V-Cell
Halfcut Series

TSS65TN
6" Mono c-Si Solar Cell

TSEC

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 280W 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.

Physical Characteristics

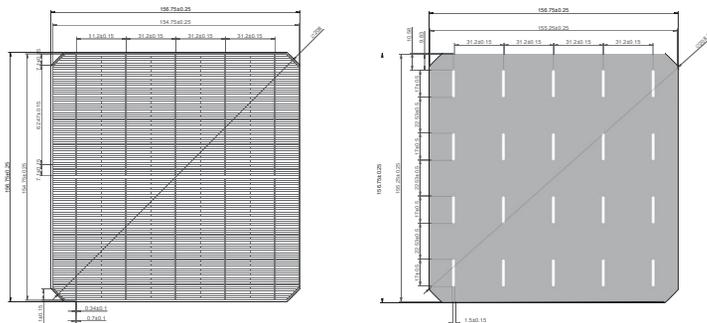|	
Dimensions	156.75mm X 156.75 mm ± 0.25mm
Thickness(Si)	$180\,\mu m \pm 20\,\mu m$, $200\,\mu m \pm 30\,\mu m$
Front(-)	Alkaline texturized surface with silicon nitride anti-reflecting coating
	Color: Dark Blue, Blue, Sky Blue
	5 X 0.7 mm ± 0.1 mm wide bus bars
	Distance between bus bars : 31.2 mm
Back(+)	Aluminum back surface field
	5x4 soldering pads, 1.5 mm±0.15 mm wide bus bars
	Distance between bus bars : 31.2 mm

Electrical Characteristics

Efficiency Code		218	217	216	215	214	213	212	211	210	209	202
Efficiency	Eff(%)	21.80	21.70	21.60	21.50	21.40	21.30	21.20	21.10	21.00	20.90	20.20
Power	Pmpp(W)	5.33	5.30	5.28	5.25	5.23	5.20	5.18	5.16	5.13	5.11	4.94
Max. Power Current	Impp(A)	9.250	9.227	9.211	9.196	9.180	9.165	9.149	9.134	9.121	9.112	9.081
Short Circuit Current	Isc(A)	9.758	9.736	9.722	9.708	9.695	9.678	9.660	9.645	9.634	9.627	9.599
Max. Power Voltage	Vmpp(V)	0.576	0.575	0.573	0.571	0.570	0.568	0.566	0.564	0.563	0.560	0.543
Open Circuit Voltage	Voc(V)	0.675	0.674	0.673	0.671	0.669	0.667	0.665	0.664	0.662	0.661	0.642

Standard test condition: AM1.5, 1000W/m^2 , 25°c
Average accuracy of all tests is +/-1.5% rel.

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Temperature Coefficients

Current Temperature Coefficient	α(ISC)	0.0459%/K
Voltage Temperature Coefficient	β(VOC)	-0.2905%/K
Power Temperature Coefficient	γ(Pmax)	-0.3682%/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.

Qualifications and Certificates

www.tuv.com
TÜV Rheinland®
ID:0000033490

RoHS Compliance
SVHC tested

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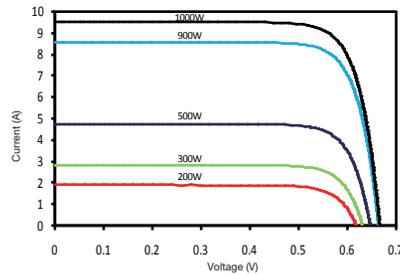
Typical Spectral Response
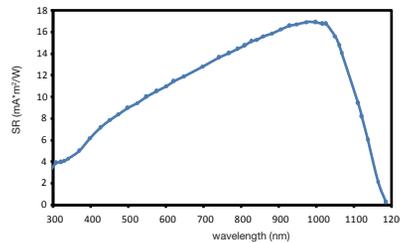
Typical IV-Power Curve
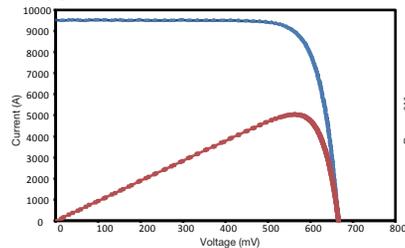
* All data measured under standard testing condition (STC): 1000 W/m², AM 1.5, 25 °C.
* All figures bear ±2% tolerance.
* Reference cell calibrated by the Fraunhofer ISE in Freiburg.

Calculated Temperature Coefficients

Short Circuit Current
$K(I_{SC})=(4.36\pm0.37)$ mA/K
$K(I_{SC})=(0.0459\pm0.0039)$ %/K

Open Circuit Voltage
$TK(V_{OC})=(-1.935\pm0.045)$ mV / K
$TK(V_{OC})=(-0.2905\pm0.0068)$ % / K

Power
$TK(P_{MPP})=(-18.56\pm0.42)$ mW/K
$TK(P_{MPP})=(-0.3682\pm0.084)$ %/K

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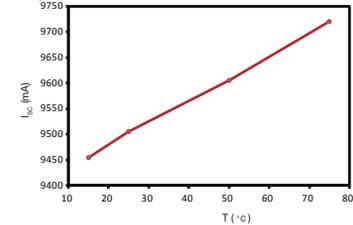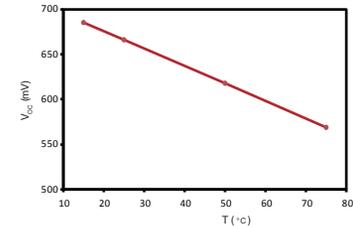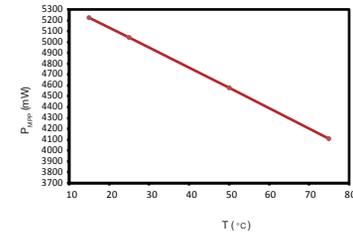Taiwan, R.O.C. (Hsinchu Industrial Park)
t 886 3 696 0707 f 886 3 696 0708