



Summary

- industrial production of SiC UV detector chips by sglux in Germany
- very similar properties compared to obsolete Cree, Inc. chips allow easy skipping
- improved visible blindness compared to Cree, Inc. chips
- 0,04 mm² to 36 mm² active area and linear arrays available

Silicon Carbide UV sensors

Professional UV radiation measurement knows no alternative to Silicon Carbide based UV detectors. Looking at the key features radiation hardness, dark current and visible blindness, SiC outclasses all other semiconductor UV detection concepts (e.g. GaN, AlGaN). Accordingly most of industrial semiconductor UV Sensors work with SiC detection technology.

Industrial production by sglux GmbH together with two R&D institutes

These SiC detector chips had been produced by one sole manufacturer worldwide, the U.S. company Cree, Inc. In 2007 Cree abandoned the production and since that time the market is supplied with remaining stock quantities supplied by a few companies. After a successful R&D period done with the Berlin *Ferdinand-Braun-Institut Leibniz-Institut fuer Hoehstfrequenztechnik* (FBH) and the Berlin *Leibniz-Institut für Kristallzuechtung* (IKZ) since 2009 the German UV semiconductor chip manufacturer sglux GmbH together with its R&D partners started the production of that SiC chip. After passing a complex quality test program, the chip is now qualified for industrial markets. sglux produces SiC chips with active areas from 0,04 mm² to 36 mm². Additionally SiC photodiode arrays and customised designs are offered.

Properties

Compared to the previous SiC chips from Cree, the sglux SiC chips offer a strongly improved visible blindness of more than ten orders of magnitude. Other parameters, such as the spectral response or the dark current are almost identical to the abandoned Cree products. Thus an easy skipping from the Cree material to the sglux material is possible.

Hybrids

Besides the UV photodiodes (that need external amplification) sglux offers hybrid UV sensors. These sensors output a voltage from 0....5V that can be easily proceeded by SPCs or similar controllers.

Applications

Main application for UV detection is the control of UV irradiation processes and the UV combustion control.

Keywords: SiC-Sensor, SiC-Photodiode, SiC-UV-Photodiode, UV photodiode, UV combustion control, UV irradiation control, sglux, FBH, IKZ