立威科技股份有限公司 Attend Technology Inc.
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SPECIFICATION AND PERFORMANCE

Series	112L-TDA0	File	112L-TDA0-SPEC_2	Date	2017/06/28

Scope:

This specification covers the requirements for product performance, test methods and quality assurance provisions of 112L-TDA0

Performance and Descriptions:

The product is designed to meet the electrical, mechanical and environmental performance requirements specification. Unless otherwise specified, all tests are performed at ambient environmental conditions.

RoHS:

All material in according with the RoHS environment related substances list controlled.

MATERIAL AND FINISH		
INSULATOR	**Material**	LCP, UL94V-0, Black
CONTACT	**Material**	Phosphor Bronze Alloy
	Plating	Contact area: Gold 10micro inches Solder area: Gold flash All under-plated Ductile Nickel 50 micro inches
SHELL	**Material**	Stainless Steel
	Plating	Solder area: Gold flash All under-plated Ductile Nickel 12 micro inches (Min.)
OTHERS	Spring: Stainless Steel Drag Link: Stainless Steel	
RATING	1. Rating Current 0.5A (Max.)/(1PIN) 2. Rating Voltage 3.3VDC 3. Durability 5000 mating cycles 4. Operating Temperature -25℃ to +85℃ 5. Storage Temperature -40℃ to +85℃ 6. Ambient Humidity 95% R.H. Max	

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ELECTRICAL		
Item	**Requirement**	**Test Condition**
Contact Resistance	Initial: 100mΩ (Max) After test: 40mΩ Max change	Solder connectors on PCB and mate them together, measure by applying closed circuit current of 1mA maximum at open circuit voltage of 20mV (max).
Insulation Resistance	Apply 500V DC between adjacent contacts, or contact and ground.	Initial: 1000mΩ (Min) After test: 100mΩ (Min)
Dielectric Withstanding Voltage	Mate connectors; apply 500V AC (RMS.) between two adjacent for 1 minute. (Trip current: 1mA)	No breakdown

MECHANICAL		
Item	**Requirement**	**Test Condition**
Durability	Finish 1. Contact Resistance:40mΩ Max change 2. No Damage	Solder connectors on PCB, then place them on the pull-push machine, and repeat mating and un-mating 5000 cycles repeatedly at a rate of 400~600 cycles/hour.
Vibration	Finish 1. No electrical discontinuity more than 1μs. 2. No Damage 3. Contact Resistance:40mΩ Max change	Mate dummy card and subject to the following vibration conditions, for a period of 30 minutes in each of 30 minutes in each of 3 mutually perpendicular axis, passing DC 1 mA during the test. Amplitude: 1.52 mm P-P or 19.6 m/s^2 Frequency: 10-55-10Hz Shall be traversed in 1minute.
Shock	Finish 1. No electrical discontinuity more than 1μs. 2. No Damage 3. Contact Resistance:40mΩ Max change	Solder connectors on PCB and mate them together, subject to the following shock conditions, 3 shocks shall be period along 3 mutually perpendicular axis, passing DC 1mA current during the test. 1 axis, plus-minus direction, core 3 times. (total: 18 times) 490 m/s^2
Card Insertion / Eject Force	8N(Max)	Push the card at the speed rate 25±3 mm/minute.
Push in strength	No Damage	The card inserted in positive and the opposite direction and the load of 10N is added.

