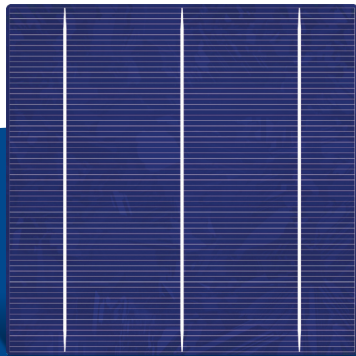


TSM63TN

6" Multi c-Si Solar Cell



Physical Characteristics

| | |
|----------------------|--|
| Dimensions | 156mm X 156mm ± 0.5mm Diagonal: 220mm ± 1.0mm |
| Thickness(Si) | 180 μm ± 20 μm, 200 μm ± 30 μm |
| Front(-) | Acid texturized surface with silicon nitride anti-reflecting coating Color: Dark Blue, Blue, Sky Blue & Light Blue 3 X 1.5 mm ± 0.15 mm wide bus bars Distance between bus bars : 52 mm |
| Back(+) | Aluminum back surface field 3 X 4 soldering pads, 2.7 mm ± 0.15 mm wide bus bars Distance between bus bars : 52 mm |

Features

- High Cell-To- Module ratio through precise cell conversion efficiency sorting, classified efficiency grade by both minimum power and narrow current classes at constant test voltage.
- 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 solderability through high quality conductive materials and regular monitor soldering properties.

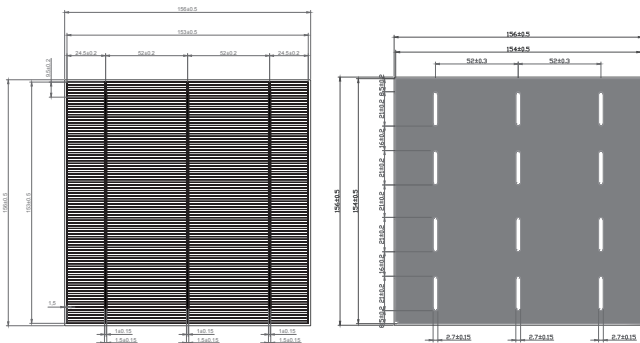
Quality Control and Professional Service

- 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 | | 182 | 180 | 178 | 176 | 174 | 172 | 170 | 168 |
|-----------------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| Efficiency | Eff(%) | 18.20 | 18.00 | 17.80 | 17.60 | 17.40 | 17.20 | 17.00 | 16.80 |
| Power | Pmpp(W) | 4.43 | 4.38 | 4.33 | 4.28 | 4.23 | 4.19 | 4.14 | 4.09 |
| Max. Power Current | Imp(A) | 8.250 | 8.201 | 8.176 | 8.153 | 8.113 | 8.069 | 8.020 | 7.972 |
| Short Circuit Current | Isc(A) | 8.731 | 8.681 | 8.656 | 8.631 | 8.594 | 8.554 | 8.505 | 8.455 |
| Max. Power Voltage | Vmpp(V) | 0.537 | 0.534 | 0.530 | 0.525 | 0.522 | 0.519 | 0.516 | 0.513 |
| Open Circuit Voltage | Voc(V) | 0.637 | 0.634 | 0.629 | 0.624 | 0.620 | 0.618 | 0.615 | 0.612 |

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



TSM63TN

6" Multi c-Si Solar Cell

Temperature Coefficients

| | |
|--|----------|
| Current Temperature Coefficient α (ISC) | 0.06%/K |
| Voltage Temperature Coefficient β (VOC) | -0.34%/K |
| Power Temperature Coefficient γ (Pmax) | -0.42%/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

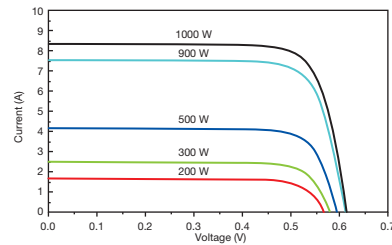
Soldering results may differ due to different flux, ribbons, soldering methods, and parameters.

Qualifications and Certificates

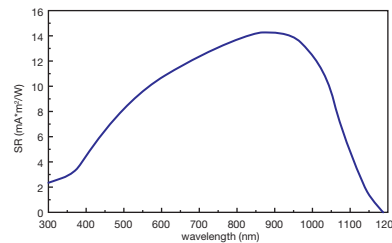


RoHS Compliance
SVHC tested

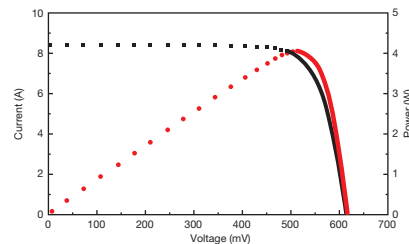
Typical Current-Voltage Curve



Typical Spectral Response

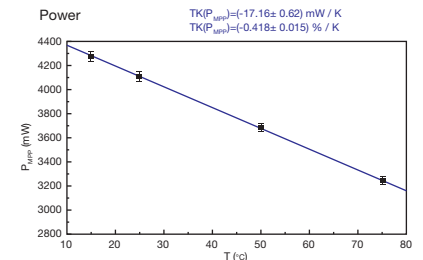
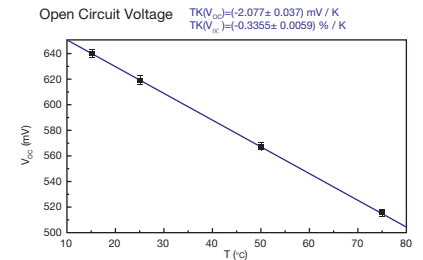
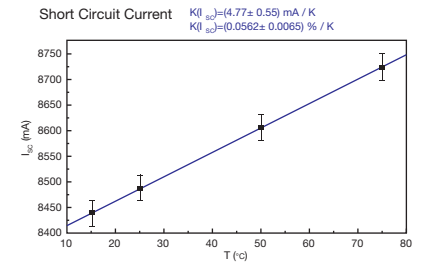


Typical IV-Power Curve



- * 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



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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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