1.0 SCOPE

This specification contains operating parameters and performance requirements for the family of FCI PV terminals. Connectors of this type are intended to mate with .025" square or .028" dia. round male contact pins.

2.0 REQUIREMENTS

2.1 Definitions

2.1.1 PV Terminal. A PV terminal is normally crimped to a wire conductor and intended to mate with a .025 ± .002 inch square or .028 ± .0005 inch dia. round pin.

2.1.2 Contact Body. The contact body forms the housing for the contact spring and the barrels used for crimping itself to the wire conductor.

2.1.3 Contact Spring. The contact spring will control insertion and withdrawal forces and supply the normal force required to give a reliable electrical connection.

2.2 Design and Construction

2.3 Materials

2.3.1 Contact Body Material. The contact body material shall be fabricated from 1/4 hard brass conforming to ASTM B-36 Alloy 260---Federal Specification QQ-B-613A Comp. 2, MIL-C-50, and UNS-C26000.

2.3.2 Contact Spring Material. Contact spring shall be fabricated from (Beryllium Copper UNS-C17200) #25 1/2 hard heat treated to 170,000 PSI min. Material conforms to ASTM B-194 and Federal Specification QQ-C-533.

2.4 Finish

Contact plating shall be as specified. However, when a substitute plating process is used, the resulting product shall meet the performance requirements of this specification.

2.4.1 Contact body plating. The contact body will be supplied with any of three (3) plating specifications.

2.4.1.1 Gold Plating .000075 inch thick. The contact body plating shall be .000075 inch minimum thick gold over .000050 inch minimum nickel underplating. Gold plating conforms to MIL-G-45204 Type 2.

2.4.1.2 Gold plating .000040 inch thick. The contact body plating shall be .000040 inch minimum thick gold over .000050 inch minimum nickel underplating. Gold plating conforms to MIL-G-45204 Type 2.

2.4.1.3 Solder Coated. The contact body shall be coated in continuous strip before stamping with 60% tin and 40% lead. Coating shall be .000150 inch minimum on the inside. This method of coating will leave edges exposed after stamping.

2.4.1.4 Tin Coated (LF) The contact body shall be coated in continuous strip before stamping with 100% hot dip tin. Coating shall be 100-160 microinches. This method of coating will leave edges exposed after stamping.

2.4.2 Spring Contact Plating

The spring contact will be supplied with any of three plating specifications.

2.4.2.1 Gold plating .000030 inch thick. The spring contact plating shall be .000030 inch minimum thick gold, conforming to MIL-C-45204 Type 2.

2.4.2.2 Gold plating .000075 inch thick. The spring contact shall be .000075 inch minimum thick gold conforming to MIL-G-45204 Type 2.

2.4.2.3 Tin Plating. The spring contact shall be plating with electroless tin to a t t thickness of .000030 inch minimum.

2.5 Banned/Restricted Substances

All product where the part number ends in “LF” meet the European Union directives and other country regulations as described in GS-22-008. The part numbers that do not end in “LF” meet all regulations except for Pb in SnPb plating, if available. Tin plated “LF” product has 100% tin plating in the interface and has not been tested for whisker growth in all interconnect environments.

2.6 Manufacturing Processability

This product is not designed to be exposed to manufacturing solder processes.

3.0 PERFORMANCE

The PV terminal shall meet the mechanical, electrical and environmental performance requirements specified herein. Tests are performed in accordance with MIL-STD-202C where applicable.

3.1 Mechanical

3.1.1 Wire Barrel Crimp Height

#18-#20 AWG .048-.050 inch
#22-#26 AWG .038-.040 inch
#28-#32 AWG .032-.034 inch
#32-#36 AWG

3.1.2 Initial Insertion Force. Initial insertion force is measured with BEI gage #485 or Mfg. Drop Gage #1208-001 on an Instron machine using a $.0260 \pm \frac{.0000}{.0002}$ square steel pin in a free floating arrangement. Terminals were degreased before testing.

