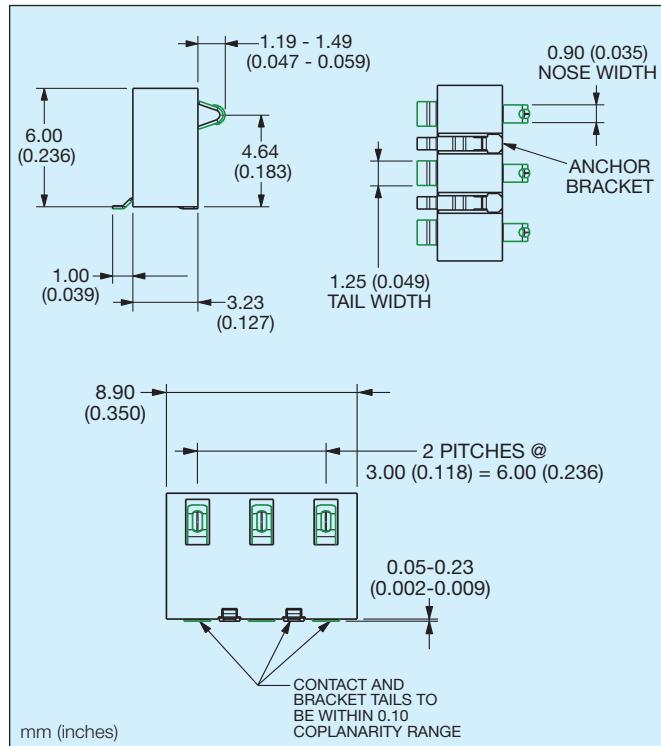
## HOW TO ORDER

00	9155	002	301	XXX		
Prefix	Series	No. of Ways	Right Angle Battery Connector			
Code		Code				
002		Description				
003		301				
004		Right Angle 3.00mm Battery Connector				
005		Code				
006		Description				
008		0.4µm Selective Gold, Pure Tin Tail				
		0.8µm Selective Gold, Pure Tin Tail				

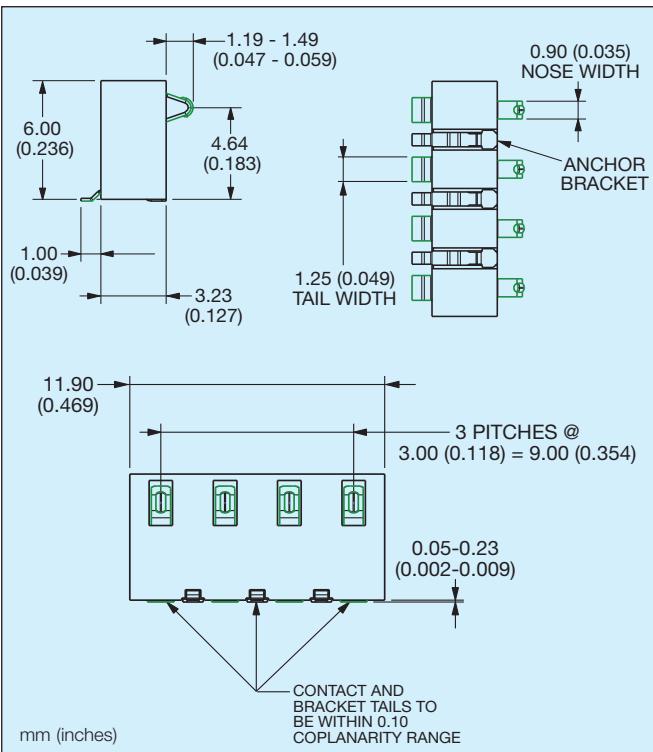
## 2 Way Right Angle Battery Connector



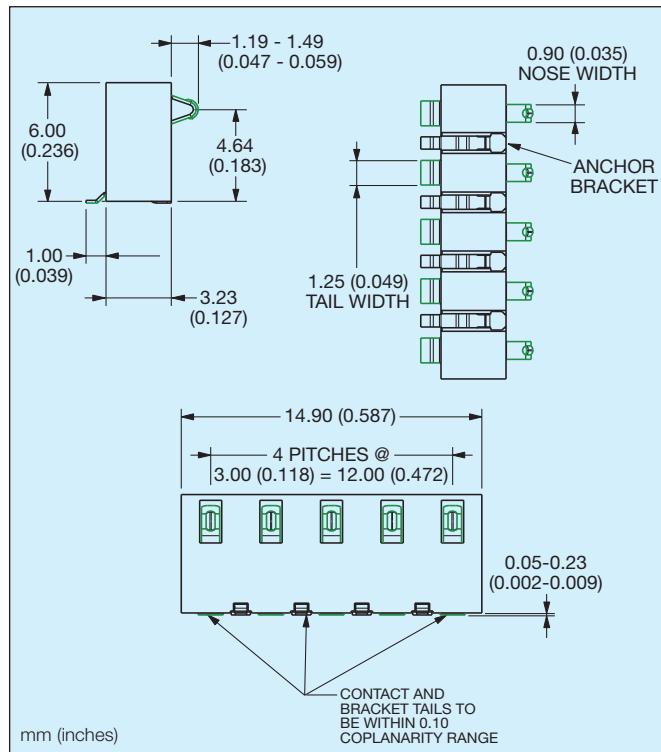
## 3 Way Right Angle Battery Connector



## 4 Way Right Angle Battery Connector



## 5 Way Right Angle Battery Connector

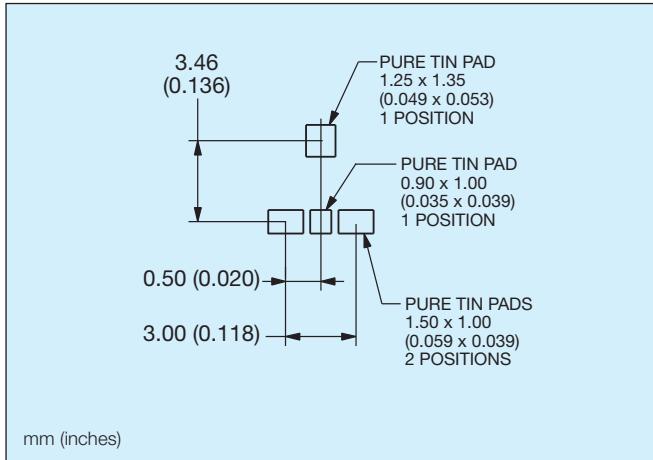


# 9155 MOBO®

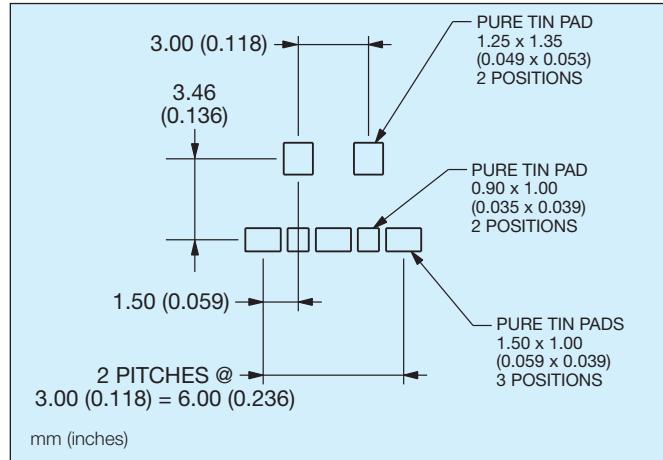
## 3.0mm Pitch Right Angle Battery Connectors



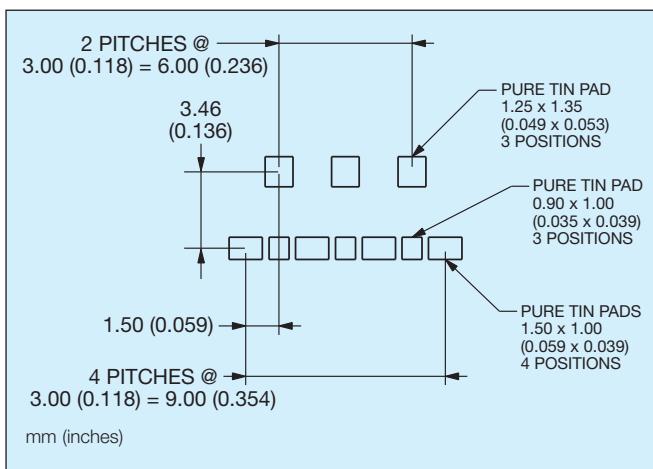
### 2 Way Right Angle Battery Connector PCB Layout



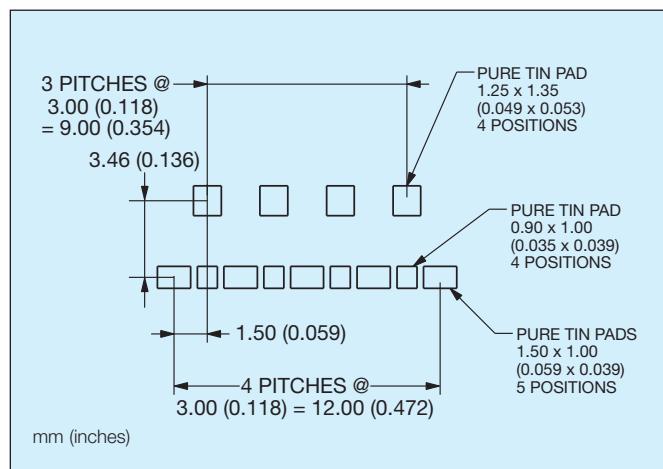
### 3 Way Right Angle Battery Connector PCB Layout



### 4 Way Right Angle Battery Connector PCB Layout



### 5 Way Right Angle Battery Connector PCB Layout



# 9155 MOBO® 2.5mm Pitch Right Angle Battery Connector



## GENERAL DESCRIPTION

AVX extends the battery connector range with the addition of a low profile 2.5mm pitch right angle connector. This connector is offered in 2 to 5 positions and is rated at 3 amps. The connector's design is small and compact to minimize its profile yet functionally stable having a contact point at 2.20mm above the PCB.

The unique design of this stamped contact allows for a maximum insulator height of 4.0mm which makes it size compatible with more expensive pogo pin style battery connectors.

The complete family of battery connectors from AVX offer all of the same advantages; Beryllium Copper base material for enhanced contact performance, a full 3 amp current rating, selective gold plating for 5000 mating cycles and high temperature plastic for RoHS soldering.

## APPLICATIONS

- Mobile Phones
- Digital Music Players
- Any Handheld Devices

## HOW TO ORDER

00	9155	002
Prefix	Series	No. of Ways

Right Angle Battery Connector	
Code	Description
541	Right Angle 2.5mm Battery Connector

Plating Option	
Code	Description
006	0.4µm Selective Gold, Pure Tin Tail
008	0.8µm Selective Gold, Pure Tin Tail

## KEY FEATURES AND BENEFITS

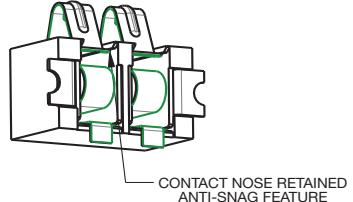
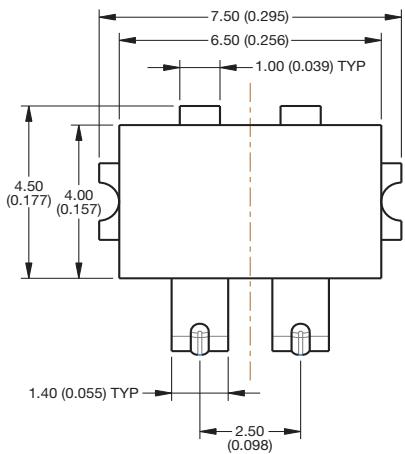
- Reliable stamped contact with coined nose
- Full 1.5mm nose deflection for large operating range
- Two anchor tabs for mechanical stability
- 5000 cycle durability rating
- Minimized X, Y and Z package dimensions



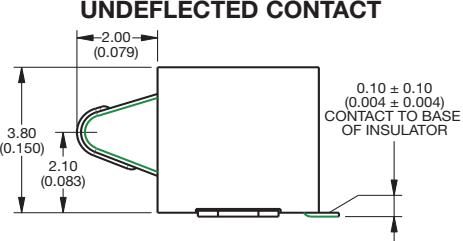
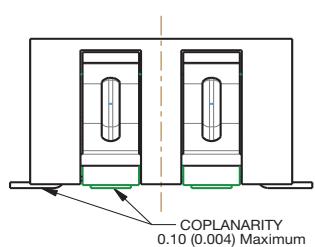
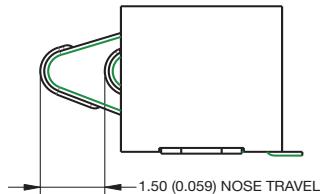
# 9155 MOBO® 2.5mm Pitch Right Angle Battery Connector



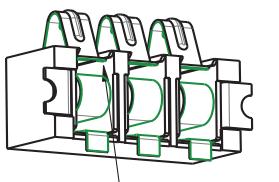
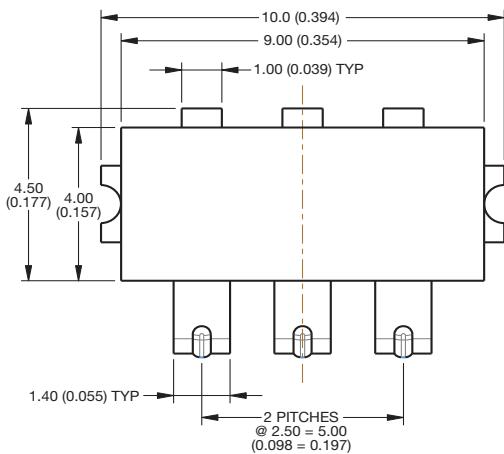
## 2 Way Right Angle Battery Connector



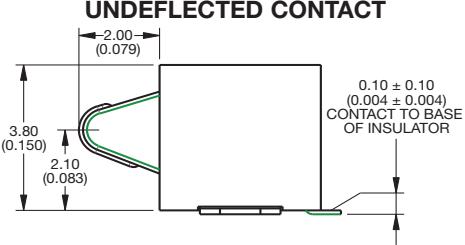
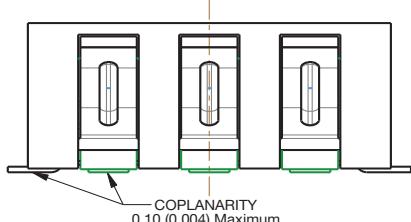
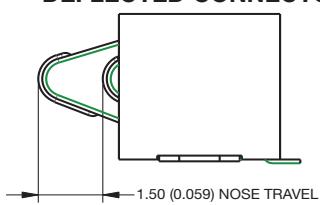
### DEFLECTED CONNECTOR



## 3 Way Right Angle Battery Connector



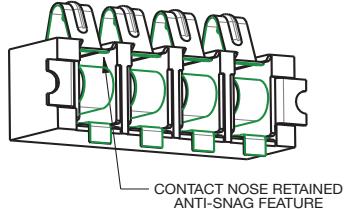
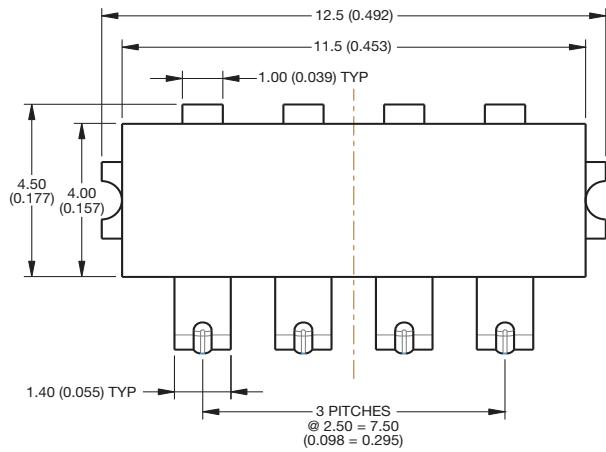
### DEFLECTED CONNECTOR



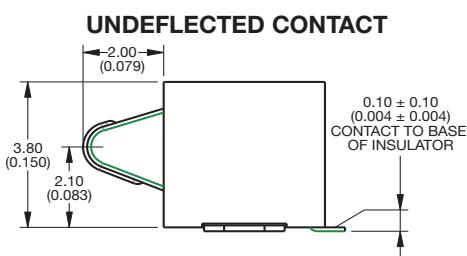
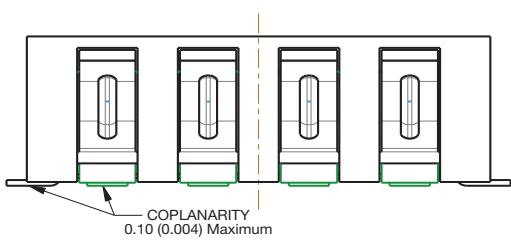
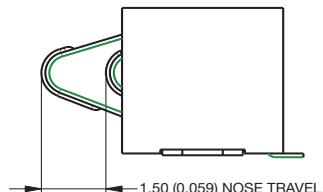
# 9155 MOBO® 2.5mm Pitch Right Angle Battery Connector



