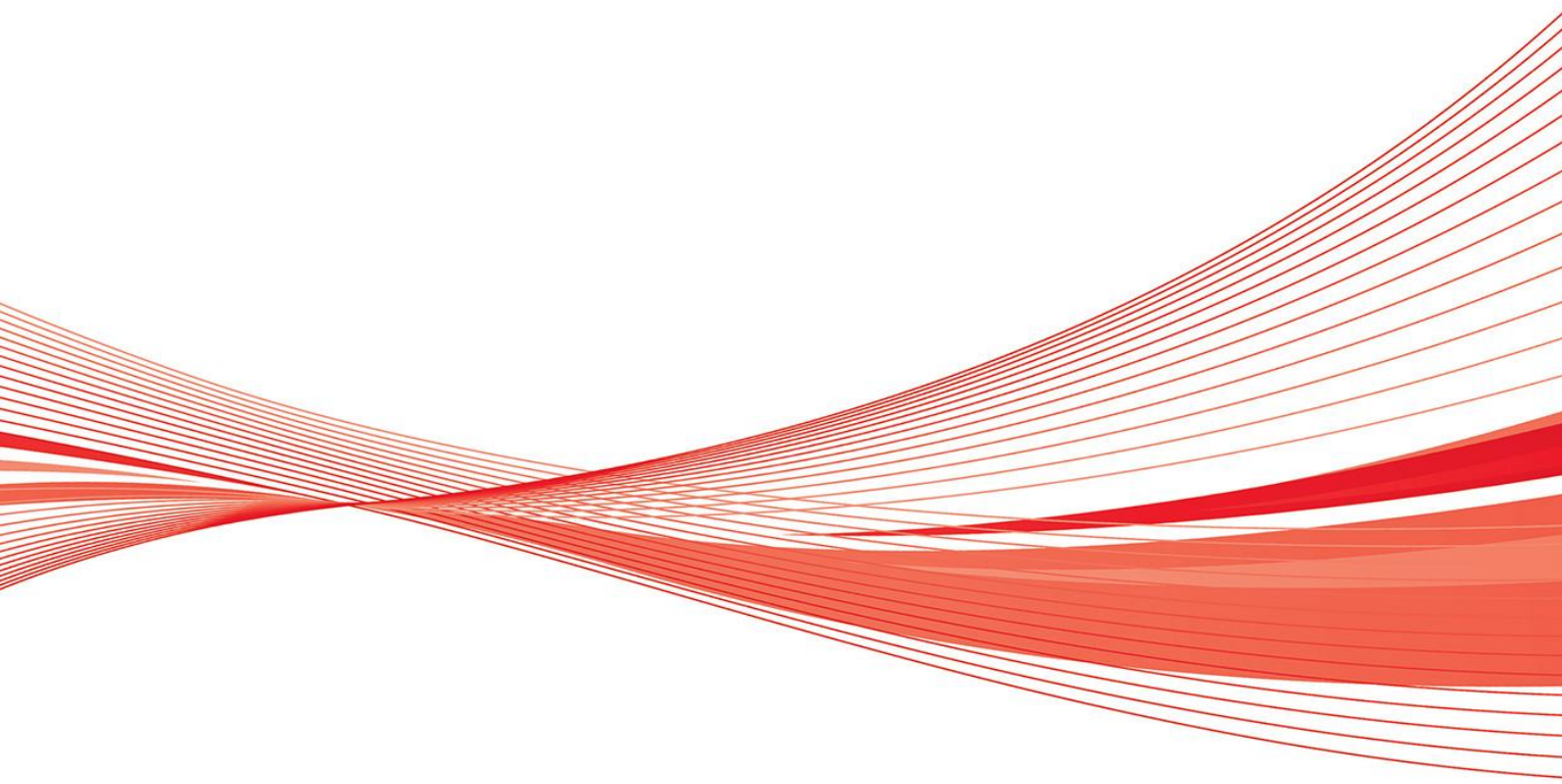
HARWIN

Harwin Test Report Summary

HT01001

Mechanical Testing of Datamate (M80 Series) J-Tek Horizontal Male SMT Contacts

Datamate



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Introduction.

1.1. Description and Purpose.

The Harwin Datamate (M80 Series) connector is manufactured to the requirements of BS9525-F0033. The following tests were carried out to confirm that the new design of stamped contacts for use in Datamate Male Horizontal SMT connectors would be comparable with the rest of the range, in the aspects of insertion and withdrawal forces, contact resistance and contact retention.

1.2. Conclusion.

The following test data has been taken from Harwin test reports C08/06, C09/06 and C13/06. For all four tests, both stamped contacts easily met the required standards, and are therefore approved for use as Datamate contacts.

