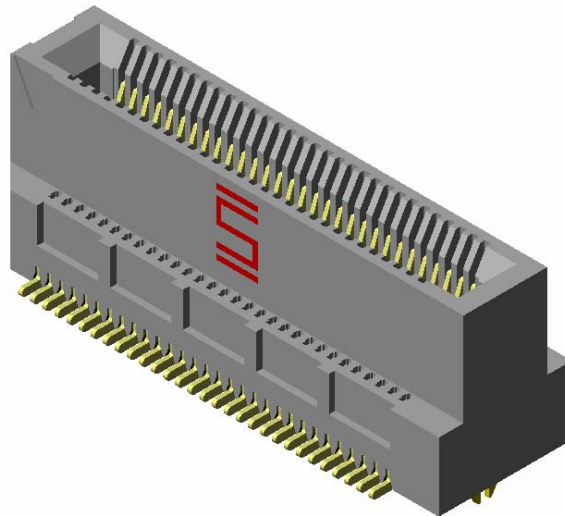
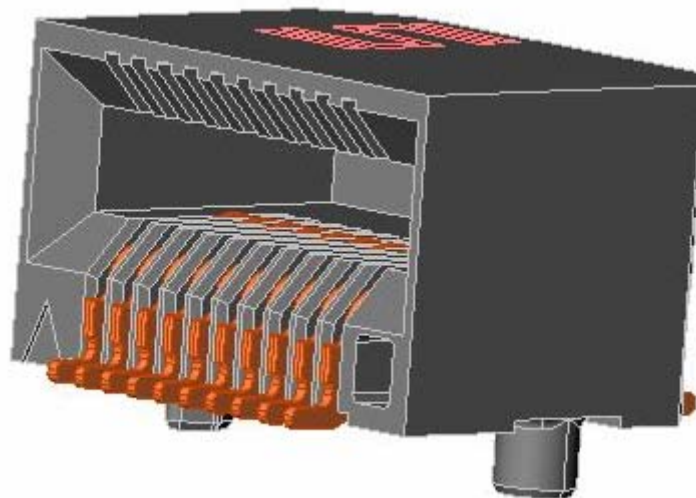


Series: [MEC6/MEC6RA](#) Micro Edge Card Connector



**MEC6-1XX-02-XX-DV-X**



**MEC6-XX-02-XX-D-RA1**

## 1.0 SCOPE

«Scope» intended to provide electrical, mechanical, environmental and also process data to assist in the proper use and application of the [MEC6](#) / [MEC6-RA](#) Micro Edge Card Connector.

Series: [MEC6/MEC6RA](#) Micro Edge Card Connector

NOTE: DATA REFERENCING [MEC8](#) ARE QUALIFIED BY SIMILARITY SINCE THE SAME CONTACT IS UTILIZED IN BOTH DESIGNS

## 2.0 ELECTRICAL

### 2.1 Dielectric Withstanding Voltage, DWV, DV/RA, per EIA-364-20

2.1.1 630/585 VAC Maximum

### 2.2 Insulation Resistance, IR, per EIA-364-21

2.2.1 100,000 M $\Omega$

### 2.3 Low Level Contact Resistance, LLCR, DV/RA, per EIA-364--23

2.3.1 19.9/18.3 m $\Omega$  Max.

### 2.4 Current Carrying Capacity, DV, for a 30°C temp rise, CCC, per EIA-364-70

2.4.1 1.7 A/contact with 6 adjacent contacts powered @ 20% de-rating

## 3.0 MATERIALS

### 3.1 Insulator Material

3.1.1 Black Liquid Crystal Polymer

### 3.2 Contact

3.2.1 Phosphor Bronze

## 4.0 MECHANICAL

### 4.1 Operational Temperature

4.1.1 - 55°C to +125°C

### 4.2 Mating/Unmating forces after 100 cycles, DV/RA, per EIA-364-13

4.2.1 14.9/16.6 Pounds Maximum Mating Force

4.2.2 7.1/9.7 Pounds Minimum Unmating Force

### 4.3 Durability after 100 cycles per EIA-364-23

4.3.1  $\Delta$  LLCR: 2.3 m $\Omega$  Max.