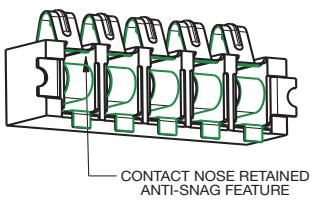
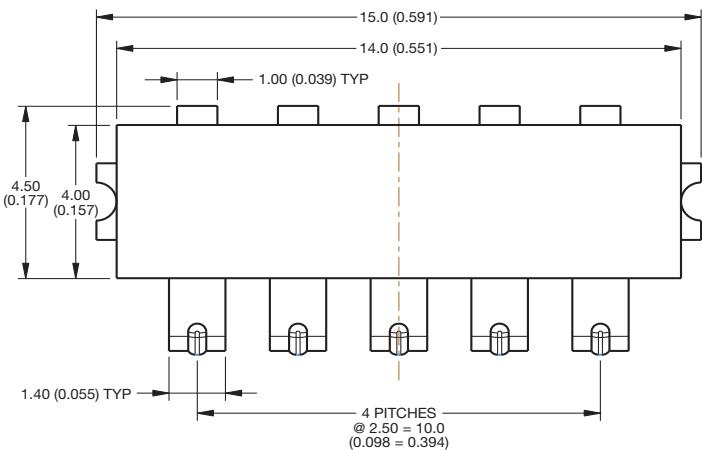
## 4 Way Right Angle Battery Connector



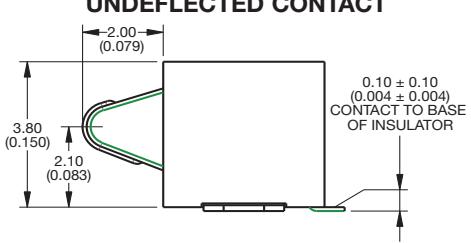
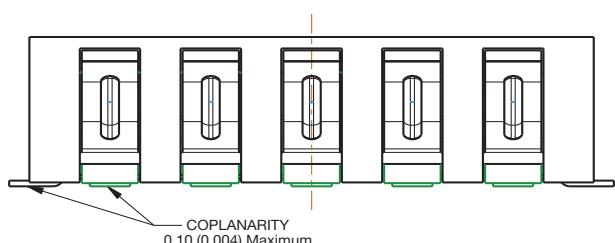
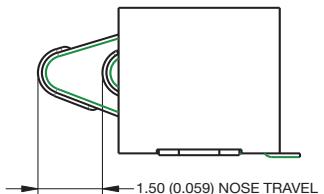
### DEFLECTED CONNECTOR



## 5 Way Right Angle Battery Connector



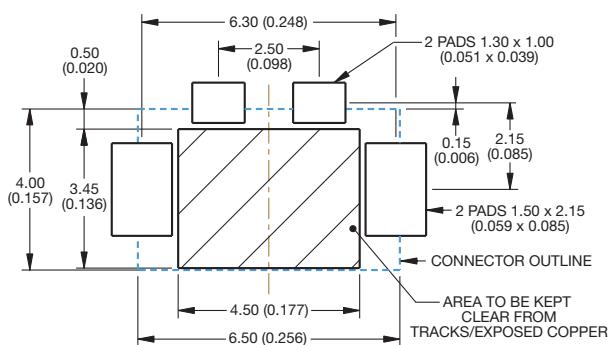
### DEFLECTED CONNECTOR



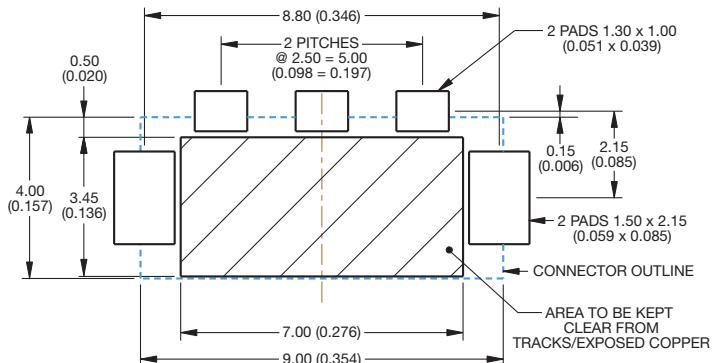
# 9155 MOBO® 2.5mm Pitch Right Angle Battery Connector



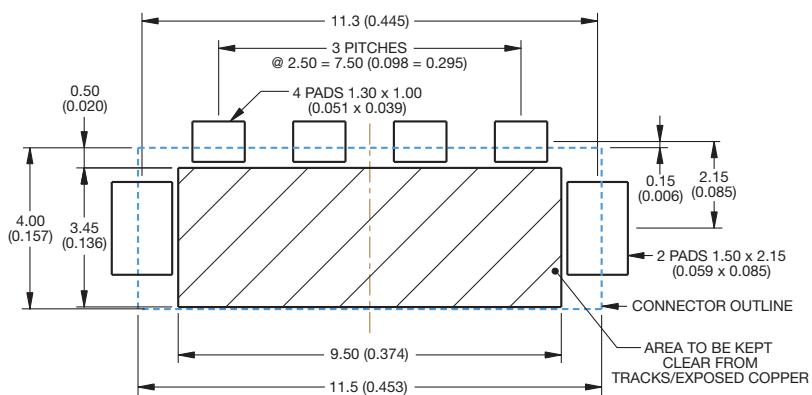
## 2 Way Right Angle Battery Connector PCB Layout



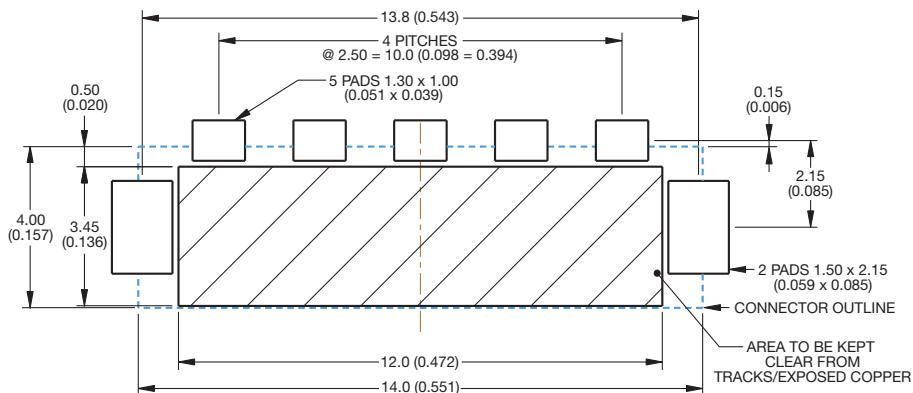
## 3 Way Right Angle Battery Connector PCB Layout



## 4 Way Right Angle Battery Connector PCB Layout



## 5 Way Right Angle Battery Connector PCB Layout



# Single Compression Contact: Board-to-Board (BTB)



## Series 70-9155



Designers for ruggedized connectors to meet harsh environments continue to look for new products which will reduce size and cost without jeopardizing performance. The new Ultra-Low Profile (ULP) compression contact from AVX surface mounts to a PCB and provides a reliable compression connection to the mating board, even under extreme shock and vibration applications. With over 20 years of 1-Piece compression contact experience, this innovative contact offers full connector performance functionality at the individual contact level. Thus, allowing single contacts to be placed in any location or position on a PCB.

The high force beryllium copper contact is gold plated to maximize reliability and signal integrity. The current offering has two contacts with nominal heights of 1.0mm and 1.5mm. Add in the "Z" axis tolerance range and the compressed height covers 0.75mm up to 1.75mm. The contacts are supplied in tape and reel for easy SMT placement.

### APPLICATIONS

- Industrial/Ruggedized handheld or portable devices
- BTB connection for any traditional power or signal application
- Ground connections between PCB's or housings

### FEATURES AND BENEFITS

- Reliable gold plated Beryllium Copper contacts for high cycle life and signal integrity up to 1000 cycles
- Tape and reel packaged for automated SMT placement
- Sweeping beam design for pluggable/module applications
- Three gold plating options to match end product environmental or expected life requirements

### ELECTRICAL

- Current Rating: 3 Amps
- Voltage Rating: Based on placement distance

### ENVIRONMENTAL

- Operating Temperature: -40°C to +125°C

### MECHANICAL

- Contact Material: Beryllium Copper
- Contact Plating: Gold over Nickel
- Durability: 50, 500 and 1000 cycles

### HOW TO ORDER

70      9155      001  
Prefix      Series      Number of Ways

6XX

Contact Description		
Code	Nominal Operating Height	Contact Operating Height Range
610	1.00mm	0.75mm to 1.25mm
615	1.50mm	1.25mm to 1.75mm

00X

Contact Description			
Code	Gold Thickness	Description	Availability
004	0.1µm	Nickel under Plate, Gold on Nose Tin on Remainder	Standard
006	0.4µm	Nickel under Plate, Gold on Nose Tin on Remainder	Special Order
008	0.8µm	Nickel under Plate, Gold on Nose Tin on Remainder	Special Order

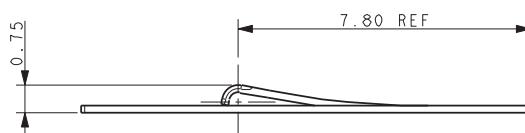
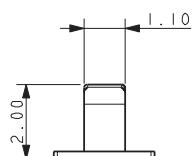
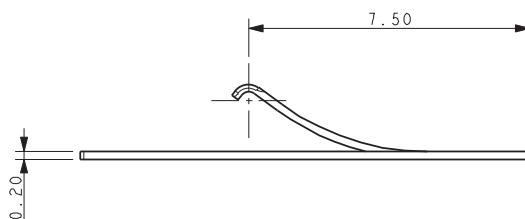
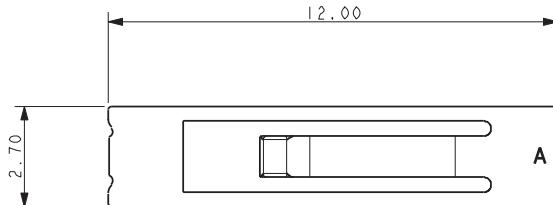


# Single Compression Contact: Board-to-Board (BTB)



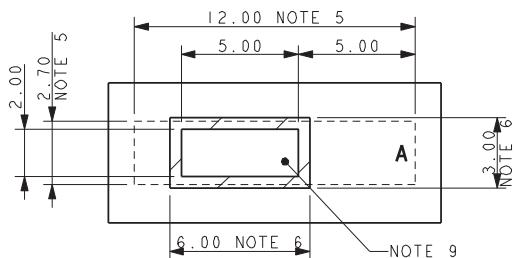
Series 70-9155

**70-9155-001-610-006  
NOMINAL WORKING HEIGHT 1.00MM**



**FULLY DEFLECTED  
CONTACT**

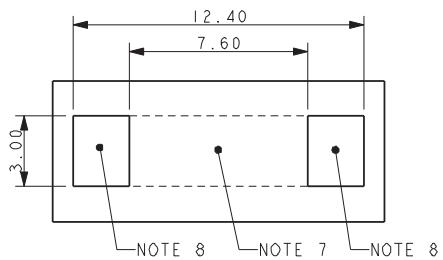
## SUGGESTED MATING PCB LAYOUT



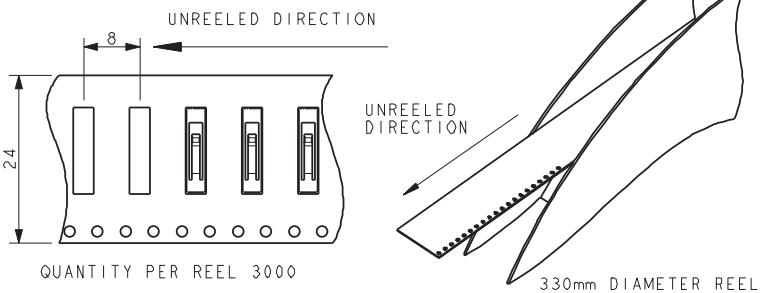
### NOTES:

1. 9155 LOW PROFILE CONTACT, WORKING HEIGHT 0.75MM TO 1.25MM.
2. FOR FULL DETAILS REFER TO PRODUCT SPECIFICATION 201-01-153 AND APPLICATIONS NOTES 201-01-154.
3. MATERIAL: COPPER ALLOY 0.2MM THICK.
4. PLATING: NICKEL ALL OVER WITH GOLD ON CONTACT NOSE AND TIN ON THE REMAINDER. PARTS TO BE PACKED IN TAPE AND REEL. QTY PER REEL 3000.
5. OUTLINE OF CONNECTOR, ORIENTATION END "A".
6. AREA TO KEPT FREE OF SOLDER RESIST, FURTHER INFORMATION IN APPLICATION NOTES.
7. AREA BETWEEN PADS TO BE KEPT CLEAR OF TRACKS AND COMPONENTS.
8. SMT PADS PLATED TIN.
9. MATING PAD PLATED GOLD OVER NICKEL.

## SUGGESTED SMT PCB LAYOUT



## PACKING DETAILS

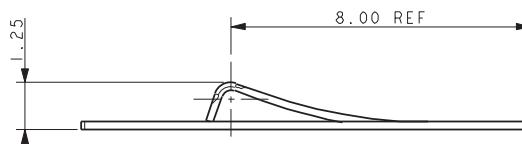
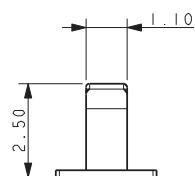
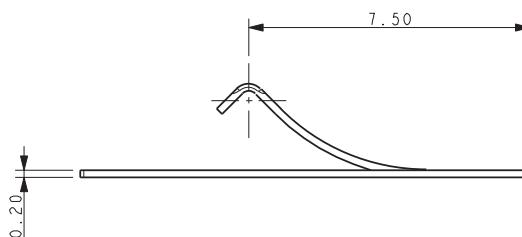
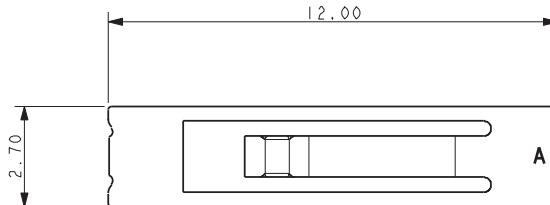


# Single Compression Contact: Board-to-Board (BTB)



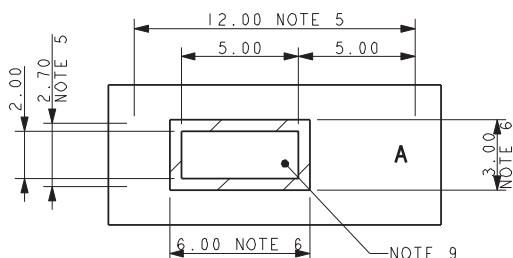
Series 70-9155

**70-9155-001-610-006  
NOMINAL WORKING HEIGHT 1.50MM**



**FULLY DEFLECTED  
CONTACT**

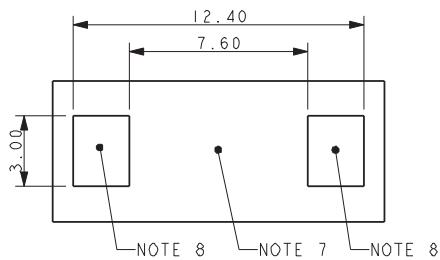
## SUGGESTED MATING PCB LAYOUT



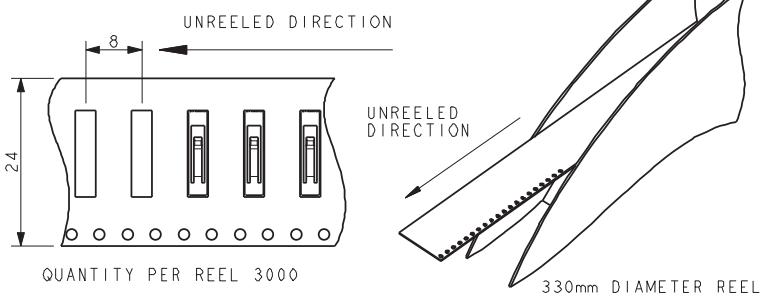
### NOTES:

1. 9155 LOW PROFILE CONTACT, WORKING HEIGHT 0.75MM TO 1.25MM.
2. FOR FULL DETAILS REFER TO PRODUCT SPECIFICATION 201-01-153 AND APPLICATIONS NOTES 201-01-154.
3. MATERIAL: COPPER ALLOY 0.2MM THICK.
4. PLATING: NICKEL ALL OVER WITH GOLD ON CONTACT NOSE AND TIN ON THE REMAINDER. PARTS TO BE PACKED IN TAPE AND REEL. QTY PER REEL 3000.
5. OUTLINE OF CONNECTOR, ORIENTATION END "A".
6. AREA TO KEPT FREE OF SOLDER RESIST, FURTHER INFORMATION IN APPLICATION NOTES.
7. AREA BETWEEN PADS TO BE KEPT CLEAR OF TRACKS AND COMPONENTS.
8. SMT PADS PLATED TIN.
9. MATING PAD PLATED GOLD OVER NICKEL.

