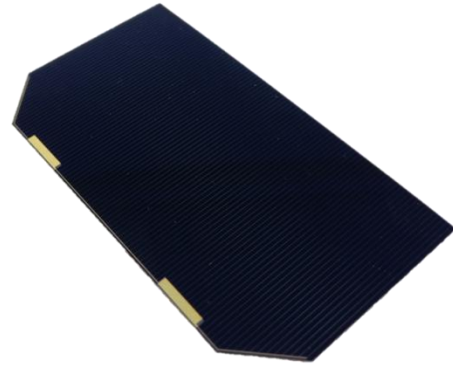
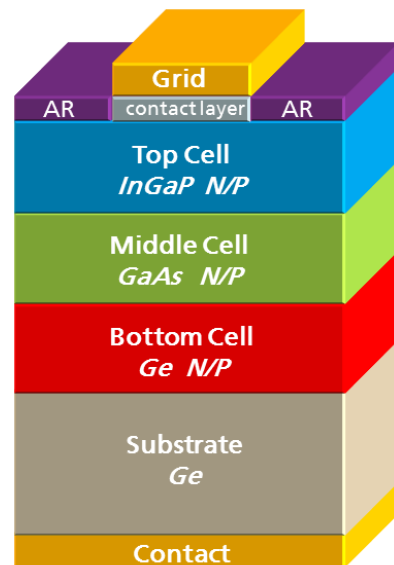


Triple-Junction Solar Cell for Space Applications (CTJ30)

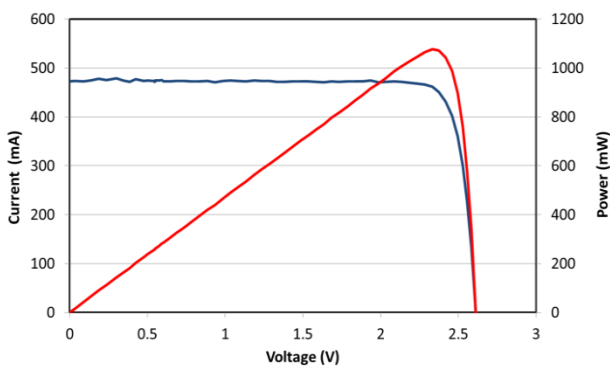


FEATURES & CHARACTERISTICS

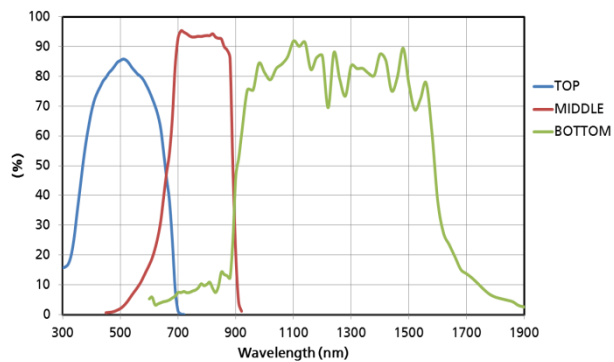
- ◆ Efficiency 29.5%
- ◆ Triple Junction Solar Cells InGaP/GaAs/Ge for Space Applications
- ◆ Polarity N on P
- ◆ Very low solar cell mass (81-89 mg/cm²)
- ◆ Thickness 150 μm ±20 μm
- ◆ Fully qualified under ESA Standard ECSS E ST20-08C for LEO and GEO orbit
- ◆ External By-pass diode for reverse bias protection
- ◆ Weldable or Solderable Contacts, Front and Back, based on gold coated silver layers.
- ◆ Standard sizes available 8 cm², 26.5 cm², 27.5 cm² and 30.15 cm²
- ◆ High Radiation Resistance
- ◆ Good mechanical strength
- ◆ High flexibility to customization available (sizes, other)



TYPICAL CURRENT-VOLTAGE CHARACTERISTIC
(CELL SIZE 26.5CM², EFFICIENCY 29.5% @ AM0, 25°C)



EXTERNAL QUANTUM EFFICIENCY
(BOL AVERAGE EXTERNAL QUANTUM EFFICIENCY)



PERFORMANCE DATA

(SOLAR CELL AVERAGE ELECTRICAL OUTPUT PARAMETERS @AM0, T=25°C)

Area (cm ²)	I _{sc} (mA)	V _{oc} (V)	I _m (mA)	V _m (V)
26.5	473	2.6	455	2.32
30.15	538	2.61	517	2.33

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TEMPERATURE COEFFICIENTS

ELECTRON ENERGY	FLUENCE (e/cm ²)	$\Delta J_{sc}/\Delta T$ ($\mu A/cm^2/^\circ C$)	$\Delta V_{oc}/\Delta T$ (mV/°C)	$\Delta J_{pmax}/\Delta T$ ($\mu A/cm^2/^\circ C$)	$\Delta V_{pm}/\Delta T$ (mV/°C)
0	BOL	15.3	-5.324	12.9	-6.026
1 MeV	1•10 ¹⁴	16.7	-5.589	14.3	-5.964
1 MeV	5 •10 ¹⁴	17.2	-5.670	14.0	-6.050
1 MeV	1 •10 ¹⁵	16.4	-5.677	17.1	-6.092

RADIATION DEGRADATION (REMAINING FACTORS)

ELECTRON ENERGY	FLUENCE (e/cm ²)	I _{sc}	V _{oc}	P _M
1 MeV	1 •10 ¹⁴	0.99	0.98	0.97
1 MeV	5 •10 ¹⁴	0.96	0.95	0.91
1 MeV	1 •10 ¹⁵	0.91	0.93	0.84

PROTON ENERGY	FLUENCE (p/cm ²)	I _{sc}	V _{oc}	P _M
100 keV	1 •10 ¹⁰	0.99	0.98	0.96
100 keV	1 •10 ¹¹	0.86	0.94	0.72
1 MeV	1 •10 ¹⁰	1.0	0.98	0.98
1 MeV	1 •10 ¹¹	1.0	0.93	0.89
10 MeV	1 •10 ¹¹	1.0	0.99	0.98
10 MeV	1 •10 ¹²	1.0	0.94	0.91

QUALIFICATION

Fully compliant with ESA ECSS-E-ST-20-8C: "Photovoltaic Assemblies and components"

- ◆ Metal Contact thickness 5-10 μm
- ◆ Degradation after reverse bias < 1%
- ◆ Contact Pull Strength >500 gr (4.9 N)
- ◆ Humidity and Temperature <1%
- ◆ Solar Absorptance 0.903

The Information contained on this datasheet is for reference only. Specifications are subject to change without notice

For further information please visit www.cesi.it, e-mail at solar@cesi.it or telephone at +39 02 21255183

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