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Product Data Sheet

PD-0075-A

3M™ Pak 50 Low Profile Wiremount Socket P25LE Series and 3M™ Pak 50 Low Profile Plug P50LE Series

P25LE-XXXS-DA
P50LE-XXXP1-XXX-DA

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1.0 Scope

This data sheet summarizes test methods, test conditions and product performance for the 3M P25LE and P50LE Series Wire-to-Board Connectors. The connectors are for wire-to-board connection with two rows of ribbon style contacts at a 0.050" pitch and IDC connection to flat ribbon cable. Connectors are available in straight, right angle, vertical SMT configurations.

2.0 Product Tested

Product:	P25LE Socket
Product Number:	Group A – E: P25LE-100S-DA Insertion and Withdrawl Force: P25LE-040S-DA P25LE-058S-DA P25LE-060S-DA P25LE-080S-DA
Related Specification Sheet:	TS-1142
Mating Product:	P50LE Plug
Mating Product Number:	Group A – E: P50LE-100P1-R1-DA Contact Retention Force: P50LE-100P1-R1-DA Insertion and Withdrawl Force: P50LE-040P1-R1-DA P50LE-058P1-R1-DA P50LE-060P1-R1-DA P50LE-080P1-R1-DA
Related Specification Sheet:	TS-1148
Cable:	30 AWG , 7 strand, PVC

3.0 General Conditions

3.1 Test Specimens

The test specimens shall be strictly in compliance with the design, construction details and physical properties detailed in the relevant Technical Specification Sheet or Engineering Drawing.

4.0 Test Results Summary

Items		Specification	Test Method	Results
General	Visual and Construction	Conform to the design drawings	Visual Inspection	Pass
Electrical	Low Level Contact Resistance (LLCR)	Max. R: < 40 mΩ	4 Wire Measurement after 3 cycles of insertion and extraction Current: 1mA Voltage: DC 20mV max	Pass
	Dielectric Withstanding Voltage (DWV)	No dielectric break down or Arcing	Apply 300 VAC_{RMS} Voltage for 1 minute between 2 adjacent contacts	Pass
	Insulation Resistance (IR)	1000MΩ Min	Apply 250V DC between two adjacent contacts	Pass
Environmental	Humidity (Steady State)	No damage or deformation Pass: LLCR, DWV, IR	Humidity: 90~95% RH Temerature: 40 °C Duration: 96 hours	Pass
	Life at Elevated Ambient Temperature (Thermal Aging)	Pass: LLCR No damage or deformation	Temperature: +85 °C Duration: 1000 hours	Pass
	Thermal Shock	No damage or deformation Pass: LLCR (5 Cycles, –55 °C to +85 °C)	1. -55 °C 30 min 2. +25 °C 5 min 3. +85 °C 30 min 4. +25 °C 5 min Repeat 1 - 4 for 5 Cycles	Pass
	Salt Spray	No damage or deformation LLCR: 40 mΩ Max	Temperature: 35°C Concentration: 5% Duration: 48hrs	Pass
	H_2S Exposure	No serious corrosion Pass: LLCR	Temperature: 40°C Concentration: 3 ppm RH: 80% Duration: 96hrs	Pass
Mechanical	Total Insertion Force (Group C – 100 Pin)	Insertion Force: <93.1 N	Measure with mating connectors without locking	Pass
	Total Withdrawl Forces (Group C – 100 Pin)	Withdrawl Force: >14.7 N	Measure with mating connectors without locking	Pass
	Total Insertion Force (II – 40, 50, 68, 80 Pin)	40: < 37.24 N 50: < 47.04 N 68: < 63.70 N 80: < 74.48 N	Measure with mating connectors without locking	Pass
	Total Withdrawl Forces (II – 40, 50, 68, 80 Pin)	40: > 5.88 N 50: > 6,86 N 68: > 9.80 N 80: > 11.76 N	Measure with mating connectors without locking	Pass
	Contact Retention Force	> 1.96 N per contact	Measure the force to remove one contact from the insulator	Pass
	Durability	No damage or deformation Pass: LLCR	500 insertion/withdrawl cycles at 500-600 cycles/hour	Pass
	Solder Reflow Process Temperature (P50LE Plug)	No damage or deformation.	J-STD-020, MSL1, 260°C PbFree Reflow	Pass

	Vibration	No damage or deformation No electrical discontinuity > 1 µ sec	Frequency: 10~55Hz Amplitude: 1.52 mm Sweep time: 1 min 2 hours each in X, Y, and Z directions with 100mA DC applied to all contacts in series	Pass
	Mechanical Shock	No damage or deformation No electrical discontinuity > 1 µ sec	Acceleration: 50G Shock Mode: half sin wave Duration: 11ms 3 Times each in X, Y, and Z and opposite directions with 100mA DC applied to all contacts in series	Pass

Testing

Test methods are based upon common electronics industry test methods.

5.1 Test Sequence

Tests conducted according to the sequence outlined in the chart below.

Tests	Sequence Group							
	A	B	C	D	E	F	G	Others*
Visual and Construction	1	1	1	1	1			
Insulation Resistance	2	2,8						
Dielectric Withstanding Voltage	3	3,9						
Low Level Contact Resistance	4,7	4,10	2,6	2,4	2,4			
Vibration	5							
Salt Spray	6							
Total Insertion and Withdrawl Force			3					
Durability			4					
Thermal Shock		5	5					
Shock		6						
Humidity		7						
H2S Exposure				3				
Life at Elevated Ambient Temperature					3			
Contact Retention Force								I
Total Insertion and Withdrawl Force								II
Process Temperature/MSL								III

* Tests run individully

Important Notice

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