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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
<b>General</b>	Visual and Construction	Conform to the design drawings	Visual Inspection	Pass
<b>Electrical</b>	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 <sub>RMS</sub> Voltage for 1 minute between 2 adjacent contacts	Pass
	Insulation Resistance (IR)	1000MΩ Min	Apply 250V DC between two adjacent contacts	Pass
<b>Environmenta l</b>	Humidity (Steady State)	No damage or deformation Pass: LLCR, DWV, IR	Humidity: 90~95% RH Temperature: 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 <sub>2</sub> S Exposure	No serious corrosion Pass: LLCR	Temperature: 40°C Concentration: 3 ppm RH: 80% Duration: 96hrs	Pass
<b>Mechanical</b>	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 individually

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