

SPECIFICATION

SPEC. NO: _____ REV: _____ X7

DATE: _____ 2025.02.19

PRODUCT NAME : _____ Multi Trak V/T SMT Conn

PRODUCT NO: _____ PMTxxx-xxxx-Pxx-xH

立讯精密工业股份有限公司

LUXSHARE-ICT PRECISION INDUSTRIAL CO.,LTD.

中国广东省东莞市清溪镇青皇村青皇工业区葵青路 17 号
No. 17, KuiQing Road, QingHuang Industrial Zone,
QingHuang Village, QingXi Town, DongGuan City,
GuangDong Province, China

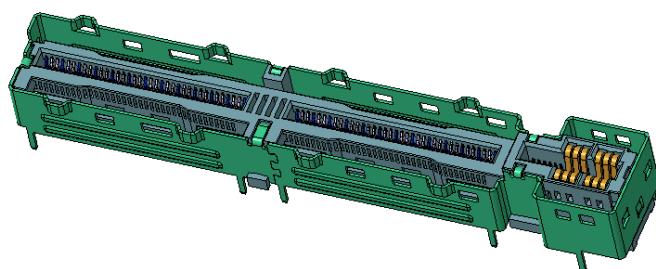
	APPROVED	CHECKED	PREPARED	DCC ISSUE
Name	Hongji Chen	Hengshan Cheng	Kevins Wu	

Product Description : Multi Trak 16X+Power VT SMT Conn

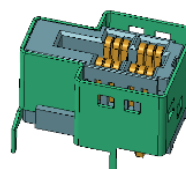
1 SCOPE

1.1 Content

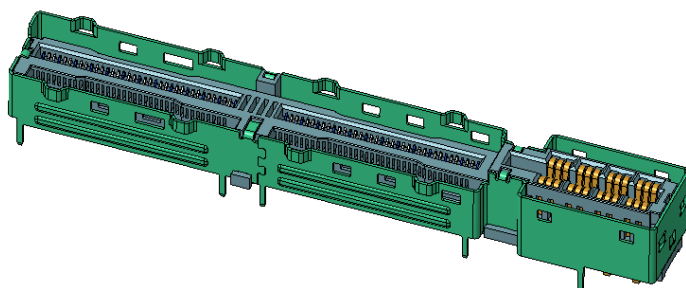
This specification covers performance tests and quality requirements for Multi Trak VT SMT Connector series.



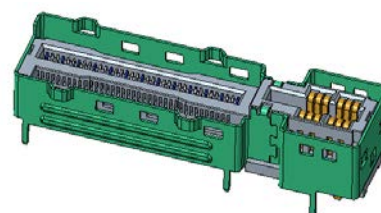
16X+Power
(21A)



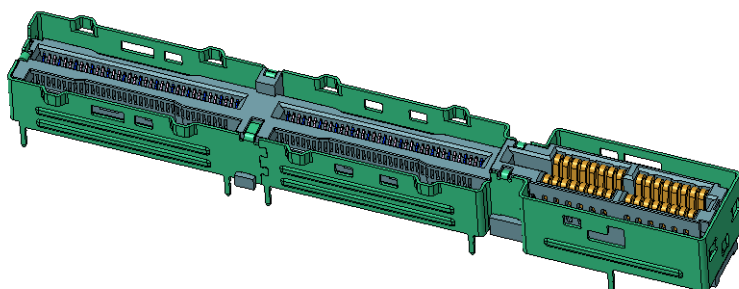
Power Only
(21A)



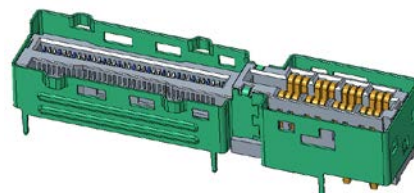
16X+High Power
(34A)



8X+Power
(21A)



16X+High Power Plus
(55A)



8X+High Power
(34A)

SPEC No.:	Rev.: X7	Pre-ECN No.:	Page:1
-----------	----------	--------------	--------

2 APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, latest edition of the specification applies. In the event of conflict between requirements of this specification and product drawing, product drawing shall take precedence.