### 4.4 Normal Force, DV/RA, per EIA-364-04

4.4.1 99.3/94.1 grams minimum @ 0.015" deflection

## 5.0 ENVIRONMENTAL

### 5.1 Thermal Aging, DV/RA, per EIA-364-17

5.1.1 Post Thermal Aging Inspection: No Damage

5.1.2 Post Thermal  $\Delta$  Low Level Contact Resistance: 10.1/2.4 m $\Omega$  Max.

5.1.3 Post Thermal Dielectric Withstanding Voltage: 480/413 VAC

5.1.4 Post Thermal Insulation Resistance: 100,000 M $\Omega$

#### 5.1.5 Test Conditions

5.1.5.1 Test condition 4 at 105°C

5.1.5.2 Test time condition B for 250 hours.

### 5.2 Cyclic Humidity, DV/RA, per EIA-364-31

5.2.1 Post Humidity Inspection: No Damage

5.2.2 Post Humidity  $\Delta$  Low Level Contact Resistance: 11.7/13.5 m $\Omega$  Max.

5.2.3 Post Humidity Dielectric Withstanding Voltage: 570/540 VAC

5.2.4 Post Humidity Insulation Resistance: 50,000/100,000 M $\Omega$

#### 5.2.5 Test Conditions

5.2.5.1 Test Temperature: +25°C to +65°C

5.2.5.2 Relative Humidity: 90 to 95%

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### 5.2.5.3 Test Duration: 10 Days

NOTE: DATA REFERENCING MEC8 ARE QUALIFIED BY SIMILARITY SINCE THE SAME CONTACT IS UTILIZED IN BOTH DESIGNS

### 5.3 Thermal Shock, [MEC8](#), per EIA-364-32

- 5.3.1 Post Thermal Shock Inspection: No Damage
- 5.3.2 Post Thermal Shock  $\Delta$  Low Level Contact Resistance: 5.6 m $\Omega$  Max.
- 5.3.3 Post Thermal Shock Dielectric Withstanding Voltage: 615 VAC
- 5.3.4 Post Thermal Shock Insulation Resistance: >50,000 M $\Omega$
- 5.3.5 Test Conditions
  - 5.3.5.1 # Thermal Cycles: 100
  - 5.3.5.2 Hot Temperature: +85°C +3/-0°C
  - 5.3.5.3 Cold Temperature: -55°C +0/-3°C
  - 5.3.5.4 Dwell/Configuration: 30 Minutes/extreme
  - 5.3.5.5 Hot/Cold Transition: Immediate

### 5.4 Gas Tight, [MEC8](#), per EIA-364-36

- 5.4.1 Post Gas Tight  $\Delta$  Low Level Contact Resistance: 5.3 m $\Omega$  Max.
- 5.4.2 Test Conditions
  - 5.4.2.1 Gas Exposure: Nitric Acid Vapor
  - 5.4.2.2 Exposure Duration: 60 Minutes +/- 5 Minutes
  - 5.4.2.3 Drying Temperature: 50°C +/- 3°C
  - 5.4.2.4 Measurements: Within one hour of exposure

### 5.5 Mechanical Shock, [MEC8](#) per EIA-364-27

- 5.5.1 Post Mechanical Shock Inspection: No Damage
- 5.5.2 Post Mechanical Shock  $\Delta$  Low Level Contact Resistance: 1.3 m $\Omega$  Max.
- 5.5.3 Discontinuities/logic events > 1.0 $\mu$ S: Passed/none observed
- 5.5.4 Test Conditions
  - 5.5.4.1 Peak Value: 100 G
  - 5.5.4.2 Duration: 6 mSec.
  - 5.5.4.3 Waveform: Half Sine
  - 5.5.4.4 # Shocks/Direction: 3 Shocks/3 Axes (18 Total)

### 5.6 Random Vibration, [MEC8](#), per EIA-364-28

- 5.6.1 Post Vibration Examination: No Damage
- 5.6.2 Post Vibration  $\Delta$  Low Level Contact Resistance: 1.3 m $\Omega$  Max.
- 5.6.3 Discontinuities/logic events > 1.0 $\mu$ S: Passed/none observed
- 5.6.4 Test Conditions
  - 5.6.4.1 Test Condition: Test Condition V, Letter "B"
  - 5.6.4.2 Frequency: 50 to 2000 Hz
  - 5.6.4.3 Duration: 2 Hours/Axis, 3 Axes Total
  - 5.6.4.4 g's: 7.56 g rms

Series: [MEC6/MEC6RA](#) Micro Edge Card Connector

## 6.0 HIGH SPEED CHARACTERISTICS:

### 6.1 Empirical Boundaries on Performance with Sinusoidal Signals

6.1.1 DV configuration, readings based on -3db insertion loss point.

6.1.2 System Impedance: 50Ω and 100Ω for Single-Ended and Differential Pair respectively.

<b>Standard configuration, single-ended signaling</b>			
<b>Socket</b>	<b>Configuration</b>	<b>Signaling</b>	<b>Performance</b>
MEC6-150-02-SM-DV-A	Standard	Single-Ended	7.5 GHz

<b>Standard configuration, differential signaling pair</b>			
<b>Socket</b>	<b>Configuration</b>	<b>Signaling</b>	<b>Performance</b>
MEC6-150-02-SM-DV-A	Standard	Differential	7.0 GHz

[Click here](#) to see the full high speed test reports.

