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Solar Panel Guide Specification Data Sheet

**TSEC Corporation
TS60-6P3-280-295(5BB)
TS60-6P3-285**

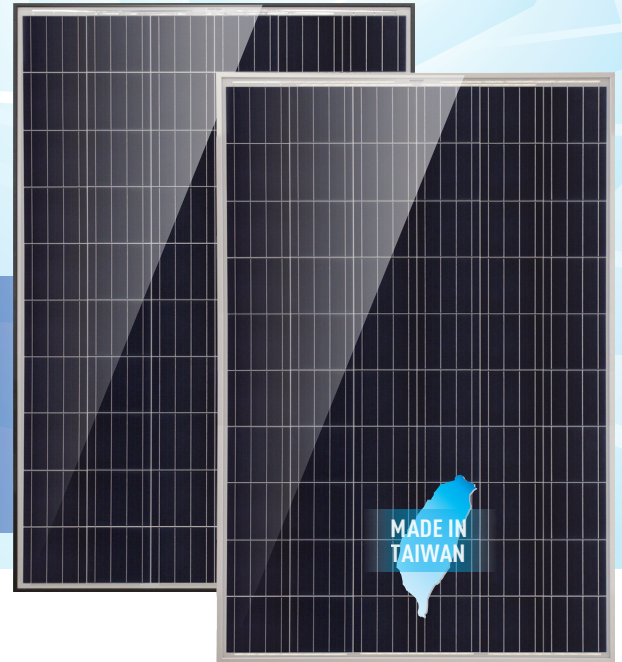
Also available on the web at
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V-Series Modules

5BB Polycrystalline Solar Modules

Peak Power: 280-295Wp



High Quality

- Powered by TSEC premium grade solar cells.
- The solar cell passed UL/ITRI PID test conditions (temperature 85°C, humidity 85%, -1500V, 300hrs)
- The solar module passed ITRI PID test conditions (temperature 85°C, humidity 85%, ±1000V, 300hrs)

High Reliability

- CNS 15114 mechanical load test 5400Pa
- IEC 61215:2016 mechanical load test 3600Pa (safety factor 1.5)
- Salt mist corrosion testing up to 56 days by ITRI, follow severity 6 in IEC61701(CNS 15196) standard.

Strict Quality Control

- Current sorting for hot spot protection.
- 3-stage EL tests at pre-lamination, before framing and before delivery.
- Positive tolerance 0~4.99W

Module Characteristics

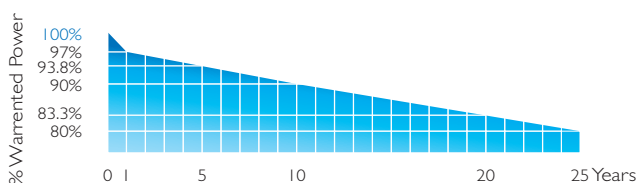
Dimension	1,650 x 992 x 40 mm
Weight	18.5 Kg

Certifications

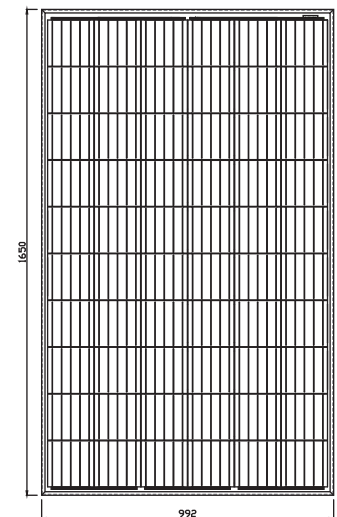
- IEC 61215:2016、IEC 61730-1:2016 & IEC 61730-2:2016
- ISO 9001:2008 Quality management system
- ISO 14001:2015 Standards for environmental management system
- ISO 50001:2011 Energy management system
- OHSAS 18001:2007 International standards for occupational health and safety

