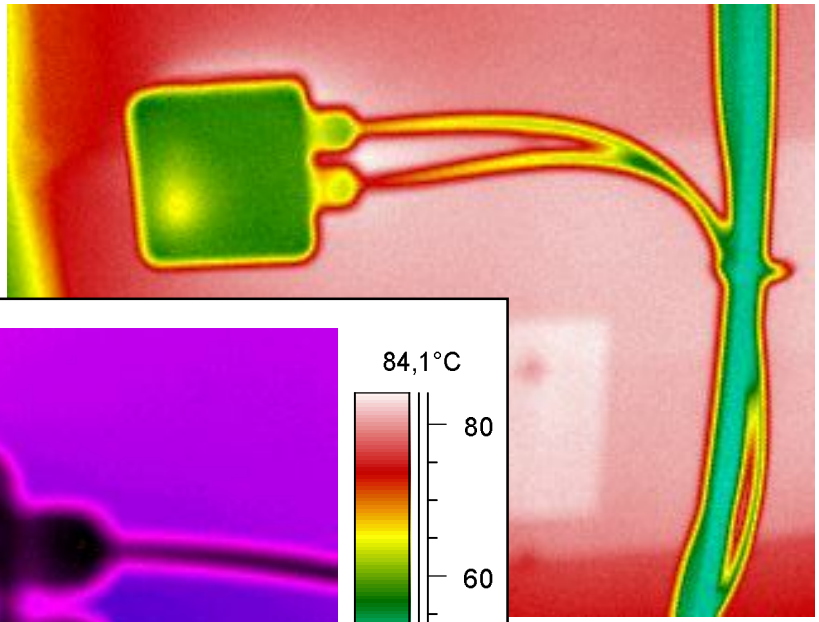
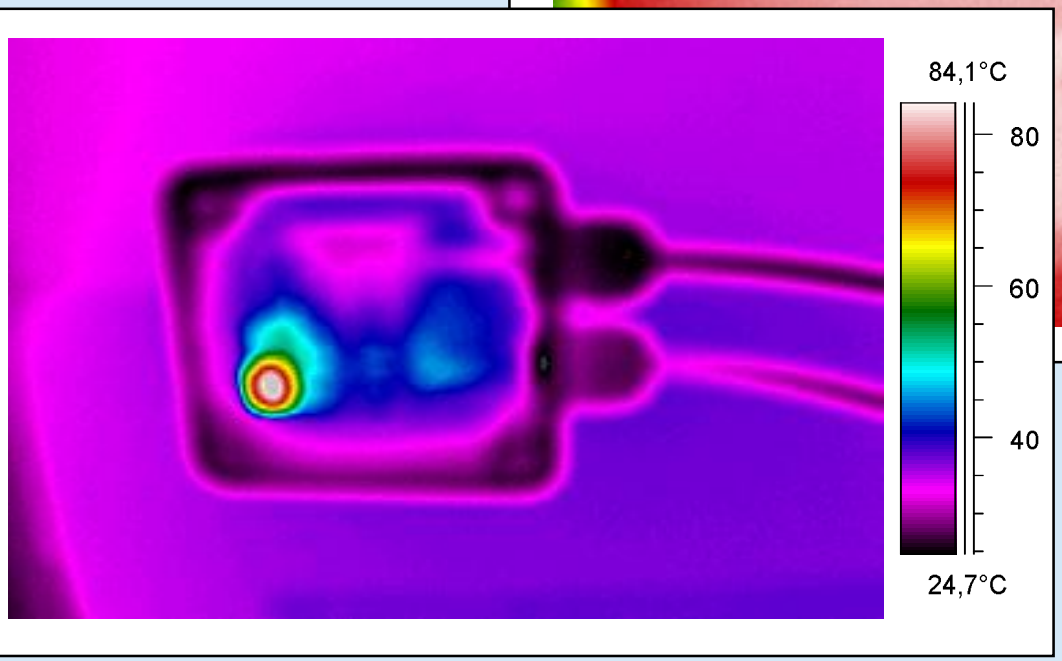
Bypass diode thermal test

Possible problem in field installation

Active by-pass diode
(closed connection box)





Active by-pass diode
(connection box with open lid)

