



SERIES: 207A-ABAO-R FILE: 207A-ABAO-R\_spec DATE: 2013/01/16

### Scope:

This specification covers the requirements for product performance, test methods and quality assurance provisions of 207A-ABA0-R.

### **Performance and Descriptions:**

The product is designed to meet the electrical, mechanical and environmental performance requirements specification. Unless otherwise specified, all tests are performed at ambient environmental conditions.

#### **RoHS**:

All material in according with the ROHS environment related substances list controlled.

| MATERIAL AND FINISH |  |                                    |  |  |  |  |  |  |
|---------------------|--|------------------------------------|--|--|--|--|--|--|
| HOUSING             | Material   | I Housing: LCP UL94V-0 Black       |  |  |  |  |  |  |
|                     |  |                                    |  |  |  |  |  |  |
| CONTACT             | Material   | Contact: Brass C2680, T=0.20       |  |  |  |  |  |  |
|                     |  |                                    |  |  |  |  |  |  |
|                     | Plating  | Contact Area: Gold 30u"            |  |  |  |  |  |  |
|                     |  | Solder Area: Gold 3u"              |  |  |  |  |  |  |
|                     |  |                                    |  |  |  |  |  |  |
| SHELL               | Material   | Shell: Stainless Steel 301, T=0.25 |  |  |  |  |  |  |
|                     |  |                                    |  |  |  |  |  |  |
|                     |  |                                    |  |  |  |  |  |  |
|                     | Plating  | Nickel Plating 40u"                |  |  |  |  |  |  |
|                     |  |                                    |  |  |  |  |  |  |
| RATING              | Voltage ra   | iting: 5V AC(rms max)              |  |  |  |  |  |  |
|                     | Current rating: 1.5A Max. per contact<br>Operating temperature range: $-30^{\circ}C \sim +85^{\circ}C$ |                                    |  |  |  |  |  |  |
|                     |  |                                    |  |  |  |  |  |  |
|                     | Storage temperature range: $-40^{\circ}$ C ~ $+85^{\circ}$ C   |                                    |  |  |  |  |  |  |



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| ELECTRICAL            |                               |   |  |  |  |  |  |
|-----------------------|-------------------------------|---|--|--|--|--|--|
| Item                  | Requirement                   | Test Condition                            |  |  |  |  |  |
| Contacts Resistance   | Initial: $30m\Omega$ max      | EIA 364 –23                               |  |  |  |  |  |
|                       | Final: $100m\Omega$ max       | Subject mated contacts assembled in       |  |  |  |  |  |
|                       |                               | housing to 20mV maximum open circuit at   |  |  |  |  |  |
|                       |                               | 100mA maximum.                            |  |  |  |  |  |
| Insulation Resistance | 100 M $\Omega$ minimum        | EIA 364 – 21                              |  |  |  |  |  |
|                       |                               | Test voltage 100±10V DC between           |  |  |  |  |  |
|                       |                               | adjacent contacts of mated and unmated    |  |  |  |  |  |
|                       |                               | connector assemblies. Interval of shield  |  |  |  |  |  |
|                       |                               | case and contacts too, in the same way.   |  |  |  |  |  |
|                       |                               |   |  |  |  |  |  |
| Dielectric            | No flashover & spark          | EIA 364 – 20                              |  |  |  |  |  |
| Withstanding Voltage  | over & excess leakage         | Test voltage 100V AC between adjacent     |  |  |  |  |  |
|                       | & breakdown.                  | contacts of mated and unmated connector   |  |  |  |  |  |
|                       |                               | assemblies for one minute. Interval of    |  |  |  |  |  |
|                       |                               | shield case and contacts too, in the same |  |  |  |  |  |
|                       |                               | way.                                      |  |  |  |  |  |
|                       |                               |   |  |  |  |  |  |
| Temperature Rise      | 0.5A at 250V AC               | EIA 364-70, method B                      |  |  |  |  |  |
|                       | minimum when                  | The object of this test procedure is to   |  |  |  |  |  |
|                       | measured at an                | detail a standard method to assess the    |  |  |  |  |  |
|                       | amplent temperature           | current carrying capacity of mated        |  |  |  |  |  |
|                       | or 25 (). With power          | connector contacts.                       |  |  |  |  |  |
|                       |                               |   |  |  |  |  |  |
|                       | contacts, the $\Delta 1$ must |   |  |  |  |  |  |
|                       | not exceed +30 ( at           |   |  |  |  |  |  |
|                       | any point in the              |   |  |  |  |  |  |
| Contact Canacitance   | 2nE maximum                   | EIA 364 - 30                              |  |  |  |  |  |
|                       | Lupmated por contact          | Test between adjacent circuits of upmated |  |  |  |  |  |
|                       |                               | connectors at 1/Hz                        |  |  |  |  |  |
|                       |                               |   |  |  |  |  |  |
|                       |                               |   |  |  |  |  |  |



