

Aluminum Panel Clip
Updated 1.14.2020

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Aluminum Panel Clip (H23)

Description:

Our elegantly designed Aluminum Panel Clip is simple and easy to install. The universal design makes it compatible with any brand, size and thickness of PV module with squared frame edges. The aluminum body features guide holes for the tek screws to keep them vertical during installation, ensuring tight and accurate clamping action.

Material:

- Clip (H23) 6063 T6 Aluminum
- End Block (H24) 6063 T6 Aluminum
- Mill Finish

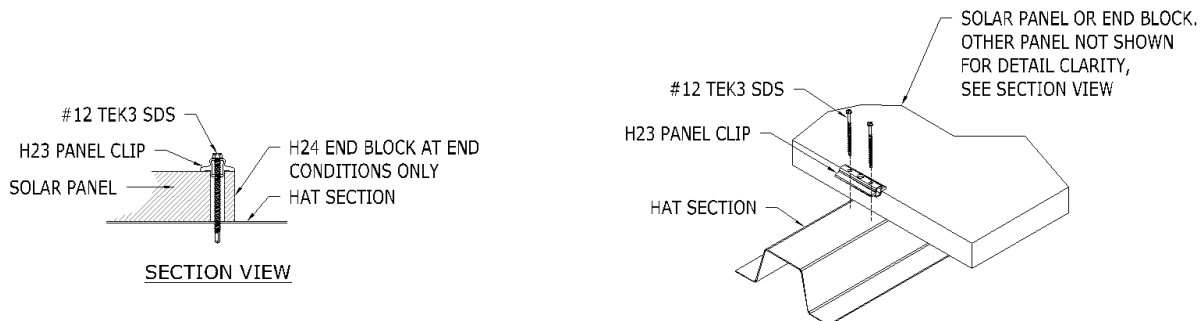


Application:

Typically, two Aluminum Clips are used per PV Module and fastened into 16ga sheet metal Hat Sections with two self-drilling screws. Alternatively, if using WEEB-DPF grounding washer, a 5/16" bolt will be used in lieu of the self-drilling screws. These clips may also be fastened to any type of rail or support beam that can be tek-screwed or through-bolted.

Installation:

Position the first module on the Hat Section making sure it is square to the Hat. Secure the outside edge of the module with a Clip (H23) and End Block (H24). Bring the next module into position, placing clips between the modules and directly over the Hat Sections. Holding the modules tightly against the clips, install the two self-drilling tek screws through the holes in the clip and into the Hat below. Continue this process for the remaining modules.



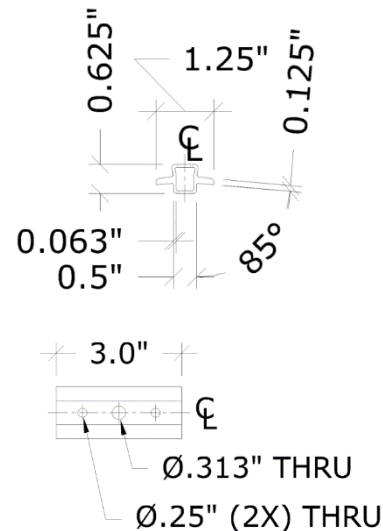
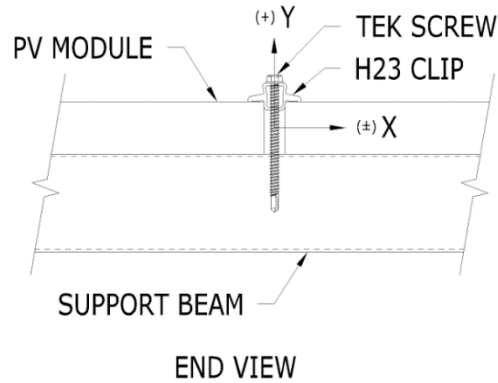
Allowable Capacity – Screw Connection¹:

Applied Load Direction	Ultimate Load (lbs)	Allowable Load (lbs)	Safety Factor, Ω :	Service Load (lbs)	Resistance Factor, ϕ :
Maximum Tension Force (+) Y:	1354	450	3	677	0.5
Maximum Shear Force, (\pm) X:	1875	625	3	938	0.5

¹Panel Clip capacities can be increased with different connection assemblies. Contact Silverback Solar for additional information.

