



# PRODUCT SPECIFICATION

## CONNECTOR FOR FREQUENCIES BELOW 3 MHz FOR USE WITH PRINTED BOARDS

### 1.0 SCOPE

This Product Specification covers the 2.54 mm (0.1 inch) centerlined, 2 and 3 rows gold plated connector series terminated with solder technology to daughter cards. (right angle male)

### 2.0 PRODUCT DESCRIPTION

#### 2.1 PRODUCT NAME AND SERIES NUMBER (S)

<b>Product Name</b>	<b>and</b>	<b>Series</b>
3 rows male connector style C with 96, 64, 32 and 16 contacts		36502
3 rows male connector style C/2 with 48, 32 and 16 contacts		36503
3 rows male connector style C with 96 and 64 coding		36504
3 rows male connector style C/3 with 30 and 20 contacts		36549
2 rows male connector style B with 64 and 32 contacts		36507
2 rows male connector style B/2 with 32 and 16 contacts		36508

#### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate sales drawings for information's on dimensions.

##### 2.2.1 Material of housing:

Standard:	Thermoplastic Polyester
High temperature:	PCT (230°C/50 sec.)
Flammability:	UL 94 V0

##### 2.2.2 Material of male contacts:

CuZn (Brass)

##### 2.2.3 Plating standard:

PL1 = min 1.27  $\mu$ m Au over 1.5  $\mu$ m Ni  
 PL1 = min 0.8  $\mu$ m Au over 1.5  $\mu$ m Ni  
 PL1 = min 0.3  $\mu$ m Au over 1.5  $\mu$ m Ni

##### 2.2.4 Marking standard:

Marking of connector and packaging shall contain: Manufacturing name  
Part Number and Date of manufacturing

<b>REVISION:</b> <b>A</b>	<b>ECR/ECN INFORMATION:</b> EC No: I 2002-1001 DATE: 2002 / 06 / 20	<b>TITLE:</b> <b>PRODUCT SPECIFICATION</b> <b>For male conn. DIN 41612</b> <b>style B &amp; C solder version</b>	<b>SHEET No.</b> <b>1 of 6</b>
<b>DOCUMENT NUMBER:</b> <b>PS-36502-001</b>		<b>CREATED / REVISED BY:</b> <b>SHIVA SHANKAR</b>	<b>CHECKED BY:</b> <b>GJLOWE</b>
		<b>APPROVED BY:</b> <b>GJLOWE</b>	



# PRODUCT SPECIFICATION

## 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Normative references: for connector style  
for testing

DIN 41612 Part 2 and 8 / IEC 603-2  
IEC 512/CECC 75101-801

## 4.0 RATINGS

### 4.1 VOLTAGE

The permissible operating voltages depend on the application and on the applicable or specified requirements.  
Therefore the clearance and creepage distances are given as operating characteristics.

#### 4.1.1 Minimum distance between contact rows

Creepage: 1.2 mm (0.047 in)  
Clearance: 1.2 mm (0.047 in)

#### 4.1.2 Minimum distance between adjacent contact

Creepage: 1.2 mm (0.047 in)  
Clearance: 1.2 mm (0.047 in)

#### 4.1.3 Minimum distance between contact and chassis

Creepage: 1.8 mm (0.071 in)  
Clearance: 1.6 mm (0.063 in)

### 4.2 CURRENT -

1A at 70°C (all contacts), up to 2.5 A  
when selective loaded

### 4.3 TEMPERATURE

Operating: -55°C to +125°C  
Nonoperating: -55°C to +125°C

### 4.4 CLIMATIC CATEGORY -

PL1: 55/125/56  
PL2: 55/125/21  
PL3: 55/125/00

### 4.5 BACKPLANE -

Thickness: 1.6 mm (0.063 in)

### 4.6 CONTACT SPACING -

2.54 mm (0.1 in)

REVISION: <b>A</b>	ECR/ECN INFORMATION: EC No: I 2002-1001 DATE: 2002 / 06 / 20	TITLE: <b>PRODUCT SPECIFICATION For male conn. DIN 41612 style B &amp; C solder version</b>	SHEET No. <b>2 of 6</b>
DOCUMENT NUMBER: <b>PS-36502-001</b>	CREATED / REVISED BY: <b>SHIVA SHANKAR</b>	CHECKED BY: <b>GJLOWE</b>	APPROVED BY: <b>GJLOWE</b>