2.1 Commercial standards

- 2.1.1 EIA-364-04A , Normal force
- 2.1.2 EIA-364-09, Durability
- 2.1.3 EIA-364-10, Thermal cycling
- 2.1.4 EIA-364-13, Un-mating force
- 2.1.5 EIA-364-17, Temperature life
- 2.1.6 EIA-364-20, Withstanding voltage
- 2.1.7 [EIA-364-21, Insulation Resistance](#)
- 2.1.8 EIA-364-23, Low Level Contact Resistance(LLCR)
- 2.1.9 [EIA-364-26B, Salt Spray](#)
- 2.1.10 EIA-364-27, Mechanical shock
- 2.1.11 [EIA-364-28, Vibration](#)
- 2.1.12 [EIA-364-29, Resistance to soldering heat](#)
- 2.1.13 EIA-364-31, Humidity/temperature cycling
- 2.1.14 EIA-364-32, Thermal shock
- 2.1.15 EIA-364-65, Mixed flowing gas
- 2.1.16 EIA-364-70, Current Rating

3 MECHANIC DIMENSIONS

3.1 Dimensions

See engineering drawing: PMT***-450*-P**-1H

3.2 Examination of product (EIA-364-18)

Visual and dimensional inspection per product drawing.

Requirement: Visual inspection in compliance with applicable specifications and documents were performed. The test samples shall be free from defects such as damage, creep, deformation, blister and burrs that are detrimental to the functions and appearances of test samples.

4 REQUIREMENTS

4.1 Design and Construction

4.1.1 Product shall be of design, construction and physical dimensions specified on applicable product drawing.

4.2 Materials and Finish

SPEC No.:	Rev.: X7	Pre-ECN No.:	Page:2
-----------	----------	--------------	--------

- 4.2.1 Housing: thermoplastic, UL94V-0
- 4.2.2 Insert molding: thermoplastic, UL94V-0
- 4.2.3 Shell: Stainless Steel. plated Solderable nickel.
- 4.2.4 Terminal: copper alloy, plated gold on contact area and tin on solder area over nickel
- 4.2.5 Cap: thermoplastic, UL94V-0.

4.3 Ratings

4.3.1 Operating temperature : -40°C TO +105°C

4.3.2 Storage temperature : -55°C TO +105°C

Relative humidity: 20% to 80%

4.3.3 Voltage: 30V DC Max per contact

4.3.4 Current:

16X+Power: 10.5A MAX per power pin, 0.5A MAX per signal pin. (21A Standard version)

8X+Power: 10.5A MAX per power pin, 0.5A MAX per signal pin. (21A Standard version)

Power Only: 10.5A MAX per power pin, 0.5A MAX per signal pin. (21A Standard version)

16X+High Power: 8.5A MAX per power pin, 0.5A MAX per signal pin. (34A High Power version)

8X+High Power: 8.5A MAX per power pin, 0.5A MAX per signal pin. (34A High Power version)

16X+High Power Plus: 27.5A MAX per power pin, 0.5A MAX per signal pin. (55A High Power version)

4.4 Workmanship

Connectors shall be uniform in quality and shall be free from burrs, scratches, cracks, voids, chips, blisters, sharp edges, and other defects that will adversely affect product's life or serviceability

5 ELECTRICAL CHARACTERISTIC

5.1 Low Level Contact Resistance (EIA-364-23)

20mV. DC Max current 100 mA Max.

To include wire termination or connector-to-board termination.

Requirement: 20 mΩ Max change from baseline.

5.2 Withstanding voltage (EIA-364-20 Method B)

Test voltage: 300V DC for 1 minute. Test between adjacent contacts, signal to signal and signal to ground.

Requirement: No defect or breakdown between adjacent contacts.

5.3 Current Rating (EIA-364-70 Method 3)

The temperature rise shall not exceed 30°C when power pin are powered at as follows.

16X+Power: 10.5A Max per power pin, 0.5A MAX per signal pin.

8X+Power: 10.5A Max per power pin, 0.5A MAX per signal pin.

Power Only: 10.5A Max per power pin, 0.5A MAX per signal pin.

16X+High Power: 8.5A Max per power pin, 0.5A MAX per signal pin.

8X+High Power: 8.5A Max per power pin, 0.5A MAX per signal pin.

16X+High Power Plus: 27.5A Max per power pin, 0.5A MAX per signal pin.

5.4 Insulation Resistance (EIA-364-21)

Test voltage 100V DC. Duration: 1 minute, Measure between adjacent signal contacts.
Requirement: 1000M Ω minimum.

6 MECHANICAL CHARACTERISTICS

6.1 Durability (Precondition) (EIA-364-09)

To be tested with connector and module (Latches should be locked out) were subjected to fully mating and unmating for 20 cycles.