Warranty

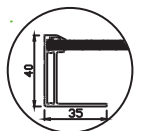
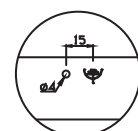
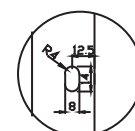
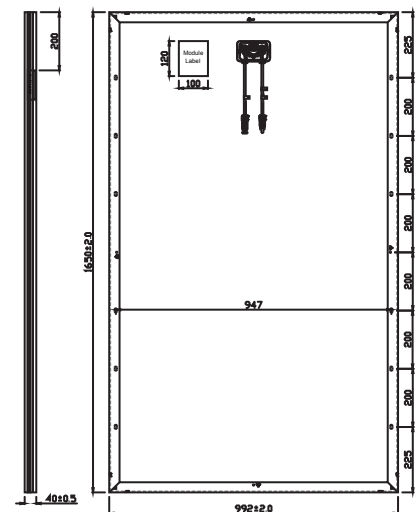
- 10-year materials and workmanship warranty.
- 25-year linear power warranty.



Module Front Side



Module Rear Side



V-Series 295W

5BB Polycrystalline Solar Modules



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Performance Under Standard Test Conditions

Model Name		TS60-6P3-280	TS60-6P3-285	TS60-6P3-290	TS60-6P3-295
Max. power at STC	P_{max} W	280	285	290	295
Max. power voltage	V_{mp} V	31.33	31.46	31.84	32.07
Max. power current	I_{mp} A	8.94	9.06	9.11	9.2
Open circuit voltage	V_{oc} V	39.10	39.33	39.40	39.7
Short circuit current	I_{sc} A	9.50	9.60	9.72	9.8
F.F. (%)	%	75.40%	75.49%	75.30%	75.84%
Module Conversion Eff.	%	17.11%	17.41%	17.72%	18.02%
Module Effective Conversion Eff.	%	18.99%	19.33%	19.67%	20.01%

* Under Standard Test Condition(1,000W/m²,25°C,AM 1.5): Power Tolerance ±3%

* Module Conversion Eff. (%) = [Max power at STC(w) / (Solar Module Area(m²) × 1000 (w/m²))] × 100%

* Module Effective Conversion Eff. (%) = [Max power at STC(w) / (Solar Cell Total Area(m²) × 1000 (w/m²))] × 100%

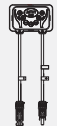

Thermal Characteristics

Normal Operating cell temperature	NMOT	°C	45±2
TC I _{sc}	α	%/°C	+0.071
TC V _{oc}	β	%/°C	-0.32
TC P _{max}	δ	%/°C	-0.43

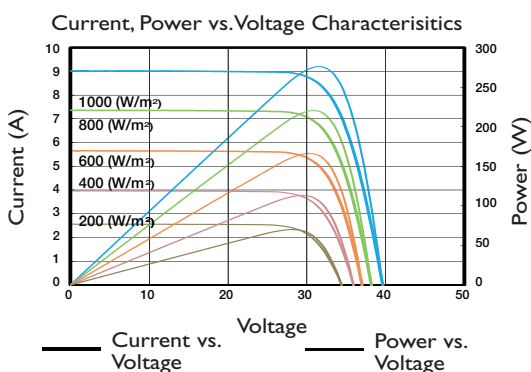
System Integration Parameters

Max. system voltage	1000V
Module fire resistance class	Class C
Application class (Safety class II)	Class A
series fuse rating	15 A
Number of bypass diodes	3
Temperature range	-40 to +85°C
Max. mechanical load	5400 pa(VPC) 3600 Pa (IEC 61215 : 2016)

Component Material

Cell type	Polycrystalline / 156.75 x 156.75mm
Cell per module	5BB / 60 pcs
Front	Low-iron glass / Tempered
Encapsulant Flim	Ethylene Vinyl Acetate(EVA)
Rear	Backsheet
Frame	6063T5 Anodized aluminum (silver/black)
Junction Box	IP68 Type 1  Type 2 
Connector	MC4 Compatible
Cable	1000mm / 12 AWG / 4mm ²

IV Curve



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