

Z1 Power Connector for AdvancedTCA Zone 1 Applications

Product Facts

- Designed to PICMG 3.0 Standard
- High conductivity copper alloy on Size 16 power contacts
- .76 micro-meters [30 microinch] gold over 1.27 micrometers [50 microinch] nickel plating at contact interface
- Gold-thickness controlled on inside of socket and outside of pin — at contact interface points
- RoHS compliant
- Stainless steel spring provides contact normal force — resists relaxation at elevated temperatures
- Eye-Of-Needle compliant press-fit termination
- No special tools needed to seat connectors to pcb — standard Flat-Rock seating tools
- Additional pcb retention hardware not required

Technical Documents

Product Specification —

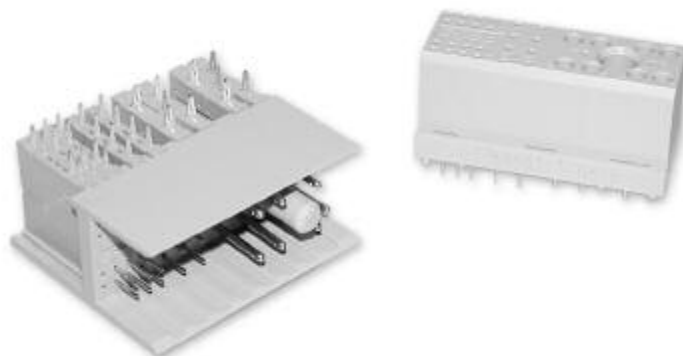
108-2216

Application Specification —

114-13156

Industry Standard —

PICMG 3.0, Rev. 2.0



Introduction

Tyco Electronics supplies both the power and the signal connectors specified in the Advanced Telecommunications Computer Architecture (AdvancedTCA) Standard. This standard (PICMG 3.0) is one of the latest standards addressing future telecommunications needs. The AdvancedTCA Power Connector, designated for use in Zone 1 per PICMG 3.0, combines 8 High Conductivity Size 16 pin & socket contacts along with 22 Size 22 pin & socket contacts, plus guidance into a compact interface. Both connector halves feature proven compliant press-fit contacts for easy solder-less termination to printed circuit boards.

Based on years of reliable long-term field installations the power contact design is based upon Tyco Electronics' famous Type III+ contact design. By adding the use of a high conductivity copper alloy and the low-force Eye-Of-Needle compliant

pin section, the new contact delivers both ease of installation (with flat-rock seating tools) as well as industry-leading current carrying capability. The power contacts are capable of carrying 20 amps per contact and the signals are capable of carrying 2 amps per contact.

The housing design also offers improvements compared to other industry alternatives. The lead-in design for the contact cavities provides better resistance from contact stubbing. The contact retention has also been designed to eliminate the need for additional hardware sometimes used to hold the connectors to the pcb after pressing in to the pcb.

The result is a connector which is easy to install, meets all the PICMG 3.0 performance requirements and stays retained to the pcb without the additional labor required to add hardware.

Typical Electrical Properties

Current Ratings — tested in accordance with CSA C22.2 No. 182.3-M1987 and IEC 60512-3, Test 5a requirements:

Positions 1–24, 27, 32 — 1 Amp each, per the PICMG 3.0 Specification

Positions 25, 26, 28–31, and 34 — 20 Amps each, exceeds the PICMG 3.0 Specification

Dielectric Withstanding Voltage —

Positions 1–16 — 1000 Volts rms

Positions 17–24 — 2000 Volts rms

Positions 25–34 — 2000 Volts rms

Environmental Parameters

Maximum Continuous Operating Temperature — 105°C

Durability Rating — 250 cycles, per PICMG 3.0

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Z1 Power Connector for AdvancedTCA Zone 1 Applications (Continued)

**Front Board Connector
Right Angle, 30 Position,
Compliant Press-Fit**

**Part Number 1766500-1
(tin plated pcb tails)**

**Part Number 1766500-2
(tin-lead pcb tails)**

**Right Angle Plug,
22 Position, Compliant
Press-Fit**

**Part Number 1766502-1
(tin plated pcb tails)**

**Part Number 1766502-2
(tin-lead pcb tails)**

Material and Finish

Insulators — Thermoplastic, glass reinforced, UL 94V-0

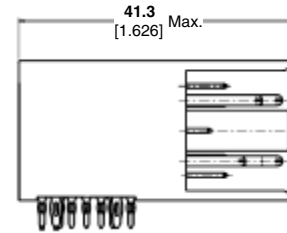
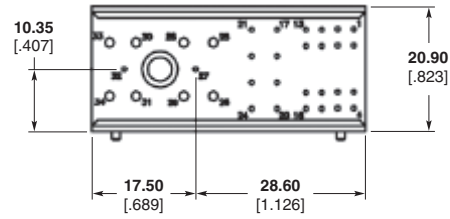
Signal Pins — Copper alloy

Power Contacts — High conductivity copper alloy, plated 0.00076 [.000030] min. gold in mating area over 0.00127 [.000050] min. nickel

Compliant PCB Tails — 0.0030 – 0.0043 [.000120 – .000170] tin plated, matt finish

Notes:

1. Mounting hardware — self tapping screw (customer supplied) can be used but not required
2. Positions 1–4 not populated and reserved for future use.



**Backplane Connector
Straight, 30 Position,
Compliant Press-Fit**

**Part Number 1766501-1
(tin plated pcb tails)**

**Part Number 1766501-2
(tin-lead pcb tails)**

**Straight, 22 Position,
Compliant Press-Fit**

**Part Number 1766503-1
(tin plated pcb tails)**

**Part Number 1766503-2
(tin-lead pcb tails)**

Material and Finish

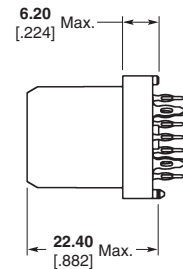
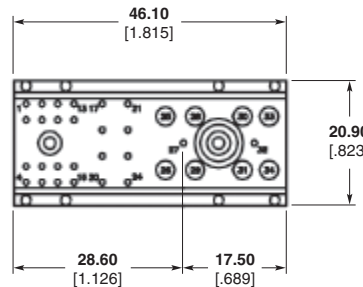
Insulators — Thermoplastic, glass reinforced, UL 94V-0

Signal Pins — Copper alloy

Power Contacts — High conductivity copper alloy, plated 0.00076 [.000030] min. gold in mating area over 0.00127 [.000050] min. nickel

Compliant PCB Tails — 0.0030 – 0.0043 [.000120 – .000170] tin plated, matt finish

Note: Positions 1–4 not populated and reserved for future use.



Note: All part numbers are RoHS compliant.