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Silicon Carbide (SiC) Performance –Temperature & Power

TEMPERATURE

What effect does temperature have on performance?

IFW measured a T_k of $<-0.06\%/K$ for peak response at 270nm. This value varies a little from lot to lot of SiC-wafer. T_k is wavelength depended too. It will be higher at higher wavelength. If the maximum power output (maximum of power at 300 ... 350nm) is in the longer wavelength range T_k will become higher (estimate - 0.1%/K). The response decreases with an increase in temperature and increases with a decrease in temperature.

POWER

Is there any data on the change in responsivity for different UV power levels? How linear is the response as the UV power levels go up?

- a. There is no change in responsivity over 5000 hours at power levels below 1000W/m²
- b. Response is linear up to 1000W7m²