



# ITT

Interconnect Solutions  
Canon, VEAM, BIW

Ensuring soldier safety

in the harshest environments for

**20 years** and over

**500,000** SINCGARS radios

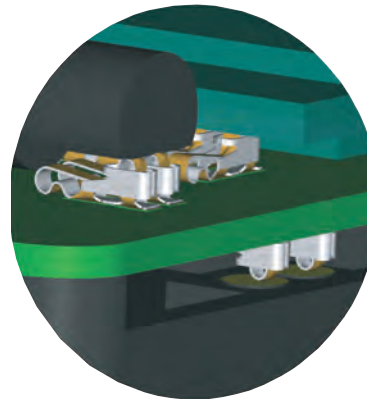


*Engineered for life*

Universal Contact is an independent SMT contact which provides an electrical connection between a device and a PCB. The contact is manufactured as a single piece stamped product, incorporating pre-load and anti-lift features. The Universal Contact has been designed to replace traditional interfaces where the contact is custom designed into the component. It can be used to connect a number of device components in any direction and configuration using the same interface.

**Features & Benefits of the Design**

- Range of heights available:
  - 1.3mm contact with the minimum pitch of 1.35mm
  - 1.8mm contact with the minimum pitch of 1.25mm
  - 2.5mm contact the minimum pitch is 1.35mm
  - 3.5 & 4.0mm minimum pitch is 1.45mm
- Solderwell that prevents solder wicking up the contact
- "Side wings" protect the active parts of the contact which prevent contact from overstressing and potential damage
- Domed contact point allows good hertz stress and low contact resistance
- The X-Y-Z movement allows robust connection between the contact and component assembly during shock and vibration
- Compliant with WEEE and RoHS directives.



**Additional Advantages of using Universal Contacts**

- Qualification time reduction - same contact for many components
- Allows standard interface across applications and platforms
- Freedom to position at an angle - not fixed by mating component

**Applications**

- Handset
- Solderless component interconnect
- I/O connector / Board to board interconnect
- Battery contact / Antenna contact
- Grounding contact / SIM contact
- Laptops & Computers
- Memory Stick
- Home Electronic Devices / White Goods
- Smoke detectors / Security alarm systems
- Home appliances
- Automotive - Keyfob
- Medical - CT scan equipment
- Industrial - Circuit breaker for GPS becken

**Materials & Finishes**

Base material: Beryllium Copper  
 Plating: Selective Au in contact area 1m min over Au stripe, 0.05 - 0.1 m over Ni 1.0 - 3.0 m

**Electrical**

Contact resistance: Max 20 mΩ  
 Max current rating: 2.0 amps nominal 3.0 amps peak

**Environmental**

Operating temperature: -40°C and +85°C  
 Humidity: Operable in 90% relative humidity (temp + 40°C)

Solder systems: Infrared and hot air reflow  
 Vibration: In accordance with IEC 68-2-36  
 Shock: In accordance with IEC 68-2-27, 30 g

**Mechanical**

See selection table on the right for contact forces at specific mating heights

Maximum mating cycle based on mating PCB plated with 0.05 Au over 2.0 m Ni = 3,000 cycles. (Wear resistance is subject to mating component surface finish and plating type, increased mating component plating spec = increased mating cycles.)

**Packaging**

Packaged in 12mm wide tape & reel packaging to EIA-481 standards

| MATING HEIGHT    | 1.3mm                          | 1.8mm    | 2.5mm    | 3.5mm    | 4.0mm    |
|------------------|--------------------------------|----------|----------|----------|----------|
|                  | FORCE (N) AT COMPRESSED HEIGHT |          |          |          |          |
| 0.90             | 0.58                           |          |          |          |          |
| 1.00             | 0.51                           | 0.87     |          |          |          |
| 1.10             | 0.44                           | 0.80     |          |          |          |
| 1.20             | 0.37                           | 0.74     |          |          |          |
| 1.30             | Pre-load                       | 0.68     |          |          |          |
| 1.40             |                                | 0.62     |          |          |          |
| 1.50             |                                | 0.56     | 0.58     |          |          |
| 1.60             |                                | 0.49     | 0.55     |          |          |
| 1.70             |                                | 0.43     | 0.52     |          |          |
| 1.80             |                                | Pre-load | 0.49     |          |          |
| 1.90             |                                |          | 0.46     |          |          |
| 2.00             |                                |          | 0.42     | 0.94     |          |
| 2.10             |                                |          | 0.39     | 0.91     |          |
| 2.20             |                                |          | 0.36     | 0.87     |          |
| 2.30             |                                |          | 0.33     | 0.83     |          |
| 2.40             |                                |          | 0.30     | 0.80     |          |
| 2.50             |                                |          | Pre-load | 0.76     | 1.30     |
| 2.60             |                                |          |          | 0.73     | 1.27     |
| 2.70             |                                |          |          | 0.69     | 1.24     |
| 2.80             |                                |          |          | 0.65     | 1.22     |
| 2.90             |                                |          |          | 0.62     | 1.19     |
| 3.00             |                                |          |          | 0.58     | 1.16     |
| 3.10             |                                |          |          | 0.55     | 1.13     |
| 3.20             |                                |          |          | 0.51     | 1.11     |
| 3.30             |                                |          |          | 0.47     | 1.08     |
| 3.40             |                                |          |          | 0.44     | 1.05     |
| 3.50             |                                |          |          | Pre-load | 1.02     |
| 3.60             |                                |          |          |          | 1.00     |
| 3.70             |                                |          |          |          | 0.97     |
| 3.80             |                                |          |          |          | 0.94     |
| 3.90             |                                |          |          |          | 0.91     |
| 4.00             |                                |          |          |          | Pre-load |
| Spring Rate N/mm | 0.68                           | 0.62     | 0.32     | 0.36     | 0.28     |

Dimensions shown in inches (mm)



RF

# Contacts



RF

**1.3mm**  
**120220-0210**  
 packaging: 9,500 per reel

**1.8mm**  
**120220-0202**  
 packaging: 6,800 per reel

**2.5mm**  
**120220-0161**  
 packaging: 6,000 per reel

**3.5mm**  
**120220-0204**  
 packaging: 3,600 per reel

**4mm**  
**120220-0206**  
 packaging: 3,200 per reel

**2 way - 2.5mm height,  
 1.5 pitch**  
**120220-0162**



Dimensions shown in inches (mm)  
 Specifications and dimensions subject to change

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