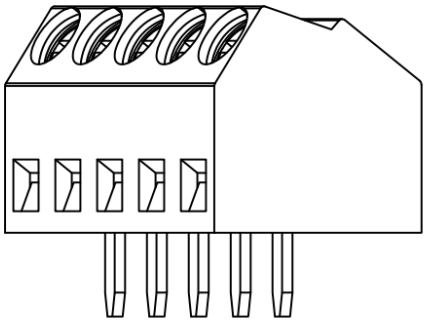
PRODUCT SPECIFICATION

Part Number	TBD05 series			**Rev**	A1	**Date**	07/01/24
Product Description	3.5mm Pitch Terminal Block, Single Row, Wire 55° Entry, Through Hole, Rising Clamp Type					**Page**	1
Doc Number	TBD05	**Prepared**	**CC**	**Checked**	**YR**	**Approved**	**PH**



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1.0 SCOPE

This specification covers performance, tests and quality requirements for the 3.5mm Pitch Terminal Block, TBD05 Series.

2.0 PRODUCT NAME AND PART NUMBER

3.5mm Pitch Terminal Block, TBD05 series

3.0 PRODUCT SHAPE, DIMENSIONS AND MATERIAL

Please refer to drawing.

4.0 RATINGS

Current rating …….	10A Per Position
Voltage rating …….	300V AC
Operating Temp Range ……	-40°C to +105°C
Storage Temp Range ……	-40°C to +70°C, Relative Humidity 30%-70%

5.0 TEST AND MEASUREMENT CONDITIONS

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Paragraph 6.0. All tests are performed under the following conditions unless otherwise specified.

6.0 PERFORMANCE

Item	Test Condition	Requirement
Examination of Product	Visual, dimensional and functional inspection as per quality plan.	Product shall meet requirements of product drawing and specification.

6.1 Electrical Performance

Item	Test Condition	Requirement
Contact Resistance	Being mated contacts assembled in housing to short circuit current of 100mA at open circuit voltage 20mV. IEC 60512-2-1	20mΩ Max.
Insulation Resistance	Being measured with an insulation measuring device of DC1000V between any open terminal and between the terminal and the shield IEC60998-1	5000MΩ Min.
Dielectric Strength	Withstand AC 1600V for 1 minute being applied between any open terminal and between the terminal and the shield. UL1059	No arcing No breakdown
Temperature Rise	Connect adjacent 3 poles in series circuit with AWG16 wire, apply rated current 10A. UL1059	+30°C Max. Change allowed

6.2 Mechanical Performance

Item	Test Condition	Requirement
Torque Test	Use max. and min. rated Stranded and Solid wire, insert wire into the product, clamp screw with 110 percent of the rated torque (2.0kgf.cm), repeat 5 times. UL1059	No Damage
Pull Out Force	All poles are fitted with below wires and forces for 1 minute in wire insertion orientation. 16AWG: 40N 30AWG: 2.2N UL 486E	Wire shall not slip out of the product
Secureness Test	The middle 4 positions are fitted with Max. wires or Min. wires, each position rotate for 30 minutes and specified loading weight: 16AWG (Str&Sol): 0.45kg. UL1059	No Damage and twist Wire shall not slip out of the product

6.3 Environmental Performance and Others

Item	Test Condition	Requirement
Humidity Test	40°C ±2°C, 91-95% RH for 48 hours. After test kept in normal condition for 30minutes. IEC 60998-1	Appearance: No Damage. Contact Resistance: 30 mΩ Max. Insulation Resistance: 5 MΩ Min. Dielectric Strength: No Breakdown
High Temperature Life	105°C ±2°C for 168 hours. After test kept in normal condition for 2 hours. IEC 60998-1	Appearance: No Damage. Contact Resistance: 30 mΩ Max. Insulation Resistance: 5 MΩ Min. Dielectric Strength: No Breakdown
Glow-wire test	The glow-wire is heated to 850°C, apply the glow-wire contact with the specimen for 30+/-1 seconds. IEC 60695-2-10	No Visible flame and no sustained glowing or flames and glowing on the specimen extinguished 30 seconds after the removal of the glow-wire.
Salt Spray	Salt water shall be adjusted at 5% weight ratio. 35±°C for 24 hours. After salt is removed by running water and a drop is removed, it is measured. IEC 60068-2-11	Contact Resistance: 30mΩ Max. No visible corrosion
Solderability	Dip solder-tails in flux then immerse in solder bath at 245 ±5°C up to 0.5mm from the bottom of the housing for 4~5 seconds.	95% of immersed area must show no voids, pin holes.

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7.0 TEST GROUP AND SEQUENCE

Item	Description	Test Group								
		A	B	C	D	E	F	G	H	I
		Test Sequence								
1	Visual Inspection	1,5	1,6	1,3	1,3	1,6	1,6	1,3	1,4	1,3
2	Contact Resistance	2				3	3		3	
3	Insulation Resistance	3				4	4			
4	Dielectric Withstanding Voltage	4	5			5	5			
5	Temperature Rise		3							
6	Torque Test			2						
7	Secureness Test		2							
8	Pull Out Force (16 AWG)		4							
9	Pull Out Force (30 AWG)				2					
10	Humidity					2				
11	High Temperature Life						2			
12	Glow-wire test							2		
13	Salt Spray								2	
14	Solderability									2
Sample Size (pcs)		3	2	4	2	3	3	3	3	3

Revision Details:

Revision	Information	Page	Release Date
0.1	First draft for review	-	12/12/2024
0.2	Sundry updates	Various	12/12/2024
0.3	Storage temperature updated	2	16/12/2024
A	First Release	-	16/12/2024
A1	Add secureness test & change insulation resistance as 5 MΩ Min. after humidity and high temperature life tests.	3&4	07/01/2025