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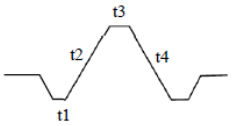
ENVIRONMENTAL

Item	Requirement	Test Condition
Temperature Cycle 	Finish 1. Contact Resistance: 40mΩ Max change. 2. Insulation Resistance: 100MΩ (Min)	Stage / Temp / Time t1 -55°C 30 min t2 -55~+85 °C 3 min t3 + 85°C 30 min t4 +85~-55 °C 3 min
Heat Resistance	Finish 1. Contact Resistance: 40mΩ Max change. 2. Insulation Resistance: 100MΩ (Min)	Solder connectors on PCB and mate them together, expose to 85±2℃ for 96hrs. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 of 2hrs, after which the specified measurements shall be performed.
Cold Resistance	Finish 1. Contact Resistance: 40mΩ Max change. 2. Insulation Resistance: 100MΩ (Min)	Solder connectors on PCB and mate them together, expose to -40±3℃ for 96hrs. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 of 2hrs, after which the specified measurements shall be performed.
Humidity	Finish 1. Contact Resistance: 40mΩ Max change. 2. Insulation Resistance: 100MΩ (Min)	Humidity storage at +40℃ with 90~95% RH for 96 hours. Upon completion of the exposure period, the test specimens shall be conditions for 1 of 2hrs, then 10 mating cycles while.
Salt Spray	Finish 1. Contact Resistance: 40mΩ Max change. 2. No Damage	5±1% salt solutions, at 35±3℃ duration 48 hours. Connectors detached.

SOLDER ABILITY

Item	Requirement	Test Condition
Solder ability	95% of immersed area must show no voids, pin holes.	Dip solder tails into the molten solder (held at 230±5℃) up to 0.5mm from the tip of tails for 3±0.5 seconds.
Resistance to soldering heat	No melting, cracks or functional damage allowed	All connectors designed for PCB soldering within this specification must be able to withstand the heat from solder oven according to the graph below. The cycle should be repeated twice.

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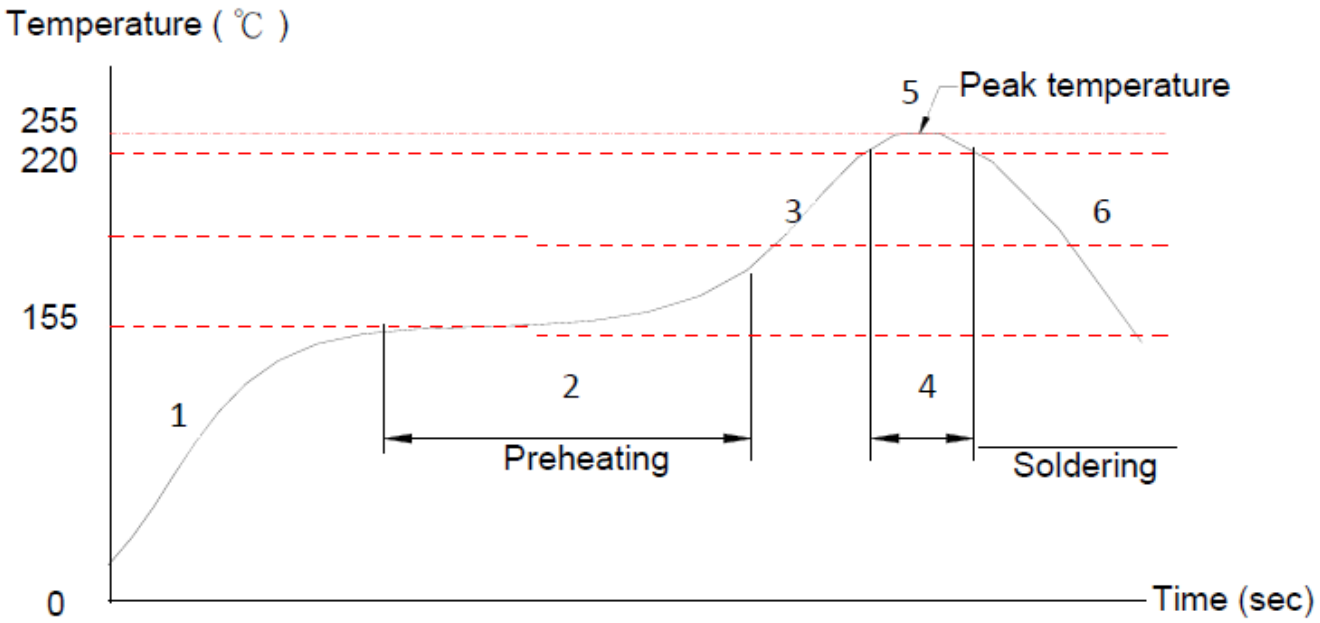
Recommended IR Reflow Profile



1	Average ramp rate	3℃ per second max.
2	Pre-heat temp. (min.)	155℃
	Pre-heat temp. (max.)	165℃
	Pre-heat time	60 to 120 seconds
3	Ramp to peak	3℃ per second max.
4	Time over liquidus temperature (220℃)	30 second
5	Peak temp	255+0/-10℃
	Time within 5℃ of peak	5 second max.
6	Ramp-down rate	6℃ per second max.
	Time 25℃ to peak	5 minutes max.

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TEST SEQUENCE

		Group & Sequence										
No.	Test Item	A	B	C	D	E	F	G	H	I	J	L
1	Contact Resistance	1,6	1,3	1,3		1,4	1,4	1,4	1,4	1.3		
2	Insulation Resistance					2,5	2,5	2,5	2,5			
3	Dielectric Withstanding Voltage	2										
4	Durability Life	4										
5	Vibration		2									
6	Shock			2								
7	Insertion/Eject Force	3,5										
8	Push in strength				1							
9	Temperature Cycles					3						
10	Heat Resistance						3					
11	Cold Resistance							3				
12	Humidity								3			
13	Salt Spray									2		
14	Solder ability										1	
15	Resistance to Soldering Heat											1
	Sample Quantity	4	4	4	4	4	4	4	4	4	4	4

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SUMMARY OF TESTING RESULT

TEST Group A						
TEST ITEM	Unit	REQUIREMENTS	Max	Min	Avg	RESULTS
Examination of product	--	Meet the product print	Normal			PASS
Contact Resistance	mΩ	Initial 100 mΩ(Max)	13.2	10.5	11.7	PASS
Dielectric Withstanding Voltage	--	No breakdown	Normal			PASS
Insertion Force	N	8N Max	5.7	5.0	5.3	PASS
Eject Force	N	8N Max	5.4	4.8	5.1	PASS
Durability life	--	No damage.	Normal			PASS
Insertion Force	N	8N Max	5.5	5.2	5.4	PASS
Eject Force	N	8N Max	5.4	5.1	5.3	PASS
Contact Resistance	mΩ	After 40 mΩ Max Change	4.3	2.7	3.2	PASS
Examination of product	--	Meet the product print	Normal			PASS

TEST Group B						
TEST ITEM	Unit	REQUIREMENTS	Max	Min	Avg	RESULTS
Examination of product	--	Meet the product print	Normal			PASS
Contact Resistance	mΩ	Initial 100 mΩ(Max)	13.9	11.2	12.4	PASS
Vibration	--	No damage. Discontinuity:1μsec maximum	Normal <1μsec			PASS
Contact Resistance	mΩ	After 40 mΩ Max Change	4.5	2.7	3.9	PASS
Examination of product	--	Meet the product print	Normal			PASS

TEST Group C						
TEST ITEM	Unit	REQUIREMENTS	Max	Min	Avg	RESULTS
Examination of product	--	Meet the product print	Normal			PASS
Contact Resistance	mΩ	Initial 100 mΩ(Max)	14.4	11.8	13.1	PASS
Shock	--	No damage. Discontinuity:1μsec maximum	Normal <1μsec			PASS
Contact Resistance	mΩ	After 40 mΩ Max Change	2.9	2.8	2.85	PASS
Examination of product	--	Meet the product print	Normal			PASS

TEST Group D						
TEST ITEM	Unit	REQUIREMENTS	Max	Min	Avg	RESULTS
Examination of product	--	Meet the product print	Normal			PASS
Push in strength	--	No damage.	Normal			PASS
Examination of product	--	Meet the product print	Normal			PASS

