



# Power connector for AdvancedTCA®, male



### General information

|                               |                              |                        |                 |               |
|-------------------------------|------------------------------|------------------------|-----------------|---------------|
| Design                        | PICMG® 3.0 R2.0              |                        |                 |               |
| No. of contacts               | Power contacts               | 8                      | Signal contacts | 22, max. 26   |
| Test voltage                  | Contacts 1-16                | 1000 V r.m.s.          | Contacts 17-34  | 2000 V r.m.s. |
| Contact resistance            | Power contacts               | ≤ 2,2 mOhm             | Signal contacts | ≤ 8,5 mOhm    |
| Working current               | Power contacts               | 16 A @ 70°C            | Signal contacts | 1 A @ 70°C    |
| Insulation resistance         | ≥ 10 <sup>10</sup> Ohm       |                        |                 |               |
| Temperature range             | -55°C ... +125°C             |                        |                 |               |
| Termination technology        | press-in                     |                        |                 |               |
| Clearance & creepage distance | Contacts                     | 5-16                   | 0,7 mm          |               |
|                               | Contacts                     | 17-24                  | 2,5 mm          |               |
|                               | Contacts                     | 25-26                  | 5,5 mm          |               |
|                               | Contacts                     | 27-34                  | 1,4 mm          |               |
|                               | Contacts                     | 13-16 to 17-20         | 3,0 mm          |               |
|                               | Contacts                     | 21-24 to 25-26         | 1,0 mm          |               |
| Sequential contact engagement | 1st:                         | 25, 26, 28, 29, 30, 31 | 3rd:            | 5-24, 34      |
|                               | 2nd:                         | 33                     | 4th:            | 27, 32        |
|                               | Insertion & withdrawal force | < 67 N                 |                 |               |
|                               | Mating cycles                | 250                    |                 |               |
| UL file                       | E102079                      |                        |                 |               |
| RoHS - compliant              | Yes                          |                        |                 |               |
| Leadfree                      | Yes                          |                        |                 |               |

### Insulator material

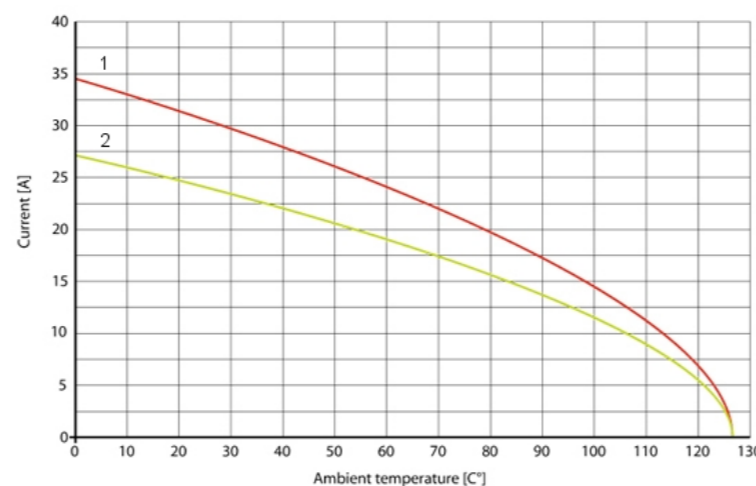
|                                 |   |
|---------------------------------|---|
| Material                        | PBT (thermoplastics, glass fiber reinforcement) |
| Color                           | grey  |
| UL classification               | UL 94-V0  |
| Material group acc. IEC 60664-1 | IIIa (175 ≤ CTI < 400)                          |

### Contact material

|                          |                     |
|--------------------------|---------------------|
| Contact material         | Copper alloy        |
| Plating termination zone | Sn over Ni          |
| Plating contact zone     | Au (0,8 µm) over Ni |