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| MECHANICAL     |                        |   |  |  |  |  |  |
|----------------|------------------------|---|--|--|--|--|--|
| Item           | Requirement            | Test Condition                                  |  |  |  |  |  |
| Appearance     | No crack or            | EIA 364-18                                      |  |  |  |  |  |
|                | deformation that may   | Visual inspection                               |  |  |  |  |  |
|                | affect the             |   |  |  |  |  |  |
|                | performance specified  |   |  |  |  |  |  |
|                | in this specification. |   |  |  |  |  |  |
| Durability     | No Damage              | EIA 364 – 09                                    |  |  |  |  |  |
|                |                        | Mate and unmate connector assemblies            |  |  |  |  |  |
|                |                        | for 10000 cycles at maximum rate of 200         |  |  |  |  |  |
|                |                        | cycles per hour.                                |  |  |  |  |  |
| Vibration      | No discontinuities of  | EIA 364-28, Condition I                         |  |  |  |  |  |
|                | 1us or Longer          | Amplitude: 1.52mm                               |  |  |  |  |  |
|                | duration.              | Frequency range: 10~55~10 Hz, shall be          |  |  |  |  |  |
|                |                        | traversed in approximately 1 minute             |  |  |  |  |  |
|                |                        | Duration: 2 hours in each of three              |  |  |  |  |  |
|                |                        | mutually perpendicular planes                   |  |  |  |  |  |
|                |                        | (total of 6 hours).                             |  |  |  |  |  |
| Physical Shock | No discontinuities of  | EIA 364 – 27 Condition H.                       |  |  |  |  |  |
|                | Tus or Longer          | Subject mated connectors to 30 G's              |  |  |  |  |  |
|                | duration.              | half-sine shock' pulses of 11 ms duration.      |  |  |  |  |  |
|                |                        | Inree shocks in each direction applied          |  |  |  |  |  |
|                |                        | along three mutually perpendicular              |  |  |  |  |  |
| Mating Force   |                        |   |  |  |  |  |  |
|                |                        | EIA 304 - 13<br>Moasura farca pacassary ta mata |  |  |  |  |  |
|                |                        | connector assemblies at maximum rate of         |  |  |  |  |  |
|                |                        | 12.5 mm /min                                    |  |  |  |  |  |
|                |                        |   |  |  |  |  |  |
| Unmating Force | Initial: 10N minimum   | EIA 364 – 13                                    |  |  |  |  |  |
|                | Final: 8~20N           | Measure force necessary to mate                 |  |  |  |  |  |
|                |                        | connector assemblies at maximum rate of         |  |  |  |  |  |
|                |                        | 12.5 mm/min.                                    |  |  |  |  |  |
|                |                        |   |  |  |  |  |  |