# PRODUCT SPECIFICATION

## 5.0 PERFORMANCE

### 5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	<b>Initial Contact Resistance</b>	As per IEC 512-2, Test 2a Standard atmospheric conditions Mated connectors  (refer sec 7.2.4 from IEC 603-2)	<b>20 milliohms</b>  MAXIMUM
2	<b>Initial Insulation Resistance</b>	As per IEC 512-2, Test 3a: Method B Standard atmospheric conditions  Test voltage 100 V + 15 V d.c. Mated connectors  (refer sec 7.2.5 from IEC 603-2)	<b>All performance levels:</b>  10E6 Megaohms  Minimum
3	<b>Voltage Proof</b>	As per IEC 512-2, Test 4a:  (refer sec 7.2.2 from IEC 603-2)  Method B Standard atmospheric conditions Mated connectors  (for measuring points refer sec 8.1.5 from IEC 603-2)	For contact/contact:  <b>1000 V</b> (r.m.s) for B 64, C96, C64 and <b>1550 V</b> (r.m.s) for C 32  For contact/test panel <b>1550 V</b> (r.m.s)  (Applicable for Performance level 1, 2 & 3)
4	<b>Current carrying capacity</b>	As per IEC 512-2, Test 5b Standard atmospheric conditions All contacts  (refer sec 7.2.3 from IEC 603-2)	<b>1A</b>  (Applicable for Performance level 1, 2 & 3)

REVISION: <b>A</b>	ECR/ECN INFORMATION: <b>EC No: I 2002-1001</b> <b>DATE: 2002 / 06 / 20</b>	TITLE: <b>PRODUCT SPECIFICATION</b> <b>For male conn. DIN 41612</b> <b>style B &amp; C solder version</b>	SHEET No. <b>3 of 6</b>
DOCUMENT NUMBER: <b>PS-36502-001</b>	CREATED / REVISED BY: <b>SHIVA SHANKAR</b>	CHECKED BY: <b>GJLOWE</b>	APPROVED BY: <b>GJLOWE</b>



# PRODUCT SPECIFICATION

## 5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	<b>Connector Insertion and withdrawal Forces</b>	As per IEC 512-7, Test 13b Maximum speed 10mm/s (0.4 in/s)  (refer sec 7.3.1 from IEC 603-2)	for style C 96 - 90 N for style C 64 - 60 N for style C 32 - 30 N for style C 16 - 15 N for style C/2 48 - 45 N for style C/2 32 - 30 N for style C/2 16 - 15 N for style C/3 30 - 28.12 N for style C/3 20 - 18.75 N for style B 64 - 60 N for style B 32 - 30 N for style B/2 32 - 30 N for style B/2 16 - 15 N
6	<b>Terminal Retention Force (in Housing)</b>	As per IEC 512-15a, Free connectors 6 contacts/specimen	Male contacts > 10 N
7	<b>Durability</b>	As per IEC 512-5, Test 9a Maximum speed 10 mm/s (0.4 in/s) Rest: 30 s (unmated) (refer sec 7.3.3 from IEC 603-2)	Perf level 1: min 500 operation Perf level 2: min 400 operation Perf level 3: min 50 operation
8	<b>Vibration (Sinusoidal)</b>	As per IEC 512-4, Test 6d (refer sec 7.3.2 and 8.1.2 from IEC 603-2)  Endurance by sweeping 10 Hz – 2000 Hz 1.5mm or 20 g  Sweep cycles: 10 Duration: 7.5 h	Contact disturbance: 1 microsecond max for Performance level 1  Not applicable for Performance level 2 & 3
9	<b>Shock (Mechanical)</b>	As per IEC 512-4, Test 6c (refer sec 8.1.2 from IEC 603-2)  Shock acceleration: 490 m/s <sup>2</sup> (50 g) Duration of impact: 11ms	Contact disturbance: 1 microsecond max for Performance level 1  Not applicable for Performance level 2 & 3

<b>REVISION:</b> <b>A</b>	<b>ECR/ECN INFORMATION:</b> EC No: I 2002-1001 DATE: 2002 / 06 / 20	<b>TITLE:</b> <b>PRODUCT SPECIFICATION</b> <b>For male conn. DIN 41612</b> <b>style B &amp; C solder version</b>	<b>SHEET No.</b> <b>4 of 6</b>
<b>DOCUMENT NUMBER:</b> <b>PS-36502-001</b>	<b>CREATED / REVISED BY:</b> <b>SHIVA SHANKAR</b>	<b>CHECKED BY:</b> <b>GJLOWE</b>	<b>APPROVED BY:</b> <b>GJLOWE</b>



