



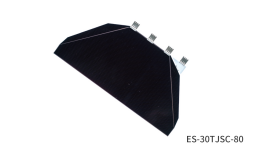
30% Triple-Junction GaAs

Standard product family | AM0 reference conditions

1 Standard Product Portfolio

Nominal dimensions and representative electrical values

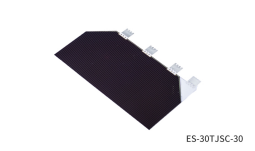
ES-30TJSC-80



ES-30TJSC-80

144.45 × 68.65 mm

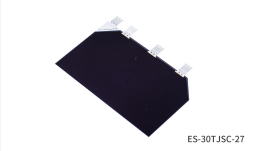
ES-30TJSC-30



ES-30TJSC-30

80.15 × 40.15 mm

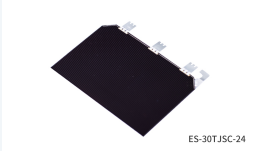
ES-30TJSC-27



ES-30TJSC-27

70.10 × 40.10 mm

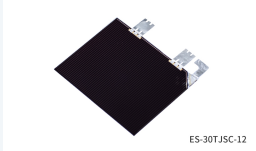
ES-30TJSC-24



ES-30TJSC-24

60.60 × 40.10 mm

ES-30TJSC-12



ES-30TJSC-12

40.10 × 30.40 mm

Model	ES-30TJSC-80	ES-30TJSC-30	ES-30TJSC-27	ES-30TJSC-24	ES-30TJSC-12
Size (mm)	144.45 × 68.65	80.15 × 40.15	70.10 × 40.10	60.60 × 40.10	40.10 × 30.40
Area (cm²)	79.8	30.15	27.0	24.0	12.0
Voc (mV)	2750	2750	2750	2750	2750
Isc (mA)	1375	520	467	415	207
Vmp (mV)	2440	2430	2440	2440	2440
Imp (mA)	1330	503	450	400	200
Efficiency	≥30%	≥30%	≥30%	≥30%	≥30%



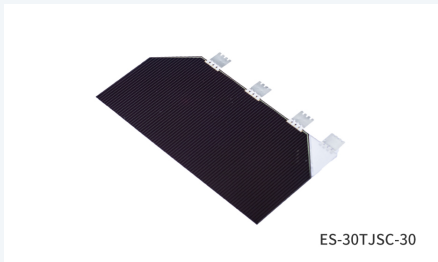
ES-30TJSC-30

Nominal 40 × 80 mm | 30% triple-junction GaAs solar cell

1 Model Overview

Representative configuration and dimensions

Actual size: 80.15 × 40.15 mm



ES-30TJSC-30

Cell structure	GaInP2 / GaAs / Ge triple-junction GaAs cell
Anti-reflective coating	TiOx / Al2O3
Active area	30.15 cm2
Cell thickness	300 +/- 25 um
Mass	3.7 ± 0.3 g
Coverglass	KFB120AR 120 +/- 20 um
Interconnect	Silver-plated Kovar 6.3 × 8.0 mm 30 um
Bypass diode	Silicon bypass diode

Physical data are typical values. Detailed electrical, radiation and reliability data follow on the next pages.



Electrical and Radiation Performance

ES-30TJSC-30 | AM0, 1 sun, 1353 W/m2, 25°C

1 Typical Electrical Performance

AM0, 1 sun, 1353 W/m2, 25°C

Parameter	Symbol	Typical value
Open-circuit voltage	Voc	2750 mV
Short-circuit current	Isc	520 mA
Short-circuit current density	Jsc	17.3 mA/cm2
Maximum-power voltage	Vmp	2430 mV
Maximum-power current	Imp	503 mA
Maximum-power current density	Jmp	16.7 mA/cm2
Average conversion efficiency	Eff	30%

2 Radiation Degradation

1 MeV electron fluence

Parameter	1E14 e/cm2	5E14 e/cm2	1E15 e/cm2
Imp / Imp0	0.99	0.98	0.96
Vmp / Vmp0	0.96	0.93	0.91
Pmp / Pmp0	0.95	0.91	0.87

Ratios are normalized to beginning-of-life values. Typical values unless otherwise stated.



Environmental and Reliability

ES-30TJSC-30 | Reference conditions and typical values

1 Operating Point and Bypass Diode

Minimum operating current and diode performance

Operating-point voltage VL	2350 mV	Forward voltage @ 620 mA	<= 1.0 V
Minimum current Imin @ VL	500 mA	Reverse leakage @ 4.0 V	<= 10 uA
Average current Iave @ VL	490 mA	Bypass diode type	Silicon

2 Temperature Coefficients

BOL and irradiated conditions

Parameter	BOL	1 MeV / 5E14 e/cm2	1 MeV / 1E15 e/cm2
Jsc (uA/cm2/C)	11.0	10.0	13.0
Voc (mV/C)	-5.9	-6.1	-6.3
Jmp (uA/cm2/C)	9.0	9.5	15.0
Vmp (mV/C)	-6.0	-6.2	-6.5

All data are typical values at the stated reference conditions. Product configuration and final acceptance specification prevail.



Reliability Reference

ES-30TJSC-30 | Material and qualification reference

1 Reliability Reference

Material and qualification reference

Absorptivity	<= 0.92
Tensile strength at 45 degrees	>= 0.83 N/mm2
Reference standard	Chinese space and ECSS standards

2 Reference Conditions

Basis for electrical performance data

AM0 spectrum 1 sun 1353 W/m2 irradiance 25°C cell temperature
Values in this datasheet are typical. Final product configuration and acceptance specification prevail.