## SUGGESTED SMT PCB LAYOUT



## PACKING DETAILS





## GENERAL DESCRIPTION

The standard SIM connector is specifically designed for handheld devices requiring secure subscriber identification.

Following on from the introduction of our standard SIM block with an offering of 3 standard heights, 0.80mm, 1.60mm, or 2.40mm, AVX is now adding another standard to the 9162 series SIM connectors, the slide-in SIM.

Unlike SIM blocks which require SIM card guides to aid insertion, removal and retention of the SIM card, the slide-in SIM has guides as part of the connector mold design.

Contacts are stamped, gold plated, rated 0.5A, and 5000 mechanical cycles.

Our contact design is specifically rounded to avoid any possible damage during and after card insertion to the card itself, assuming normal use. The design also incorporates protection features to avoid contact damage during this operation such as contact snagging.

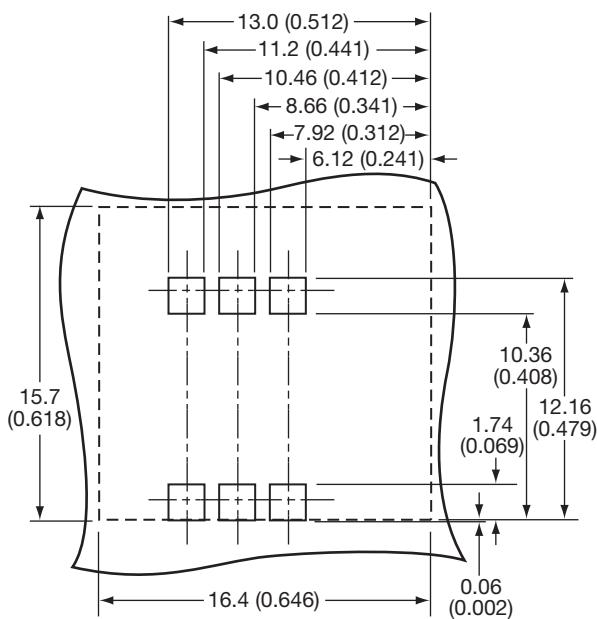
Please contact the appropriate sales office for further details of this service.

## KEY FEATURES AND BENEFITS

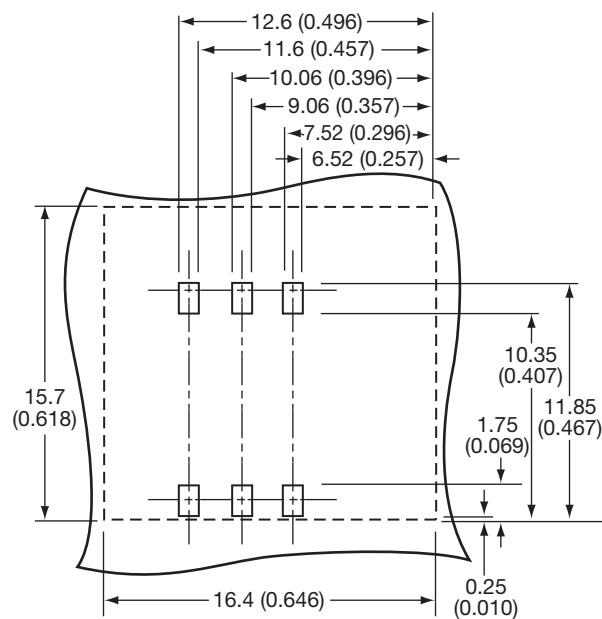
- Produced for use with mini SIM cards.
- The insulator is molded from high temperature plastic enabling the connector to be used in convection or infrared soldering processes.
- Supplied on tape and reel packaging for pick and place assembly.
- The all plastic design, assuming normal use prevents damage to the SIM card on insertion.
- Optional SMT contact size:  
Standard SMT contact size – 1.60mm x 1.60mm  
Narrow SMT contact size – 1.05mm x 0.60mm
- RoHS Compliant available.



### Standard SMT Contact Layout



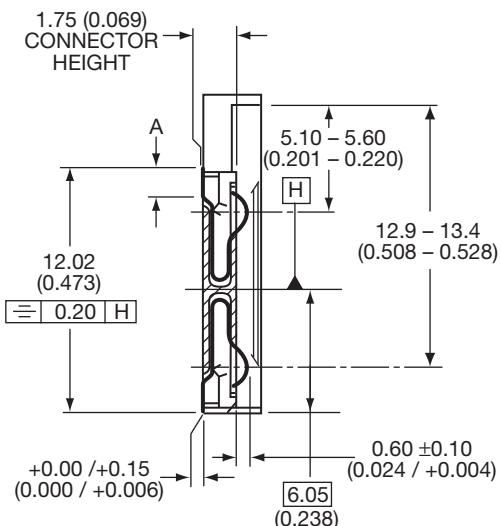
### Narrow SMT Contact Layout



# 9162 Slide-In SIM Card Connector

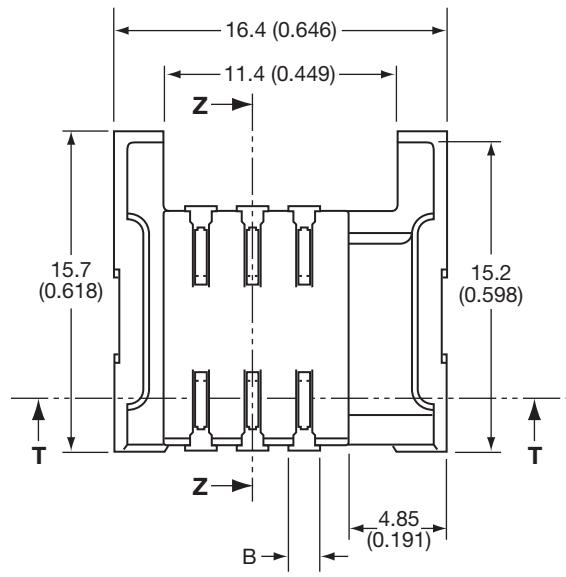


**Connector Height 1.75mm**

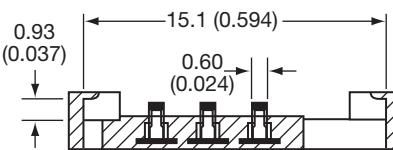


**SECTION Z-Z**

	Standard	Narrow
<b>A</b>	1.46 (0.057)	1.05 (0.041)
<b>B</b>	1.60 (0.063)	0.60 (0.024)



**SECTION T-T**



## HOW TO ORDER

**00**  
Prefix  
00 = Standard  
58 = Special

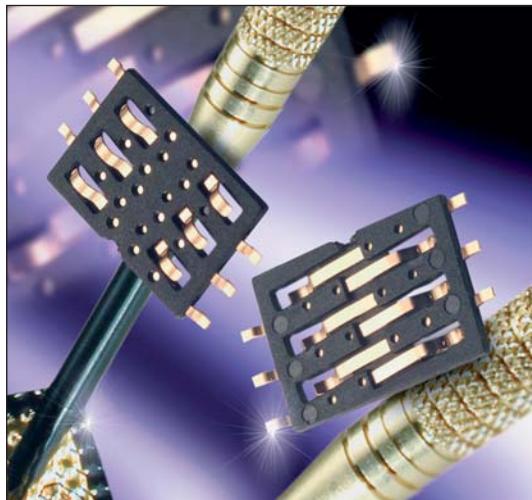
**9162**  
Series

**006**  
No. of Contacts  
006 = 6

**2X 6**  
SIM Type  
20 = Standard SMT Footprint  
21 = Narrow SMT Footprint

**Plating Options**  
Selective Gold,  
Pure Tin Tail

**XXX**  
**Connector Height**  
XXX refers to  
Connector Height  
175 = 1.75mm stack height



## GENERAL DESCRIPTION

The standard SIM connector is specifically designed for handheld devices requiring secure subscriber identification.

The connectors are available in a standard 6 pin configuration on a 2.54mm pitch with a 0.8mm height.

Contacts are stamped, gold plated, rated at 0.5A, and 5000 mechanical cycles.

Our contact design is specifically rounded to avoid any possible damage during and after card insertion to the card itself, assuming normal use. The design also incorporates protection features to avoid contact damage during this operation such as contact snagging.

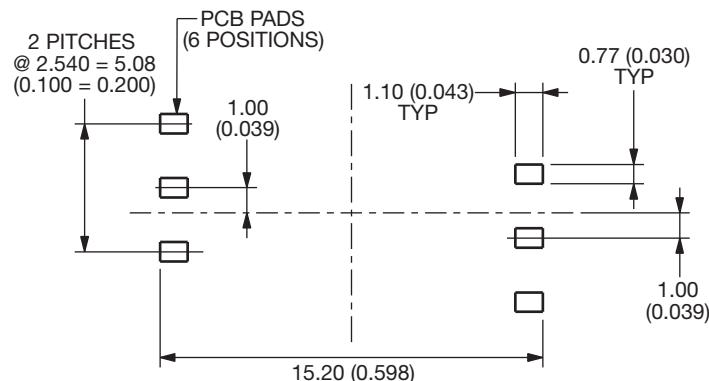
Please contact the appropriate sales office for further details.

## KEY FEATURES AND BENEFITS

- Produced for use with both full ISO cards and mini SIM cards.
- The insulator is molded from high temperature plastic enabling the connector to be used in convection or infrared soldering processes.
- Supplied on tape and reel packaging for pick and place assembly.
- RoHS Compliant.



## 0.8mm PCB Pad Layout



# 9162 SIM Card Block



Connector Height 0.8mm

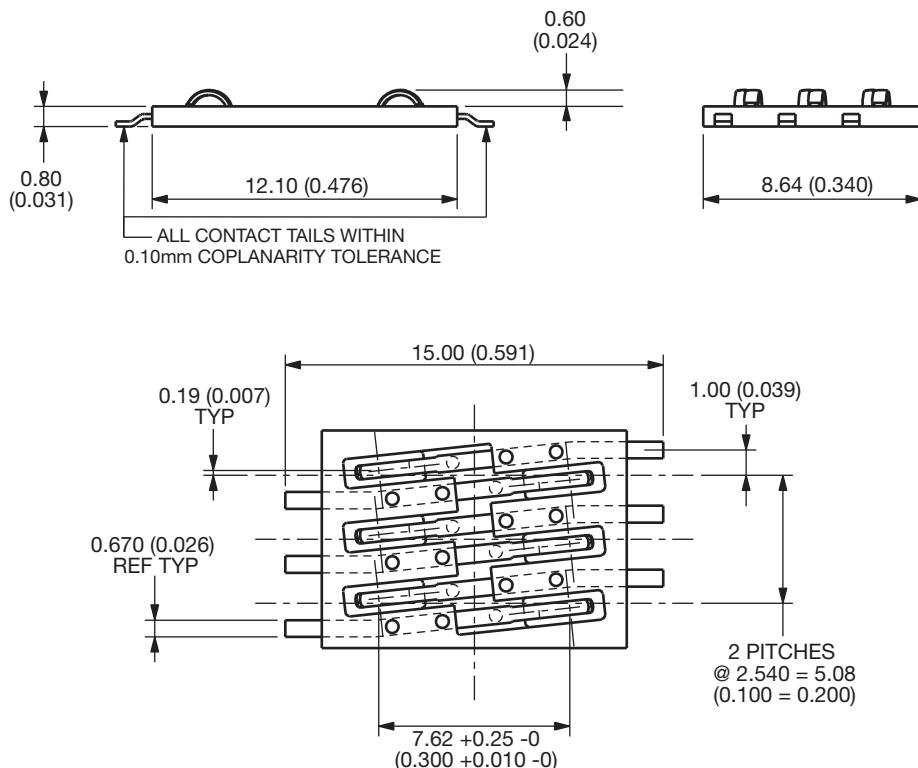
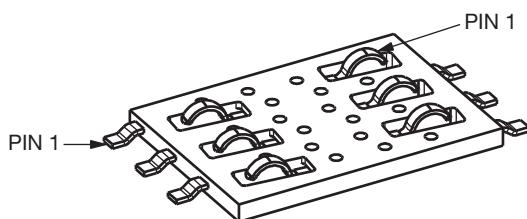


Illustration of Pin Configuration



## HOW TO ORDER

00

Prefix

9162

Series

006

Number of Contacts

006

SIM Type  
006 = Selective Gold,  
Pure Tin Tail

080

Connector Height  
080 = 0.8mm stack height

# 9162 SIM Connector with Locking Latch



## GENERAL DESCRIPTION

For 9162 Slide-IN & 9162 SIM/microSD

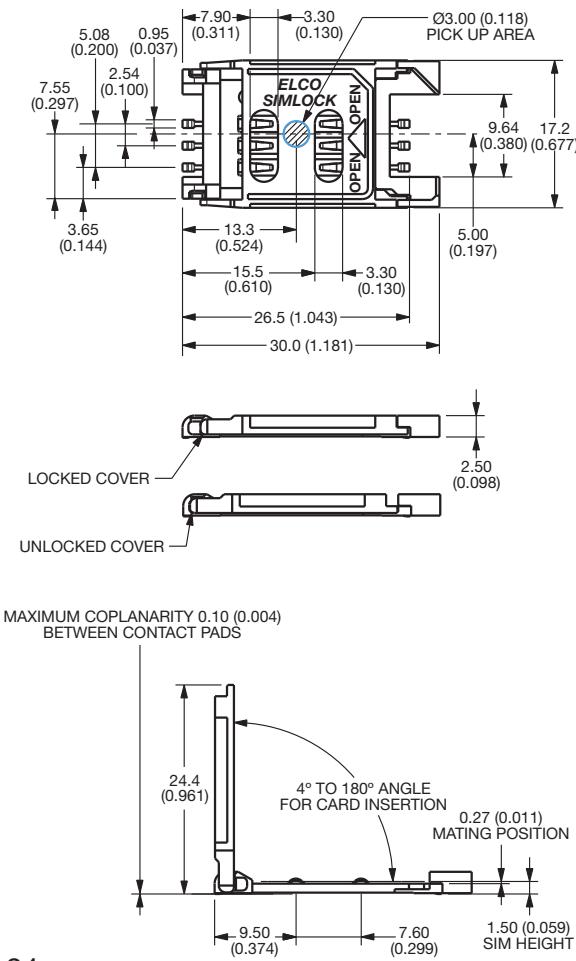
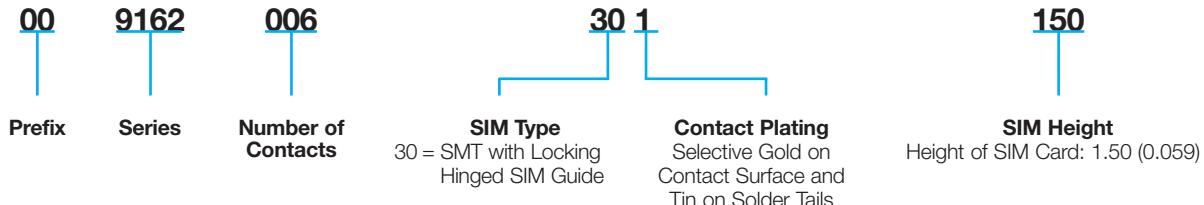
- Accepts GSM Standard 11.11 cards
- Secure locking latch mechanism
- Robust, good resistance against shock and vibration
- SIM Installed Height – 1.50mm
- Polarized to eliminate improper insertion of the card

## KEY FEATURES AND BENEFITS

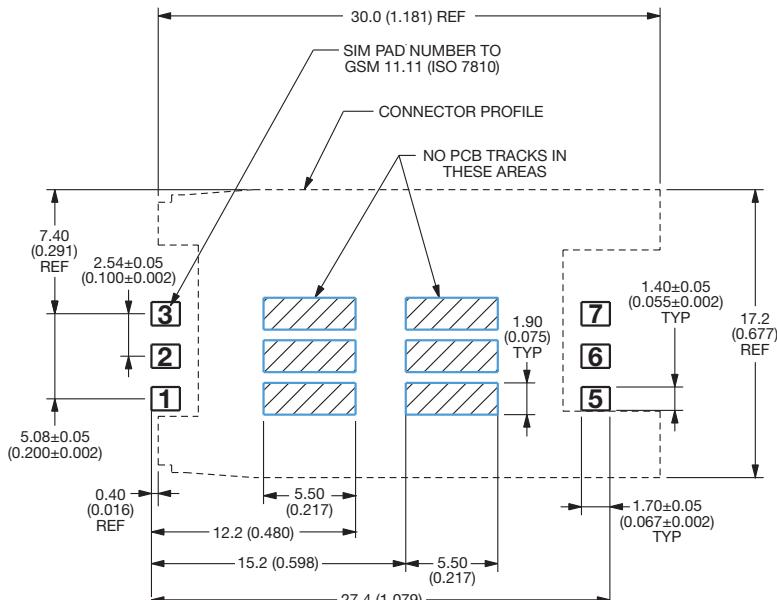
- SMT with locking hinged guide
- 2.50mm connector height
- Selective gold on mating surface/tin on solder tails
- Tape and reel packaging



