Comments to extraction of Eeff used in the I(T) formula
from the experimental data

1. Symbol Eg should not be used in the I(T) function to avoid confusion between temperature independent effective band gap and the actual band gap in Si, normally denoted as Eg, which is temperature dependent. It is better to use Eeff or something else.

2. The standard formula for I(T) and the Eeff=1.21 eV refer to the current generated in the bulk. It is not valid for currents from other sources: generated near the surface, leaking over the physical edge of the sensor, generated at the defects (scratches etc.) or in "hot spots" and so on. Therefore it is important to understand what fraction of the measured current is due to the bulk current. Only if the bulk current dominates the above parameterisation may be expected to be applicable.

3. The best signature of the bulk current is bias dependence: the current should grow as a square root of Ubias up to depletion voltage and then saturate or nearly saturate.

4. It is better to plot I vs T with logarithmic scale for the current. The fit function then is almost a straight line and it is easier to see the agreement between the points and the fit.

5. There may be a difference between the fit without errors (i.e. equal absolute errors) and the fit with equal relative errors (e.g. 5% of the current). Since the fitted current range is usually quite large the second approach seems to be more relevant. In any case the results for both fits should be compared since their difference represents a systematic error.

6. The fit result may depend on the temperature range used for the fit. This dependence should be investigated and quoted. For genuine bulk current there should be practically no temperature dependence.

7. Dependence of Eeff on bias is crucial for understanding the systematic effects. For bulk generated current there should be no bias dependence.