



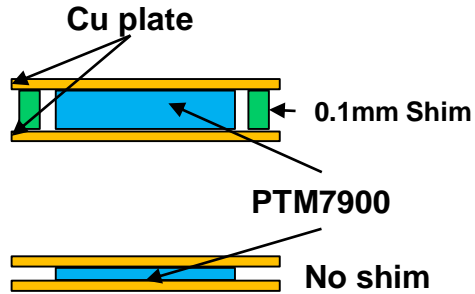
# Honeywell Thermal Interface Materials Reliability Report

**PTM7900**

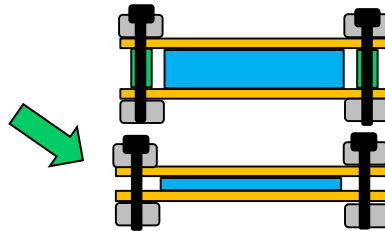


**Honeywell**

## Samples preparation procedure



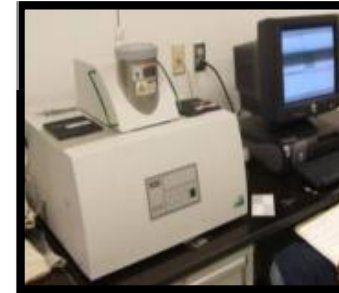
1. Compress PTM7900 using two Cu plate in 90°C oven for 30min.



2. Fix the Cu plate and PTM7900 using screws



3. Spray graphite on the surface of Cu plate



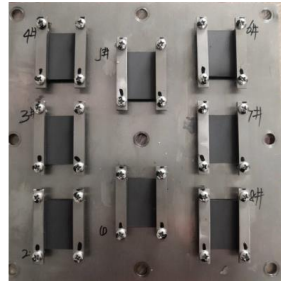
Netzsch Laser Flash™  
ASTM E 1461

4. Test initial thermal resistance of samples



5. Fix 8 samples to the fixture.  
1#~6# no shim  
7#,8# 0.1mm shim

## Vibration and shock test procedure



Samples



X, Y, Z vibration under room temperature, 8 hours each axis



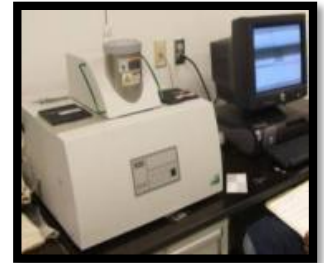
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Thermal resistance test every 24 hour

Repeat 3 times, total 72 hours vibration



Mechanical Shock in axis of  $\pm X$ ,  $\pm Y$ ,  $\pm Z$  under room temperature  
Same equipment and same fixed mode as vibration test



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Thermal resistance test after all test

## Test Condition

**Test Item:** Electromagnetic random vibration and mechanical shock

**Test Standard/Method:**

**1. Random Vibration:** ISO 16750-3 para 4.1 Vibration

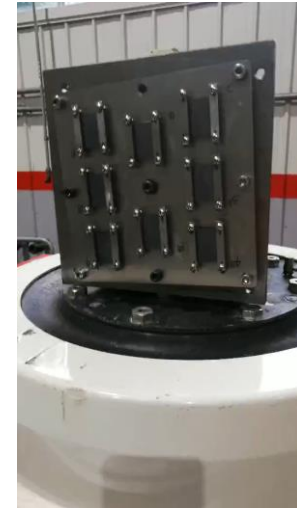
Perform random vibration at room temperature per the test profile below

Frequency(HZ)	PSD ((gn) <sup>2</sup> /HZ)
10	0.3119
400	0.0007
1000	0.00207

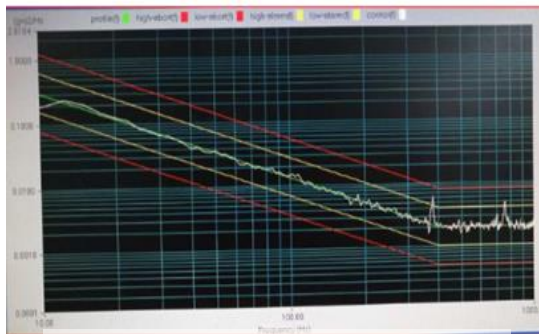
**2. Mechanical Shock:** ISO 16750-3 para 4.2.2.2 Shock

Perform Automotive Shock test in the X-Y-Z axes with full severity

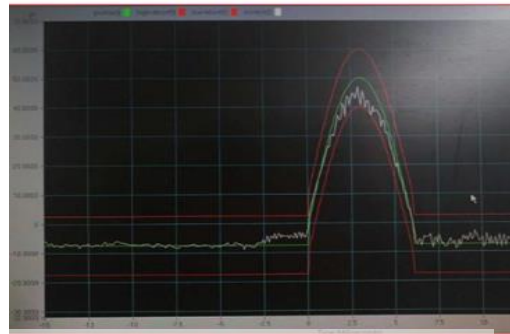
- Operating mode of the DUO: 3.2 (see ISO 16750-2)
- Pulse shape: half-sinusoidal
- Acceleration: 500 m/s<sup>2</sup>
- Duration: 6ms
- Number of shocks: 10 per test direction



