

Sun sensor for climate control

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Intended use and function

The sun sensor produced in an MID procedure is used to support climate control in cars. In addition to the temperature, the intensity and direction of the incident radiation are detected, which allows a reduction in overall energy consumption. The sun sensor enables flexible control of cooling and ventilation in the event of higher solarization/heating on one side.



Figure 1: Sun sensor in MID design supports climate control in cars

Advantages of the MID solution

- The manufacture in an MID procedure allows greater miniaturization in connection with increased reliability. A number of optic sensors with the corresponding analysis electronics are built into the component.
- The MID solution allows a high level of design freedom and free spatial arrangement of the optical ASICs.

Application areas	Automobiles, sensor systems
User	HELLA KGaA Hueck & Co.
Product	Sun sensor
Main function	Interconnect device



Pushing Performance

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Project implementation

The project evaluation started in August 2004 and the start of production was in 2005.

Functions of the MID component

- Contacting to the periphery via metallized plastic pins that are created directly during the injection molding process, as is the conductor path placement.
- Exact positioning and alignment of the sensors.

Manufacturing aspects

- The MID base carrier is manufactured in two-component injection molding with two different types of the material LCP (Vectra® E820i Pd as the plateable and Vectra® E130i as the non-plateable component).
- The electrical contacting of the optical ASICs is executed in wire bonding technology, with the silicon chips mechanically mounted to the substrate using adhesive.

Substrate material	LCP/LCP (Vectra E 820i Pd LDS/Vectra E130i)
Structuring	Injection molding
Metallization	Chemical Cu-Ni-Au
Connection technology	Conductive adhesive bonding/wire bonding
Number of components	5
Start of production	2005
Production run	1.5 million p.a.
Development period	2 years