

1. **Scope**
This specification covers the PCI Express M.2 connector series
2. **Ordering information**
Refer to the drawing.
3. **Connector dimensions**
Refer to the drawing.
4. **Material**
Housing: Heat resistant polymer (UL 94V-0)
Color :Refer to the drawing
Terminal: Refer to the drawing
Plating:Refer to the drawing
5. **Accommodated P.C.B layout**
Refer to the drawing.
6. **Rating**
Operating voltage(Max.) 50V DC
Current rating(Max.) 0.5A Max. (Each Circuit)
Temperature range-operating -40°C to +80°C

7. **Performance**

Electrical Performance

Test Items	Procedures	Requirements
Contact Resistance	Mate The sample connectors, measure by dry circuit, 20mV Max., 10mA Max. (EIA-364-23)	55mΩ Max(Initial) 75mΩ Max(Final)
Insulation Resistance	Unmated The sample connectors, apply 500V DC between adjacent terminal or ground. (EIA-364-21)	500MΩ Min
Dielectric Strength	Unmated The sample connectors, Apply 300V AC for 1minute. Test between adjacent circuit of unmated connector. (EIA-364-20)	No Breakdown. Current leakage: 1 mA Max.
Temperature Rising	Mate The sample connectors and measure the temperature rise of contact when the maximum AC rated current is passed. (EIA-364-70 METHOD 2)	30°C Max. Under loaded rating current

Mechanical Performance

Mating Force	Measure force necessary to mate the connector assemblies at a rate of 25.4 mm/minute EIA-364-13	25N (2.55kgf) Max.
Durability	The sample should be mounted in the tester and fully mated and unmated the number of cycles(60 mate/unmate cycles for 15u" & 30u" Au plating; 25 mate/unmate cycles for gold flash plating) EIA-364-09	No evidence of physical damage
Durability (precondition)	Repeated insertion and extraction of P.C.B to and from the connector with the turns to lock it and then unlock it for 5 cycles. EIA-364-9	No evidence of physical damage
Reseating	Manually unplug/plug the connector.Perform 3 such cycles.	No physical damage

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Vibration (Random)	Subject mated connectors Vibration Frequency: 10 to 55 Hz Accelerated Velocity: 30.38m/s ² (3.1G), rms. Vibration Direction: In each of 3 mutually perpendicular planes. Duration: 15 minutes each 100 mA applied. Module board should be fixed on the connector mount board or test jig. EIA-364-28 Method VIII condition D	No electrical discontinuity greater than 1μ sec. shall occur. 75 mΩ Max. (Final)	
Physical Shock (Normal test)	Accelerated Velocity: 490 m/s ² (50 G) Waveform: Half sine Duration: 11 m sec. Number of Drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops. EIA-364-27 Condition A	No electrical discontinuity greater than 1μ sec. shall occur. 75 mΩ Max. (Final)	
Humidity	Mated connector, 25±3~65±3°C, 50±3~80±3% R.H. 24 cycles Cold shock -10°C performed EIA-364-31	Appearance	No Damage
		Contact Resistance	75mΩ Max
		Dielectric strength	No Breakdown
		Insulation Resistance	500MΩ Min
Temperature Cycling	A connector shall and subject to the following condition for 10 cycles .Upon completion of the exposure period, the test specimens shall be conditioned at ambient room condition for 1to2 hours, after which the specified measurements shall be performed. 1cycle a)-40±3°C,30 minutes b) +85±3°C,30 minutes (Transit time shall be with in 3 minutes) (EIA-364-31, Test condition A)	Appearance	No Damage
		Contact Resistance	75mΩ Max
Temperature Life	Subject mated connectors to temperature life at 105°C for 120 hours. EIA-364-17, Method A	No physical damage ΔR=20 mΩ Max. (Final)	
Temperature Life (Precondition)	Subject mated connectors to temperature life at 105°C for 72 hours. EIA-364-17,Method A	No physical damage	
Salt Spray	Mate The sample connectors shall expose to the following salt mist conditions. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water, after which the specified NaCl solution Concentration:5±1% Spray time:8hours Ambient temperature:35±2°C (EIA-364-26,Test condition B)	Appearance	No Damage
		Gold Flash & 10μ" Au (8hours)	
		10μ" Au (48hours)	
Solderability	Tip of solder tails and fitting mails into the molten solder (held at 245±5°C) up to 1.6mm from the Housing for3±0.5seconds. (EIA-364-52)	Solder Wetting	95% of immersed area must show no voids ,pin holes
Resistance to Reflow Soldering Heat	Test connector on P.C.Board Temperature: Pre-Heat150~180°C: 60~120sec. Heat 230°C Min.: 40sec Min. Heat Peak 260 +0/-5°C 10 sec. Max. The number of reflow: 2 times	Appearance	No Damage

8. Product qualification and reliability test sequence

Test or Examination	Test Group											
	A	B	C	D	E	F	G	H	I	J	K	L
Appearance	1;5	1;3	1;5;8	1;4	1;4	1;4	1;3	1;3	1;5;8;11	1;5;8	1;3	1;4
Contact Resistance			2;6;9	2;5		2;5			2;6;9;12	2;6;9	2;6;9;12	2;5
Dielectric Withstanding Voltage	2;6											
Insulation Resistance	3;7											
Temperature Rising		2										
Vibration(Random)			7									
Physical Shock				3								
Mating Force					2							
Durability(precondition)					3							
Durability						3						
Reseating									10	7	10	
Solderability							2					
Resistance to Reflow Soldering Heat								2				
Humidity	4								7			
Temperature Cycling											7	
Temperature Life										4		
Temperature Life(Precondition)											4	
Salt Spray												3

9. Temperature condition graph

Temperature on board pattern side

