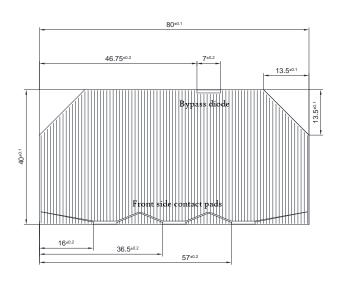


30% Triple Junction GaAs Solar Cell Type: TJ Solar Cell 3G30C - Advanced

Best in Class EOL-Values!



This cell type is an InGaP/GaAs/Ge on Ge substrate triple junction solar cell (efficiency class 30% advanced). The cell has an improved grid-design and is equipped with an integrated bypass diode, which protects the adjacent cell in the string. The advanced version of the 3G30C offers best EOL-values.



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/AI_2O_3
Dimensions	40 x 80 mm ± 0.1 mm
Cell Area	30.18 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 Voc	[mV]	2700	2616	2564	2522
Average Short Circuit Isc	[mA]	520.2	518.5	514.0	501.9
Voltage at max. Power V _{mp}	[mV]	2411	2345	2290	2246
Current at max. Power I _{mp}	[mA]	504.4	503.2	500.6	486.6
Average Efficiency η _{bare} (1367 W/m²)	[%]	29.5	28.6	27.8	26.5
Average Efficiency η_{bare} (1353 W/m²)	[%]	29.8	28.9	28.1	26.8

Standard: CASOLBA 2005 (05-20MV1, etc.); Spectrum: AMO WRC = 1367 W/m 2 ; T = 28 $^{\circ}$ C

@fluence 1MeV [e/cm²]

Acceptance Values

Voltage V _{op}	2350 mV
Min. average current I _{op avg} @ V _{op}	505 mA
Min. individual current I _{op min} @ V _{op}	475 mA

Shadow protection

Integrated protection diode	$V_{forward}$ (620 mA) \leq 2.5 V	
T = 25°C ± 3°C	$I_{reverse}$ (2.8 V) \leq 100 μ A	



Temperature Gradients

			BOL	2E14	5E14	1E15
Open Circuit Voltage	$\Delta V_{oc}/\Delta T \uparrow$	[mV/°C]	- 6.2	- 6.5	- 6.6	- 6.7
Short Circuit Current	$\Delta I_{sc}/\Delta T \uparrow$	[mA/°C]	0.36	0.33	0.35	0.38
Voltage at max. Power	$\Delta V_{mp}/\Delta T \uparrow$	[mV/°C]	- 6.7	- 6.8	- 7.1	- 7.2
Current at max. Power	$\Delta I_{mp}/\Delta T \uparrow$	[mA/°C]	0.24	0.20	0.24	0.28

@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					

Issue date: 2014-03-13

HNR 0003384-01-01 Page 2 of 2 74072 Heilbronn phone: +49 7131 67 2603 telefax: +49 7131 67 2727 e-mail: info@azurspace.com website: www.azurspace.com MANAGEMENTSYSTEM

DIN EN ISO 9001:2000
DIN EN ISO14001:2005
OHSAS 18001:1999
DQS certficated; Reg. 062403