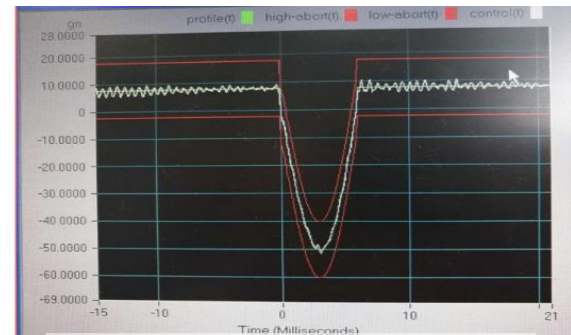
Video for vibration test



XYZ random vibration spectrum



+XYZ mechanical shock spectrum

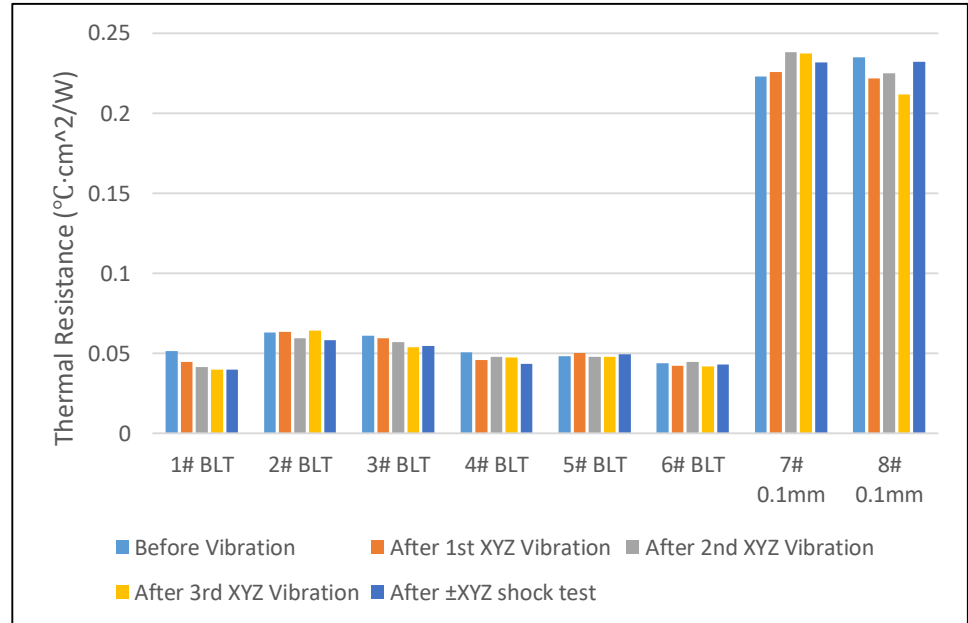


-XYZ mechanical shock spectrum

## Test Result

**No appearance abnormal  
and no thermal resistance change after  
72h vibration and mechanical shock**

Test Report				
Test Sequence	Test Item	Test Standard	Test Duration (hours)	Test Result (Appearance)
1	X axis random vibration	ISO 16750-3 para 4.1	8	Normal
2	Y axis random vibration	ISO 16750-3 para 4.1	8	Normal
3	Z axis random vibration	ISO 16750-3 para 4.1	8	Normal
4	X axis random vibration	ISO 16750-3 para 4.1	8	Normal
5	Y axis random vibration	ISO 16750-3 para 4.1	8	Normal
6	Z axis random vibration	ISO 16750-3 para 4.1	8	Normal
7	X axis random vibration	ISO 16750-3 para 4.1	8	Normal
8	Y axis random vibration	ISO 16750-3 para 4.1	8	Normal
9	Z axis random vibration	ISO 16750-3 para 4.1	8	Normal
Test Sequence	Test Item	Test Standard/Method	Test Cycles	Test Result (Appearance)
10	+X axis mechanical shock	ISO 16750-3 para 4.2.2.2	10	Normal
11	-X axis mechanical shock	ISO 16750-3 para 4.2.2.2	10	Normal
12	+Y axis mechanical shock	ISO 16750-3 para 4.2.2.2	10	Normal
13	-Y axis mechanical shock	ISO 16750-3 para 4.2.2.2	10	Normal
14	+Z axis mechanical shock	ISO 16750-3 para 4.2.2.2	10	Normal
15	-Z axis mechanical shock	ISO 16750-3 para 4.2.2.2	10	Normal



**THANK YOU**

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