SPECIFICATION

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SPEC. NO.: PS-51079-XXXXX-XXX **REVISION:** D

PRODUCT NAME: 0.8mm BTB CONN. SMT D/R S/T TYPE

PRODUCT NO:
51079-XXXXX-XXX SERIES
51080-XXXXX-XXX SERIES
51095-XXXXX-XXX SERIES

PREPARED:	CHECKED:	APPROVED:
CHEN CHUN YUAN	TSO I CHIAO	HUANG KUO HUA
DATE: 2021/11/16	DATE: 2021/11/16	DATE: 2021/11/16

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1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
A	1912233	FOR PDR APD1080163/1080164	CHEN CHUN YUAN	2019/12/11
B	2020028	ADD Male / Female Terminal / Housing Retention Force	CHEN CHUN YUAN	2020/02/11
C	005254	ADD Working Voltage Less than 36 Volts AC(Per Pin) ADD 51095-XXXXX-XXX Series	CHEN CHUN YUAN	2021/8/26
D	006925	Modify Mating Forces Modify REFLOW	CHEN CHUN YUAN	2022/01/20

2 SCOPE

This specification covers performance, tests and quality requirements for 0.8 mm BTB CONN. SMT D/R S/T TYPE

3 APPLICABLE DOCUMENTS

EIA-364: ELECTRONICS INDUSTRIES ASSOCIATION

4 REQUIREMENTS

4.1 Design and Construction

4.1.1 Product shall be of design, construction and physical dimensions specified on applicable product drawing.
4.1.2 All materials conform to R.o.H.S. and the standard depends on TQ-WI-140101.

4.2 Materials and Finish

4.2.1 Contact: High performance copper alloy (Phosphor Bronze)
Finish: (a) Contact Area: Refer to the drawing.
(b) Under plate: Refer to the drawing.
(c) Solder area: Refer to the drawing.
4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0

4.2.3 Fitting Nail: Copper Alloy, Finish: Refer to the drawing.

4.2.4 SHELL: SUS

4.3 Ratings

4.3.1 Voltage: 50 Volts AC/DC (per pin)
4.3.2 Current: 2.0 Amperes (per pin)
4.3.3 Operating Temperature : -40℃ to +85℃
4.3.4 Working Voltage Less than 36 Volts AC(Per Pin)

5 Performance

5.1. Test Requirements and Procedures Summary

Item	Requirement	Standard
Examination of Product	Product shall meet requirements of applicable product drawing and specification.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Item	**Requirement**	**Standard**
Low Level Contact Resistance	50 m Ω Max.(initial)per contact Δ 10 m Ω Max.(finish)	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. (EIA-364-23)
Insulation Resistance	1000 M Ω Min.	Unmated connectors, apply 500 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: 1 mA max.	250 VAC Min. at sea level for 1 minute. Test between adjacent contacts of unmated connectors. (EIA-364-20)
Temperature rise	30℃ Max. Change allowed	Mate connector: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at 25℃ (EIA-364-70,METHOD1,CONDITION1)
MECHANICAL		
Item	**Requirement**	**Standard**
Durability	30 cycles.	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)
Mating/Unmating Forces	Mating 60 g (Max.) / Per Pin Unmating 10 g (Min.) / Per Pin	Operation Speed： 25.4 ± 3 mm/minute.. Measure the force required to mate/unmate connector. (EIA-364-13)
Terminal / Housing Retention Force	Male / Female 0.1 kgf MIN.	Apply axial pull out force at the speed rate of 10 ± 3 mm/minute. On the terminal assembled in the housing.

Vibration	1 μs Max.	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. (EIA-364-28 Condition I)
Shock (Mechanical)	1 μs Max.	Subject mated connectors to 50 G's (peak value) half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks). The electrical load condition shall be 100mA maximum for all contacts. (EIA-364-27, test condition A)

ENVIRONMENTAL

Item	Requirement	Standard
Resistance to **Reflow** Soldering Heat	See Product Qualification and Test **(Lead Free)**	Pre Heat：150℃~180℃, 60~120sec. Heat：230℃ Min., 40sec Min. Peak Temp.：260℃Max, 10sec Max. Rellow number cycle: 2 times
Thermal Shock	See Product Qualification and Test Sequence Group 4	Mate module and subject to follow condition for 5 cycles. 1 cycles: -55 +0/-3 ℃, 30 minutes +85 +3/-0 ℃, 30 minutes (EIA-364-32, test condition I)
Humidity	See Product Qualification and Test Sequence Group 4	Mated Connector 40℃, 90~95% RH, 96 hours. (EIA-364-31,Condition A, Method II)
Temperature life	See Product Qualification and Test Sequence Group 5	Subject mated connectors to temperature life at 85℃ for 96 hours. (EIA-364-17, Test condition A)

Salt Spray (Only For Gold Plating)	See Product Qualification and Test Sequence Group 6	Subject mated connectors to 5% salt-solution concentration, 35℃ (I) Gold flash for 8 hours (II) Gold plating 5 u" for 96 hours. (EIA-364-26)
Solder ability	Tin plating: Solder able area shall have minimum of 95% solder coverage. Gold plating: Solder able area shall have minimum of 75% solder coverage	And then into solder bath, Temperature at 245 ±5℃, for 4-5 sec. (EIA-364-52)
Hand Soldering Temperature Resistance	Appearance: No damage	T≧350℃, 3sec at least.

