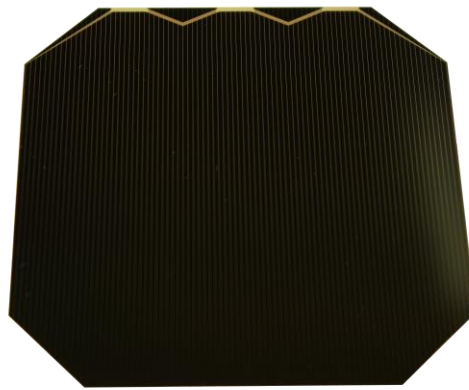




30% Triple Junction GaAs Solar Cell
Type: TJ Solar Cell 3G30C - Advanced
Large Area: 80mm x 80mm



This cell type is an InGaP/GaAs/Ge on Ge substrate triple junction solar cell (efficiency class 30% advanced). The cell has an active area of 60.36cm² and is equipped with an improved grid-design. The advanced large version of the 3G30C cell offers best EOL-values in this class and is also available in various customized cell designs with a side length of up to 85mm.

30% Triple Junction GaAs Junction Solar Cell

Type: TJ Solar Cell 3G30C – Advanced (80mm x 80mm)



Design and Mechanical Data

Base Material	GalnP/GaAs/Ge on Ge substrate
AR-coating	TiO _x /Al ₂ O ₃
Dimensions	80 x 80 mm ² ± 0.1 mm
Cell Area	60.36 cm ²
Average Weight	≤ 86 mg/cm ²
Thickness (without contacts)	150 ± 20 µm
Contact Metallization Thickness (Ag/Au)	4 – 10 µm
Grid Design	Grid system with 3 contact pads



Electrical Data

		BOL	2,5E14	5E14	1E15
Average Open Circuit V _{oc}	[mV]	2700	2616	2564	2522
Average Short Circuit I _{sc}	[mA]	1041	1038	1029	1004
Voltage at max. Power V _{mp}	[mV]	2411	2345	2290	2246
Current at max. Power I _{mp}	[mA]	1007	1005	999	972
Average Efficiency η _{bare} (1367 W/m ²)	[%]	29.4	28.6	27.7	26.5
Average Efficiency η _{bare} (1353 W/m ²)	[%]	29.7	28.9	28.1	26.7

Standard: CASOLBA 2005 (05-20MV1, etc); Spectrum: AMO WRC = 1367 W/m²; T = 28 °C

@fluence 1MeV [e/cm²]

Acceptance Values

Voltage V _{op}	2350 mV
Min. average current I _{op avg} @ V _{op}	1010 mA
Min. individual current I _{op min} @ V _{op}	948 mA



Temperature Gradients

		BOL	2E14	5E14	1E15
Open Circuit Voltage	ΔV _{oc} /ΔT↑ [mV/°C]	- 6.2	- 6.5	- 6.6	- 6.7
Short Circuit Current	ΔI _{sc} /ΔT↑ [mA/°C]	0.72	0.66	0.70	0.76
Voltage at max. Power	ΔV _{mp} /ΔT↑ [mV/°C]	- 6.7	- 6.8	- 7.1	- 7.2
Current at max. Power	ΔI _{mp} /ΔT↑ [mA/°C]	0.48	0.40	0.48	0.56

@fluence 1MeV [e/cm²]



Threshold Values

Absorptivity	≤ 0.91 (with CMX 100 AR)
Pull Test	> 1.6 N with 12.5µm welded Ag stripe, pulled at 45°