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|                  |                 | 2010/01/10   |  |  |  |  |  |
|------------------|-----------------|--|--|--|--|--|--|
|                  |                 |  |  |  |  |  |  |
| ENVIRONMENTAL    |                 |  |  |  |  |  |  |
| Item             | Requirement     | Test Condition   |  |  |  |  |  |
| Humidity Life    | No Damage       | EIA 364 – 31 ,Condition A. method.                     |  |  |  |  |  |
|                  |                 | Subject mated connectors to 96 hours at                |  |  |  |  |  |
|                  |                 | 40°C ±2°C with 90~95% RH.                              |  |  |  |  |  |
| Thermal Shock    | No Damage       | EIA 364 – 32, Condition .                              |  |  |  |  |  |
|                  |                 | Subject mated connectors to 10 cycles                  |  |  |  |  |  |
|                  |                 | between -55° $C$ ~ 85° $C$                             |  |  |  |  |  |
| Temperature Life | No Damage       | EIA 364 – 17 Condition Method                          |  |  |  |  |  |
|                  |                 | Subject mated connectors to temperature                |  |  |  |  |  |
|                  |                 | Life at 85°C for 250 hours                             |  |  |  |  |  |
| Salt Spray       | Spray No Damage | EIA 364-26   |  |  |  |  |  |
|                  |                 | Salt solution concentration: $5 \pm 1\%$               |  |  |  |  |  |
|                  |                 | The connector shall be subjected to a fine             |  |  |  |  |  |
|                  |                 | mist of salt solution at temperature of                |  |  |  |  |  |
|                  |                 | $35^{\circ}C \pm 2^{\circ}C$ for 24 hours continuously |  |  |  |  |  |
|                  |                 |  |  |  |  |  |  |
|                  |                 |  |  |  |  |  |  |

| SOLDER ABILITY |                      |  |  |  |  |  |
|----------------|----------------------|--|--|--|--|--|
| Item           | Requirement          | Test Condition                           |  |  |  |  |
| Solderability  | The contact solder   | EIA364—52                                |  |  |  |  |
|                | tails shall pass 95% | Solder temperature:255±5 $^{\circ}$ C    |  |  |  |  |
|                | coverage after one   | Immersion period:5 Sec.                  |  |  |  |  |
|                | hour steam aging     |  |  |  |  |  |
| Resistance of  | Class 5.2.1 shall be | The Receptacle Connector shall be passed |  |  |  |  |
| soldering heat | satisfied            | through the reflow furnace with the      |  |  |  |  |
|                |                      | following conditions:                    |  |  |  |  |
|                |                      | Preheat :150~180 for 90~120 Sec. Peak    |  |  |  |  |
|                |                      | temperature: 230~265 for 20~30 Sec.      |  |  |  |  |
|                |                      |  |  |  |  |  |



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#### **Test Sequences:**

|                              |     | Test Group    |     |     |     |     |     |     |     |     |     |     |
|------------------------------|-----|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Test Item                    | Α   | В             | С   | D   | Е   | F   | G   | Н   | Ι   | J   | Κ   | L   |
|                              |     | Test Sequence |     |     |     |     |     |     |     |     |     |     |
| Appearance                   | 1,3 | 1,3           | 1,8 | 1,7 | 1,5 | 1,5 | 1,9 | 1,9 | 1,9 | 1,5 | 1,3 | 1,3 |
| Low Level Contact Resistance |     |               | 2,5 | 2,5 | 2,4 | 2,4 | 2,6 | 2,6 | 2,6 | 2,4 |     |     |
| Insulation Resistance        |     |               | 3,6 |     |     |     | 3,7 | 3,7 | 3,7 |     |     |     |
| Dielectric Withstanding      |     |               | 4,7 |     |     |     | 4,8 | 4,8 | 4,8 |     |     |     |
| Temperature Rise             | 2   |               |     |     |     |     |     |     |     |     |     |     |
| Contact Capacitance          |     | 2             |     |     |     |     |     |     |     |     |     |     |
| Mating & Unmating force      |     |               |     | 3,6 |     |     |     |     |     |     |     |     |
| Wrench strength              |     |               | 5   |     |     |     |     |     |     |     |     |     |
| Durability                   |     |               |     | 4   |     |     |     |     |     |     |     |     |
| Vibration                    |     |               |     |     | 3   |     |     |     |     |     |     |     |
| Physical Shock               |     |               |     |     |     | 3   |     |     |     |     |     |     |
| Humidity                     |     |               |     |     |     |     | 5   |     |     |     |     |     |
| Thermal Shock                |     |               |     |     |     |     |     | 5   |     |     |     |     |
| Temperature Life             |     |               |     |     |     |     |     |     | 5   |     |     |     |
| Salt Spray                   |     |               |     |     |     |     |     |     |     | 3   |     |     |
| Solderability                |     |               |     |     |     |     |     |     |     |     | 2   |     |
| Resistance to Soldering Heat |     |               |     |     |     |     |     |     |     |     |     | 2   |