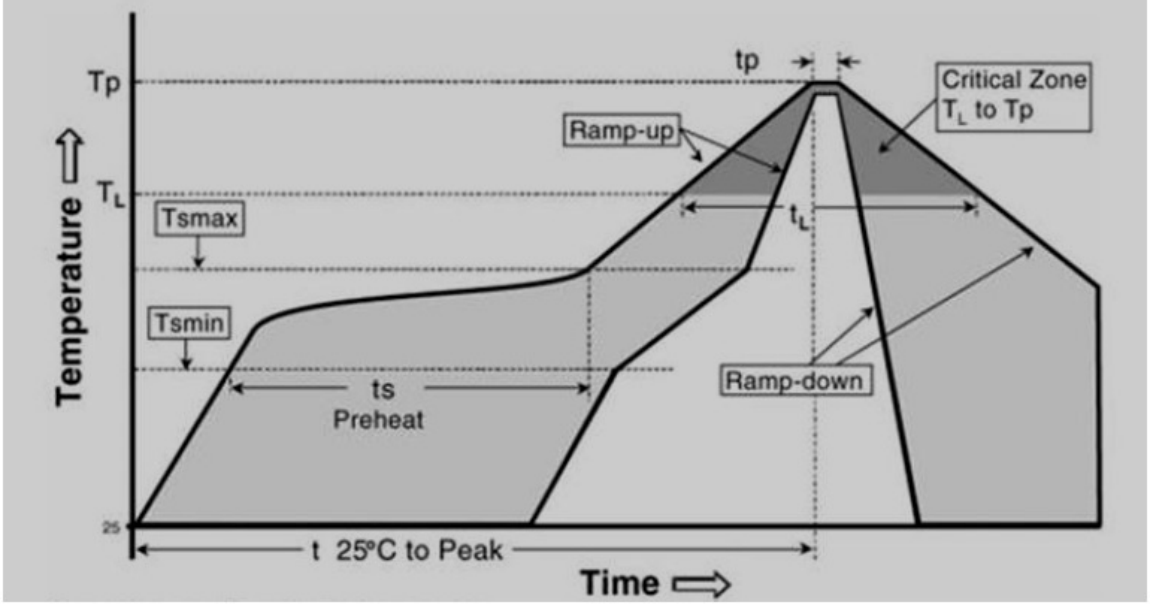
Note. Flowing Mixed Gas shell be conduct by customer request.

6 INFRARED REFLOW CONDITION

6.1. Lead-Free Process

Profile Feature	Pb-Free Assemble
Average ramp-up rate (Tsmax to tp)	3℃/ second max.
Preheat	
Temperature Min (TSmin)	150 ℃
Temperature Max (TSmax)	200 ℃
Time (TSmin to TSmax) (TS)	60~180 seconds
Time maintained above	
Temperature (Tt)	217 ℃
Time(Tt)	60-150 seconds
Peak Temperature (Tp)	See Table 4.2
Time within 5℃ of actual Peak Temperature $(tp)^2$	20-40 seconds
Ramp-down Rate	6℃/ second max.
Time 25℃ to Peak Temperature	8 minutes max.

