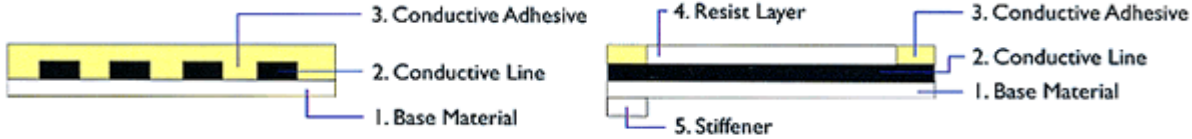


# SPECS. FOR HEAT SEAL CONNECTORS

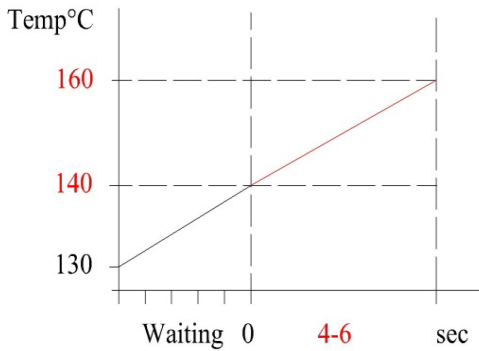
| Structure of Heat Seal Connectors |                           | Thickness       |
|-----------------------------------|---------------------------|-----------------|
| Material Description              | Polyester Film            | 25 or 38 um     |
| Conductive Lines                  | Carbon / Mix / Silver     | 10~15 um        |
| Conductive Adhesive               | Synthetic Rubber          | 10~15 um        |
| Resist Layer                      | Polyester Film / UV Resin | 25 um / 10~15um |
| Stiffener                         | Polyester Film (White)    | 180 um / 250 um |



## Bonding Parameters

Sealing Temperature 140~160 °C  
 Sealing Pressure 30~40 kg/cm<sup>2</sup>  
 Sealing Time 4~6 sec.

H TYPE HEAT-SEAL BONDING TEMP. CURVE



▲  $SP = (GP \times 3.1416 \times R^2) / (L \times W)$   
 GP: Gauge Pressure (kg/cm<sup>2</sup>)  
 R: Cylinder Radius (cm)  
 L: Length of HSC Melting Area (cm)  
 W: Width of Metal head (cm)

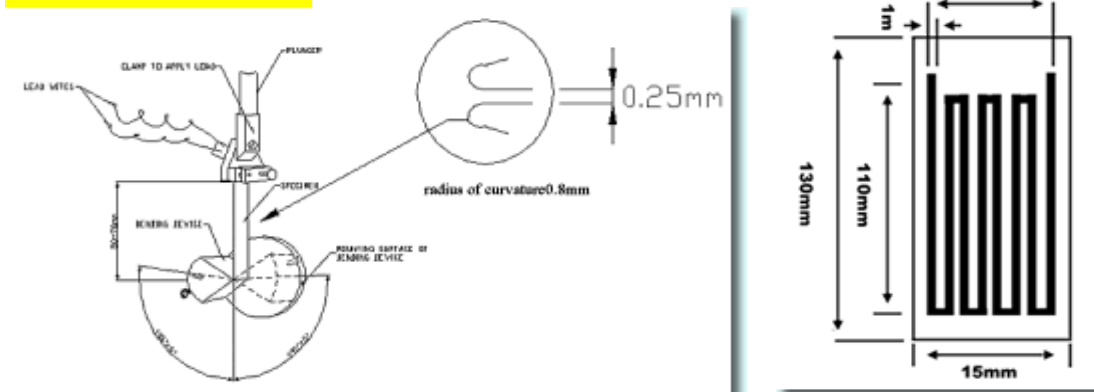
## Resistance Comparison

| Conductive Line  | Before Reliability test | After Reliability test |
|------------------|-------------------------|------------------------|
| Silver           | 0.2 ohm/sq.             | 0.5 ohm/sq.            |
| Graphite         | 50 ohm/sq.              | 70 ohm/sq.             |
| Silver Mix       | 2 ohm/sq.               | 5 ohm/sq.              |
| Peeling Strength | 400 g/cm <sup>2</sup>   | 300 g/cm <sup>2</sup>  |

## Reliability test

| Item  | Test conditions  |
|---|--|
| High-temperature shelf test                       | 80 ± 2°C for 500 hrs   |
| High-temperature and high-humidity shelf test     | 60 ± 2°C and 90% (+0, -5%) for 500 hrs   |
| Heat cycle, high-low temperature at high humidity | 60 ± 2°C and 90% (+0, -5%) for 12hrs.<br>-40 ± 3°C for 12 hrs. 50 cycles of the above. |
| Low-temperature shelf test                        | -40 ± 3°C for 500 hrs  |

## FOLDING TEST



## FOLDING TEST

Date July.2013

Material of Test Slip :15130 TEST FOR CARBON INK

Standard : JIS P8115 MIT-TEST

Facility : MIT型耐彎折試驗機 (MIT Type Folding Testing machine)

Frequency 90 Times/Min

Folding Angle 270 degree

Folding Radius R角0.38mm

Heavy load 500 g

$\Omega$  Stander 50  $\Omega$ /SQ.

| Folding times | Initial K $\Omega$ | K $\Omega$ /SQ (Initial ) | K $\Omega$ After Folding) | K $\Omega$ /SQ (After Folding) | Variant rate% |
|---------------|--------------------|---------------------------|---------------------------|--------------------------------|---------------|
| 10000         | 18.61              | 19.39                     | 23.70                     | 24.69                          | 27.40         |
| 20000         | 18.43              | 19.20                     | 22.04                     | 22.96                          | 19.60         |
| 30000         | 18.60              | 19.38                     | 24.05                     | 25.05                          | 29.30         |
| 40000         | 17.67              | 18.41                     | 22.97                     | 23.93                          | 30.00         |
| 50000         | 18.60              | 19.38                     | 23.90                     | 24.90                          | 28.50         |
| 80000         | 17.35              | 18.07                     | 21.30                     | 22.19                          | 22.80         |
| 100000        | 17.79              | 18.53                     | 23.44                     | 24.42                          | 31.80         |
| 110000        | 17.00              | 17.71                     | 21.30                     | 22.19                          | 25.30         |
| 120000        | 17.87              | 18.61                     | 21.80                     | 22.71                          | 22.00         |
| 130000        | 18.10              | 18.85                     | 24.01                     | 25.01                          | 32.70         |
| 140000        | 18.50              | 19.27                     | 24.12                     | 25.13                          | 30.40         |
| 150000        | 18.84              | 19.63                     | 23.50                     | 24.48                          | 24.70         |