Plating	Spring Thk.	Max. Grams
Gold	.005	430
Gold	.006	600
Gold	.008	1100
Gold	.0126	1800
Solder	.005	600
Solder	.006	750
Solder	.008	1200
Solder	.0113	1500
Solder	.0126	1800

3.1.3 Withdrawal Force. Withdrawal force is measured with BEI gage #485 on an Instron machine using a $.0240 \pm \frac{.0002}{.0000}$ square steel pin in a free floating arrangement. The withdrawal force is measured after five insertions of the $.0240 \pm \frac{.0002}{.0000}$ square steel pin in a free floating arrangement. The withdrawal force is measured after five insertions of the $.0260 \pm \frac{.0000}{.0002}$ square steel pin.

Plating	Spring Thk.	Min. Grams
Gold	.005	75
Gold	.006	100
Gold	.008	225
Gold	.0126	550
Solder	.005	80
Solder	.006	125
Solder	.008	250
Solder	.0113	400
Solder	.0126	700

3.1.4 Tensile Strength of Crimp. The desirable tensile strength of the wire crimp shall be at least 75% of the underformed wire tensile strength.

3.2 Electrical

3.2.1 Current Rating Table. The table below applies unless restricted by the male pin which is mated with the PV terminal.

Wire No.	Diameter	Max. Current	Ins. Range
18	.040	5.0A	.042 - .103
20	.032	5.0A	.042 - .103
22	.026	4.5A	.036 - .103
24	.021	2.5A	.036 - .103
26	.016	1.5A	.036 - .103
28	.013	1.0A	.028 - .054
30	.010	0.5A	.028 - .054
32	.008	0.2A	.028 - .054

3.2.2 Contact Resistance. Contact resistance for all PV terminals mated with a standard plated production pin #47310.

Prior to aging: less than 3.0 milliohms
After aging: less than 4.0 milliohms

Aging test shall be accomplished as specified in Section 4.

3.3 Environment

3.3.1 Temperature Range. The PV terminals are rated for continuous operation within the range of -65^{O} to 125^{O}C.

3.3.2 Relative Humidity Range. The PV terminals are rated for continuous operation within the range of 10% to 95% humidity.

4.0 CONTACT AGING TEST

4.1 The PV terminals shall be subjected to one for the following tests:

a) 50 cycles of 4-4-16 with contamination as described per section 4.3.
b) Flowers of Sulphur as described per section 4.4.

4.2 The terminals shall be subjected to 25 cycles (one cycle = one insertion and one withdrawal) over standard .025 square pin.

4.3 4-4-16 Aging Test

4.3.1 Terminals shall be contaminated, each with one of the following contaminants:

a. synthetic dust
b. artificial perspiration

Samples of each contaminant must be tested.

4.3.2 Unmated terminals shall then be subjected to 50 cycles of 4-4-16 environment.

a. $50^{O}F \pm 10^{O}F$ 50% max. humidity 4 hours
b. $170^{O}F \pm 10^{O}F$ 92% ± 3% humidity 4 hours
c. $170^{O}F \pm 10^{O}F$ 50% max. humidity 16 hours

4.4 Flowers of Sulphur Aging Test

4.4.1 Unmated terminals shall be placed in an enclosure containing flowers of sulphur and water for 10 days.

Temperature $150^{O}F \pm 10^{O}F$

Humidity 80% ± 3%

4.5 Terminals shall be subjected to 5 cycles of mating with .025 square pin after stabilizing at room temperature $70^{O}F \pm 10^{O}F$.

REVISION SHEET

REV	PAGE	DESCRIPTION	EC #	DATE
A	All	RELEASED	V01294	10/24/90
B	All	Revised format to be consistent with GS-01-001, and change BERG, Dupont, etc. references to FCI.	V01904	08/01/00
C	2	Add sections 2.4.1.4, 2.5 and 2.6 for lead free Information.	V05-1113	12/14/05
D	All	Change logo	V06-0526	05/31/06

AMEYA360
Components Supply Platform

Authorized Distribution Brand :

Website :

Welcome to visit www.ameya360.com

Contact Us :

- ### Address :

  401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
  Minhang District, Shanghai , China

- ### Sales :

  Direct +86 (21) 6401-6692

  Email amall@ameya360.com

  QQ 800077892

  Skype ameyasales1 ameyasales2

- ### Customer Service :

  Email service@ameya360.com

- ### Partnership :

  Tel +86 (21) 64016692-8333

  Email mkt@ameya360.com