<b>Standard configuration, single-ended signaling</b>			
<b>Socket</b>	<b>Configuration</b>	<b>Signaling</b>	<b>Performance</b>
MEC6-150-02-L-D-RA1	Standard	Single-Ended	7.0 GHz

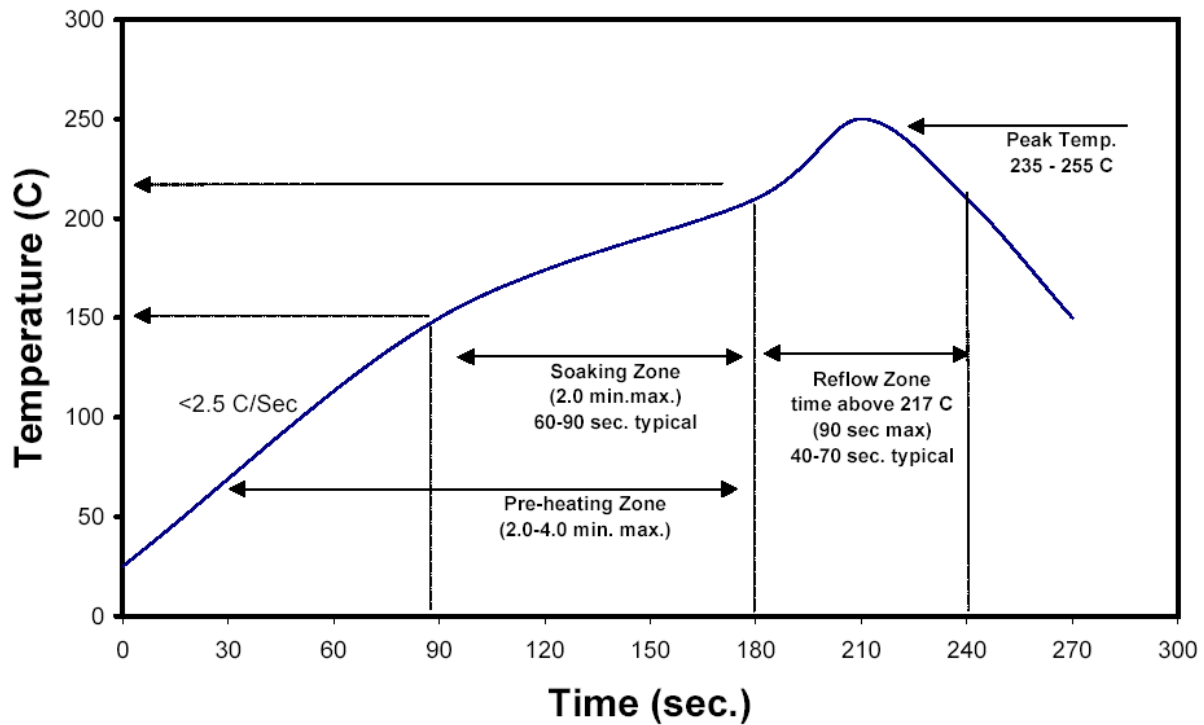
<b>Standard configuration, differential signaling pair</b>			
<b>Socket</b>	<b>Configuration</b>	<b>Signaling</b>	<b>Performance</b>
MEC6-150-02-L-D-RA1	Standard	Differential	7.0 GHz

[Click here](#) to see the full high speed test reports.

