



## Case Study

# AUTOMOTIVE CAMERA DEMISTER SYSTEM DESIGNED IN EIGHT WEEKS

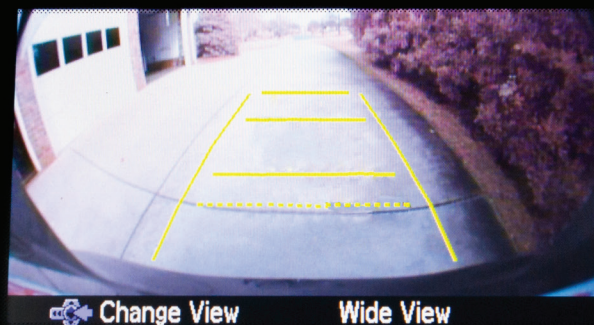
Automobile OEMs are replacing traditional mirrors with intelligent camera systems. Cameras must be clear and operational in less than a minute with minimum power. A leading automotive OEM chose Sanmina to design an innovative demisting system.

## THE CHALLENGE

An automotive company needed to design a heater to demist exterior rear-view cameras. These new systems are beginning to replace mirrors in automobiles, and need to be operational in one minute or less in temperatures ranging from -40°C to +50°C in rain or snow. With the increased usage of electronics in automobiles, power budgets have become critical design criteria. These systems also need to withstand harsh environments and comply with IATF 16949.

## WHY SANMINA

Sanmina's designers have proven experience in solving challenging automotive engineering design requirements. They demonstrated significant first principle design knowledge based on expertise in other markets including industrial, clean energy, medical and automotive.



## SANMINA'S APPROACH

- Sanmina's engineers analyzed existing demisting technology which can take up to 6 minutes of continuous power to successfully demist a camera.
- The new design needed to operate on very low power in less than a minute.
- A higher power density self-regulating heater element based on a flexible foil was designed to heat the camera lens and increase its temperature by 40°C in 60 seconds.
- Material was carefully chosen to ensure long term reliability.
- Track density and separation were carefully designed to optimize heat dissipation over the camera.
- The demister was designed to power off when the camera is cleared.
- Sanmina developed the CAD models, schematic drawings and a working prototype was designed and validated in 8 weeks.

## RESULTS

- The camera demister was designed and in production in twelve weeks.
- Five different models were developed for different vehicles.
- All automotive design and validation requirements were met.



## ABOUT SANMINA

Sanmina makes some of the most complex and innovative optical, electronic and mechanical products in the world. Recognized as a technology leader, Sanmina provides end-to-end design, manufacturing and logistics solutions, delivering superior quality and support to Original Equipment Manufacturers (OEMs) primarily in the communications networks, computing and storage, medical, defense and aerospace, industrial and semiconductor, multimedia, automotive and clean technology sectors.

More information regarding the company is available at [www.sanmina.com](http://www.sanmina.com)