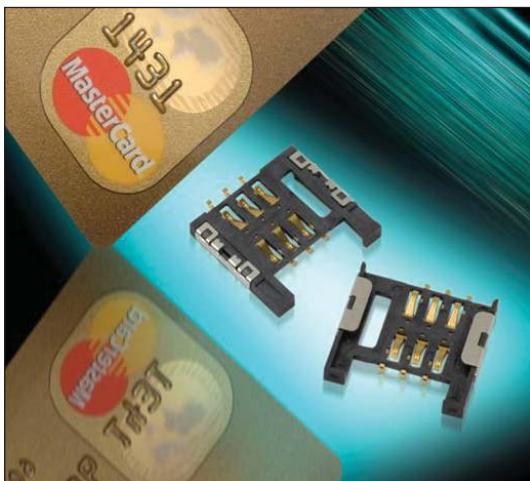
## HOW TO ORDER



## Suggested PCB Layout



# 9162 Slide-In Low Profile SIM Connector



## GENERAL DESCRIPTION

- Six position Slide-In SIM
- Low Profile – 0.70mm to SIM base
- Side bracket to add solder security
- SIM guidance using the side walls

## KEY FEATURES AND BENEFITS

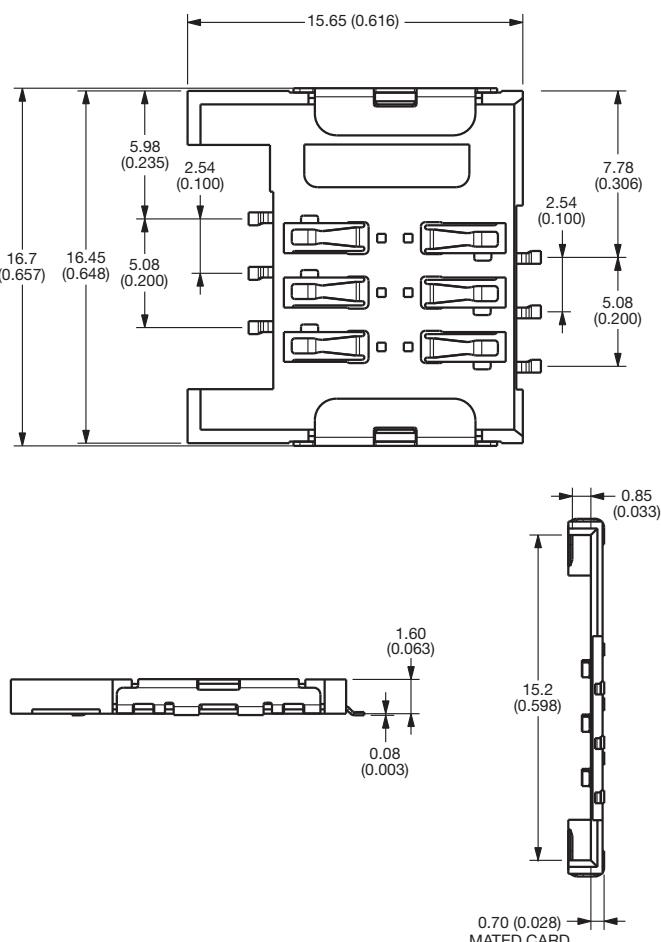
- SMT Slide-In SIM
- Molded in high temperature LCP
- 0.38µm Gold on contact surface and gold flash on contact tails
- 1.60mm connector height
- Tape & Reel packaging



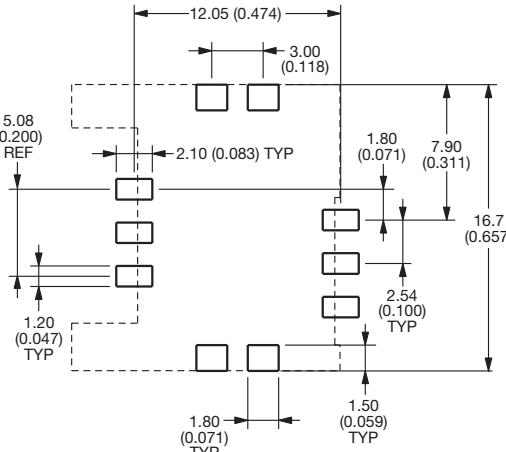
## HOW TO ORDER

00	9162	006	40 1	070
Prefix	Series	Number of Contacts	SIM Type 40 = SMT, Slide-in SIM	Contact Plating 0.38µm Gold on Contact Surface and Gold Flash on Solder Tails. Underplated 1.27µm Nickel.

**SIM Height**  
Height of SIM Card: 0.70 (0.028)



## Suggested PCB Layout



# 9162 SIM/microSD Micro Combination Connector



## GENERAL DESCRIPTION

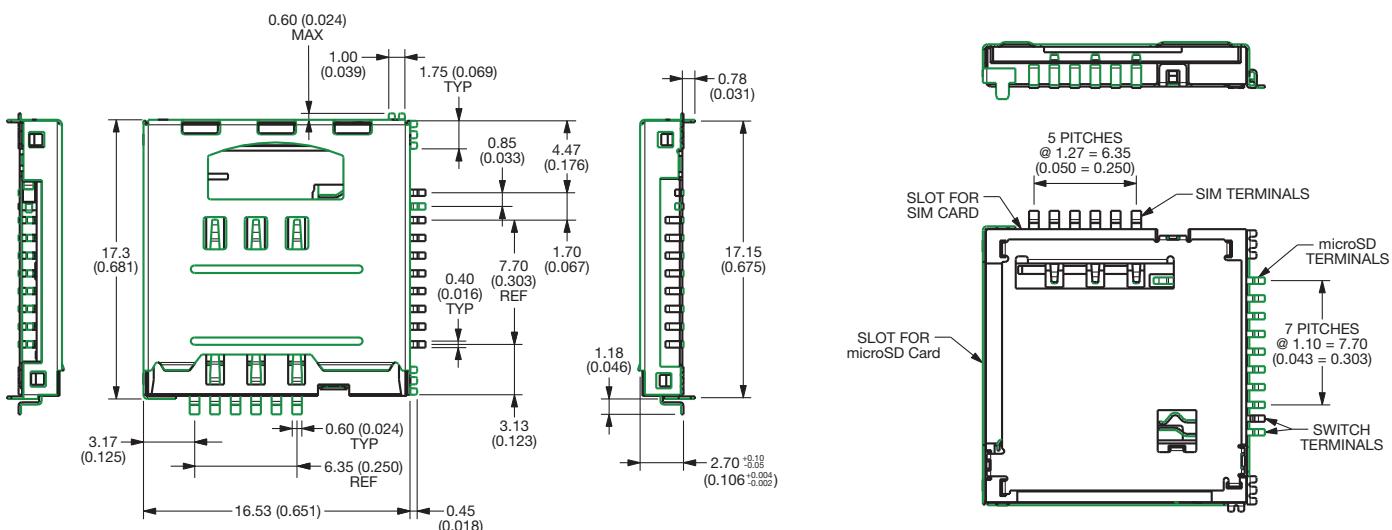
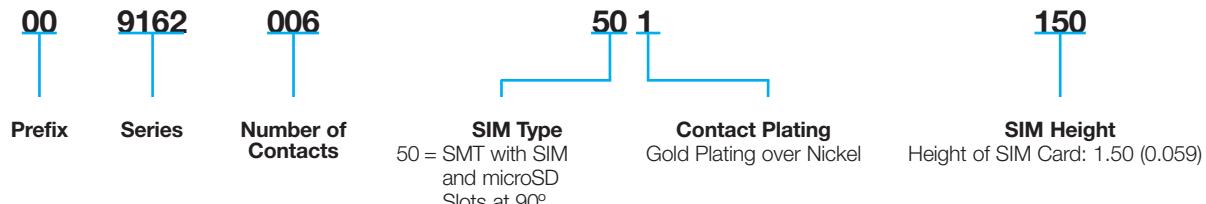
- Six position slide-in SIM connector & Push-Push microSD connector
- Allows two cards to be inserted into the same connector
- Card detect switch on the microSD

## KEY FEATURES AND BENEFITS

- Space saving connector combination
- Integrates 2 connectors into 1
- Contact Plating: Gold
- Insulator molded from LCP UL94 V-O
- Low profile 1.50mm to SIM
- 2.70mm connector height



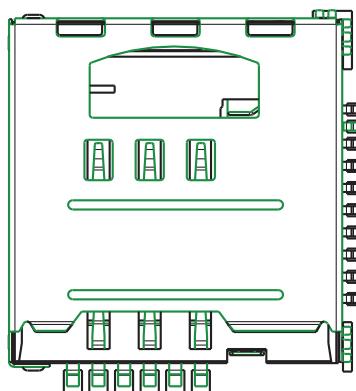
## HOW TO ORDER



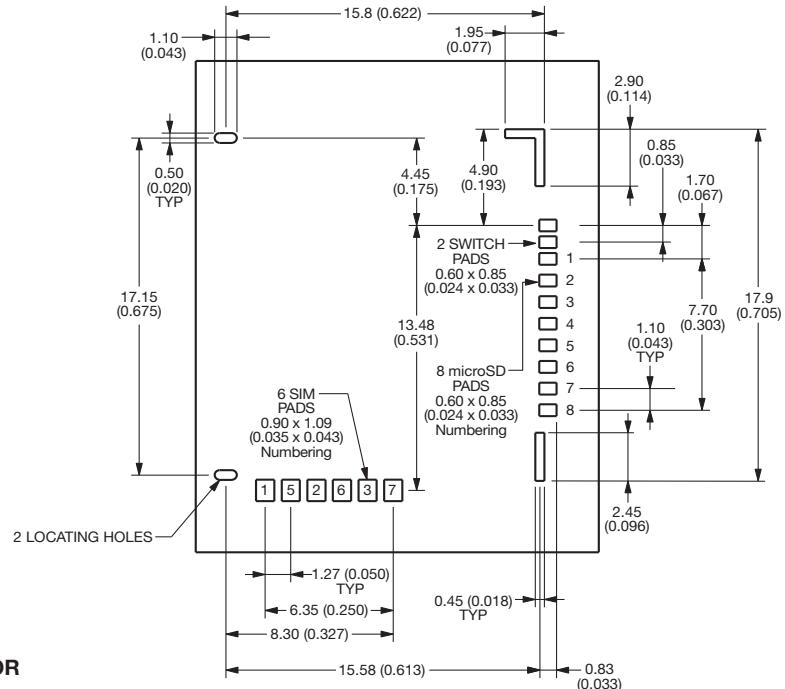
# 9162 SIM/microSD Micro Combination Connector



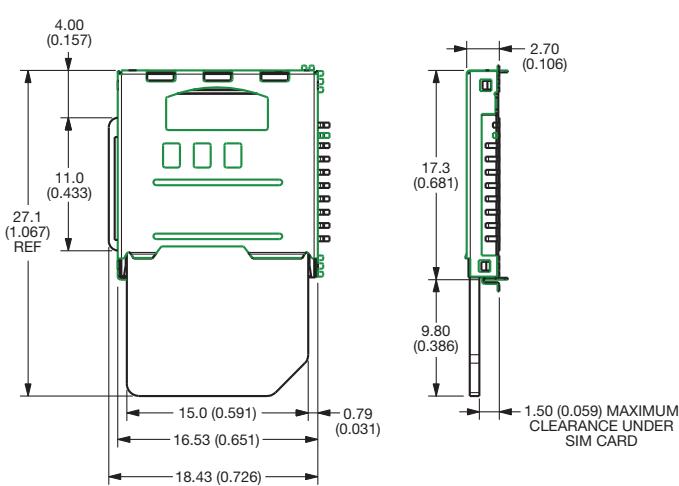
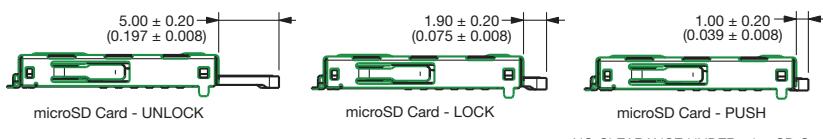
**Connector on PCB**



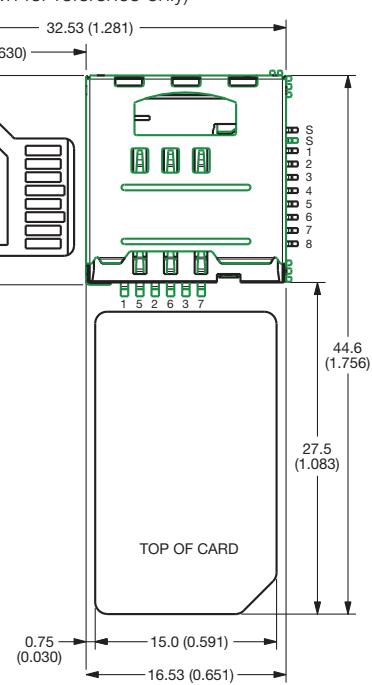
**Recommended PCB Layout**



**PCB SPACE USED BY CONNECTOR  
CARDS FULLY INSERTED**



**CARDS EXTRACTED**  
(Shown for reference only)



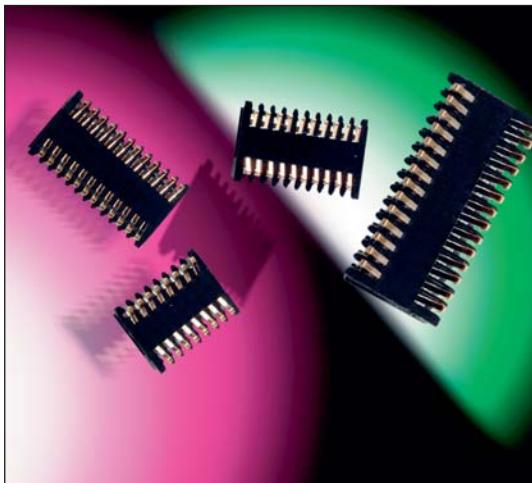
**CONTACT FUNCTIONS (ISO7816):**

1. Supply Voltage Vcc
2. Reset
3. Clock
5. Ground
6. Program Voltage Vpp
7. I/O

**MICRO SD FUNCTIONS:**

- S. Switch
- S. Switch
1. DAT 2
2. CD/DAT 3
3. CMD
4. Vdd
5. Clock
6. Vss
7. DAT 0
8. DAT 1





## GENERAL DESCRIPTION

The MOBO® series 9158 is a one-piece connector used to connect two PCBs within mobile phones, pagers, PDAs, security, handheld scanners, etc. in a cost-effective manner.

A standard range is available with 16, 20, 24 and 28 contacts to suit stack heights of 1.90mm to 3.30mm. Other contact variants are also available up to 5.10mm, in custom housings. The SOLO STACKER can allow a spacing tolerance of up to  $\pm 0.30\text{mm}$  and still provide reliable connections between the PCBs, even if they are not parallel.

SOLO STACKER is designed for PCB surface mounting and is supplied in tape and reel packaging. Gold plated pads on the mating PCB or suitable flex circuits provide connection between the boards.

Whatever your requirements this SOLO STACKER can also be customized to suit your applications.

## APPLICATIONS

Suitable applications include:

- Mobile Phones
- PDA
- Medical
- PMR
- Industrial
- Security
- Handheld Scanner

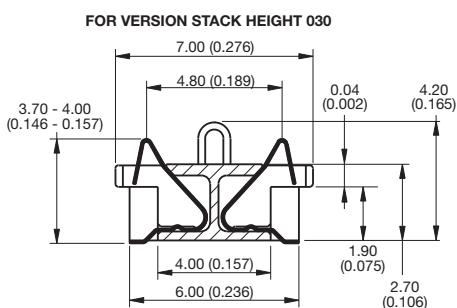
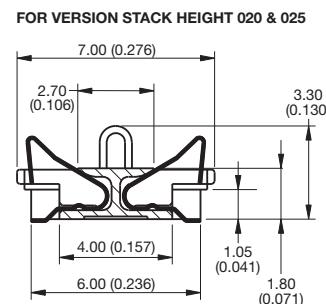
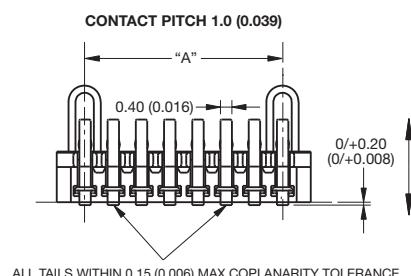
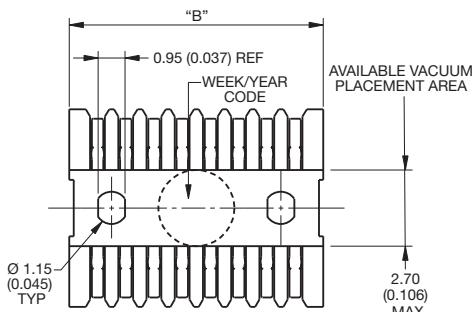
## KEY FEATURES AND BENEFITS

Single piece Connector – no mating half connector required to connect two boards together which means:

- Reduced assembly time.
- Only one part to purchase and stock.
- Due to the unique contact design, the mating device does not have to be parallel.
- Extremely robust when subjected to shock and vibration.
- Cost effective.
- Helps reduce tolerance accumulation within system.



