

# SheerPwr™ Circular

PCB -to-Busbar and  
PCB- to-PCB connectors

*Product Presentation*

Amphenol Information Communications  
and Commercial Products



# Amphenol ICC

# SheerPwr™ Circular

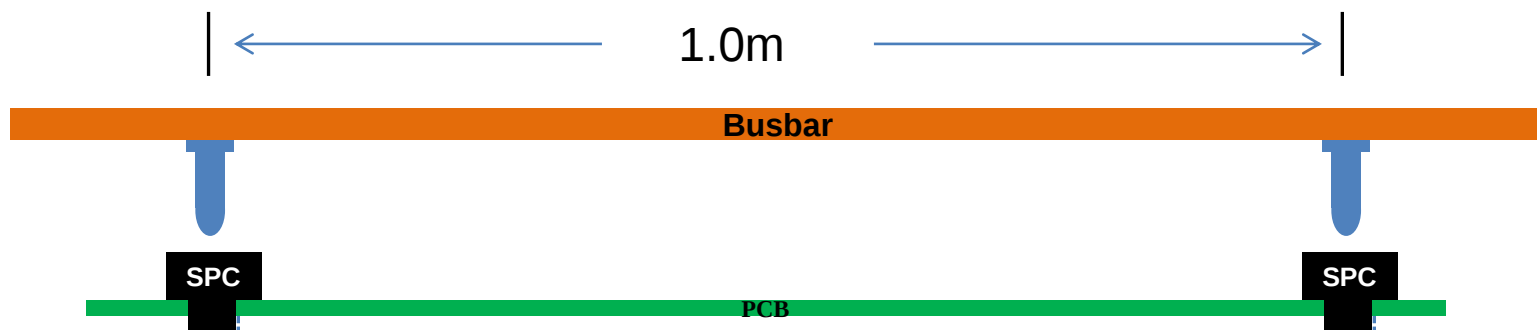
What is it?



- SheerPwr™ Circular is a high-current, low-resistance interface designed for connecting busbars to circuit boards. It uses a robust and compliant power contact assembled in a circular orientation.
- The result is a power socket, designed to mate with traditional machined pins, which provides repeated low resistance, high mis-alignment and high current carrying capabilities.



- Redundant contact points for improved reliability and lower resistance
- Low profile socket regardless of pin size
- Permanent misalignment capability of  $\pm 0.64\text{mm}$
- Provides a minimum of 4.0mm of gatherability (increases with pin diameter)
- AGT® Silver-based for maximum efficiency



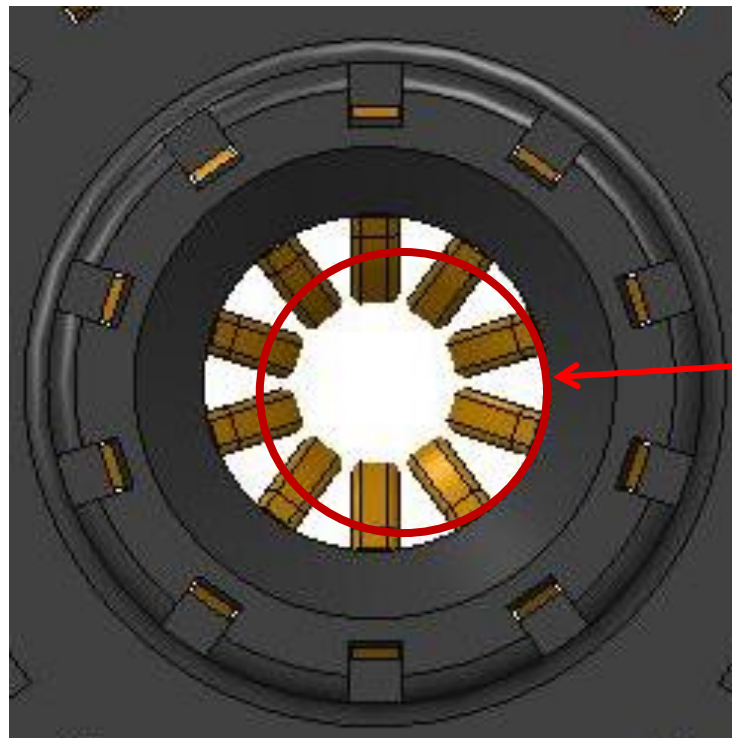
Permanent misalignment can be as high as 0.64mm – due to thermal coefficient of expansion differences

# SheerPwr™ Circular

Design Advantage: Permanent Misalignment



- Large beam deflection range handles up to  $\pm 0.64\text{mm}$  permanent misalignment. When fully misaligned, all of the beams still make contact with the pin. Alternate products, at  $0.64\text{mm}$  misalignment lose contact with several spring beams.