Assembly Notes:

- Screw diameter shall not be less than 1/16" of nominal hole diameter.
- Calculated capacity assumes (2) 12-14 or 12-24 screws outside holes: nominal fastener diameter = 0.216 in, nominal washer diameter = 0.415 in.
- Fastener material requirements:
 - Exterior dry application: low moisture/rainfall
 1. 400 series stainless
 2. Zinc coated carbon steel ASTM A123, A641, B695
 3. Nickel plated carbon steel ASTM B 456, Type SC.
 - Exterior wet application: high moisture/rainfall
 1. Aluminum
 2. 300 Series stainless
- Panel clip capacities are for the extruded aluminum panel clip only and shall be compared with both the fastener and connecting material capacities as determined by the applicable Building Code(s) and or Building Official. The minimum value shall be used for design.



Material Properties: Extruded Aluminum 6063 T-6¹:

Tension Strength		Shear		Modulus
Ultimate	Yield	Ultimate	Yield	Modulus of Elasticity
30 ksi	25 ksi	19 ksi	15 ksi	10,100 ksi

¹Published stresses per 2010 Aluminum Design Manual

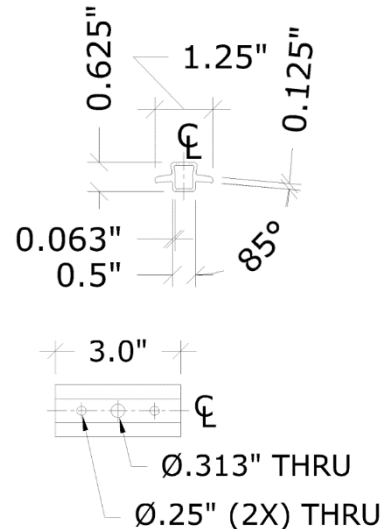
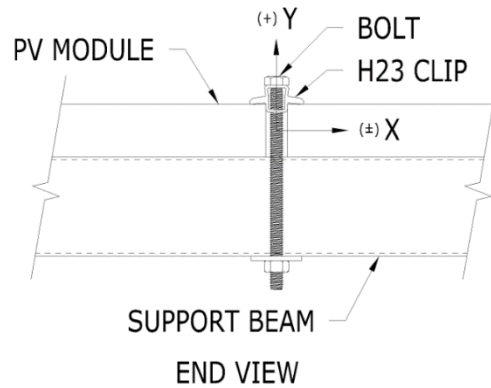
Allowable Capacity – Bolted Connection¹:

Applied Load Direction	Ultimate Load (lbs)	Allowable Load (lbs)	Safety Factor, Ω :	Service Load (lbs)	Resistance Factor, ϕ :
Maximum Tension Force (+) Y:	920	471	1.95	690	0.75
Maximum Shear Force, (\pm) X:	938	480	1.95	703	0.75

¹ Panel clip capacities can be increased with different connection assemblies. Contact Silverback Solar for additional information.

Assembly Notes:

- Bolt diameter shall not be less than 1/16" of nominal hole diameter.
- Calculated capacity assumes (1) 5/16" diameter 300 series, 18-8 stainless steel bolt in center hole.
- Panel clip capacities are for the extruded aluminum panel clip only and shall be compared with both the fastener and connecting material capacities as determined by the applicable Building Code(s) and or Building Official. The minimum value shall be used for design.



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Tension Strength		Shear		Modulus
Ultimate	Yield	Ultimate	Yield	Modulus of Elasticity
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