Requirement: After 20 cycles of durability test, the sample shall be no evidence of physical damage.

6.2 Durability (EIA-364-09)

To be tested with connector and module (Latches should be locked out) engaged for 200 cycles at a maximum rate of 500 ± 50 cycles per hour.

Requirement: After 200 cycles of durability test, the sample shall be no evidence of physical damage.

6.3 Mating force (EIA-364-13, Method B.)

The force for needed to mate connector and module (plug) when latches are deactivated.

Requirement: 1.1 N Max per pair pin for signal pin
10N Max per pair pin for power pin

6.4 Un-mating force (EIA-364-13, Method B.)

The force for needed to separate connector and module (plug) when latches are deactivated.

Requirement: 0.1N Min per pair pin for signal pin
2N Min per pair pin for power pin

6.5 Retention force (EIA 364-13)

Amount of force the latching can withstand when latching mechanism engaged (not locked out).

Pull indirection parallel to insertion ,hold for min of 60 seconds.

Requirement: 50N Min

6.6 Vibration (EIA-364-28)

Subject mated specimens to 3.10 G's rms between 20-500Hz for 15 minutes in each of 3 mutually perpendicular planes.

Requirement: No Damage, No discontinuity longer than 1us allowed, 20m Ω MAX change from initial (baseline) contact resistance.

6.7 Mechanical shock (EIA-364-27 Method H)

Subject mated specimens to 50 G's half-sine shock pulses of 11ms duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks

SPEC No.:	Rev.: X7	Pre-ECN No.:	Page:4
-----------	----------	--------------	--------

SPECIFICATION

Requirement: No Damage, 20 m Ω MAX change from initial(baseline) contact resistance

6.8 Reseating

Manually Un-mate/mate the connector 3 cycles.

Requirement: No evidence of physical damage.

6.9 Normal Force (EIA-364-04A)

0.49N min./PIN

7 ENVIRONMENTAL CHARACTERISTICS

7.1 Thermal shock (EIA-364-32, Method A, Table 2, Test Condition 1)

Subject mated specimens to 5 cycles between -55 and 85°C with 30 minutes dwells at temperature extremes and 5 minute transition between temperatures.

Requirements: No Damage, 20 m Ω MAX change from initial(baseline) contact resistance.

7.2 Humidity/temperature cycling (EIA-364-31, Method III)

Subject mated specimens to 24 cycles between 25 and 65°C at 80 to 100%RH. Ramp time is 0.5 hours, and dwell time is 1 hour. Dwell time starts when the temperature and humidity have stabilized within the specified levels.

Requirement: No Damage, 20 m Ω MAX change from initial(baseline) contact resistance

7.3 Temperature life, preconditioning (EIA-364-17, Method A)

Subject mated samples were exposed to 85 °C temperature for 72 hours .

Requirement: No Damage

7.4 Temperature life (EIA-364-17, Method A, Conditions 3)

Subject mated samples were exposed to 85 °C temperature for 500 hours

Requirements: No Damage, 20 m Ω MAX change from initial(baseline) contact resistance.

7.5 Mixed flowing gas (EIA-364-65, Class II A, Option 4)

Test condition: Mated connector. RH: 70 $\pm$ 2%, Temperature: 30 $\pm$ 1°C , Cl₂: 10 $\pm$ 3ppb , NO₂: 200 $\pm$ 50ppb, H₂S: 1 $\pm$ 5ppb, SO₂: 100 $\pm$ 20ppb, Duration: 7days.

Requirements: No evidence of physical damage.

7.6 Solderability (J-STD-002E; Method A1)

Test condition: Temperature: 245°C $\pm$ 5°C ,

Immerse and withdraw at 1mm-5mm, per second and dwell for 5+0/-0.5 seconds, Leads and Terminations shall have flux applied uniformly and to cover the surfaces to be tested.

Requirement: 95% of immersed area must show no voids or pin holes.

7.7 Salt Spray (EIA-364-26B)

Test condition: Mated connector.

a) 5 $\pm$ 1% salt b) Temperature: 35 $\pm$ 2°C c) Duration: 48 hours

Requirement: No evidence of physical damage.

