

Title Subject : 2.5mm Center Spacing Wire To Board Connector

Part Number : 2500S , 2503T , 2501P , 2502P Series

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**1. PRODUCT DESCRIPTION**

1-1	Part Name	Series Number	Material	Surface Finish
	Housing	2500SXXXXX 2500SXXXXX-X	Nylon 66	UL94V-0
	Terminal	2503TXXXXX	Phosphor Bronze/Brass	Tin-Plated/Matte Tin-Plated
	Straight Header	2501PXXXXXX 2501PXXXXXX -XXXX	Base : Nylon 66 or Nylon 66 15% G/F Pin : Brass	UL94V-0 UL94V-0 Tin-Plated/Matte Tin-Plated
	Right-Angle Header	2502PXXXXXX 2502PXXXXXX -XXXX	Base : Nylon 66 or Nylon 66 15% G/F Pin : Brass	UL94V-0 UL94V-0 Tin-Plated/Matte Tin-Plated

1-2 Current Rated : 3A AC, DC ( When AWG #22 applied )

1-3 Voltage Rated : 250V AC, DC

1-4 Temperature Range : - 25°C to + 85°C

1-5 Applicable Wire Size : AWG #22 to AWG #28

1-6 Applicable P.C.B. Thickness : 1.6 mm

1-7 Applicable P.C.B. Hole Dia. :  $\phi$  1.2 mm

**2. ELECTRICAL PERFORMANCE**

2-1 Contact Resistance :

Test Condition: Mate connectors, measure by dry circuit, 20 mV max. , 10 mA.

Requirements : 10 mΩ max. ( Initial )

20 mΩ max. ( After environmental test )

2-2 Insulation Resistance :

Test Condition: Mate connectors, apply 500V DC between adjacent terminal or ground.

Requirements : 1000 MΩ min. ( Initial )

500 MΩ min. ( After environmental test )

2-3 Dielectric Strength :

Test Condition: Mate connectors, apply 1000V AC ( Initial ) and 1000V AC ( After environmental test )

for 1 minute between adjacent terminal or ground.

Requirements : No Breakdown.

**3. MECHANICAL PERFORMANCE**

3-1 Insertion Force ( I.F. ) and Withdrawal Force ( W.F. ) :

Test Condition: Insert and withdraw connectors at the speed rate of 25±3mm/minute.

Requirements :

No. of Circuits	At Initial		At 50th
	I.F. (max.)	W.F. (min.)	W.F. (min.)
2P	2.5 Kg	0.8 Kg	0.6 Kg
3P	3.0 Kg	1.0 Kg	0.8 Kg
4P	3.5 Kg	1.2 Kg	0.9 Kg
5P	4.0 Kg	1.2 Kg	0.9 Kg
6P	4.5 Kg	1.4 Kg	1.0 Kg
7P	5.0 Kg	1.4 Kg	1.0 Kg
8P	5.5 Kg	1.6 Kg	1.2 Kg
9P	6.0 Kg	1.6 Kg	1.2 Kg
10P	6.5 Kg	1.8 Kg	1.4 Kg
11P	7.0 Kg	1.8 Kg	1.4 Kg
12P	7.5 Kg	2.0 Kg	1.6 Kg
13P	7.5 Kg	2.0 Kg	1.6 Kg
14P	8.5 Kg	2.2 Kg	1.8 Kg
15P	8.5 Kg	2.4 Kg	2.0 Kg
16P	9.0 Kg	2.6 Kg	2.2 Kg

### 3-2 Crimping Pull Out Force :

Test Condition: Fix the crimped terminal, apply axial pull out force on the wire at the speed rate of  $25\pm 3\text{mm}/\text{minute}$ .

Requirements : AWG22 : 4.0 Kg (min.)      AWG24 : 3.0 Kg (min.)  
 AWG26 : 2.0 Kg (min.)      AWG28 : 1.0 Kg (min.)

### 3-3 Terminal/Housing Retention Force :

Test Condition: Apply axial pull out force at the speed rate of  $25\pm 3\text{mm}/\text{minute}$  on the terminal assembled in the housing.

Requirements : 2.0 Kg min.

### 3-4 Pin Retention Force :

Test Condition: Apply axial push force at the speed rate of  $25\pm 3\text{mm}/\text{minute}$ .

Requirements : 2.0 Kg min.

## 4. ENVIRONMENTAL PERFORMANCE AND OTHERS

### 4-1 Temperature Rise :

Test Condition: Carrying rated current load.

Requirements : Temperature rise :  $30^{\circ}\text{C}$  max.

### 4-2 Durability :

Test Condition: When mated up to 50 cycles repeatedly by the rate of 10 cycles per minute.

Requirements : Contact Resistance :  $20\text{ m}\Omega$  max.

## 4-3 Humidity :

Test Condition: Temperature :  $40 \pm 2^{\circ}\text{C}$   
Relative humidity : 90 to 95%  
Duration : 240 hours

Requirements : Appearance : No damage  
Contact Resistance :  $20\text{ m}\Omega$  max.  
Insulation Resistance :  $500\text{ M}\Omega$  min.  
Dielectric Strength : 1000V AC for 1 minute no breakdown.

## 4-4 Heat Aging :

Test Condition: Temperature :  $85 \pm 2^{\circ}\text{C}$   
Duration : 250 hours

Requirements : Appearance : No damage  
Contact Resistance :  $20\text{ m}\Omega$  max.

## 4-5 Thermal Shock :

Test Condition: 1 cycle consists of :

a)  $-55 \pm 3^{\circ}\text{C}$  for 30 minutes

b)  $+85 \pm 2^{\circ}\text{C}$  for 30 minutes

Times of cycles : 25 cycles

Requirements : Appearance : No damage  
Contact Resistance :  $20\text{ m}\Omega$  max.  
Insulation Resistance :  $500\text{ M}\Omega$  min.  
Dielectric Strength : 1000V AC for 1 minute no breakdown.

## 4-6 Salt Spray :

Test Condition: Temperature :  $35 \pm 2^{\circ}\text{C}$   
Density : 5% in weight  
Duration : 48 hours

Requirements : Appearance : No damage  
Contact Resistance :  $20\text{ m}\Omega$  max.

## 4-7 Vibration :

Test Condition: Sweep time : 10-55-10 Hz in 1 minute  
Amplitude : 1.52 mm P-P  
Duration : 2 hours in each X. Y. Z. axes

Requirements : Appearance : No damage  
Contact Resistance :  $20\text{ m}\Omega$  max.  
Discontinuity :  $1\ \mu\text{sec}$  max.

## 4-8 Solderability :

Test Condition: Solder temperature :  $240 \pm 5^{\circ}\text{C}$   
Solder time :  $2 \pm 0.5\text{ sec}$ .

Requirements : Plating surface of solder-dipping section shall be covered with smooth solder.

## 4-9 Resistance to Soldering Heat :

Test Condition: Solder temperature : (Nylon 66)  $260 \pm 5^{\circ}\text{C}$ . (Nylon 66 15% G/F)  $270 \pm 5^{\circ}\text{C}$ .  
Solder time : (Nylon 66)  $5 \pm 1\text{ sec}$ . (Nylon 66 15% G/F)  $10 \pm 1\text{ sec}$ .

Requirements : There shall be no deformation nor damage which may affect the performance.