## DRAWINGS AND DIMENSIONS



Number of Positions	Part Number	A	B
16	00-9158-016-XXX-XXX	7	9.00
20	00-9158-020-XXX-XXX	9	11.00
24	00-9158-024-XXX-XXX	11	13.00
28	00-9158-028-XXX-XXX	13	15.00

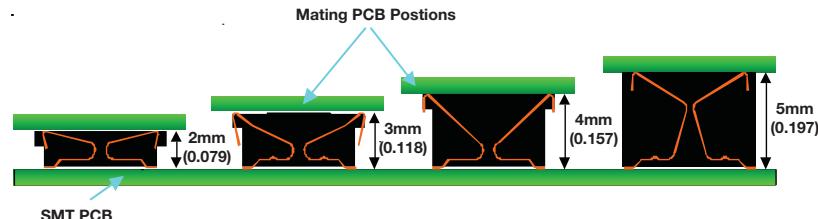
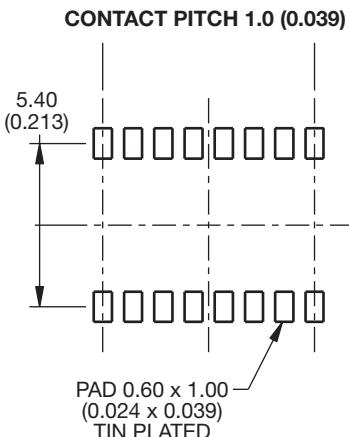
A = Number of contact pitches at 1mm

B = Connector Length

# 9158 SOLO STACKER



## SMT PCB Footprint

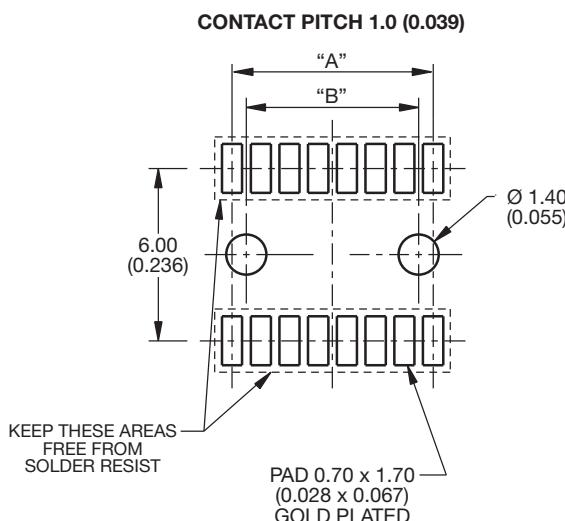


Mating Height	Standard Positions				Special Positions*				
	16	20	24	28	4	18	30	32	40
2mm	X	X	X	X					
3mm	X	X	X	X				X	
4mm					X	X			X
5mm							X		

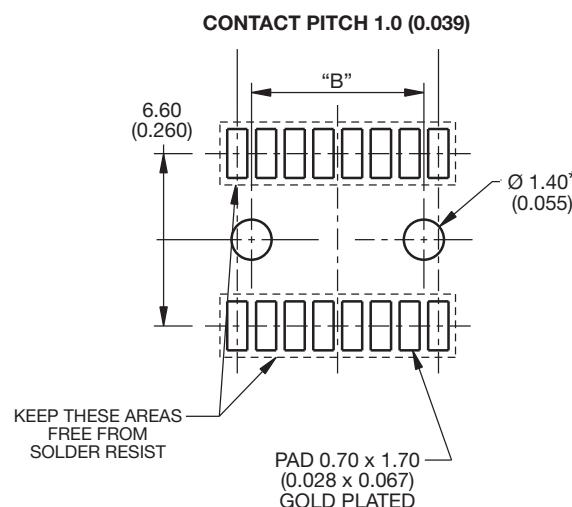
Other sizes available on request.

\*Please consult with factory for availability.

## Mating PCB Footprint for version stack height 020 & 030



## Mating PCB Footprint for version stack height 025



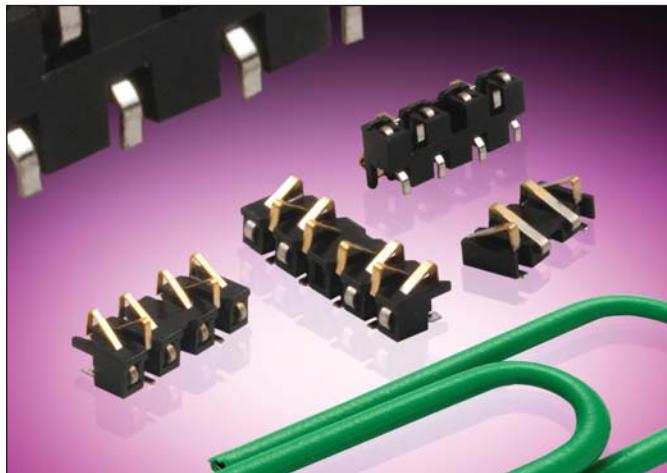
\* Used for Boss versions only.

B	Dim
16	6.00 (0.236)
20	8.00 (0.315)
24	10.00 (0.394)
28	12.00 (0.472)

## HOW TO ORDER

00	9158	XXX	XXX	06	X
Prefix	Series	No of Ways	Stack Height	Plating Variation	PCB Location Bosses
00 = Standard			020 = 1.9mm to 2.1mm 025 = 2.1mm to 2.7mm 030 = 2.8mm to 3.3mm	06 = Selective Gold 0.25µm Gold Plated Contact Nose, Pure Tin Tail	1 = With PCB Location Bosses 2 = Without PCB Location Bosses
		16 = 016 20 = 020 24 = 024 28 = 028			





## GENERAL DESCRIPTION

The SOLO series 9188 is a one-piece connector used to connect two PCBs in a cost effective manner.

A standard range is available with 4, 6, 8 staggered contacts to suit stack heights of 1.1mm to 2.1mm (see table below).

SOLO Stacker is designed for PCB surface mounting and is supplied in tape and reel packaging. Gold plated pads on the mating PCB or suitable flex circuits provide connection between the two boards.

## APPLICATIONS

Suitable applications include:

- Handheld Devices:
  - Phones
  - Scanners
  - Radios
  - Medical Diagnostic
  - Security Devices

## KEY FEATURES AND BENEFITS

Single piece connector – no mating half required to connect two boards together which means:

- Reduced assembly time
- Only one part to purchase and stock
- Due to the unique contact design, the mating device does not have to be parallel
- Helps reduce tolerance accumulation within system



## HOW TO ORDER

<b>00</b>	<b>9188</b>	<b>004</b>
Prefix	Series	No. of Ways

Stack Height		
Code	Height	No. of Ways
012	1.1mm to 1.3mm	4 only
020	1.9mm to 2.1mm	6 & 8 only

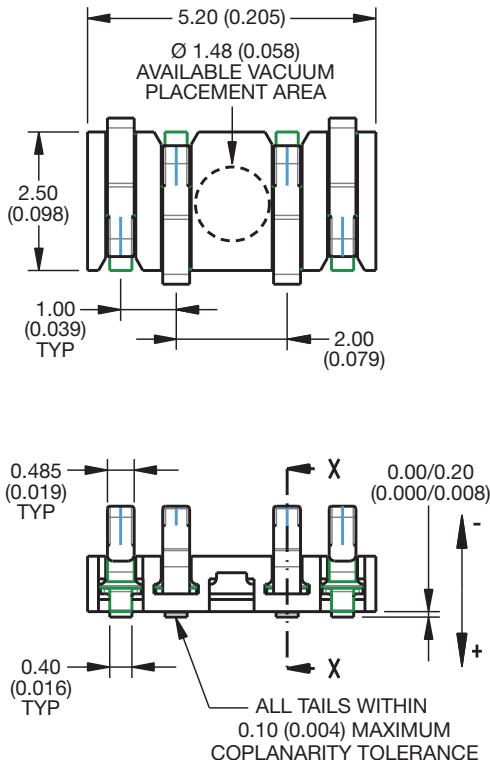
### Plating Variation

06 = Selective Gold  
 0.25µm  
 Gold Plated  
 Contact Nose,  
 Pure Tin Tail  
 No Bosses

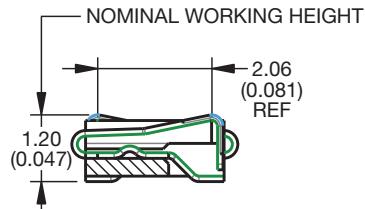
# 9188 Staggered SOLO Stacker



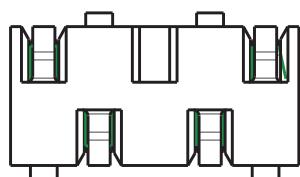
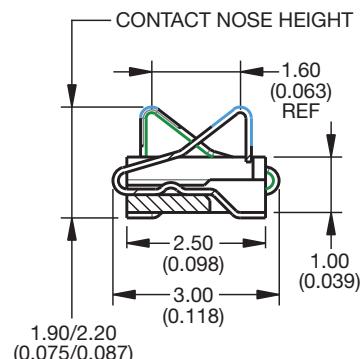
## 4 Way Staggered Stacker



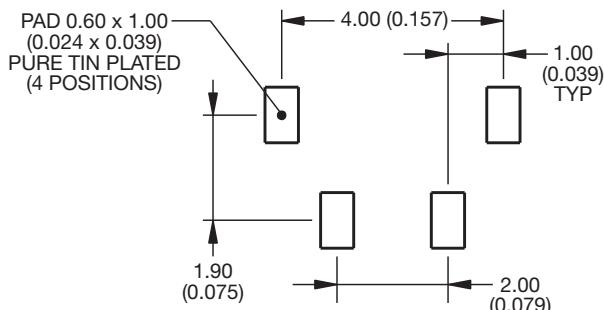
### MATING CONDITION



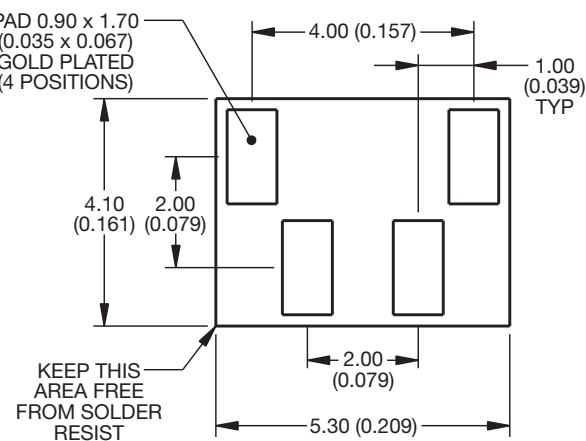
### SECTION ON X - X



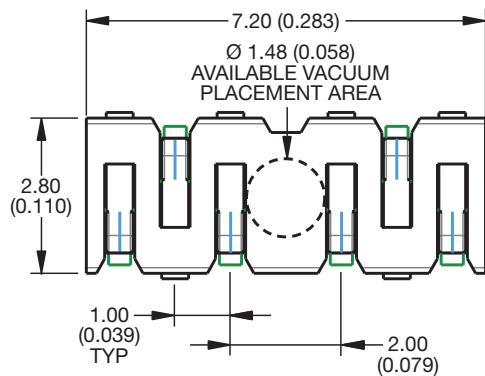
### SMT PCB FOOTPRINT



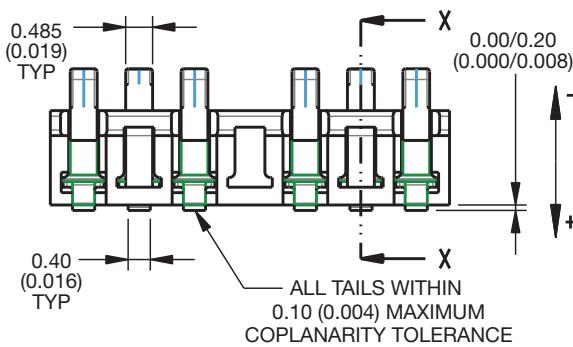
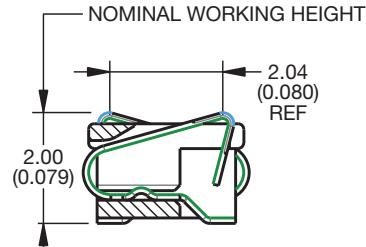
### MATING PCB FOOTPRINT



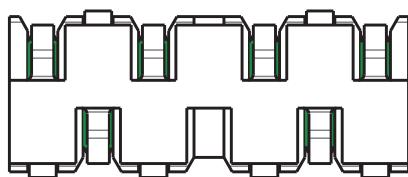
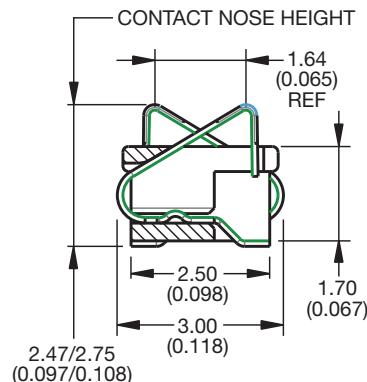
## 6 Way Staggered Stacker



### MATING CONDITION

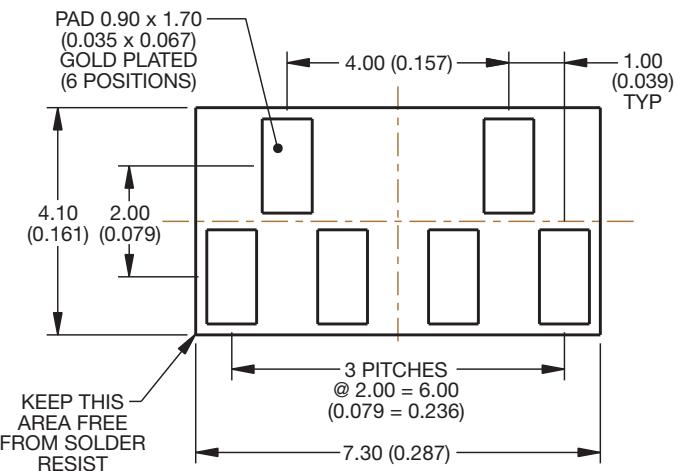


### SECTION ON X - X



### SMT PCB FOOTPRINT

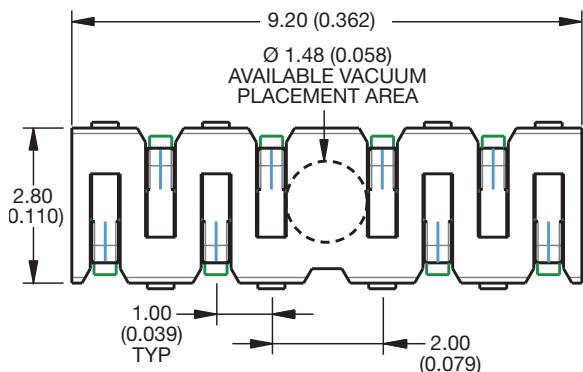
### MATING PCB FOOTPRINT



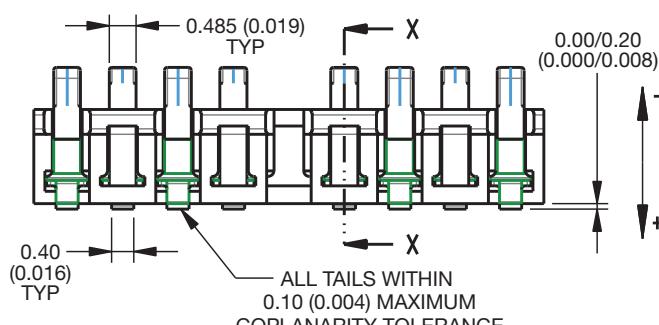
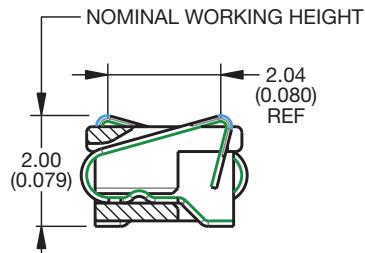
# 9188 Staggered SOLO Stacker



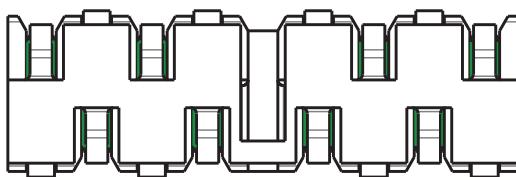
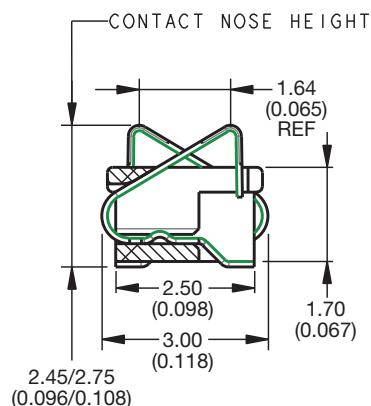
## 8 Way Staggered Stacker



