

Soldering Kodak Image Sensors onto Printed Circuit Boards

**Image Sensor Solutions
Eastman Kodak Company
Rochester, New York 14650-2010**

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Introduction:

Special care should be given when soldering image sensors with filter arrays (CFA) and/or microlens, onto a circuit board, since both are sensitive to high temperatures. Prolonged heating at elevated temperatures may result in deterioration of the performance of the sensor. The following recommendations are made to ensure that sensor performance is not compromised during end-users' assembly processes.

Board Assembly:

Device placement onto boards should be done in accordance with strict ESD controls for Class 0, JESD22 Human Body Model, and Class A, JESD22 Machine Model devices.

Assembly operators should always wear all designated and approved grounding equipment; grounded wrist straps at ESD protected workstations are recommended including the use of ionized blowers.

All tools should be ESD protected.

(Refer to the Application Note MTD/PS-224 Electrostatic Discharge Control.)

Manual Soldering:

When a soldering iron is used the following conditions should be observed:

- Use a soldering iron with temperature control at the tip.
- The soldering iron tip temperature should not exceed 350°C.
- The soldering period for each pin should be less than 5 seconds.

Reflow Soldering:

Figure 1 shows the maximum recommended thermal profile for a reflow soldering system. If the temperature/time profile is exceeds these recommendations damage to the image sensor may occur.

Precautions:

Avoid spilling solder flux on the cover glass; bare glass and particularly glass with antireflection filters may be adversely affected by the flux.

Avoid mechanical or particulate damage to the cover glass.

Refer to the ISS "Application Note MTD/PS-0237 Cover Glass Cleaning for additional information on glass cleaning techniques.



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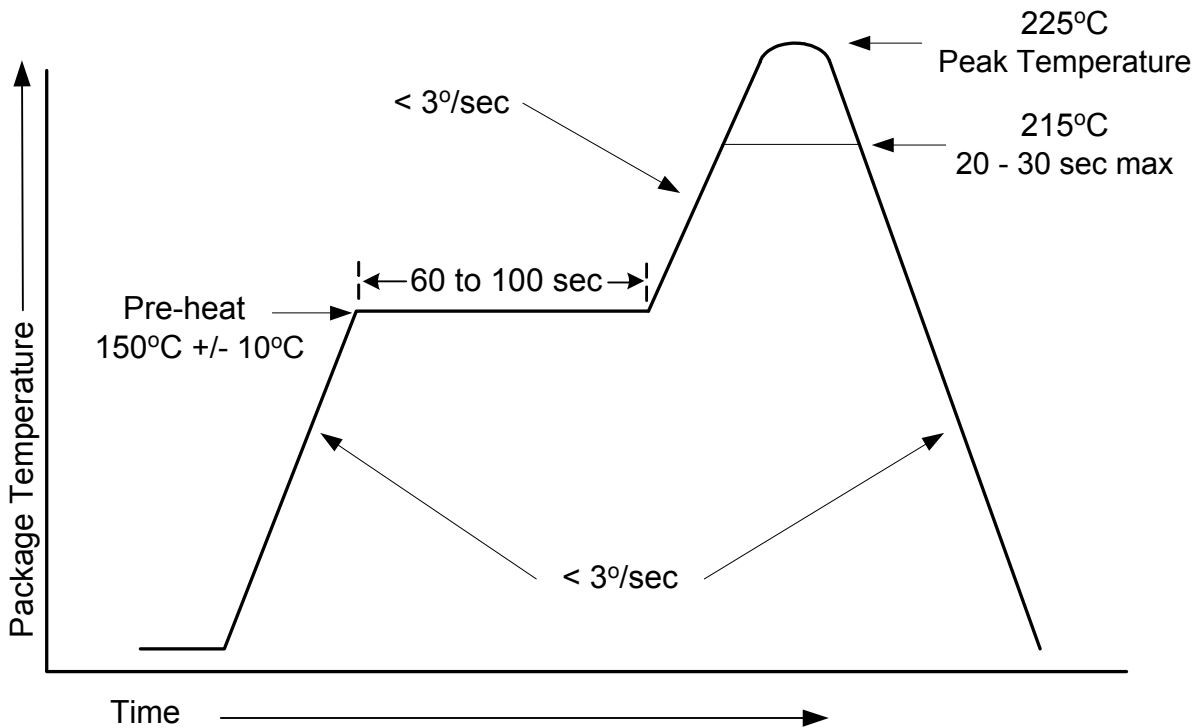


Figure 1: Soldering Temperature/Time Profile

Process Development:

In order to develop the soldering process ISS stocks Mechanical and Engineering grade devices. The Engineering grade devices are functional devices but may have cosmetic defects that exceed specification.