Offset Pin

# SheerPwr™ Circular

## Features and Benefits



| Features                               | Benefits                                                                |
|----------------------------------------|-------------------------------------------------------------------------|
| ▪ Redundant contact points             | ▪ Low and stable resistance                                             |
| ▪ Large gatherability                  | ▪ For blind-mate applications                                           |
| ▪ Large beam deflection range          | ▪ +/-0.64mm permanent misalignment                                      |
| ▪ AGT® Silver plated contacts          | ▪ Lower resistance                                                      |
| ▪ 3.6mm, 6mm, and 8mm mating pin sizes | ▪ Serves many applications/ environments                                |
| ▪ Low-Halogen material                 | ▪ Meets next-generation requirements                                    |
| ▪ Low 6.8mm connector height           | ▪ Compact size fits in many applications and allows for greater airflow |
| ▪ Low Halogen materials                | ▪ Meets JEDEC JS709 Electronics Industry Standards                      |

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## Typical Applications



- AC/DC pluggable power supplies
- Pluggable circuit breakers
- Networking equipment
- Switches



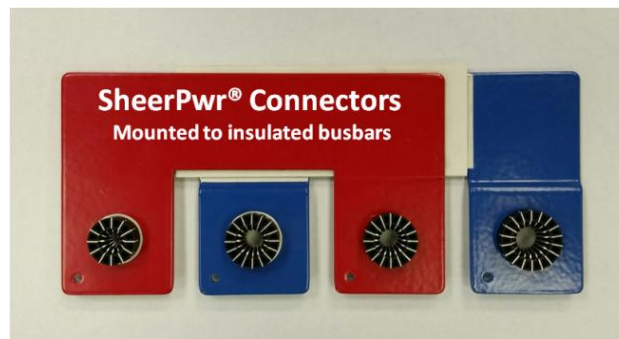
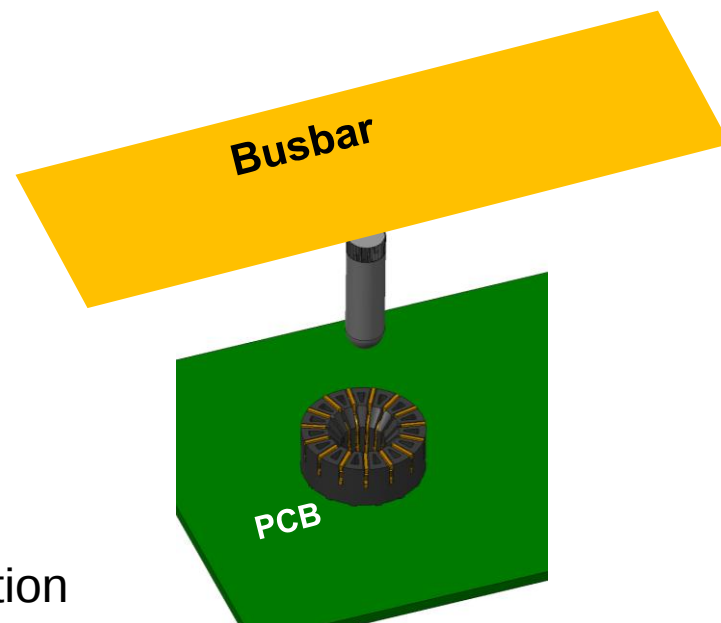
- Server
- Storage



- Industrial PC
- Industrial Controls & Instrumentation
- Circuit Breakers



- Medical

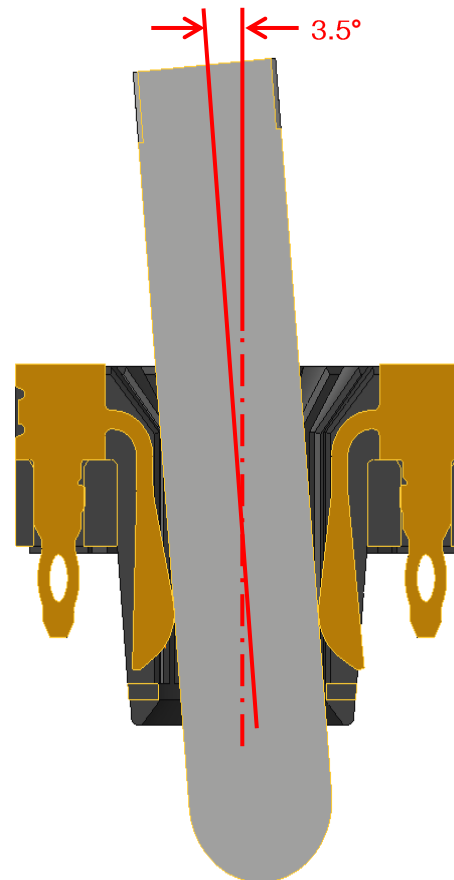


- Current Ratings (30°C T-rise in still air):
  - 3.6mm – 70amps
  - 6mm – 120 amps
  - 8mm – 160 amp
- Contact Resistance: 0.05 – 0.1mΩ (depending on size)
- Durability: 100 mating cycles
- Mating force: 20 – 50N (depending on pin diameter)
- Unmating force: 10 -20N (depending on pin diameter)
- Operating Temperature: -40°C to 105°C
- RoHS compliant