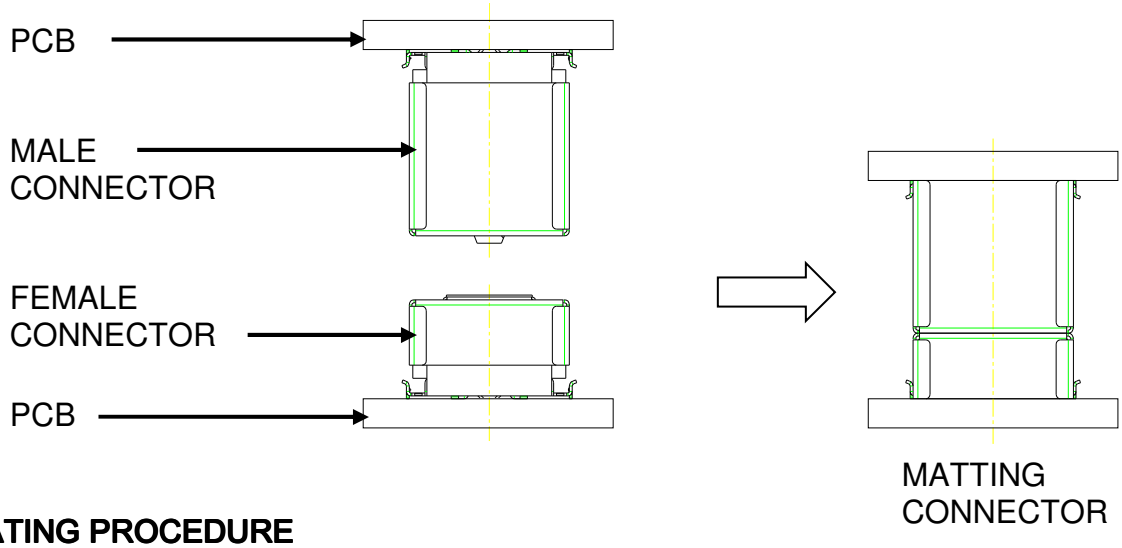
Note 1: All temperatures refer to topside of the package, measured on the package body surface.
Note 2: Time within 5 °C of actual peak temperature (tp) specified for the reflow profiles is a "supplier" minimum and "user" maximum.



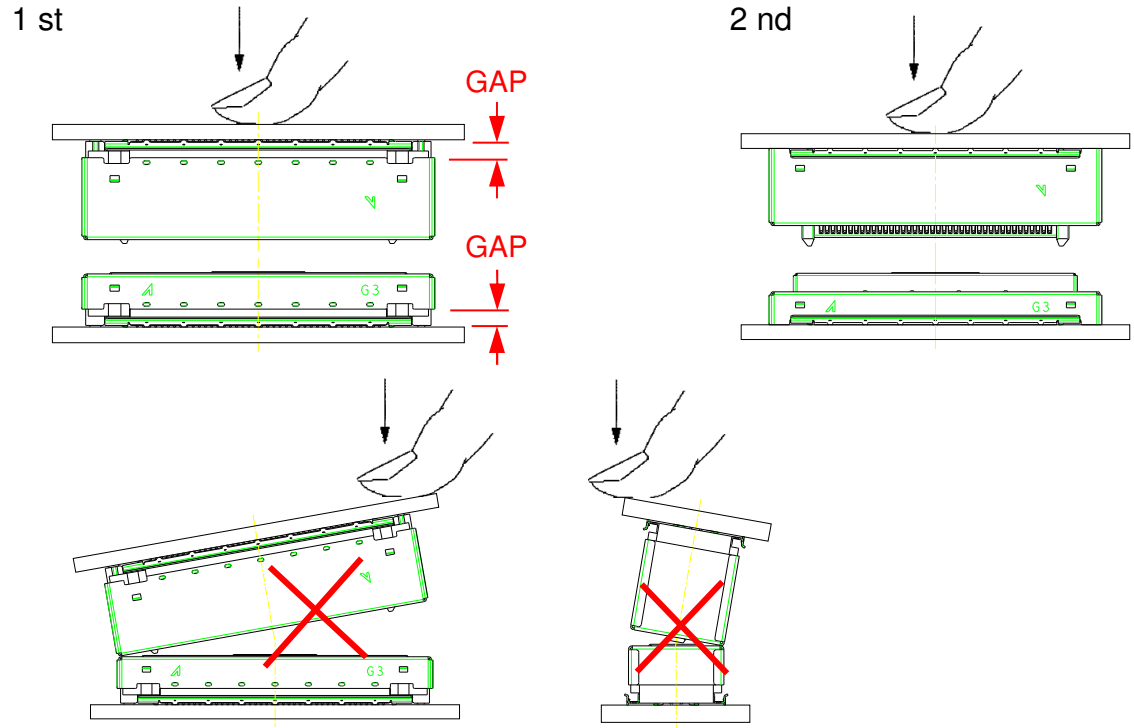
7 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group										
	1	2	3	4	5	6	7	8	9		
	Test Sequence										
Examination of Product	1,3	1	1	1、7	1、6	1、4			1,3		
Low Level Contact Resistance		2、6	2、5	2、8	2、7	2、5					
Insulation Resistance				3、9	3、8						
Dielectric Withstanding Voltage				4、10	4、9						
Temperature rise	2										
Mating / Unmating Forces		3、5									
Durability		4									
Vibration			3								
Shock (Mechanical)			4								
Thermal Shock				5							
Humidity				6							
Temperature life					5						
Salt Spray(Only For Gold Plating)						3					
Solder ability							1				
Terminal / Housing Retention Force								1			
Hand Soldering Temperature Resistance									2		
Sample Size	2	4	4	4	4	4	2	4	4		

8. CONNECTOR USAGE



MATING PROCEDURE



UNMATING PROCEDURE