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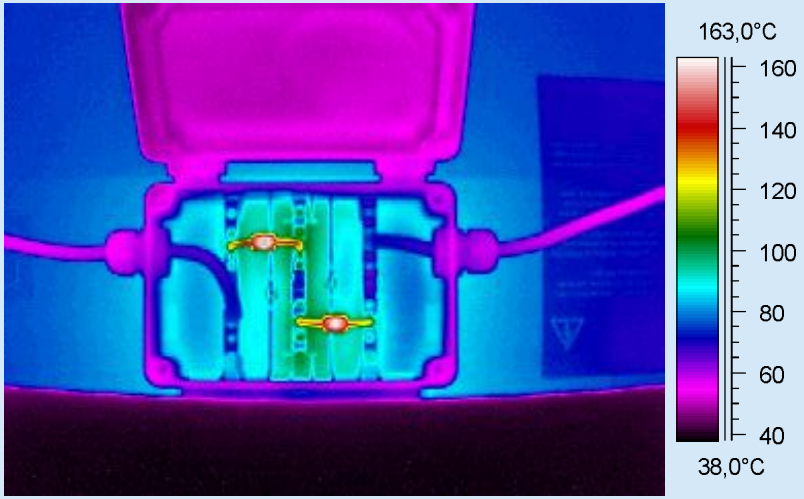
Precisely Right.

Bypass diode thermal test

Example of test performance

Diode type: 80 SQ 045
$T_{j\ max}$ = 175°C



Current [A]	Box Temperature [°C]	Junction Temperature T_J [°C]
4.88 (I_{SC})	128.2	135.2
6.1 (1.25*I_{SC})	144.2	151.2

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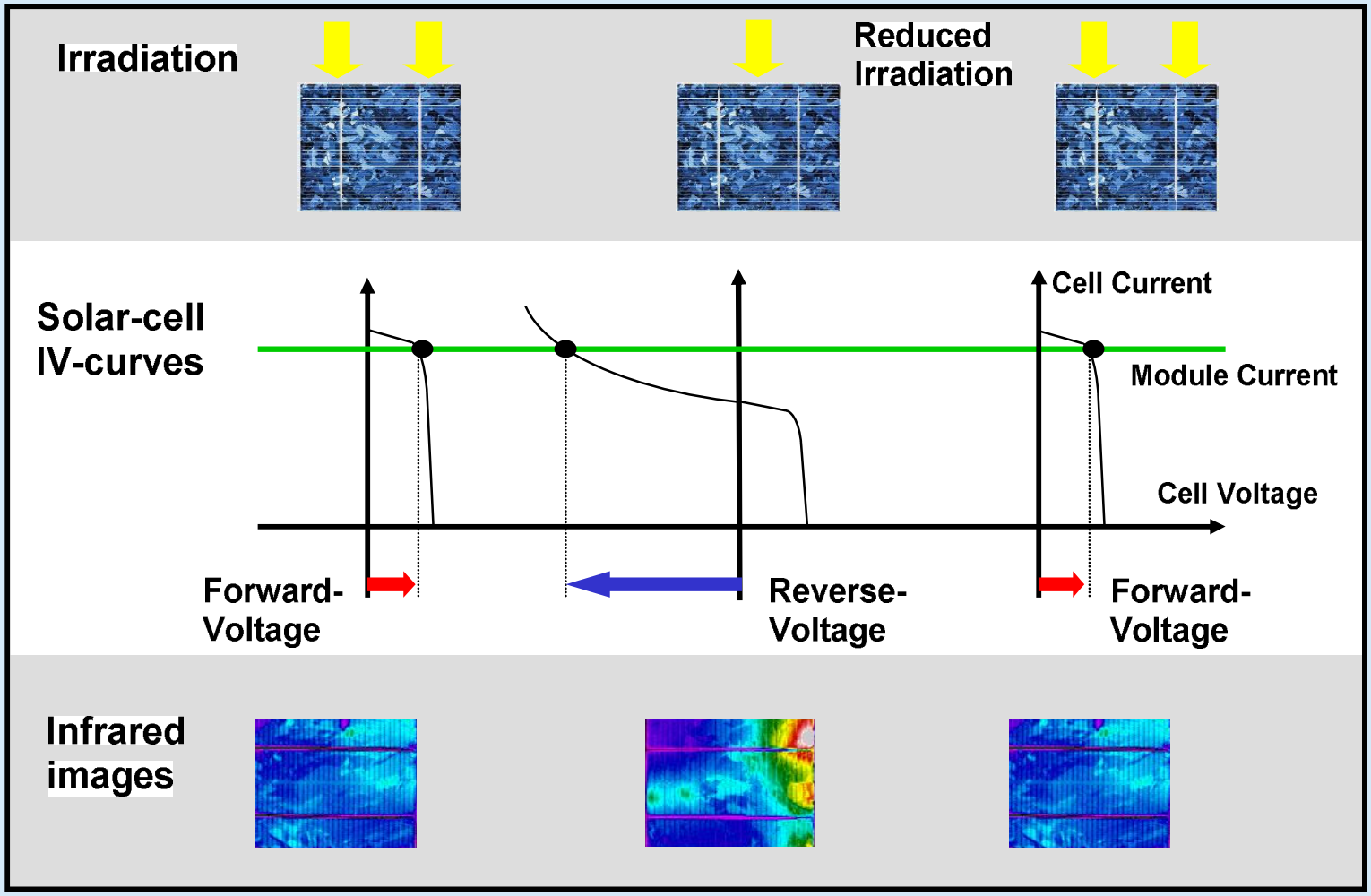
Hot-Spot endurance test

