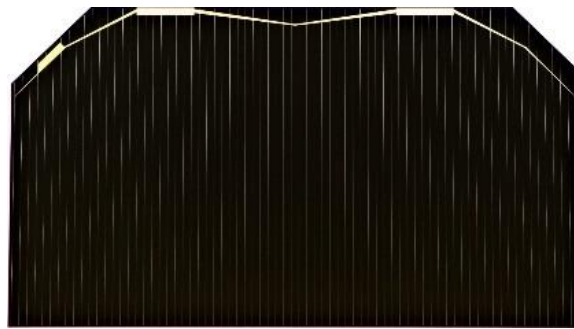
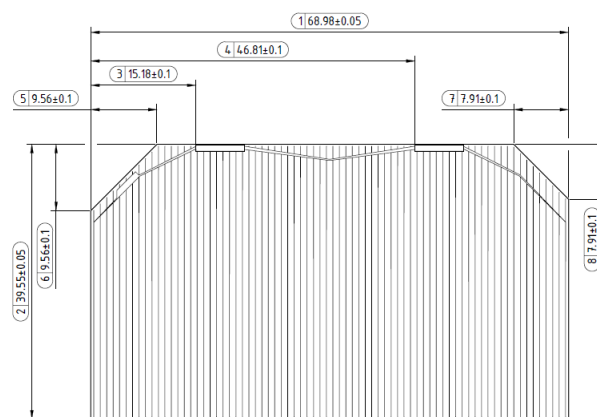




30% Triple Junction GaAs Solar Cell Type: TJ Solar Cell 3G30C - Advanced



This type is an InGaP/GaAs/Ge on Ge substrate triple junction solar cell (efficiency class 30% advanced). The end-of-life version of the 3G30C solar cell offers best EOL-performance values and should be combined with an external bypass diode protection.



30% Triple Junction GaAs Junction Solar Cell

Type: TJ Solar Cell 3G30C - Advanced

Design and Mechanical Data

Base Material	GalnP/GaAs/Ge on Ge substrate
AR-coating	TiO _x /Al ₂ O ₃
Dimensions	39.55 x 68.98 mm ± 0.05 mm
Cell Area	26.51 cm ²
Cell Thickness	150 ± 20 µm
Average Weight	≤ 2.35 g
Contact Metallization Thickness (Ag/Au)	4 – 10 µm
Front Side Interface (Cathode)	Ag/Au Contact Metallization
Rear Side Interface (Anode)	Ge-Substrate with Ag/Au Contact Metallization

Electrical Data

		BOL	2,5E14	5E14	1E15
Average Open Circuit V _{oc}	[mV]	2700	2616	2564	2522
Average Short Circuit I _{sc}	[mA]	457.0	455.5	451.6	440.9
Voltage at max. Power V _{mp}	[mV]	2411	2345	2290	2246
Current at max. Power I _{mp}	[mA]	442.8	442.1	439.8	427.5
Average Efficiency η _{bare} (1367 W/m ²)	[%]	29.5	28.6	27.8	26.5
Average Efficiency η _{bare} (1353 W/m ²)	[%]	29.8	28.9	28.1	26.8

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}	444 mA
Min. individual current I _{op min} @ V _{op}	417 mA

Temperature Gradients

		BOL	2,5E14	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]	0.32	0.29	0.31	0.33
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]	0.21	0.18	0.21	0.25

@fluence 1MeV [e/cm²]

Threshold Values

Absorptivity	≤ 0.91 (with CMX 100 AR)
Pull Test	> 1.6 N at 45° welding test (with 12.5µm Ag stripes)
Status	Qualified 3G30 Technology