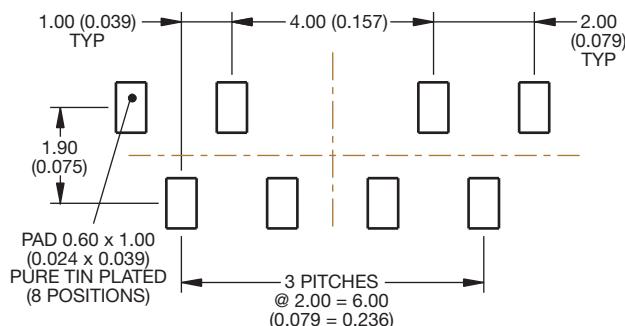
### MATING CONDITION



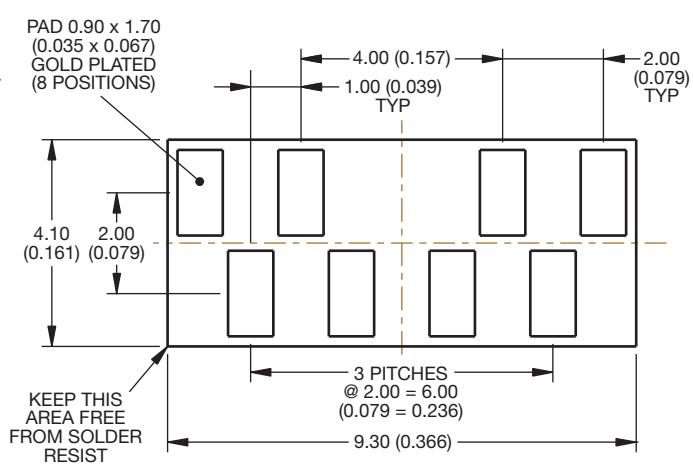
### SECTION ON X - X



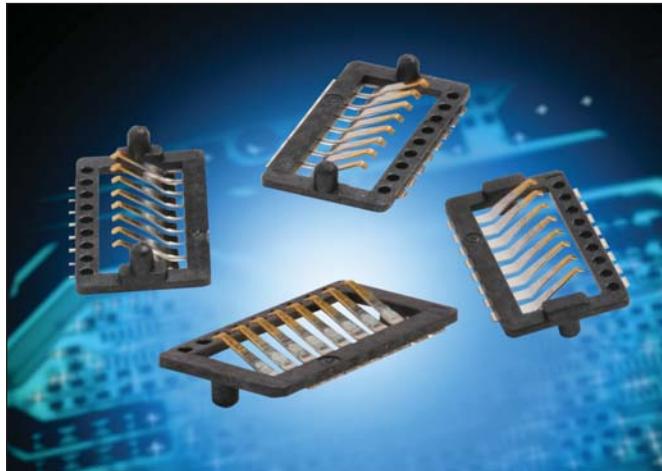
### SMT PCB FOOTPRINT



### MATING PCB FOOTPRINT



# 9258 Ultra Low Profile Stacker



## GENERAL DESCRIPTION

The SOLO series 9258 is a one-piece connector used to connect two PCBs in a cost effective manner.

This connector is a 1.0mm pitch available in an 8 position with stack heights of 0.40mm and 0.80mm. It is available with or without location bosses.

This connector is designed for PCB surface mounting and is supplied in tape and reel packaging. Gold plated pads on the mating PCB or suitable flex circuits provide connection between the boards.

## APPLICATIONS

Suitable applications include:

- Mobile phones
- Handheld scanners
- Portable medical devices
- Display interface

## KEY FEATURES AND BENEFITS

Single piece connector – no mating half connector required to connect two boards together which means:

- Reduced assembly time
- Only one part to purchase and stock
- Due to the unique contact design, the mating device does not have to be parallel
- Extremely robust when it comes to shock and vibration



## HOW TO ORDER

**00**  
Prefix  
00 = Standard

**9258**  
Series

**008**  
No of  
Ways

**XXX**

**Stack Height**  
004 = 0.40mm  
008 = 0.80mm

**06**

**Plating Variation**  
06 = Selective Gold  
0.25µm  
Gold Plated  
Contact Nose,  
Pure Tin Tail

**X**

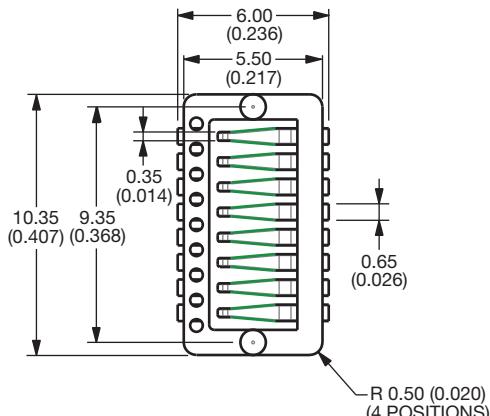
### PCB Location Bosses

- 1 = With Mating PCB Location Bosses (top side)
- 2 = Without PCB Location Bosses
- 3 = With SMT PCB Location Bosses (bottom side)
- 4 = With SMT and Mating PCB Location Bosses (top and bottom sides)

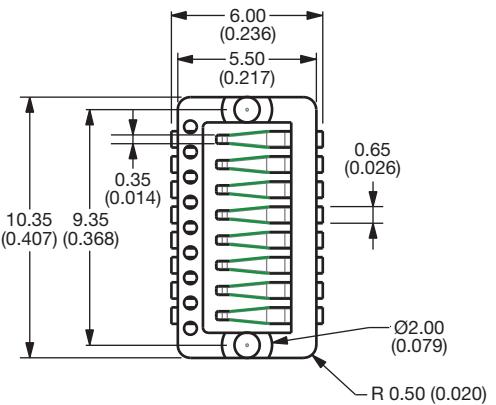
# 9258 Ultra Low Profile Stacker



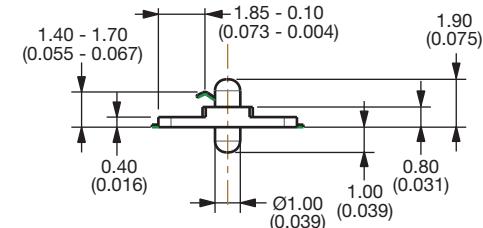
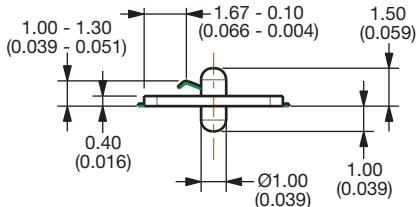
## 0.4mm Ultra Low Profile Stacker



## 0.8mm Ultra Low Profile Stacker

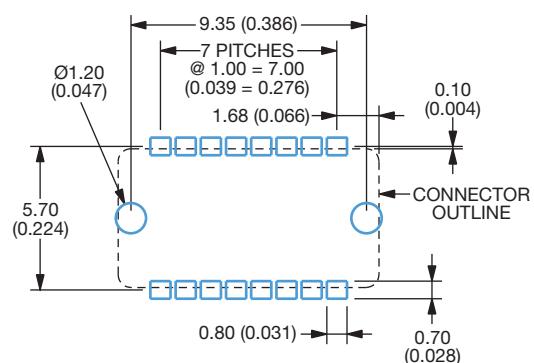


ALL TAILS TO BE WITHIN  
0.10 (0.004) MAXIMUM  
COPLANARITY TOLERANCE

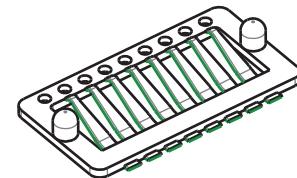


## PROPOSED SMT PCB LAYOUT

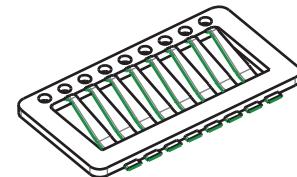
ALL PADS PURE TIN PLATE



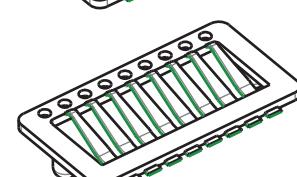
## WITH MATING PCB LOCATION BOSSES (TOP SIDE)



## WITHOUT PCB LOCATION BOSSES

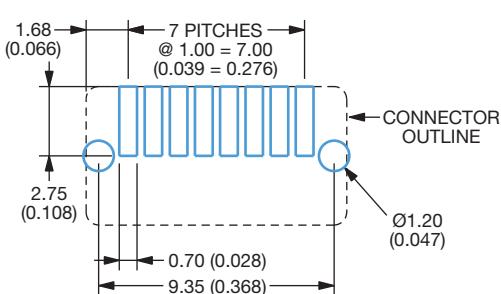


## WITH SMT PCB LOCATION BOSSES (BOTTOM SIDE)

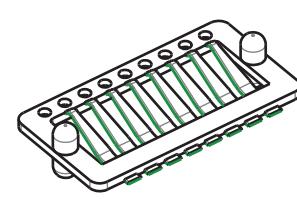


## PROPOSED MATING PCB LAYOUT

ALL PADS GOLD PLATE



## WITH PCB AND SMT LOCATION BOSSES





## GENERAL DESCRIPTION

The 9157 series was specifically designed for portable equipment.

AVX now offers this two-part system as a standard product. The fixed SMT socket is designed to be housed within the confined dimensional constraints of the portable device.

The plug/cover connector has sprung contacts and is designed for termination to accessory equipment. The connector is designed to house fifteen signal contacts on a 1mm pitch rated at 1.5A. There is the option to include a switching RF coax.

A cradle SMT plug connector for docking applications is also available as standard and has the option of including a SMT RF coax.

Whatever your requirements, the 9157 series can also be customized to suit your application.

## APPLICATIONS

Suitable applications include:

- Mobile Phones
- PDA
- Medical
- Docking/Charging for any portable device

## KEY FEATURES AND BENEFITS

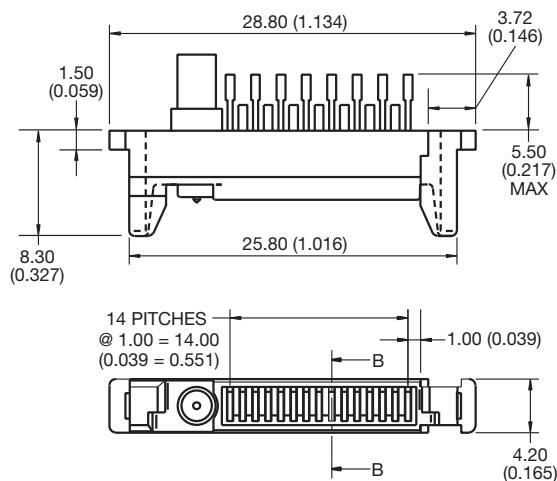
- Patented 20° angled face on the socket gives self-cleaning face when mated with plug.
- Metal Latching area integral to socket which saves PCB real estate.
- Integral to socket is a mechanical 50Ω switching coax for SMT termination.
- Single sprung plug contact design gives ten thousand mating cycles and cleaning/wiping action.
- Customer has option to terminate own RF coax using AVX custom tooling: 06-9157-7116-01-000.
- SMT plug has unique location pyramids that give positive alignment to portable device, and assist blind mating.
- RoHS Compliant.



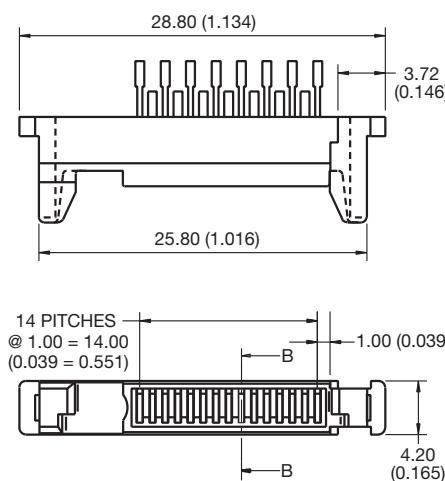
# 9157 I/O Connector



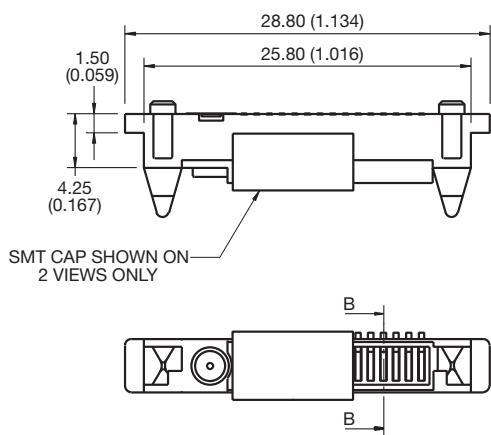
## Plug Wire with Coax



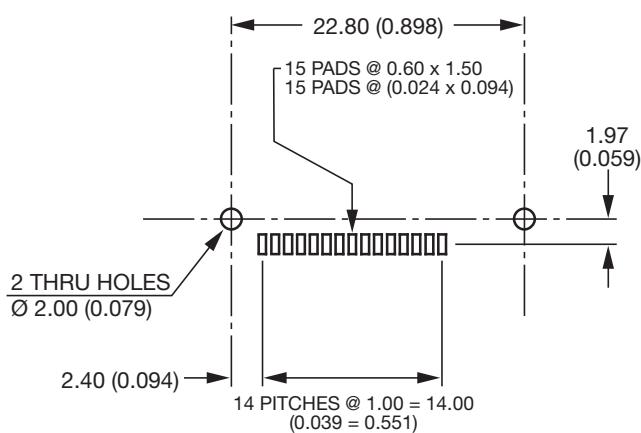
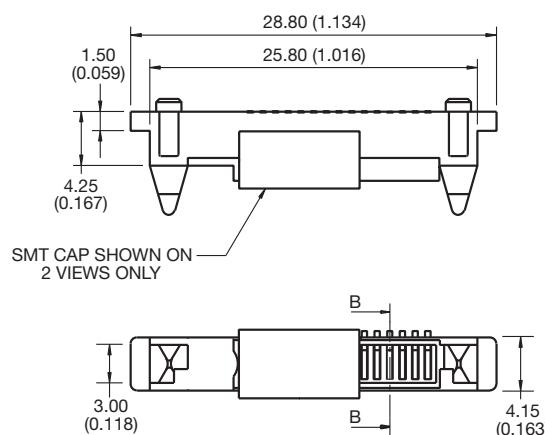
## Plug Wire without Coax



