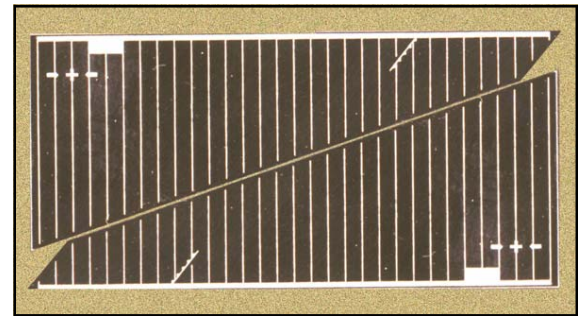


## Triangular Advanced Solar Cells (TASC)

### Product Description & Applications

- Designed for high power terrestrial applications, where space is at a premium.
- Two solar cells can be arranged within an approximate rectangular area of 0.611 x 1.254 inches (1.55 x 3.18 cm) with a cell gap of 0.018 inches (0.46 mm). See picture.
- Each solar cell is ideally matched to charge a single 1.2 V battery cell (eg. Ni-MH, NiCad, etc.). Cells can be wired in parallel for increased current. Two solar cells in series can charge one 3.6V Li-ion battery cell.
- A major advantage using these solar cells compared to silicon cells is that they deliver greater than 4 times higher voltage. Therefore, only one of Spectrolab's multi-junction solar cells is required to generate the same voltage as 5 Si solar cells connected in series
- Compared to typical silicon cells, these solar cells are **over twice as efficient** and thus will deliver more than twice the power for the same area.
- Uses and applications: A variety of power-consuming electronic equipment can benefit from these cells, especially if the area available is small or the time required for charging is limited. For example, these cells help power devices used during business trips, emergency situations or for the outdoor activities.



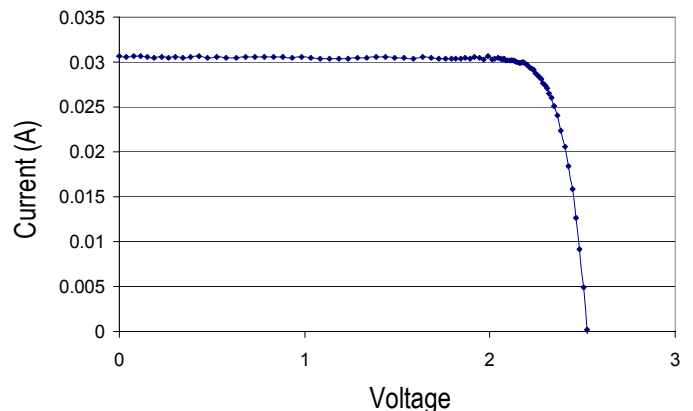
Not Actual Size

### Typical Cell Electrical Parameters

1 Sun, AM1.5G (100.0 mW/cm<sup>2</sup>) 25°C

$I_{sc}$ = 31 mA	$I_{mp}$ = 28 mA
$V_{oc}$ = 2.52 V	$V_{mp}$ = 2.19 V
$P_{mp}$ = 0.027 W/cm <sup>2</sup>	Cff = 80 %
Efficiency = 27 ± 3% Absolute	Temp. Coeff. $V_{mp}$ = -6.2 mV/°C

### Typical Cell I-V Curve (AM 1.5G)



ISO9001:2000  
REGISTERED

SPECTROLAB

A BOEING COMPANY

### Product Description

Cell Type	Improved triple-junction gallium arsenide
Method of Cell Growth	Metal Organic Vapor Phase Epitaxy
Polarity	n/p
Thickness	190 μm (0.0075 in.)
Area	2.277 cm <sup>2</sup> (0.353 sq. in.)
Mass	0.234 g
Assembly Methods	Soldering, welding, metallized epoxy
Device Design	Monolithic, two terminal triple junction. n/p GaInP <sub>2</sub> , GaAs, and Ge solar cells interconnected with two tunnel junctions.
Antireflective Coating	Multi-layer providing low reflectance over wavelength range 0.3 to 1.8 μm.

The information contained on this sheet is for reference only. Actual specifications for delivered products may vary. 4/10/02