Problem



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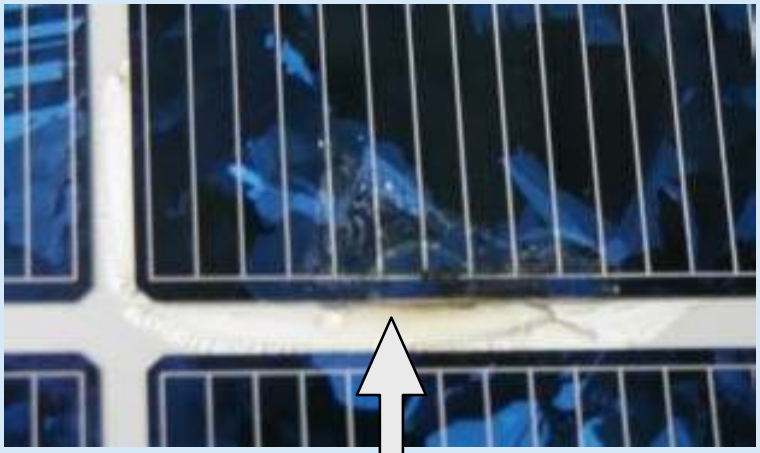
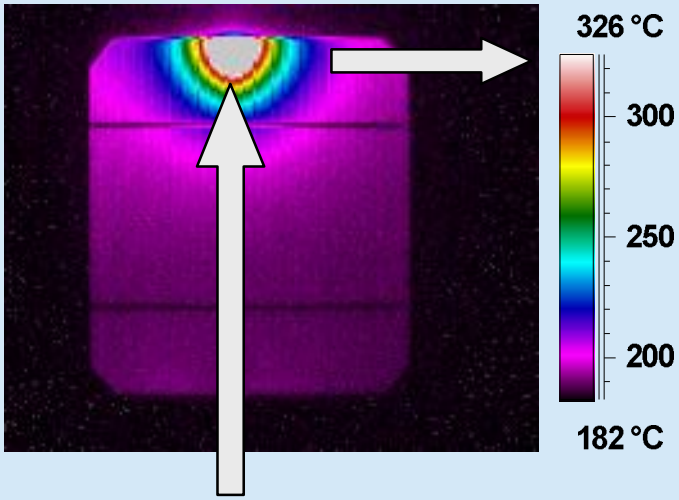
Hot-Spot endurance test

Test failure





<u>Hot-Spots</u> can produce severe visible defects on module front and rear side (temperatures > 300 °C !)

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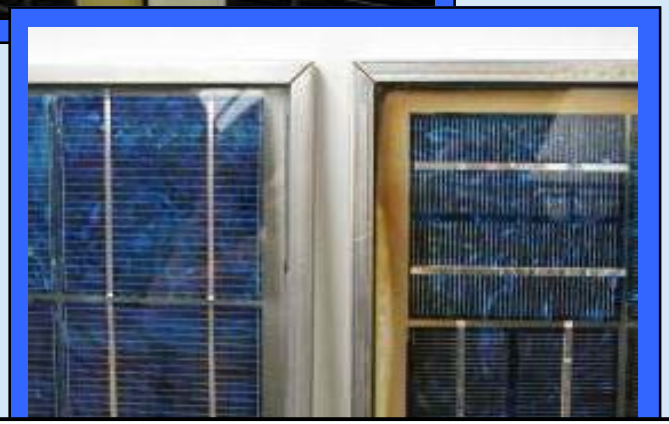
■ UV-preconditioning test



- Dose UV (280 nm - 400 nm): > 15 kWh/m²
- Dose UV-B (280 nm - 320 nm): =3 to 10 % of total UV
- Module temperature: 60 °C

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