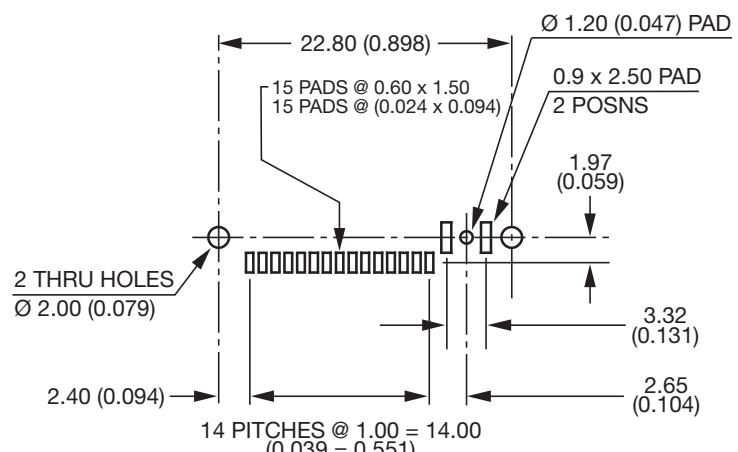
## SMT Plug with Coax



## SMT Plug without Coax



SUGGESTED PCB LAYOUT

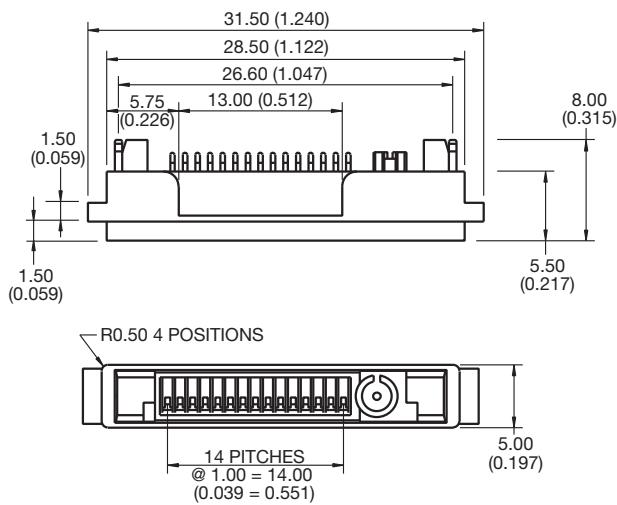


SUGGESTED PCB LAYOUT

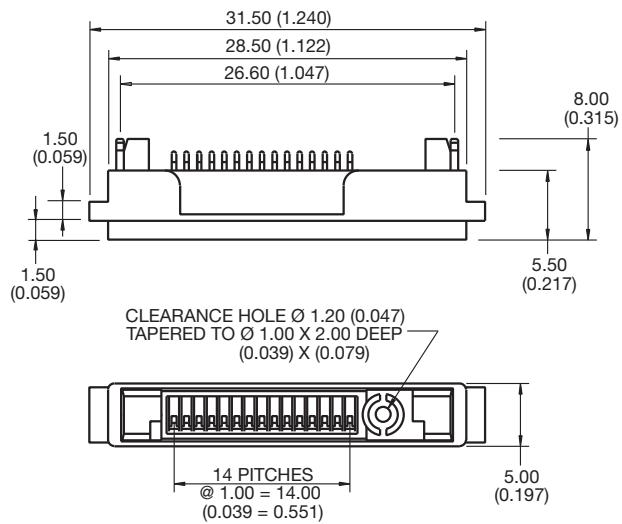
# 9157 I/O Connector



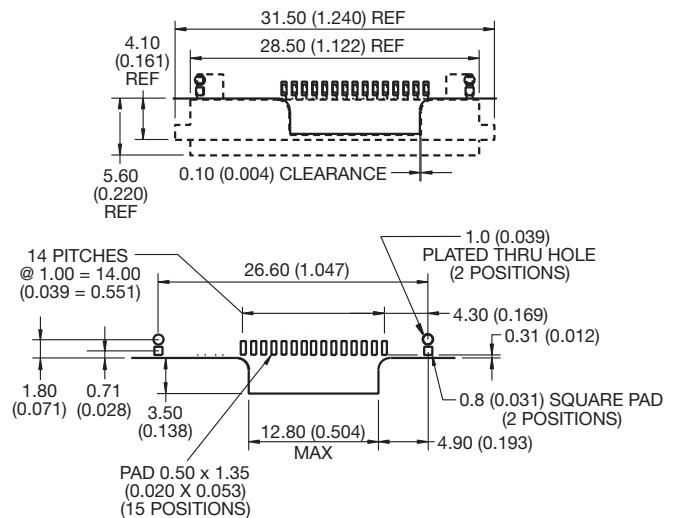
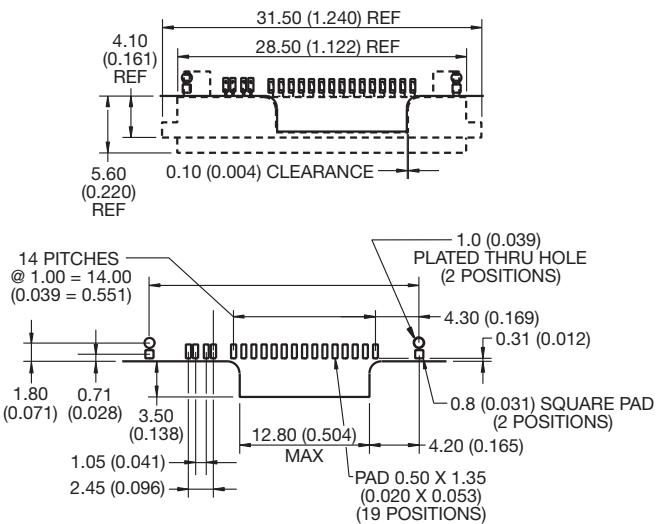
**SMT Socket with Coax**



**SMT Socket without Coax**



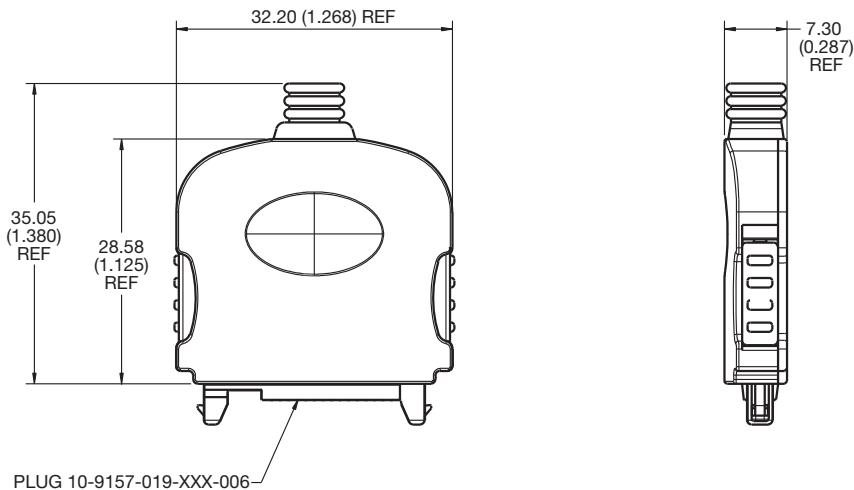
**SMT PAD LAYOUT**



# 9157 I/O Connector



## Cover Kit



## HOW TO ORDER

### Plug Options – Example

<b>10</b>	<b>9157</b>	<b>015</b>	<b>000</b>	<b>006</b>
<b>Prefix</b> 10 = Plug 58 = Special	<b>Series</b>	<b>No of Ways</b> 15 = 015	<b>RF Coax Option</b> 000 = No RF Coax 001 = With RF Coax	<b>Contact Type</b> 006 = Solder Wire 007 = SMT

### Socket Options – Example

<b>20</b>	<b>9157</b>	<b>015</b>	<b>000</b>	<b>006</b>
<b>Prefix</b> 20 = Socket 58 = Special	<b>Series</b>	<b>No of Ways</b> 15 = 015	<b>RF Coax Option</b> 000 = No RF Coax 001 = With RF Coax	<b>Contact Type</b> 006 = SMT

### Cover Options – Example \* Parts supplied in kit form

<b>30</b>	<b>9157</b>	<b>9700</b>	<b>00</b>	<b>000</b>
<b>Prefix</b> 30 = Sub Assembly 58 = Special	<b>Series</b>	<b>Cover Version</b> 9700 = Screw/Press-fit Version	<b>Standard</b>	<b>Grommet Variation</b> 000 = No Grommet 035 = to suit $\phi$ 3.50 cable 050 = to suit $\phi$ 5.00 cable

Patent: 2276285  
5540599

Note: Application tooling to terminate coax cable 06-9157-7116-01-000.



# 9157 MOBO® 19 Way I/O Connector



## GENERAL DESCRIPTION

Based on our standard 15 way 9157 I/O family, AVX has now released a family 19 way devices. This range includes a SMT 90 degree plug, a wire socket version that is used with the standard 9157 cover and a SMT socket for charging applications.

Options with the 90 degree SMT socket include the sealing of the connector contacts and the connector to the housing up to IP67. There is also an option to have an EMLB (early mate, late break) on pins 1 and 19.

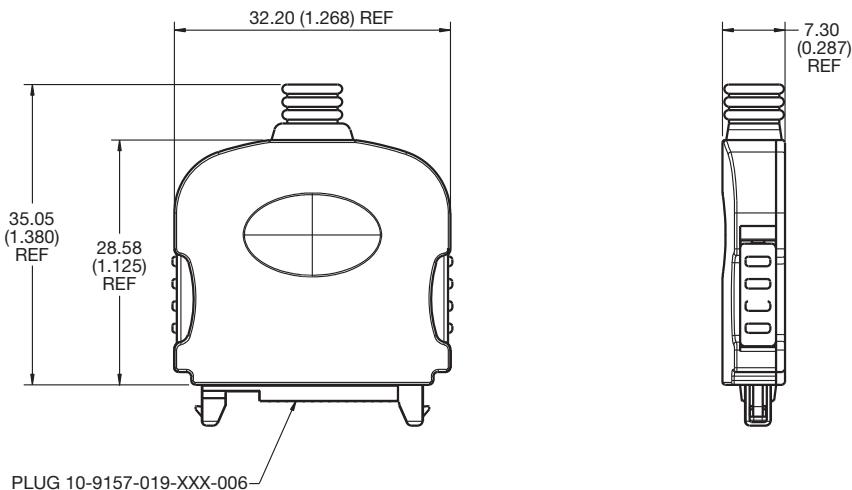
To achieve the seal to the device housing, it may be necessary to customize the device housing design.

On the SMT 90 degree version, we also have the capability of an integrated DC jack, enabling both the DC jack and the 19 way cover to be plugged in at the same time.

## AVAILABLE DEVICES:

- |                             |                                  |
|-----------------------------|----------------------------------|
| <b>10 9157 019 000 006</b>  | <b>Plug wire version</b>         |
| <b>10 9157 019 000 007</b>  | <b>SMT charging version</b>      |
| <b>20 9157 019 000 006</b>  | <b>90 degree SMT socket</b>      |
| <b>30 9157 97 XX 00 000</b> | <b>Cover options see page 39</b> |

## Cover Kit

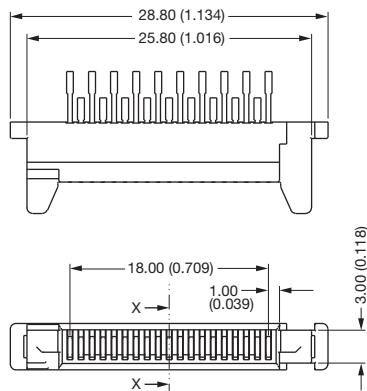


# **9157 MOBO®**

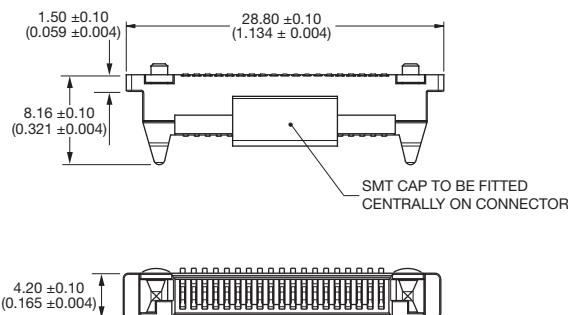
## **19 Way I/O Connector**



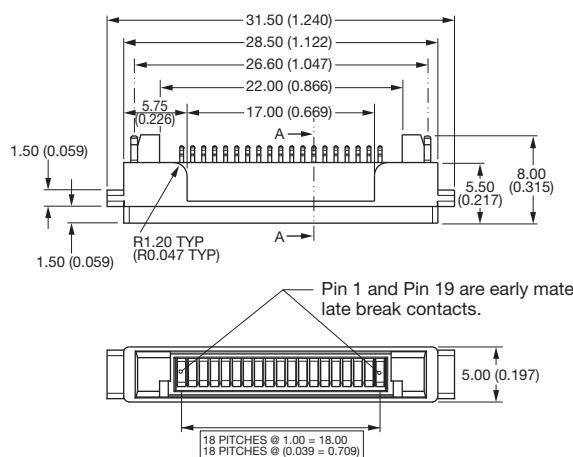
# Plug Wire



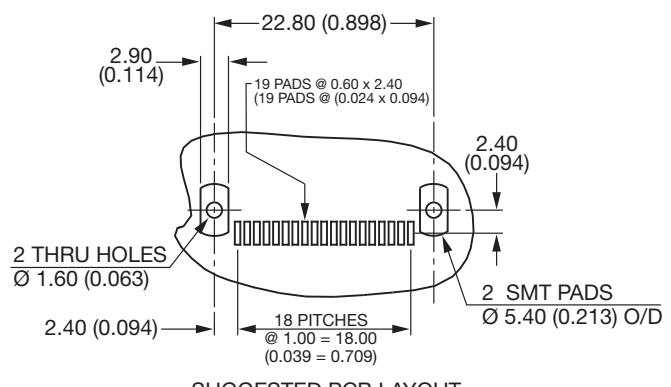
## SMT Plug



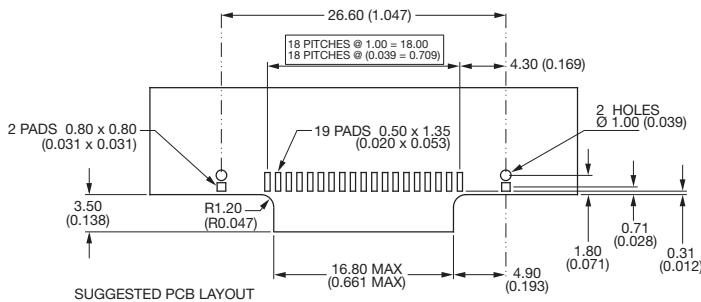
## SMT Socket



## SMT Plug (Suggested PCB Layout)



## SMT Socket (Suggested PCB Layout)



# 9257 Reduced Size I/O Connector



## GENERAL DESCRIPTION

An I/O interconnect system designed for portable equipment.

AVX offers this plug and socket reduced size system as a standard product. The fixed SMT socket is designed to be mounted on a PCB and housed within a portable device. The plug is designed for cable termination with options of single and double sided contacts and customizing the overmold cover or parts can be supplied as connector only for sub contract termination. The socket connector houses 16 contacts in two rows on 1.25mm pitch with a rating of 1 amp per contact. Both connectors are RoHS compliant.

## APPLICATIONS

Suitable applications include:

- Cellular Phones
- Handheld Devices
- Industrial Modules
- Medical Electronics

## KEY FEATURES AND BENEFITS

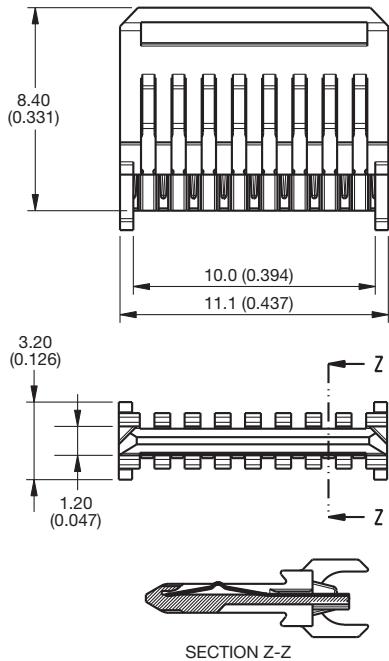
- No latching is required due to the click design of the contacts.
- Optional customization of the overmold cover.
- Options of single row (8 way) or dual row (16 way) plug connector.
- Compact size to optimize PCB real estate.
- Metal outer cover provides integrated PCB location and solder tab.
- Positive alignment and orientation of the plug and socket.
- 5K mating cycles and 1 amp rated.



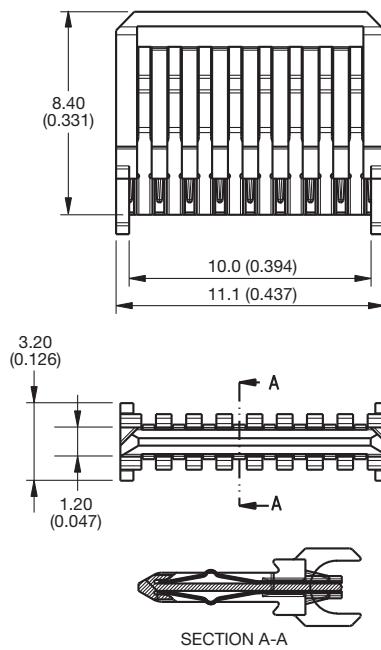
# 9257 Reduced Size I/O Connector



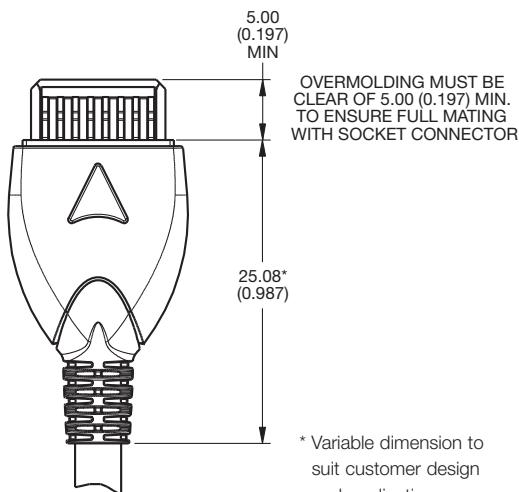
**Single Sided 8 Way I/O Plug Connector**



