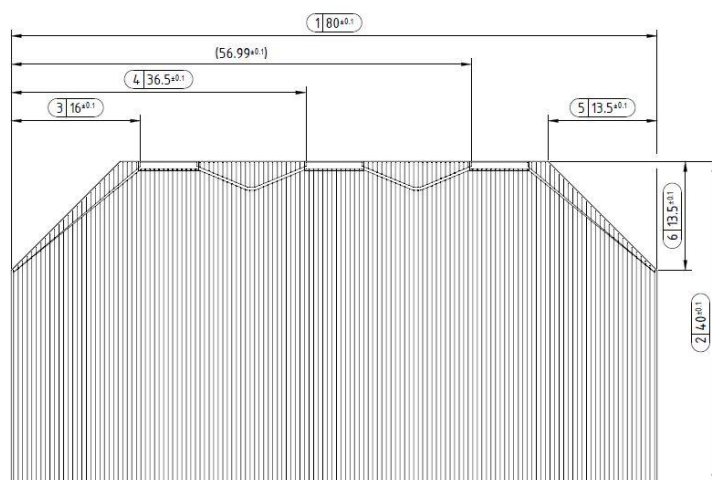


32% Quadruple Junction GaAs Solar Cell Type: QJ Solar Cell 4G32C - Advanced



This cell type is an AlInGaP/AlInGaAs/InGaAs/Ge on Ge substrate quadruple junction solar cell (efficiency class 32%). The end-of-life version (EOL) of the 4G32C - Advanced, is offering best-in-class power at EOL, mass and price per watt. The cell should be combined with an external bypass diode protection.



32% Quadruple Junction GaAs Junction Solar Cell

Type: QJ Solar Cell 4G32C - Advanced



Design and Mechanical Data

Base Material	AlInGaP/AlInGaAs/InGaAs/Ge on Ge
AR-coating	TiO _x /Al ₂ O ₃
Dimensions	40 x 80 mm ± 0.1 mm
Cell Area	30.18 cm ²
Average Weight	≤ 1780 mg (*≤ 2600 mg)
Thickness	110 ± 12 µm (*150 ± 20 µm)
Contact Metallization Thickness (Ag/Au)	4 – 6.2 µm

*available alternative version



Electrical Data (typical)

		BOL	5E14	1E15	3E15	1E16
Average Open Circuit V _{oc}	[mV]	3451	3292	3227	3120	2955
Average Short Circuit I _{sc}	[mA]	457.6	453.3	451.5	423.8	365.1
Voltage at max. Power V _{mp}	[mV]	3025	2866	2793	2700	2581
Current at max. Power I _{mp}	[mA]	433.5	428.0	423.8	394.0	320.9
Average Efficiency η _{bare} (1367 W/m ²)	[%]	31.8	29.7	28.7	25.8	20.1

Standard: PS_4G32_PTB_2016-09-13; Spectrum: AM0 WRC = 1367 W/m²; T = 25 °C

@fluence 1MeV [e/cm²]

Acceptance Values (typical)

Voltage V _{op}	2900 mV
Min. average current I _{op avg} @ V _{op}	438 mA
Min. individual current I _{op min} @ V _{op}	418 mA



Temperature Gradients (typical)

			BOL	5E14	1E15	3E15	1E16
Open Circuit Voltage	ΔV _{oc} /ΔT↑	[mV/°C]	- 8.4	- 8.8	- 8.9	- 9.1	- 9.5
Short Circuit Current	ΔI _{sc} /ΔT↑	[mA/°C]	0.07	0.14	0.14	0.25	0.34
Voltage at max. Power	ΔV _{mp} /ΔT↑	[mV/°C]	- 8.6	- 9.0	- 9.0	- 9.3	- 9.8
Current at max. Power	ΔI _{mp} /ΔT↑	[mA/°C]	0.03	0.07	0.07	0.24	0.46

@fluence 1MeV [e/cm²]



Threshold Values

Absorptivity	≤ 0.91 (with CMX 100 AR)
Pull Test	> 1.6 N at 45° welding test
Status	Qualified