2. Test Method, Requirements and Results.

2.1. List of Test Samples.

a) M80-5525005 – male Horizontal SMT J-Tek connector, incorporating stamped contacts M80-2360005 and M80-2370005

b) M80-4105001 – female Vertical PC Tail J-Tek connector

2.2. Specification Parameters.

The BS9525-F0033 requirements for these tests are detailed in the table below:

	Requirements
Insertion Force	Per contact = 2.8N max, 0.5N min For 50-way connector = 140.0N max
Withdrawal Force	Per contact = 1.8N max, 0.2N min
Contact Resistance	Initial = 20mΩ max
Contact Retention	10N min

2.3. Test Method and Results.

The following tests were all carried out in a mated condition.

a) Insertion and Withdrawal Forces:
Overall Insertion force for 50-way mating connectors = 76.8N.
Overall withdrawal force of the two mated connectors = 35.5N
(results on following page)

		Average Insertion Force Per Contact		Average Withdrawal Force Per Contact	
		M80-236	M80-237	M80-236	M80-237
Sample 1	Initial	0.9N	1.6N	0.8N	1.5N
	After 5 Cycles	0.9N	1.8N	0.5N	0.6N
	After 10 Cycles	1.1N	1.0N	0.6N	0.5N
Sample 2	Initial	1.6N	1.2N	0.9N	0.6N
	After 5 Cycles	1.2N	0.8N	0.9N	0.5N
	After 10 Cycles	1.6N	0.6N	0.6N	0.5N
Sample 3	Initial	2.4N	1.6N	0.5N	0.8N
	After 5 Cycles	1.0N	1.2N	0.6N	0.5N
	After 10 Cycles	0.9N	0.8N	1.3N	0.4N
Sample 4	Initial	1.0N	1.9N	0.9N	0.9N
	After 5 Cycles	0.5N	1.3N	0.6N	0.5N
	After 10 Cycles	0.9N	1.0N	0.4N	0.7N
Sample 5	Initial	2.3N	2.1N	1.1N	0.8N
	After 5 Cycles	1.4N	1.2N	0.8N	0.7N
	After 10 Cycles	1.5N	0.6N	0.7N	0.7N
Maximum		2.4N	2.1N	1.3N	1.5N
Minimum		0.5N	0.6N	0.4N	0.4N
Average		1.28N	1.25N	0.75N	0.68N

b) Contact resistance:

		Average Contact resistance Per Contact (mΩ)	
		M80-236	M80-237
Sample 1	Initial	2.1mΩ	3.2mΩ
	After 5 Cycles	2.8mΩ	3.4mΩ
	After 10 Cycles	2.8mΩ	3.8mΩ
Sample 2	Initial	3.5mΩ	3.6mΩ
	After 5 Cycles	3.5mΩ	3.4mΩ
	After 10 Cycles	3.4mΩ	3.2mΩ
Sample 3	Initial	2.9mΩ	3.2mΩ
	After 5 Cycles	2.2mΩ	3.3mΩ
	After 10 Cycles	3.4mΩ	3.7mΩ
Sample 4	Initial	3.8mΩ	3.4mΩ
	After 5 Cycles	2.7mΩ	1.8mΩ
	After 10 Cycles	3.8mΩ	3.6mΩ
Sample 5	Initial	2.5mΩ	2.9mΩ
	After 5 Cycles	3.7mΩ	3.2mΩ
	After 10 Cycles	3.3mΩ	3.6mΩ
Maximum		3.8mΩ	3.8mΩ
Minimum		2.1mΩ	1.8mΩ
Average		3.09mΩ	3.29mΩ

c) Contact Retention Forces:

Contact Number	M80-2360005	M80-2370005
1	24.6N	17.3N
2	21.7N	14.6N
3	18.6N	15.7N
4	19.8N	13.5N
5	17.5N	18.0N
6	17.8N	16.1N
7	27.8N	17.5N
8	22.7N	16.6N
9	21.3N	17.2N
10	20.4N	21.2N
11	18.7N	19.0N
12	19.3N	18.2N
13	20.4N	21.0N
14	22.7N	13.5N
15	15.8N	19.1N
16	22.9N	12.5N
17	18.5N	16.7N
18	19.8N	18.9N
19	22.4N	17.6N
20	16.5N	18.6N
21	20.8N	15.5N
22	22.3N	17.3N
23	22.6N	17.1N
24	19.8N	18.4N
25	26.1N	19.1N
Minimum	15.30N	12.50N
Maximum	21.60N	21.20N
Average	17.60N	17.21N