### ■ Total Angular Misalignment

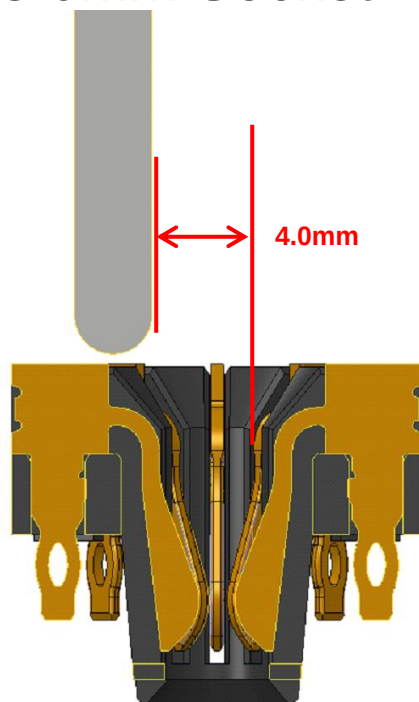
- 3.6mm & 6.0mm Sockets = 3.5°
- Solves mating force problems resulting from angled mating.
- Compliancy of springs make for easier installation of busbars to mating circuit boards.

Alternative products only meet +/- 1°

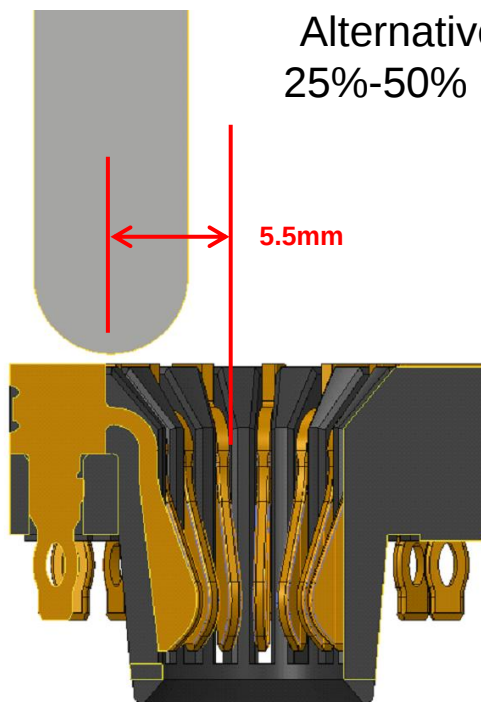


### ■ Total Gather-ability for application

- 3.6mm Socket=4.0mm
- 6.0mm Socket=5.5mm
- 8.0mm Socket=6.5mm



**3.6mm Socket**

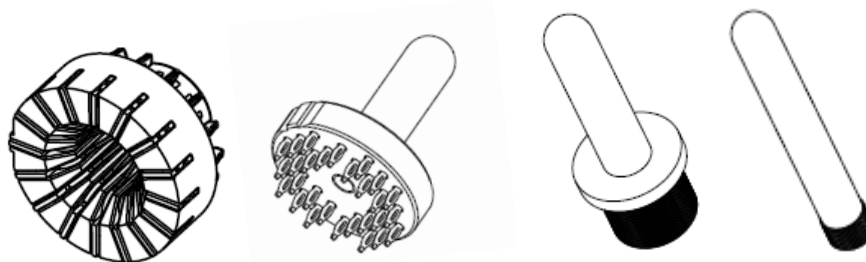


**6.0mm Socket**

Alternative products have  
25%-50% less gatherability

### ■ Receptacles

| Pin Diameter | Receptacle PN    |
|--------------|------------------|
| 3.6mm        | 10132381-20360LF |
| 6.0mm        | 10132381-20600LF |
| 8.0mm        | 10132381-20800LF |



**Style A**

**Style B**

### ■ Mating Plugs

| Pin Diameter | Style A<br>Press-fit to PCB | Produces<br>Mezzanine stack<br>height * | Style B<br>Press-fit to Busbar     | Produces<br>Mezzanine Stack<br>Height * |
|--------------|-----------------------------|-----------------------------------------|------------------------------------|-----------------------------------------|
| 3.6mm        | 10140847-3601LF             | 42mm                                    | 10137675-XXXXLF<br>10139665-XXXXLF | Follows customer<br>application         |
| 6.0mm        | 10140553-XXXXLF             | Follows customer<br>application         |                                    | Follows customer<br>application         |
| 8.0mm        | 10140847-XXXXLF             | Follow customer<br>application          |                                    | Follows customer<br>application         |

\* Other stack heights available upon request

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Thank You!