

NUMBER GS-12-629	TYPE Product Specification		
TITLE 1.27MM BOARD TO BOARD & CABLE TO BOARD CONNECTOR		PAGE 1 of 4	REVISION B
		AUTHORIZED BY Sterling Lin	DATE Nov 30 2009
CLASSIFICATION <b>UNRESTRICTED</b>			

## 1.0 GENERAL

This specification defines the performance, tests and quality requirements for the 1.27MM Board to Board (BTB), and Cable to Board (CTB) plug and receptacle connectors.

This document is composed of the following sections.

1. General
2. Scope
3. Applicable Documents
4. Requirements
  - ✧ Design and Construction
  - ✧ Material
  - ✧ Finish
5. Test Methods and Requirements
6. Test Plan
7. Applicable Part Number and Product Drawing
8. Revision Record

## 2.0 SCOPE

This specification is applicable to the termination characteristics of the 1.27MM board to board, and cable to board connectors family.

## 3.0 APPLICABLE DOCUMENTS

### 3.1 Military Standards:

- 3.1.1 MIL-STD-1344A: Test methods for electronic and electrical component parts.
- 3.1.2 MIL-STD-202 : Test methods for electronic and electrical component parts.

### 3.2 Industry Specification/Other Standards:

- 3.2.1 UL-94: Tests for flammability of plastic materials.

## 4.0 REQUIREMENT

### 4.1 Design and Construction:

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

### 4.2 Materials

#### 4.2.1 Housing:

- ✧ The insulators shall be rated flame retardant V-0 in accordance with UL-94.

#### 4.2.2 Contact

- ✧ Copper Alloy, Selected plating over Nickel under-plated overall.

### 4.3 Ratings

4.3.1 Rated Voltage (Max.): 125 V AC .

4.3.2 Rated Current (Max.): 1A Max. per contact.

4.3.3 Operating Temperature Range: -40°C to +105°C.( Including temperature rise caused by application of current )

NUMBER GS-12-629	TYPE Product Specification		
TITLE 1.27MM BOARD TO BOARD & CABLE TO BOARD CONNECTOR		PAGE 2 of 4	REVISION B
		AUTHORIZED BY Sterling Lin	DATE Nov 30 2009
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#### 4.4 Finish:

The finish for applicable components shall be specified on the applicable product drawing

### 5.0 TEST METHODS AND REQUIREMENTS:

#### TEST REQUIREMENTS AND PROCEDURES SUMMARY

TEST DESCRIPTION	REQUIREMENT	PROCEDURED
Examination of product	Meets requirements of product drawing and Specification.	Visual inspection No physical damage
<b>ELECTRICAL</b>		
Contact Resistance	30 mΩ Max. (After Test 50 mΩ Max.)	MIL-STD-1344A method 3002.1
Insulation Resistance	100 MΩ Min. at 500 V DC / 2 minute	MIL-STD-1344A method 3003.1
Dielectric Withstanding Voltage	No breakdown at 500 V RMS	MIL-STD-1344A method 3001.1
<b>MECHANICAL</b>		
Durability	100 Cycles	MIL-STD-1344A method 2016
Vibration	Meets requirements of product drawing and electrical specification.	MIL-STD-202 method 201
Mating Force	220g Max. /Pin	Speed 25±3mm/minute
Unmating Force	20g Min. /Pin	Speed 25±3mm/minute
Contact Retention Force	Male 300 g Min./Pin Female 150 g Min./Pin	MIL-STD-1344A method 2007.1
<b>ENVIRONMENTAL</b>		
Humidity(Steady state)	Meets requirements of product drawing and electrical specification.	MIL-STD-1344A method 1002.2, Condition B 90-95%, 40C, 96 hours
Thermal Shock	Meets requirements of product drawing and electrical specification.	MIL-STD-1344A method 1003.1, Condition A -55C to 85C, 5 cycle
Dry Heat	Meets requirements of product drawing and electrical specification	The connector housing shall be store at temperature of 105 ± 2°C for 168 hours ICE-60998-1
Cold	Meets requirements of product drawing and electrical specification.	The connector housing shall be store at temperature of -25 ± 3°C for 48 hours
<b>PHYSICAL</b>		
Solderability	The test area shall be covered more than 95% of immersed area with flash solder	Solder Temperature: 245°C ± 5°C Immersion Period: 5 Sec

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NUMBER GS-12-629	TYPE Product Specification		
TITLE 1.27MM BOARD TO BOARD & CABLE TO BOARD CONNECTOR		PAGE 3 of 4	REVISION B
		AUTHORIZED BY Sterling Lin	DATE Nov 30 2009
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Test or Examination	Test Group						
	A	B	C	D	E	F	G
	Test Sequence						
Examination of Product	1,10	1,6	1,3	1,5	1,3	1,7	1,9
Contact Resistance	2,7	2,7		2,4			2,8
Insulation Resistance	3,8					2,5	3,7
Dielectric Withstanding Voltage	4,9					3,6	4,6
Durability		4					
Vibration				3			
Mating Force & Unmating Force		3,5					
Contact Retention Force					2		
Humidity-Cycling Test	6						
Thermal Shock	5						
Cold							5
Dry heat						4	
Solderability			2				

Figure 2

NUMBER GS-12-629	TYPE Product Specification		
TITLE 1.27MM BOARD TO BOARD & CABLE TO BOARD CONNECTOR		PAGE 4 of 4	REVISION B
		AUTHORIZED BY Sterling Lin	DATE Nov 30 2009
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## 6.0 REVISION RECORD:

Revision	Page	Description	ECR no	Date
A	All	New release	T09-1096	Sep 15 2009
B				1
		Change operator temp from 85C to 105 C	T09-1154	Nov 30 2009
	2	Change dry heat test from 85C 96 HR to 105C 168HR		
	3	Erase the contact resistance in test group F		