

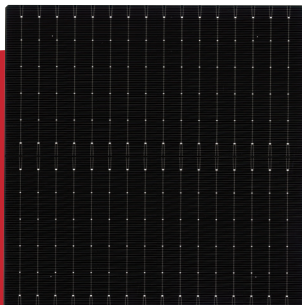
H-Cell

Halfcut Series



TSUDQ

Mono c-Si Solar Cell
(Hero)



Physical Characteristics

Dimensions 182.2mm X 183.75mm \pm 0.25mm
Diagonal 256mm \pm 0.25mm

Thickness(Si) 130 μ m \pm 80 μ m

Front(+) Alkaline texturized surface with silicon nitride anti-reflecting coating

16 X 0.036mm \pm 0.05mm bus bars

Distance between bus bars : 10.8mm

Back(-) Alkaline texturized surface with silicon nitride anti-reflecting coating

16 X 0.036mm \pm 0.05mm bus bars

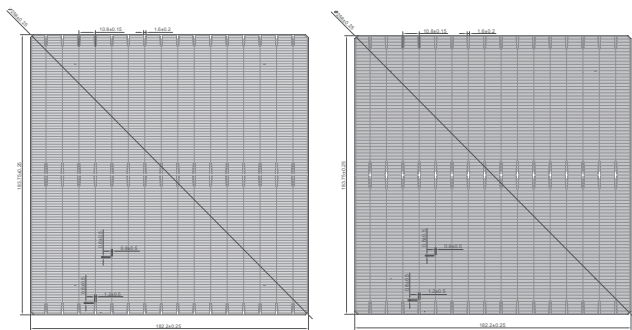
Distance between bus bars : 10.8mm

Features

- High Cell-To- Module ratio through precise cell conversion efficiency sorting, classified efficiency grade by both minimum power and current.
- Excellent electrical long-term stability and reliability by using of best raw materials and through strict quality inspection control.
- Low breakage rate by using high qualified and stable wafers.
- High quality homogeneous appearance by sorting into defined color classes.
- 100% screened for reverse current and shunt resistance.
- The best solution for PV module with above 490W(6x20) and 590W(6x24) outputs.

Quality Control and Professional Service

- Regular calibration of test equipment using Fraunhofer ISE reference cell.
- Environmental friendly due to REACH-SVHC and RoHS compliances.
- Professional on-site service and support for module certification.
- Regular light source AAA class calibration for stable conversion efficiency.
- Lowest LID by periodic monitoring and superior wafer incoming control.



Front

Back

Electrical Characteristics

Efficiency Code		255	254	253	252	251	250	249	248	247	246	245
Efficiency	Eff(%)	25.50	25.40	25.30	25.20	25.10	25.00	24.90	24.80	24.70	24.60	24.50
Power	Pmpp(W)	8.54	8.50	8.47	8.43	8.40	8.37	8.33	8.30	8.27	8.23	8.20
Max. Power Current	Imp(A)	13.334	13.327	13.310	13.270	13.244	13.226	13.196	13.172	13.148	13.125	13.104
Short Circuit Current	Isc(A)	13.888	13.887	13.881	13.876	13.866	13.866	13.865	13.865	13.864	13.863	13.863
Max. Power Voltage	Vmpp(V)	0.640	0.638	0.637	0.635	0.634	0.633	0.632	0.630	0.629	0.627	0.626
Open Circuit Voltage	Voc(V)	0.732	0.731	0.730	0.729	0.728	0.727	0.726	0.725	0.723	0.722	0.721

Standard test condition: AM1.5, 1000W/m², 25°C
Average accuracy of all tests is +/-1.5% rel.