Series: [MEC6/MEC6RA](#) Micro Edge Card Connector

## 7.0 PROCESSING, LEAD-FREE

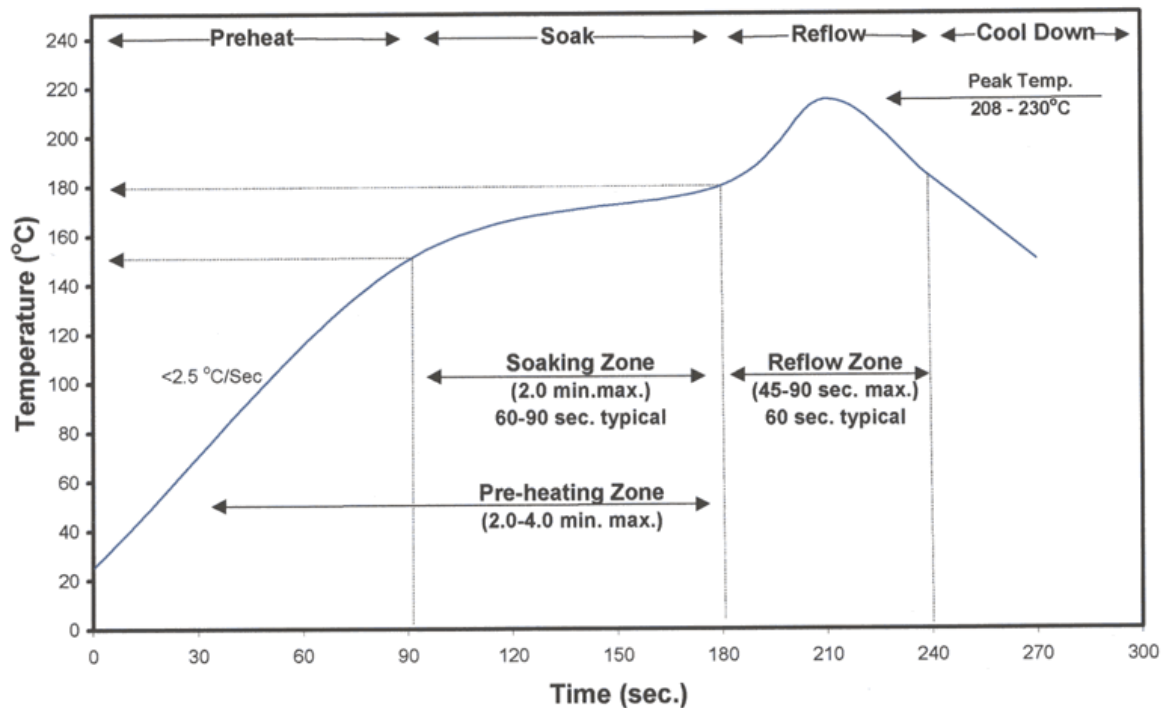
### Kester Lead Free Reflow Profile Alloys: Sn96.5/Ag3.0/Cu0.5 and Sn96.5/Ag3.5



Series: [MEC6/MEC6RA](#) Micro Edge Card Connector

8.0 PROCESSING, Sn63/Pb37

**Standard Solder Paste Reflow Profile  
for Kester Paste Containing  
Alloys: Sn63Pb37 or Sn62Pb36Ag02**



9.0 Multi Connector Processing Placement Limitations – See Following Figures

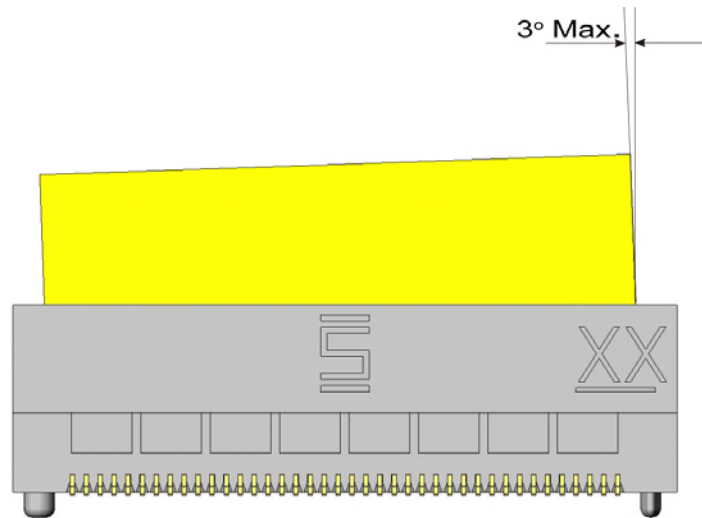
9.1 When using multiple connectors on a printed circuit board, care must be taken to ensure proper alignment. For applications requiring more than two connectors per board, please contact Samtec’s Interconnect Processing group at [ipg@samtec.com](mailto:ipg@samtec.com)

9.2 Note: Minimum spacing shall be dictated by circuit routing best practices.

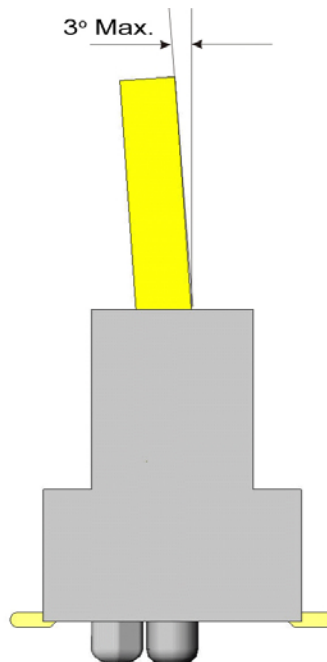
Series: [MEC6/MEC6RA](#) Micro Edge Card Connector

### 10.0 Multi Connector processing

#### 10.1 Constrained and Free Floating Board Alignment



Connector Side View



Connector End View