# PRODUCT SPECIFICATION

## 5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
10	<b>Rapid change of temperature</b>	As per IEC 512-6, Test 11d -55°C to 125 °C Mated connectors duration: 30 minutes 5 cycles recovery time: 2h	Applicable to Performance level 1 & 2
11	<b>Climatic sequence</b>	As per IEC 512-6, Test 11a	To be carried out for all type of connector
11.1	<b>Dry heat</b>	As per IEC 512-6, Test 11i at 125°C, Test voltage 100V ± 15V dc Mated connectors Method B (refer sec 8.1.5 from IEC 603-2)	10E5 Megaohm min for Performance level 1 & 2 10E4 Megaohm min for Performance level 3
11.2	<b>Damp heat cyclic, First cycle</b>	As per IEC 512-6, Test 11m Method 1: 25°C to 55°C, Perf level 1: 55°C, Perf level 2: 40°C Relative humidity: 95% Recovery time: 2h	Applicable for Performance level 1 & 2
11.3	<b>Cold</b>	As per IEC 512-6, Test 11j for - 55°C Duration: 2h Recovery time: 2h	Applicable for Performance level 1,2 & 3
11.4	<b>Damp heat cyclic, Remaining cycles</b>	As per IEC 512-6, Test 11m	For Performance level 1: 5 cycles For Performance level 2: 1 cycle
11.5	<b>Damp heat Steady state</b>	As per IEC 512-6, Test 11c At 40°C and 95 % relative humidity Polarization voltage: 60 V dc Conditions according to sec 7.1 as per IEC 603-2 Connection points and conditions according to sec 8.1.5 as per IEC 603-2	For Performance level 1: 56 days For Performance level 2: 21 days
11.6.1	<b>Corrosive (Industrial Atmosphere) (half mated; half unmated)</b>	As per IEC 512-6, Test 11g Method A: 10 ppm SO <sub>2</sub> + Method B: 1 ppm H <sub>2</sub> S	For Performance level 1: 10 days + 4 days For Performance level 2: 4 days + 4 days
11.6.2		Mixed gas: 0.5 ppm SO <sub>2</sub> + 0.1 ppm H <sub>2</sub> S (for test method refer Annex A from IEC 603-2)	For Performance level 1: 10 days For Performance level 2: 4 days

REVISION: <b>A</b>	ECR/ECN INFORMATION: EC No: I 2002-1001 DATE: 2002 / 06 / 20	TITLE: <b>PRODUCT SPECIFICATION For male conn. DIN 41612 style B &amp; C solder version</b>	SHEET No. <b>5 of 6</b>
DOCUMENT NUMBER: <b>PS-36502-001</b>	CREATED / REVISED BY: <b>SHIVA SHANKAR</b>	CHECKED BY: <b>GJLOWE</b>	APPROVED BY: <b>GJLOWE</b>



# PRODUCT SPECIFICATION

## 5.3 ENVIRONMENTAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
12	<b>Solderability &amp; Aging</b>	As per IEC 512 -12a, Test Ta, Method 1 Free board connector: immersion depth 2.6mm min.  Fixed board connector: Board thickness up to 1.6 mm, immersion depth 2.0 mm min.  Board thickness up to 2.4 mm immersion depth 3.5 mm min.  Aging Test 3, duration 16 hours dry heat at 155°C (refer Test Ba of IEC Publication 68-2-2)	Applicable for Performance level 1, 2 & 3  Not applicable for solderless termination techniques  Visual: No Damage

## 6.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.

## 7.0 SPECIAL FEATURE

- 7.1 Coding device
- 7.2 First make last break contacts
- 7.3 Last make first break contacts
- 7.4 Retention clip
- 7.5 Lubrication (polyphenylether)
- 7.6 Anti flux treatment: DIN 41640 part 84

<b>REVISION:</b> <b>A</b>	<b>ECR/ECN INFORMATION:</b> EC No: I 2002-1001 DATE: 2002 / 06 / 20	<b>TITLE:</b> <b>PRODUCT SPECIFICATION</b> <b>For male conn. DIN 41612</b> <b>style B &amp; C solder version</b>	<b>SHEET No.</b> <b>6 of 6</b>
<b>DOCUMENT NUMBER:</b> <b>PS-36502-001</b>		<b>CREATED / REVISED BY:</b> <b>SHIVA SHANKAR</b>	<b>CHECKED BY:</b> <b>GJLOWE</b>
		<b>APPROVED BY:</b> <b>GJLOWE</b>	