### Derating diagram acc. to IEC 60512-5 (Current carrying capacity)

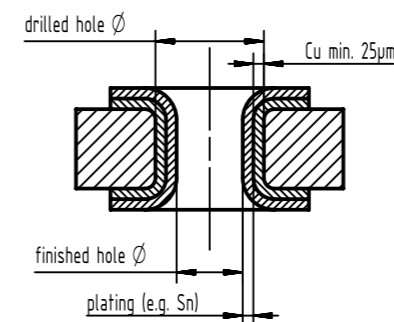
- nominal derating, all contacts under load acc. to ATAC spec. PICMG® 3.0 R2.0
- derating curve at I\*0,8 (IEC 512)



### Recommended configuration of plated through holes for press-in termination

The press-in zone of the AdvancedTCA® power connector is tested according to Telcordia/Bellcore GR 1217CORE Part7. It is approved to be used with a plated through hole according IEC 60352-5 with a diameter of  $\varnothing 1,00 +0,09/-0,06$  mm for signal contacts (drilled hole  $\varnothing 1,15 \pm 0,025$  mm) and  $\varnothing 1,60 +0,09/-0,06$  mm for power contacts (drilled hole  $\varnothing 1,75 \pm 0,025$  mm).

Based on our experiences regarding the production process of the PCB manufacturer we recommend a plated through hole configuration like shown in the table. To achieve the recommended plated through hole diameter, it is important to specify especially the drilled hole diameter of  $\varnothing 1,15 \pm 0,025$  mm resp.  $\varnothing 1,75 \pm 0,025$  mm to your PCB supplier.



| Plating                     | Drilled hole $\varnothing$  | Signal contacts             | Power contacts  |
|-----------------------------|-----------------------------|-----------------------------|-----------------|
|                             |                             | finished hole $\varnothing$ |                 |
| Tin plated PCB (HAL)        | Sn                          | 5 - 15 µm                   | 5 - 15 µm       |
|                             | finished hole $\varnothing$ | 1,00 - 1,10 mm              | 1,60 - 1,70 mm  |
| Chemical tin plated PCB     | Sn                          | 1,15 + 0,025 mm             | 1,75 ± 0,025 mm |
|                             | finished hole $\varnothing$ | 0,8 - 1,5 µm                | 0,8 - 1,5 µm    |
|                             | finished hole $\varnothing$ | 1,00 - 1,10 mm              | 1,60 - 1,70 mm  |
|                             | Gold /Nickel plated PCB     | Drilled hole $\varnothing$  | 1,15 + 0,025 mm |
| Ni                          |                             | 3 - 7 µm                    | 3 - 7 µm        |
|                             | Au                          | 0,05 - 0,12 µm              | 0,05 - 0,12 µm  |
|                             | finished hole $\varnothing$ | 1,00 - 1,10 mm              | 1,60 - 1,70 mm  |
| Silver plated PCB           | Drilled hole $\varnothing$  | 1,15 + 0,025 mm             | 1,75 ± 0,025 mm |
|                             | Ag                          | 0,1 - 0,3 µm                | 0,1 - 0,3 µm    |
|                             | finished hole $\varnothing$ | 1,00 - 1,10 mm              | 1,60 - 1,70 mm  |
|                             | Copper plated PCB (OSP)     | Drilled hole $\varnothing$  | 1,15 + 0,025 mm |
| finished hole $\varnothing$ |                             | 1,00 - 1,10 mm              | 1,60 - 1,70 mm  |
| All surfaces                | Pad size $\varnothing$      | min. 1,4 mm                 | min. 2,0 mm     |

|  |  |                        |                          |  |
|--|--|------------------------|--------------------------|--|
|  | All Dimensions in mm<br>Original Size DIN A3 | Scale<br>1:1           | Free size tol.           | Ref.<br>Sub.   |
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|  |  | Date<br>2018-06-05     | State<br>Final Release   |  |
| Title<br>Power connector for AdvancedTCA, male |  |                        |                          | Doc-Key / ECM-Nr.<br>100551740/UGD/001/B<br>500000135670 |
| HARTING Electronics GmbH<br>D-32339 Espelkamp  |  | Type<br>DS             | Number<br>16300000101    | Rev.<br>B<br>Page<br>1/1                                 |