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Temperature Coefficients

Current Temperature Coefficient	$\alpha(I_{SC})$	0.0450%/K
Voltage Temperature Coefficient	$\beta(V_{OC})$	-0.2487%/K
Power Temperature Coefficient	$\gamma(P_{max})$	-0.2819%/K

Standard test condition: AM1.5, 1000W/m², 25°C

Processing Recommendations

Solder Joint

Copper ribbons coated with 15~25µm:
62%Sn/36%Pb/2%Ag or 60%Sn/40%Pb

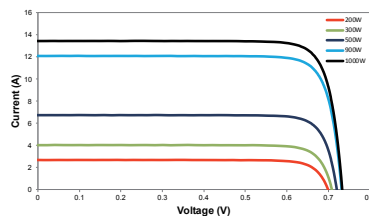
Solderability

Peel Strength Minimum

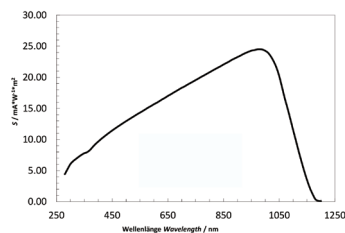
> 1.25 N/mm

Soldering results may differ due to different flux, ribbons, soldering methods, and parameters.

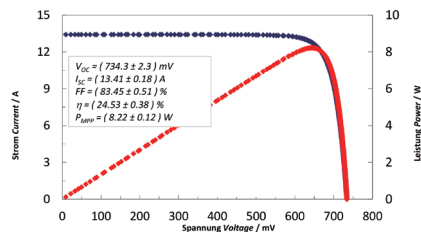
Typical Current-Voltage Curve



Typical Spectral Response



Typical IV-Power Curve



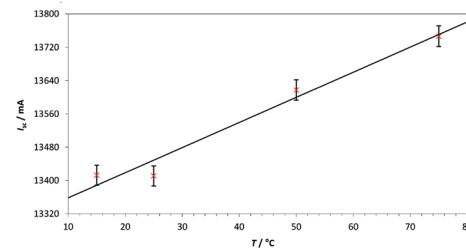
* All data measured under standard testing condition (STC):
1000 W/m², AM 1.5, 25 °C.

* All figures bear ±2% tolerance.

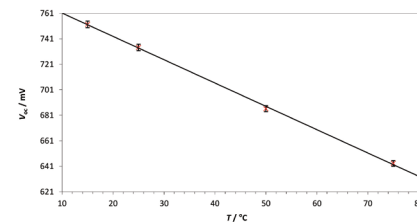
* Reference cell are under testing by Fraunhofer ISE in Freiburg.

Calculated Temperature Coefficients

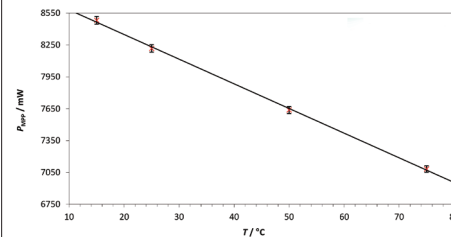
Short Circuit Current $TK(I_{SC}) = (6.04 \pm 0.53) \text{ mA/K}$
 $TK(I_{SC}) = (0.0450 \pm 0.0039) \%/K$



Open Circuit Voltage $TK(V_{OC}) = (-1.826 \pm 0.050) \text{ mV/K}$
 $TK(V_{OC}) = (-0.2487 \pm 0.0069) \%/K$



Power $TK(P_{MPP}) = (-23.17 \pm 0.71) \text{ mW/K}$
 $TK(P_{MPP}) = (-0.2819 \pm 0.0086) \%/K$



TSEC Corporation

Taipei Headquarters

8F, No.225, Sec. 3, Beixin Rd., Xindian Dist.,
New Taipei City 23143, Taiwan, R.O.C

t 886 2 2912 2199 f 886 2 2917 5399 m sales@tsecpv.com

Hsinchu Plant

No.85, Guangfu N. Rd., Hukou Township, Hsinchu County 30351,
Taiwan, R.O.C. (Hsinchu Industrial Park)

t 886 3 696 0707 f 886 3 696 0708

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and revision of datasheet.