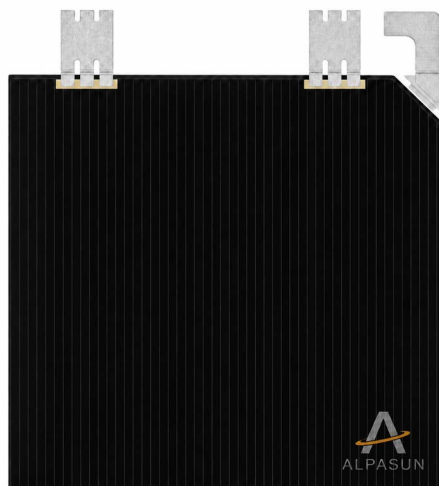
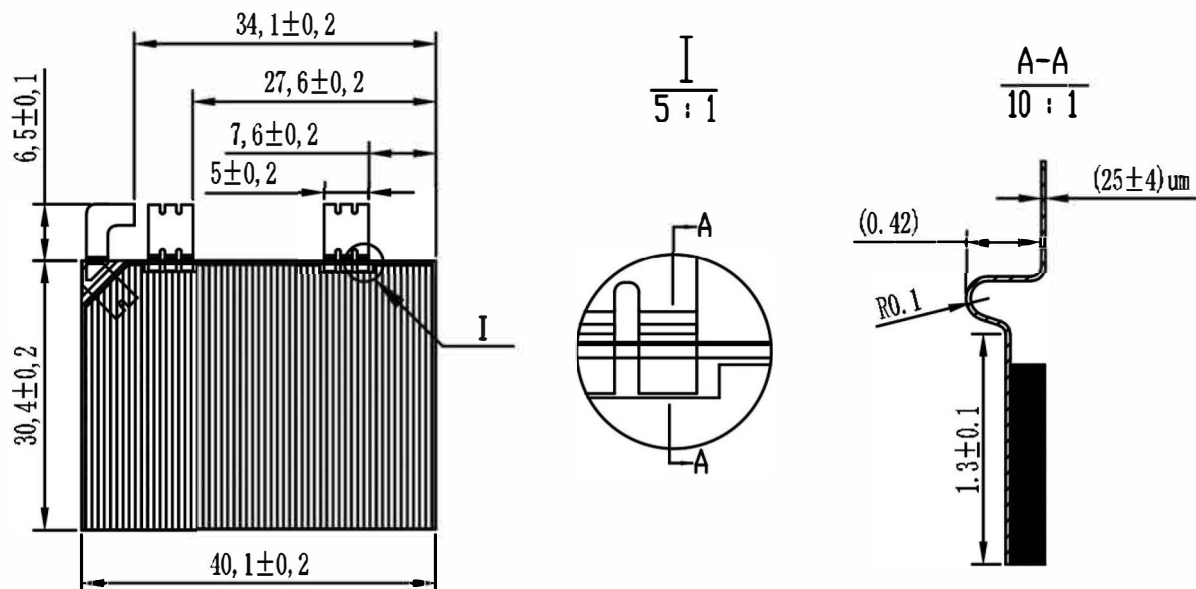


Triple Junction GaAs Solar Cell Assembly (30mm×40mm)



Contact information

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Features

- ◆ Encapsulated on germanium substrate by MOCVD epitaxial growth, semiconductor device process and anti-irradiation encapsulation;
- ◆ GaInP/GaAs/Ge on Ge substrate triple junction solar cell assembly;
- ◆ $\text{Eff} \geq 30.5\%$ (25°C , AM0 1353 W/m^2);
- ◆ Reinforced with anti-irradiation coverglass, external Si diode protection, and interconnect soldering of Kovar silver-plated components, owning excellent adaptability to the space environment.

Design and Mechanical Data

Base Material	GaInP/GaAs/Ge on Ge substrate
Contact Metallization Thickness	4~5 μm (Ag)
AR-coating	TiO _x /Al ₂ O ₃
Dimensions	(30.4 $\pm$ 0.05 mm) $\times$ (40.1 $\pm$ 0.05 mm)
Cell Area	12.0 cm^2
Areal density	$\leq 120 \text{ mg/cm}^2$
Thickness	0.36 $\pm$ 0.10mm
Coverglass thickness	120 $\pm$ 15 μm
Interconnects Interconnector	kovar, silver coated
thickness	25 $\pm$ 4 μm
Pull Test	$\geq 1.0\text{N/mm}^2$ with 21 μm kovar/Ag stripes by pulling at 45°
Bypass protection	External Si diode

Average Electrical Data

Data	BOL	1.0E+14	2.0E+14	5.0E+14	1.0E+15
Open Circuit V_{oc}(mV)	2750	2602	2600	2557	2481
Short Circuit I_{sc}(mA)	210.9	210.5	210.4	210.1	206.6
V_{mp} @Max. Power (mV)	2430	2304	2299	2270	2187
I_{mp} @Max. Power (mA)	207.0	206.6	206.5	206.2	202.2
Fill Factor FF (%)	85	85	85	84	85
Efficiency (%)	30.5	29	29	28	26

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Bypass Diode

Forward Voltage V_F	$\leq 1.0V$ (620mA, $T=25^{\circ}C$)
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Reverse Current I_R	$\leq 25\mu A/mm^2$ (4.0V, $T=25^{\circ}C$)
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Operation Temperature	$-180^{\circ}C$ to $+150^{\circ}C$
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Temperature Gradients

DATA	BOL	1.0E+14	2.0E+14	5.0E+14	1.0E+15
Voltage @max. power (mV/ $^{\circ}C$)	-5.2	-5.4	-5.5	-5.6	-5.8
Current @max. power ($\mu A/cm^2/^{\circ}C$)	6.0	6.2	6.3	6.4	6.5

Absorptivity

Absorptivity	≤ 0.92
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Emissivity	0.84 ± 0.03
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Customization, Handling and Support.

- ◆ Product dimensions, configurations and photovoltaic efficiencies can be customized to meet specific customer requirements, subject to technical evaluation.
- ◆ This product is fragile, handle with care during transportation, storage, installation and use.
- ◆ If a product-related quality issue occurs, we will provide timely technical support, investigate the issue and work with the customer toward an effective resolution.

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