**Dual Sided 16 Way I/O Plug Connector**



## Suggested Overmolding for Plug Connector



## HOW TO ORDER

**10**

**Prefix**  
10 = Plug Connector

**9257**

**Series**

**016**

**No of Ways**  
016 = 16 way dual sided  
008 = 8 way single sided

**001**

**Contact**  
001 = Solder Bucket

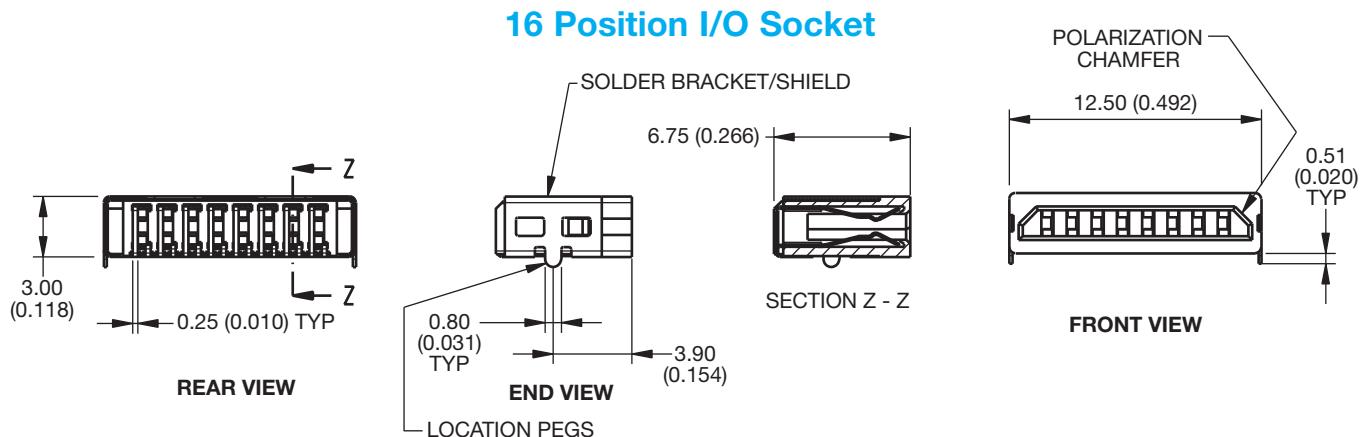
**003**

**Plating Option**  
003 = 0.8µm Selective Gold, Tin Tail

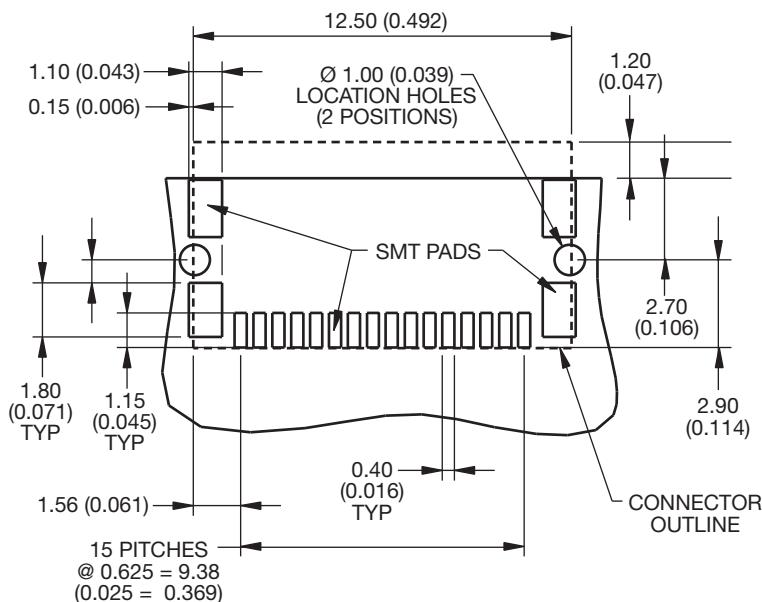
### Notes:

1. All dimensions are for reference only unless tolerated.
2. For full product specification refer to AVX spec 201-01-089.
3. Parts packed in tube with 50 parts per tube.

# 9257 Reduced Size I/O Connector



## PCB Layout



## HOW TO ORDER

**20**

**Prefix**  
20 = Socket Connector

**9257**

**Series**

**016**

**No of Ways**  
16 = 016

**001**

**Contacts**  
001 = SMT Termination

**01**

**Solder Bracket**  
01 = Solder Bracket with location pegs

**3**

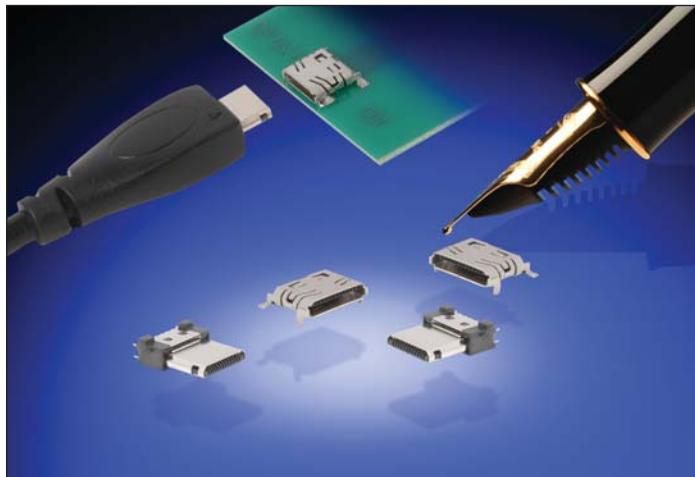
**Plating Option**  
3 = 0.8µm Selective Gold, Tin Tail

<b>Packing Details</b>	
Reel Qty.	1100
Pack Qty.	5500

Notes:

1. 16 Way I/O Socket.
2. For full product specification refer to AVX spec 201-01-089.
3. General tolerance  $\pm 0.20$  (0.008) unless otherwise stated.
4. SMT feet within 0.13 (0.005) coplanarity.





## GENERAL DESCRIPTION

AVX offers the 12 way mini I/O connector as a standard product. The fixed SMT socket is designed to be mounted on a PCB and housed within a portable device. The plug is designed for cable termination with options of single and double sided contacts. Parts can be supplied as connectors only for sub contract termination, or with a custom overmold cover. The socket connector houses 12 contacts in a single row on 0.50mm pitch.

## APPLICATIONS

- Medical Electronics
- Cellular Phones
- Industrial Modules
- Hand Held Devices

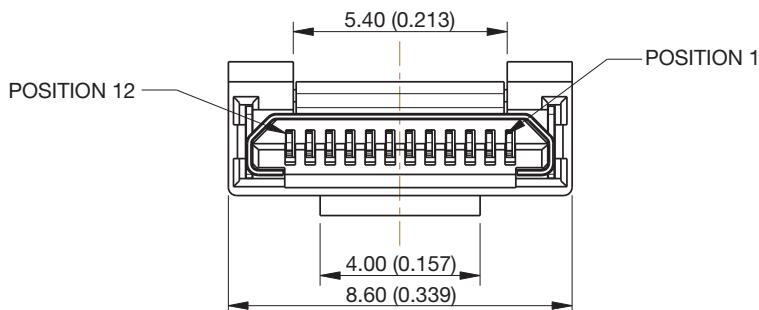
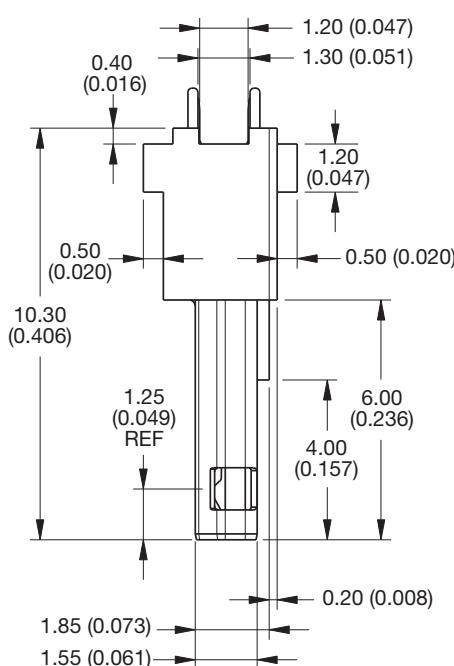
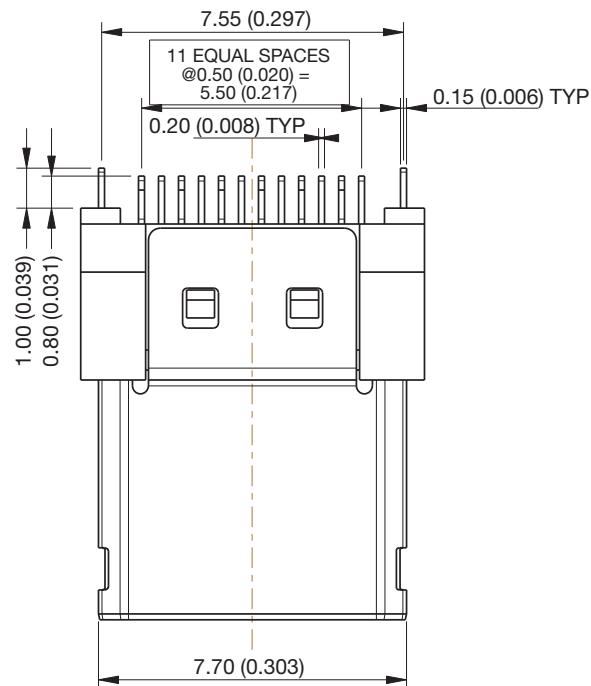
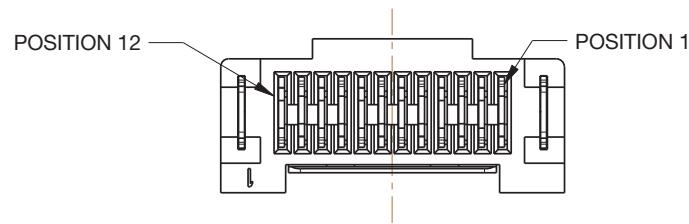
## KEY FEATURES AND BENEFITS

- No latching required due to the click design of the contacts.
- Optional customization of the overmold cover.
- Compact size to optimize PCB real estate.
- Metal outer cover provides integrated PCB location and solder tab.
- Positive alignment and orientation of the plug and socket.

# 9257 Mini I/O Connector



## 9257 STANDARD 12 WAY MINI I/O PLUG



## HOW TO ORDER

**10**

**Prefix**  
10 = Plug Connector

**9257**

**Series**

**012**

**No of Ways**  
12 = 012

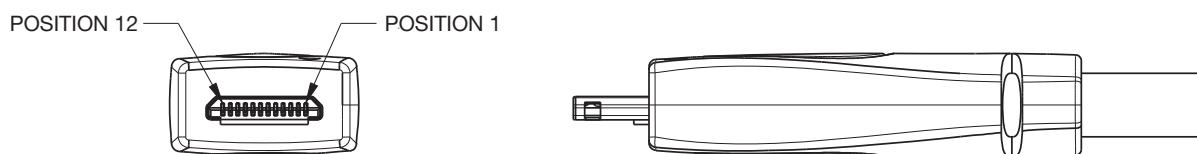
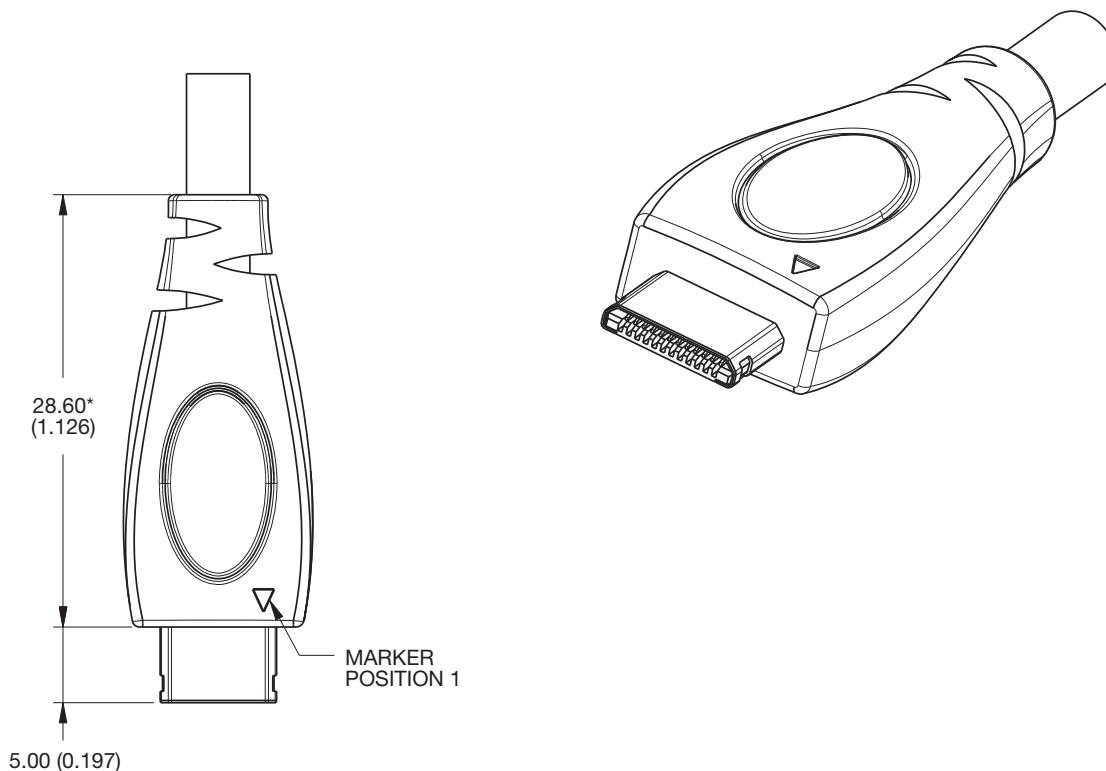
**101**

**Contacts**  
101 = Solder Tail

**006**

**Plating Option**  
006 = 0.25µm Gold over Nickel

## SUGGESTED OVERTMOLDING FOR PLUG CONNECTOR

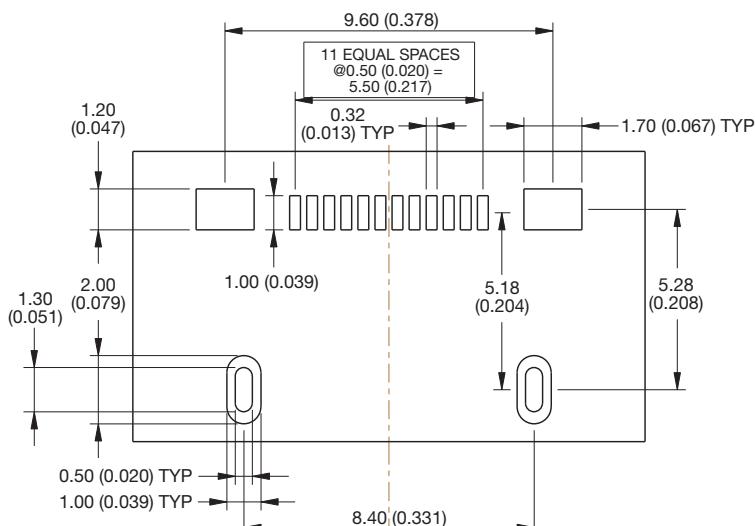
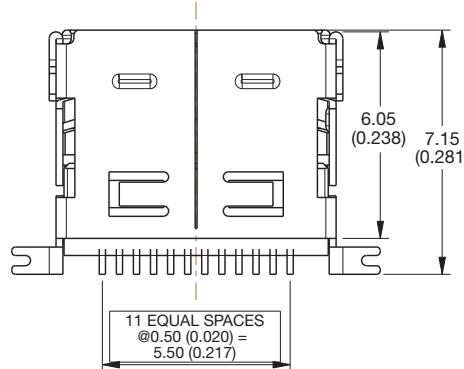
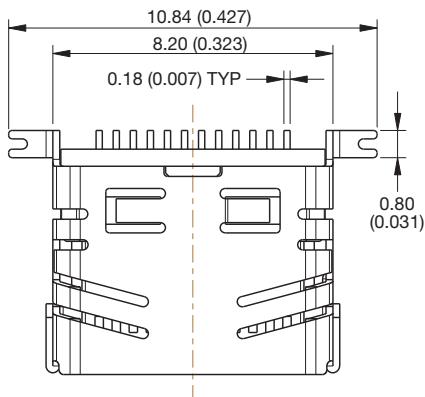


DIMENSION MARKED WITH A \* ARE  
VARIABLE DIMENSION TO SUIT  
CUSTOMER DESIGN AND APPLICATION

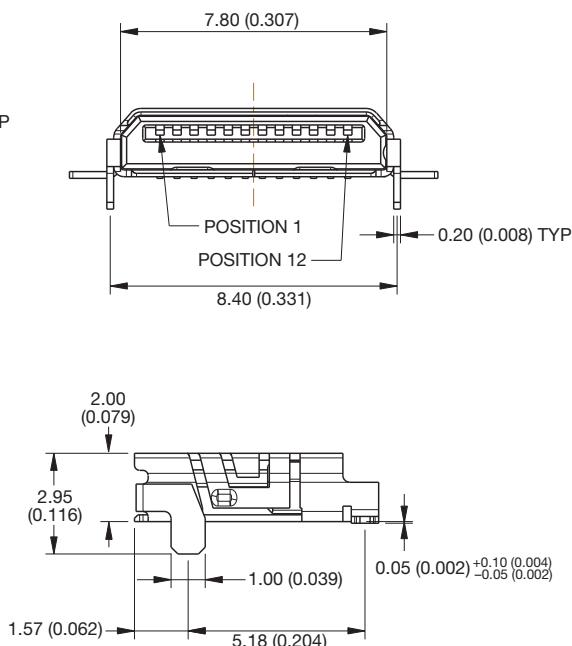
# 9257 Mini I/O Connector



## 9257 STANDARD 12 WAY MINI I/O SOCKET



SUGGESTED PCB LAYOUT



## HOW TO ORDER

**20**

**Prefix**  
20 = Socket Connector

**9257**

**Series**

**012**

**No of Ways**  
12 = 012

**101**

**Contacts**  
101 = SMT Termination

**01**

**Solder Bracket**  
01 = Solder Bracket with location pegs

**6**

**Plating Option**  
6 = 0.25µm Gold over Nickel

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Contact:

