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<ol> <li>Scope</li> <li>Applicable dod</li> <li>Requirements</li> <li>Test Requirem</li> <li>Reflow solderi</li> <li>Connector test</li> </ol>	ents and Proceens	<u>-INDEX-</u>		
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## **CRS Precision electronic Co., LTD**

## Document SPEC-BT0524H-XXXXX Name SPEC-BT0525H-XXXXX

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#### 1. Scope:

This specification covers the performance, tests and quality requirements for the 0.5mm Pitch BOARD to BOARD SMD V/T Type Connector . (MATING HEIGHT: 3.0H 3.5H 4.0H 4.5H 5.0H 5.5H 6.0H 6.5H)

2. Applicable documents:

EIA-364: ELECTRONICS INDUSTRIES ASSOCIATION

- 3. Requirements:
  - 3.1 Design and Construction
    - 3.1.1 Product shall be of design, construction and physical dimensions specified on applicable product drawing.
    - 3.1.2 All materials confirm to R.o.H.S.
  - 3.2 Materials and Finish
    - 3.2.1.Terminal: Phosphor Gold-Flash under-plated Ni overall.
    - 3.2.2.Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0
  - 3.3 Ratings
    - 3.3.2 Voltage: 60V DC
    - 3.3.3 Current: 0.5A Max.( (Each Pin)
    - 3.3.4 Operating Temperature :  $-55^{\circ}$ C to  $+85^{\circ}$ C

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### 4. Test Requirements and Procedures Summary:

APPEARANCE REQUIREMENTS
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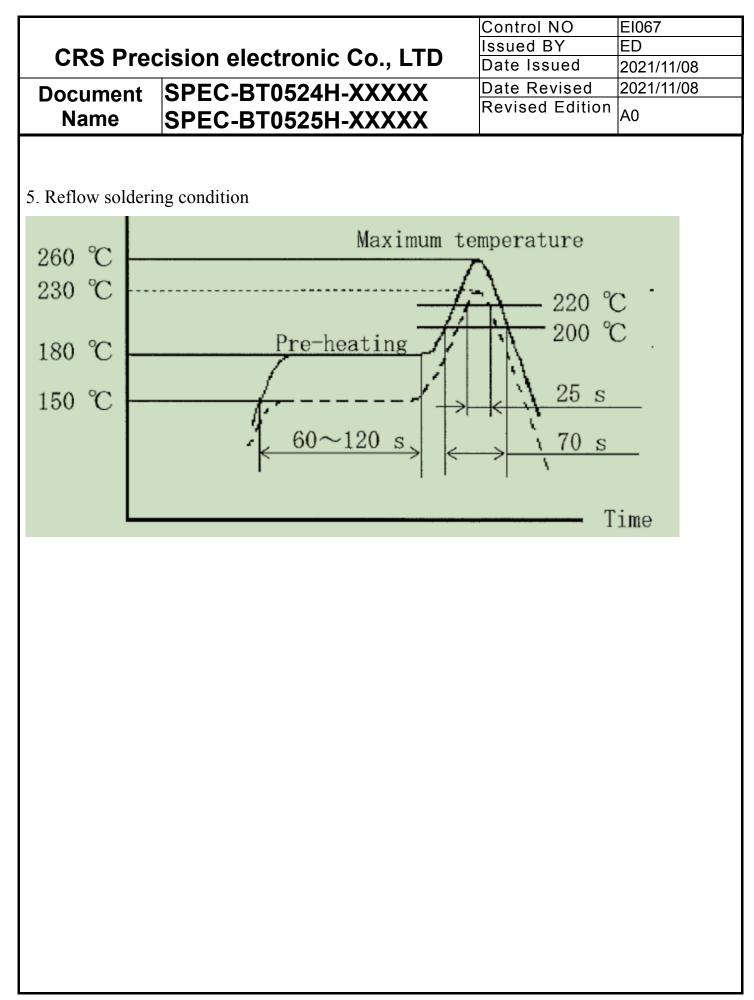
N0.	Test Item	Test Procedure	Requirements
1	Visual and	Visual, dimensional and functional per	Meets requirements of
	dimensional	applicable quality inspection plan.	product drawing. No
	inspections	EIA 364-18	physical damage.

		ELECTRICAL PERFORMANCE	
N0.	Test Item	Test Procedure	Requirements
2	Contact Resistance	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. EIA 364 -23	20 mΩ Maximum
3	Insulation resistance	Test between adjacent contacts of unmated connector assemblies apply a voltage of 500V DC for 1 minute EIA 364-21	800 MΩ Minimum
4	Dielectric Withstanding Voltage	500V AC/DC Min. at sea level for 1 minute. Test between adjacent contacts of unmated connectors. EIA-364-20	No discharge,flashover or breakdown.Current leakage: 1 mA max.
5	Temperature Rise	Mate connector: measure the temperature rise at rated current after:0.5A/Power contact. The temperature rise above ambient shall not exceed 30°C The ambient condition is still air at 25 °C (EIA-364-70 METHOD 2)	30℃ max change allowed

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		Mechanical Performance			
Test Item		Test Procedure		Require	ments
Durabilit	y	The sample should be mounted if the tester and fully mated and unmated the number of cycles specified at the rate of $25.4 \pm 3$ mm/min. (EIA-364-09)	in	Contact ]	Resistance:
Insertion Force         Contact Retention         Force         Vibration		soldered on a board and inserted	0.12Kgf x N Max 0.03Kgf Min.		
		Operation Speed: 25.4 ± 3 mm/minute Measure the contact retention force with Tester			
		contacts. Subject to a simpleharmonic motion having amplitudeof 0.76mm (1.52mm maximumtotal excursion) in frequencybetween the limits of 10 and 55 Hz.The entire frequency range, from10 to 55 Hz and return to 10 Hz,shall be traversed in approximately1 minute. This motion shall beapplied for 2 hours in each of three			Appearance: No Damage Discontinuity :1 µ sec Max.
	Eument ame Test Item Durability Insertion Contact F Force	ument       SPEC-I         Test Item       Insertion         Insertion       Force         Contact Retention       Force         Insertion       Force	ame       SPEC-BT0525H-XXXXX         Mechanical Performance       Mechanical Performance         Test Item       Test Procedure         Durability       The sample should be mounted the tester and fully mated and unmated the number of cycles specified at the rate of 25.4 ± 3 mm/min. (EIA-364-09)         Insertion Force       Mate The sample connectors shat soldered on a board and inserted separated at speed of 25± 3 mm/ (EIA-364-13)         Contact Retention Force       Operation Speed: 25.4 ± 3 mm/minute         Force       25.4 ± 3 mm/minute         Measure the contact retention for Tester       The electrical load condition shat be 100 mA maximum for all contacts. Subject to a simple harmonic motion having amplitu of 0.76mm (1.52mm maximum total excursion) in frequency between the limits of 10 and 55 The entire frequency range, from 10 to 55 Hz and return to 10 Hz shall be traversed in approximat 1 minute. This motion shall be applied for 2 hours in each of th	RS Precision electronic Co., LTD       Issued By Date Issu         Sument ame       SPEC-BT0524H-XXXXX SPEC-BT0525H-XXXXX       Date Revi Revised E         Mechanical Performance       Mechanical Performance         Test Item       Test Procedure         Durability       The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of 25.4 ± 3mm/min. (EIA-364-09)         Insertion Force       Mate The sample connectors shall be soldered on a board and inserted and separated at speed of 25±3mm/min. (EIA-364-13)         Contact Retention Force       Operation Speed: 25.4 ± 3 mm/minutc Measure the contact retention force with Tester         Vibration       The electrical load condition shall be 100 mA maximum for all contacts. Subject to a simple harmonic motion having amplitude of 0.76mm (1.52mm maximum total excursion) in frequency between the limits of 10 and 55 Hz. The entire frequency range, from 10 to 55 Hz and return to 10 Hz, shall be traversed in approximately 1 minute. This motion shall be applied for 2 hours in each of three mutually perpendicular directions.	Sument ame       SPEC-BT0524H-XXXX SPEC-BT0525H-XXXXX       Date Revised Revised Edition         Date Revised Revised Edition         Mechanical Performance         Test Item       Test Procedure       Require         Durability       The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of 25.4 ± 3mm/min. (EIA-364-09)       30 cycle Contact I         Insertion Force       Mate The sample connectors shall be soldered on a board and inserted and separated at speed of 25 ± 3mm/min. (EIA-364-13)       0.12Kgf         Contact Retention Force       Operation Speed: 25.4 ± 3 mm/minute Measure the contact retention force with Tester       0.03Kgf         Vibration       The electrical load condition shall be 100 mA maximum for all contacts. Subject to a simple harmonic motion having amplitude of 0.76mm (1.52mm maximum total excursion) in frequency between the limits of 10 and 55 Hz. The entire frequency range, from 10 to 55 Hz and return to 10 Hz, shall be traversed in approximately 1 minute. This motion shall be applied for 2 hours in each of three mutually perpendicular directions.       Discont

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10	Mechani	cal Shock	Accelerate Velocity: 490m/s2 Waveform: Half-sine shock plu Duration: 11msec			ance: No Damage inuity :1 µ sec		
			No. of Drops: 3 drops each to					
			reversed directions of X,Y and Z					
			totally 18 drops, passing DC 1n	nA current				
			during the test.					
			{ EIA 364-27B }					
			Environmental Performance	ce				
N0.	Test Item	1	Test Procedure			Requirements		
11	Resistant	ce to	Pre Heat: 150°C~180°C,			eet visual		
	Soldering	g Heat	60~120sec.	requirement, show no				
			Heat: 200~220℃ .,3-6sec.		physica	l damage.		
			Peak Temp.: 260°C Max,					
			3-6sec.					
			(EIA-364-56)					
12	Heat Res	sistance	Mate The sample connectors sh	all	Appear	ance: No Damage		
			expose to 85 2 for 96 hours. Up	Contact Resistance;				
			completion of the exposure peri	iod, the test	90m Ma	ax.		
			specimens shall be conditioned	at ambient				
			room condition for 1to2 hours, after which					
			the specified measurements sha	ll be				
			performed.					
13	Cold Res	sistance	Mate The sample connectors sh	all expose	Appearance: No Damage			
			to $-55^{\circ}C + - 2^{\circ}C$ for 96 hours. U	pon	Contact	Resistance;		
			completion of		90m Ma	ax.		
			the exposure period, the test spe	ecimens				
			shall be conditioned at ambient	room				
			condition for 1to2 hours, after v	which the				
			specified measurements shall be	e				

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			performed.			
14	Temperat Cycling	ture	A connector shall and subject to the following condition for 5 cycles. The completion of the exposure period specimens shall be conditioned at room condition for 1to2 hours, aft the specified measurements shall performed. 1cycle a) $55^{\circ}C+/-3^{\circ}C$ , 30 minutes b) +85^{\circ}C+/-3^{\circ}C, 30 minutes b) +85^{\circ}C+/-3^{\circ}C, 30 minutes (Tra- shall be with in 3 minutes ) (EIA-364-31, Test condition A)	Upon d, the test c ambient ter which be	Appeara	ance: No Damago
15	Humidity	7	Mate The sample connectors shal expose to 40°C relative humidity 90~95% for 96 hours. Upon comp the exposure period, the test speci shall be conditioned at ambient ro condition for 1to2 hours, after wh specified measurements shall be performed.	pletion of imens oom	Dielectri No Bro Contact Max	ance: No Damage ic Strength: eakdown Resistance: 90m on Resistance: /in.
16	Salt Spra	у	Subject mated/unmated connectors to 5% salt-solution concentration, 35°C 24 hours (EIA-364-26)		requirer	eet visual nent, show no l damage.
17	Solder ab	bility	And then into solder bath, Tempe 245±5°C, for 4-5sec (EIA-364-52)	rature at	have mi	able area shall nimum of 95% overage.



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6 Са	nnaatar taat	and saguanaa										
6. Connector test and sequence         Test or Examination         Test Group												
No.		Item	A	В	C	D	E	F	G	Н	Ι	J
110.	No. Item			D	C			equence		11	1	
1	Examination	of Product				1,10	1,9	1,9	1,3		1,3	1,3
2	Contact Resi	stance		1,4	1,4	2,9	2,8	2,8				
3	Insulation Re	esistance				3,8	3,7	3,7				
4	Dielectric W	ithstanding Voltage				4,7	4,6	4,6				
5	Temperature	Rise	1									
6	Durability			3								
7	Insertion For	rce		2								
8	Contact Rete	ntion Force								1		
9	Vibration				2							
10	Mechanical S	Shock			3							
11	Resistance to	Soldering Heat										2
12	Heat Resistan	nce				5						
13	Cold Resista	nce				6						
14	Temperature	Cycling					5					
15	Humidity							5				
16	Salt Spray								2			
17	Solder ability	ý									2	
Num	ber of Test Sar	nples (Minimum)	2	4	4	4	4	4	4	2	4	4

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