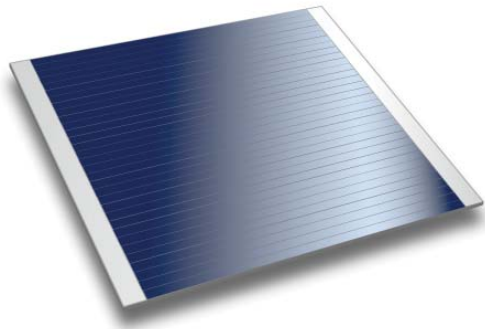


CTJ Photovoltaic Cell

Triple-Junction Solar Cell for Terrestrial Applications



TERRESTRIAL PHOTOVOLTAICS



Standard CTJ Cell Dimensions

External Dimensions	10.68 x 10.075 mm
Designed Aperture Area	10 x 10 mm
Total Nominal Active Area	100 mm ²
Bondable Perimeter Busbar	0.235 mm
Total Cell Thickness	~0.2 mm

39% Efficiency under Concentrated Illumination

Features & Characteristics

- Triple-Junction High-Efficiency Solar Cells on Germanium Substrate for Terrestrial Concentrated Photovoltaic Applications
- Multi-Layer Antireflective Coating Providing Low Reflectance over Wavelength Range 0.3 to 1.8 μ m
- Characterized for Terrestrial Applications Under Concentrated Illumination (Over 1500 Suns)
- Weldable or Solderable Contacts, Front and Back
- Standard 1x1 cm² (Designated Aperture Area)
- Customer Specific Sizes Available
- Available in Cell and Application-Specific Configurations
- Application-Specific Grid Design Service to Optimize Power Output
- 4" Ge Manufacturing Operation with >300MW Annual Capacity

Performance Data

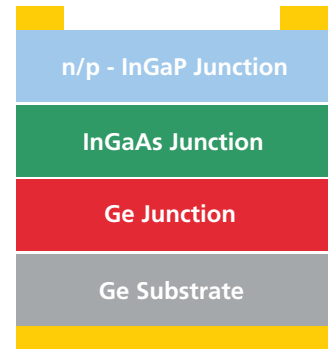
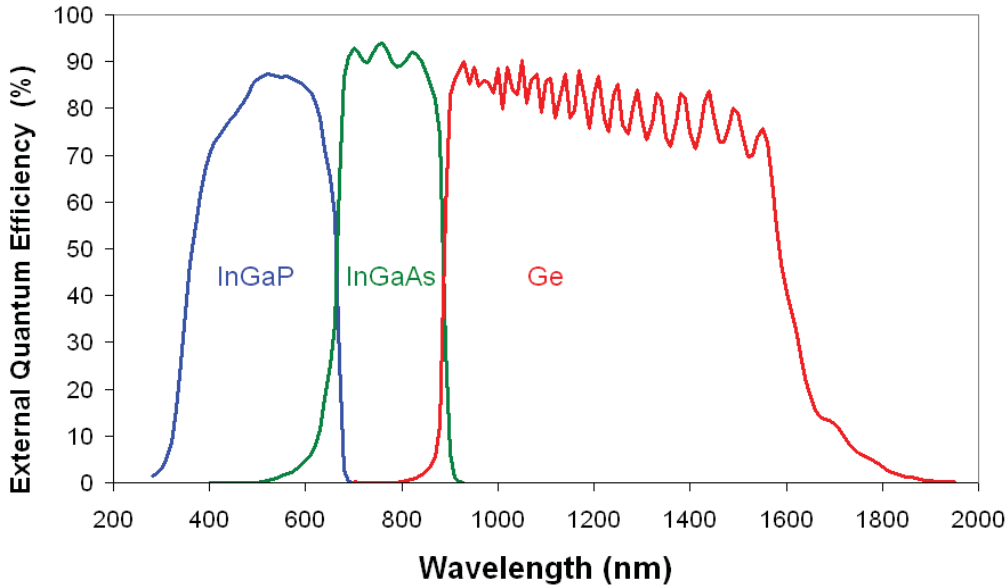
Solar cell electrical output parameters
@ AM1.5D, Low-AOD Illumination, 25°C

	1X Concentration	503X Concentration	1182X Concentration
Efficiency	31.4%	39.0%	36.3%
V _{oc}	2.605 V	3.193 V	3.251 V
J _{sc}	13.85 mA / cm ²	6.96 A/cm ²	16.37 A/cm ²
V _{mp}	2.33 V	2.84 V	2.68 V
J _{mp}	13.4 mA / cm ²	6.8 A/cm ²	16.04 A/cm ²
P _{mp}	31.4 mW / cm ²	19.3 W/cm ²	42.9 W/cm ²

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Quantum Efficiency

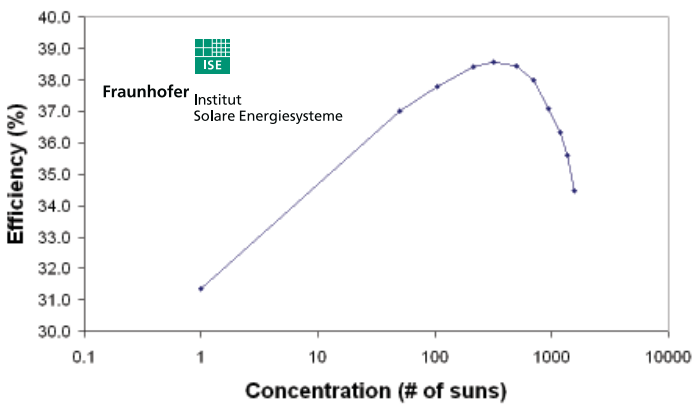


Cell Structure Diagram
(Tunnel diodes not shown)

Temperature Dependence at 800 Suns (20°C - 70°C)

$\Delta V_{oc} = -4 \text{ mV}/^\circ\text{C}$
$\Delta J_{sc} = 7.2 \text{ mA}/^\circ\text{C}$
$\Delta \text{efficiency} = -0.06\% \text{ (absolute)}/^\circ\text{C}$

Efficiency vs. Concentration



Typical IV Curves at Varying Concentration Levels, 25°C