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TEST Group E						
TEST ITEM	Unit	REQUIREMENTS	Max	Min	Avg	RESULTS
Examination of product	--	Meet the product print	Normal			PASS
Contact Resistance	mΩ	Initial 100 mΩ (Max)	14.2	11.7	12.95	PASS
Insulation Resistance	mΩ	Initial 1000 mΩ (Min)	>9999			PASS
Temperature Cycle	--	No damage.	Normal			PASS
Contact Resistance	mΩ	After 40 mΩ Max Change	1.4	1.4	1.4	PASS
Insulation Resistance	mΩ	Finish 100 mΩ (Min)	>9999			PASS
Examination of product	--	Meet the product print	Normal			PASS

TEST Group F						
TEST ITEM	Unit	REQUIREMENTS	Max	Min	Avg	RESULTS
Examination of product	--	Meet the product print	Normal			PASS
Contact Resistance	mΩ	Initial 100 mΩ (Max)	14.5	10.4	11.95	PASS
Insulation Resistance	mΩ	Initial 1000 mΩ (Min)	>9999			PASS
Heat Resistance	--	No damage.	Normal			PASS
Contact Resistance	mΩ	After 40 mΩ Max Change	3.8	2.3	3.55	PASS
Insulation Resistance	mΩ	Finish 100 mΩ (Min)	>9999			PASS
Examination of product	--	Meet the product print	Normal			PASS

TEST Group G						
TEST ITEM	Unit	REQUIREMENTS	Max	Min	Avg	RESULTS
Examination of product	--	Meet the product print	Normal			PASS
Contact Resistance	mΩ	Initial 100 mΩ (Max)	19.5	10.7	15.1	PASS
Insulation Resistance	mΩ	Initial 1000 mΩ (Min)	>9999			PASS
Cold Resistance	--	No damage.	Normal			PASS
Contact Resistance	mΩ	After 40 mΩ Max Change	3.2	2.7	2.95	PASS
Insulation Resistance	mΩ	Finish 100 mΩ (Min)	>9999			PASS
Examination of product	--	Meet the product print	Normal			PASS

TEST Group H						
TEST ITEM	Unit	REQUIREMENTS	Max	Min	Avg	RESULTS
Examination of product	--	Meet the product print	Normal			PASS
Contact Resistance	mΩ	Initial 100 mΩ (Max)	16.5	12.8	13.6	PASS
Insulation Resistance	mΩ	Initial 1000 mΩ (Min)	>9999			PASS
Humidity	--	No damage.	Normal			PASS
Contact Resistance	mΩ	After 40 mΩ Max Change	2.2	0.4	1.35	PASS
Insulation Resistance	mΩ	Finish 100 mΩ (Min)	>9999			PASS
Examination of product	--	Meet the product print	Normal			PASS

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TEST Group I						
TEST ITEM	Unit	REQUIREMENTS	Max	Min	Avg	RESULTS
Examination of product	--	Meet the product print	Normal			PASS
Contact Resistance	mΩ	Initial 100 mΩ (Max)	15.2	12.6	14.4	PASS
Salt Spray	--	No damage.	Normal			PASS
Contact Resistance	mΩ	After 40 mΩ Max Change	3.4	0.9	1.65	PASS
Examination of product	--	Meet the product print	Normal			PASS

TEST Group J						
TEST ITEM	Unit	REQUIREMENTS	Max	Min	Avg	RESULTS
Examination of product	--	Meet the product print	Normal			PASS
Solder-ability	--	95% of immersed area must show no voids, pin holes	Over 95% coverage, no voids and pin holes occurred			PASS

TEST Group K						
TEST ITEM	Unit	REQUIREMENTS	Max	Min	Avg	RESULTS
Examination of product	--	Meet the product print	Normal			PASS
Resistance to soldering Heat	--	No melting, Cracks or functional damage allowed.	Normal			PASS