



सीमा शुल्क (निवारक) के आयुक्त का कार्यालय

OFFICE OF THE COMMISSIONER OF CUSTOMS (PREVENTIVE)

55-17-3, सी-14, 2 तल, औद्योगिक एस्टेट, ऑटो नगर, विजयवाड़ा – 520 007

55-17-3, C-14, 2nd Floor, Road No.2, Industrial Estate, Autonagar, Vijayawada – 520 007

फोन / Phone : 0866-2551261

फैक्स / Fax : 0866-2551156

C. No. VIII/48/322 /2018-Cus.Tech.

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**PUBLIC NOTICE No. 17 / 2018 - Customs**

Sub:- Customs – Clarification regarding classification of Solar Panel /  
Module equipped with Elements – regarding.

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Attention of all the Importers, Exporters, Customs Brokers, Steamer Agents, Custodians/Customs Cargo Service Providers, Trade Associations/Chamber of Commerce, Members of the RAC/PGC and the Public is invited to the Instruction No. 08/2018-Customs dated 06.04.2018 from F. No. 528/90/2016-STO(TU) of Central Board of Indirect Taxes and Customs, New Delhi.

2. On the classification of solar modules, it was earlier clarified that :
  - (a) If the solar panel / module is equipped with elements and these elements supply the power to an external load i.e. a motor, an electrolyser etc., then the solar panel / module is classifiable under **CTH 8501**.
  - (b) However, if the solar panel / module is equipped with elements but these elements do not supply the power to an external load i.e. a motor, an electrolyser etc., then the solar panel / module is classifiable under **CTH 8541**.



(c) Solar panel / module without element is classifiable under **CTH8541**.

3. In this regard, Board has further received representations from the trade regarding classification of solar modules / panels equipped with bypass diodes. The trade is of the view that the function of the bypass diodes in the module is to protect the solar modules / panels at the time of shading of solar cells and not to control the direction of the current. Therefore, in their opinion, solar modules equipped with bypass diode merits classification under Heading 8541.

4. The issue has been examined by the Board with reference to the decisions of World Customs Organizations in the matter and in this regard it is stated that the most common function of a diode is to allow an electric current to pass in one direction (in forward biasing), while blocking it in the opposite direction (in reverse biasing). Depending on its position in the solar module panel, it is referred as bypass diode or blocking diode.

**Bypass diodes :** These are commonly connected in parallel across pairs of solar cells or linear interconnected strands of cells, and prevent damage to solar cells when one or more cells receive much lower solar radiation than the rest of the array (as when the sun's rays are temporarily blocked by a tree limb or other article producing shade). Under normal conditions with no shading, every cell on the module will generate power and the bypass diode will be inactive as it will remain in reverse bias position. However, if part of the module becomes shaded (e.g. by a leaf or an object), the shaded cells will cease to generate power and will consume the energy produced by the active cells. As a result, the shaded cells would overheat and deteriorate. Bypass diode, therefore, protects the shaded cells from overheating, damage by diverting the electrical current around strings with shaded cells and through an



external circuit. When part of the module becomes shaded, the bypass diode wired in parallel to the string with shaded cells will conduct current. As a result, the current will flow through the bypass diode and around the shaded string. Therefore, solar module / panels equipped with such diodes would not meet the terms of the exclusion of the Explanatory Note to heading 85.41 and merits classification under CTH 8541.

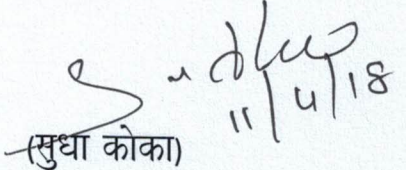
**Blocking Diode** : On the other hand, blocking diodes are usually attached in a series to the final output of the solar panel or module, and control the aggregate output (for example, preventing a reverse power flow from a connected electric accumulator). Therefore, the function of blocking diodes is to prevent a reverse power flow from connected devices. Since the blocking diode blocks the current in the opposite direction, which can be considered as a control of the direction fo the current as mentioned in the Explanatory Note to heading 85.01, therefore, solar modules / panels equipped with blocking diode merits classification under CTH 8501.

5. In view of the above, it is clarified that :

- (a) the solar panels or modules equipped with bypass diodes are classifiable in heading 8541.
- (b) the solar panels or modules equipped with blocking diodes are classifiable in heading 8501.
- (c) the solar panels or modules equipped with blocking diodes and bypass are classifiable in heading 8501.



6. Any difficulty faced in implementation of the above, should immediately be brought to the notice of the undersigned.

  
(सुधा कोका)  
SUDHA KOKA  
आयुक्त  
COMMISSIONER

To

All the Exporters / Customs Brokers Agencies / Customs Brokers Licensees / Customs Brokers Associations under the jurisdiction of Customs Commissionerate (Preventive), Vijayawada through the Joint Commissioner of Customs, Krishnapatnam / Kakinada Custom House and the Deputy / Assistant Commissioner of Customs, ICD, Marripalem.

1. Copy submitted to the Chief Commissioner of Customs & Central Tax, Visakhapatnam Zone, GST Bhavan, Port Area, Visakhapatnam – 530 035 for information.

**Copy to :**

1. The Principal Commissioner of Customs, Custom House, Port Area, Visakhapatnam – 530 035 for information
2. The Principal Commissioner / Commissioner of Central Tax, Tirupati, Guntur and Visakhapatnam Commissionerates for information.
3. The Joint Commissioner of Customs, Krishnapatnam Custom House, KAPS Building, CVR Complex, Krishnapatnam Port Area, Gopalapuram, **MUTHUKURU – 524 344** S. P. S.R. Nellore District for information with a direction to give wide publicity among the exporters under the jurisdiction KPCH.
4. The Joint Commissioner of Customs, Kakinada Custom House, Port Road, **Kakinada – 533 007**. East Godavari District for information with a direction to give wide publicity among the exporters under the jurisdiction KKDCH.
5. The Deputy / Assistant Commissioner of Customs ,ICD, **Marripalem – 522 233**, Guntur District for information with a direction to give wide publicity among the exporters under their jurisdiction.



6. The Deputy / Assistant Commissioners of Customs, Customs Divisions, **Visakhapatnam, Kakinada and Tirupati** for information.
7. Copy to Webmasters for display on KPCL/KSPL/GCT websites.
8. Copy to M/s. Krishnapatnam Port Company Limited (KPCL), the Custodian / Custom Cargo Service Provider of Krishnapatnam Port , Muthukur , SPSR Nellore District (Though the Joint Commissioner of Customs, Custom House, Krishnapatnam) for information.
9. Copy to M/s. Kakinada Sea Ports Limited, the Custodian / Custom Cargo Service Provider of Kakinada Port, Kakinada (Though the Joint Commissioner of Customs, Custom House, Kakinada) for information.
10. Copy to M/s. Leap International Private Limited , the Custodian / Custom Cargo Service Provider of ICD, Marripalem, Guntur (Though Deputy / Assistant Commissioner of Customs, ICD, Marripalem, Guntur ) for information.
11. Copy to Superintendent (Computers), CC(P), Hqrs. Office, Vijayawada for display on CPC, Vijayawada website [www.apcustoms.gov.in](http://www.apcustoms.gov.in).
12. Notice Board.