LLCR initial : baseline , After test: $\Delta R = 20m \Omega$ MAX

7.8 Resistance to soldering heat (Infrared reflow) (EIA-364-29)

SPEC No.:	Rev.: X7	Pre-ECN No.:	Page:5
-----------	----------	--------------	--------

SPECIFICATION

Temperature (board surface) : 250+10°C/-0°C , Duration: 30~35 seconds

Requirement: No evidence of physical damage.

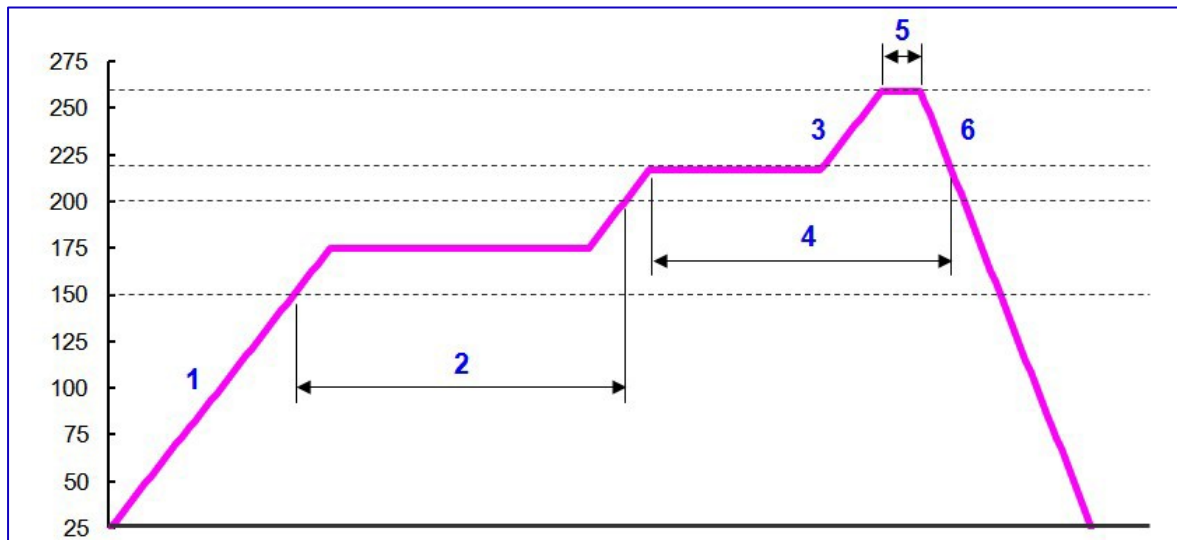
8 Qualification Testing Sequences

ITEM	TEST DESCRIPTION	TEST SEQUENCE													TEST METHOD
		A	B	C	D	E	F	G	H	I	J	K	L	M	
1	Examination of product	1,8	1,10	1,10	1,10	1,9	1,3	1,7	1,5	1,3	1,3	1,3	1,3	1,3	3. 2
2	Current rating						2								5.3
3	Low Level Contact Resistance	2,5,7	2,5,7,9	2,5,7,9	2,5,7,9	4,6			2,4						5.1
4	Insulation Resistance					3,8									5.4
5	Dielectric Withstanding Voltage					2,7									5.2
6	Durability					5									6.2
7	Durability (Precondition)	3	3	3	3										6.1
8	Reseating	6	8		8			2,5							6.8
9	Thermal shock		4												7.1
10	Temperature-Humidity Cycling		6												7.2
11	Temperature life	4						4							7.4
12	Temperature life (Precondition)			4	4										7.3
13	Mechanical Shock			8											6.7
14	Vibration			6											6.6
15	Salt Spray								3						7.7
16	MFG				6										7.5
17	Solder ability									2					7.6
18	Resistance to soldering heat										2				7.8
19	Mating force /Un-mate force							3,6							6.3/6.4
20	Retention force											2			6.5
21	Normal Force													2	6.9
Sample Size		5	5	5	5	5	5	5	5	5	5	5	5	5	

Remark:

- 5pcs samples are required in each group.
- Recommended IR reflow profile (Lead-free)

SPECIFICATION



1, 3	Average ramp-up rate	3°C/second max.
2	Preheat	
	- Temperature Min	150°C
	- Temperature Max	200°C
	- Pre-heat time	60-180 seconds
4	Time maintained above	
	- Temperature	217°C
	- Time	60-150 seconds
5	Peak temperature	260°C
	Time within 5°C of actual peak	20-40 seconds
6	Ramp-down Rate	6°C/second max.
	Time 25°C to peak Temperature	8 minutes max.