

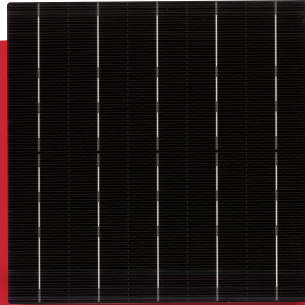
V-Cell

Halfcut Series



TSS65TNG

6" Mono c-Si Solar Cell



Physical Characteristics

Dimensions	158.75mm X 158.75mm ± 0.5mm
Diagonal	223mm
Thickness(Si)	170μm ± 50μm
Front(-)	Alkaline texturized surface with silicon nitride anti-reflecting coating Color: Dark Blue, Blue 5 X 0.7 mm ± 0.1 mm segmented bus bars Distance between bus bars : 31.2 mm
Back(+)	Aluminum back surface field 5x4 soldering pads, 1.5 mm±0.15 mm wide bus bars Distance between bus bars : 31.2 mm

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.
- Excellent passivation quality of the rear side compared to the traditional solar cell is clearly visible in the long wavelength regime.
- The best solution for PV module with above 320W outputs.

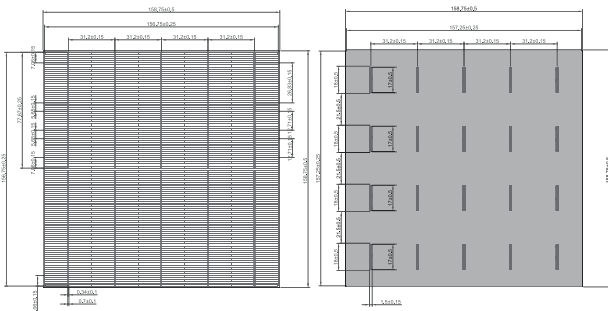
Quality Control and Professional Service

- 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.

Electrical Characteristics

Efficiency Code	225	224	223	222	221	220	219	218	217	216	215	214	213	212	211	210	209	
Efficiency	Eff(%)	22.50	22.40	22.30	22.20	22.10	22.00	21.90	21.80	21.70	21.60	21.50	21.40	21.30	21.20	21.10	21.00	20.90
Power	Pmpp(W)	5.67	5.64	5.62	5.59	5.57	5.54	5.52	5.49	5.47	5.44	5.42	5.39	5.37	5.34	5.32	5.29	5.27
Max. Power Current	Imp(A)	9.730	9.696	9.680	9.665	9.651	9.641	9.635	9.630	9.617	9.610	9.601	9.590	9.578	9.559	9.534	9.519	9.467
Short Circuit Current	Isc(A)	10.259	10.221	10.204	10.187	10.173	10.167	10.165	10.163	10.153	10.145	10.138	10.127	10.124	10.098	10.072	10.080	10.025
Max. Power Voltage	Vmpp(V)	0.583	0.582	0.580	0.579	0.577	0.575	0.573	0.570	0.569	0.566	0.564	0.562	0.560	0.559	0.558	0.556	0.556
Open Circuit Voltage	Voc(V)	0.684	0.683	0.681	0.680	0.678	0.676	0.675	0.674	0.673	0.671	0.669	0.667	0.667	0.664	0.663	0.662	0.659

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	$\alpha(I_{SC})$	0.0423%/K
Voltage Temperature Coefficient	$\beta(V_{OC})$	-0.2903%/K
Power Temperature Coefficient	$\gamma(P_{max})$	-0.3535%/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

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

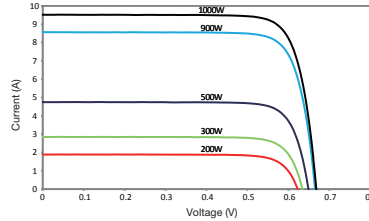
Solderability

Peel Strength Minimum

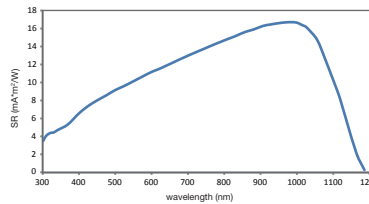
> 1.25 N/mm

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

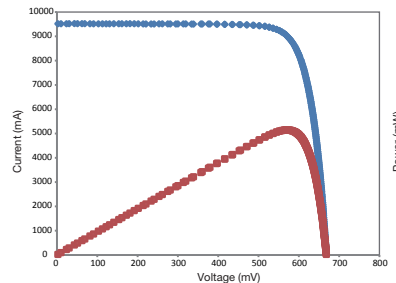
Typical Current-Voltage Curve



Typical Spectral Response



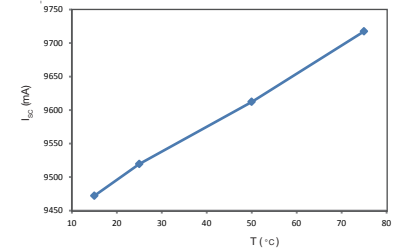
Typical IV-Power Curve



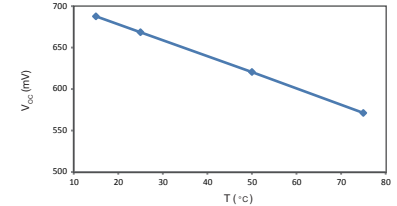
* All data measured under standard testing condition (STC):
1000 W/m², AM 1.5, 25 °C.
* All figures bear ±2% tolerance.
* Reference cell calibrated by the Fraunhofer ISE in Freiburg.

Calculated Temperature Coefficients

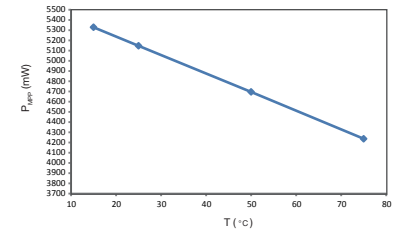
Short Circuit Current $TK(I_{sc}) = (4.03 \pm 0.37) \text{ mA/K}$
 $TK(I_{sc}) = (-0.0423 \pm 0.0039) \text{ \% / K}$



Open Circuit Voltage $TK(V_{oc}) = (-1.941 \pm 0.045) \text{ mV/K}$
 $TK(V_{oc}) = (-0.2903 \pm 0.0068) \text{ \% / K}$



Power $TK(P_{MPP}) = (-18.19 \pm 0.43) \text{ mW/K}$
 $TK(P_{MPP}) = (-0.3535 \pm 0.0084) \text{ \% / K}$



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Specifications are subject to change without prior notice.
TSEC reserves the rights of final interpretation
and revision of datasheet.

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