



One of the World's Largest  
**Manufacturers**  
of Discrete Semiconductors and Passive Components

# Diode Division

## High Power Diodes for Rotating Application overview

Rev. 11-17



## Customized Diodes for Rotating Applications

Vishay Semiconductor supplies since more than 35 years several Diode part numbers suitable for High Speed Rotating Application.

The diodes are manufactured using dedicated materials and standard process flow and then are submitted to dedicated test sequence to meet customer specification.

Four major product families of Discrete High Power Product families are involved :

- STUD DO5 (for  $I_{favg}$  40-90 A)
- STUD DO9 (for  $I_{favg}$  300 A)
- STUD B8 (for  $I_{favg} > 300A$ )
- Power discs (hockey-puk) for  $I_{favg} > 500 A$

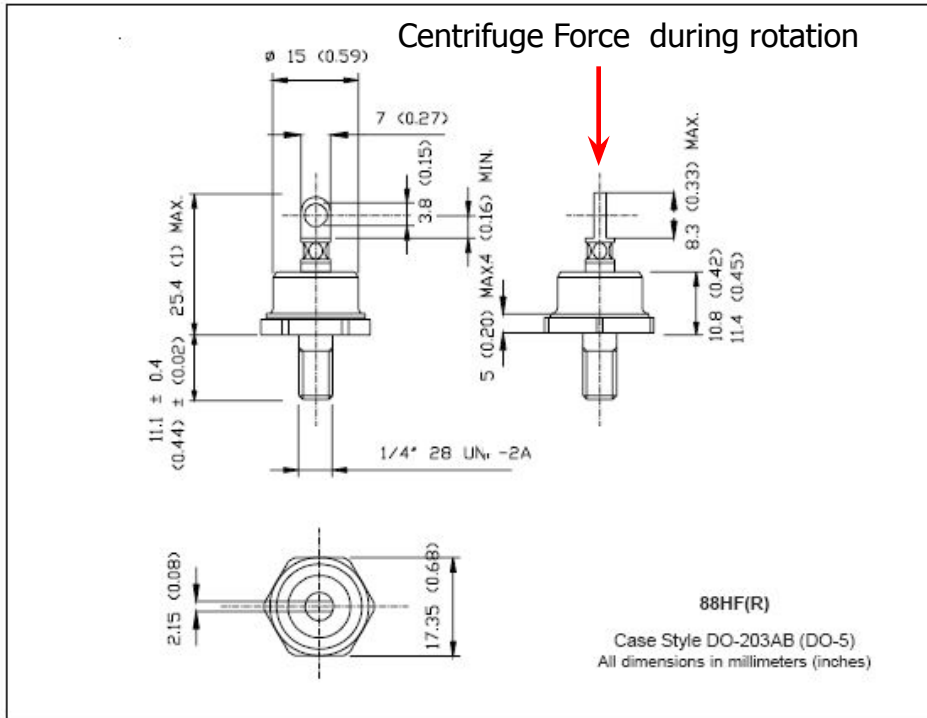
In all diode families we recommend to mount diode package in order to have centrifuge force axial to device body.

R&D Module, Discrete, Bridges

# Customized Diodes for Rotating Applications

## STUD DO5 (for $I_{avg}$ 40-90 A)

Outlines Table



88HF series

Double click to open data sheet. **See 88HF Series**



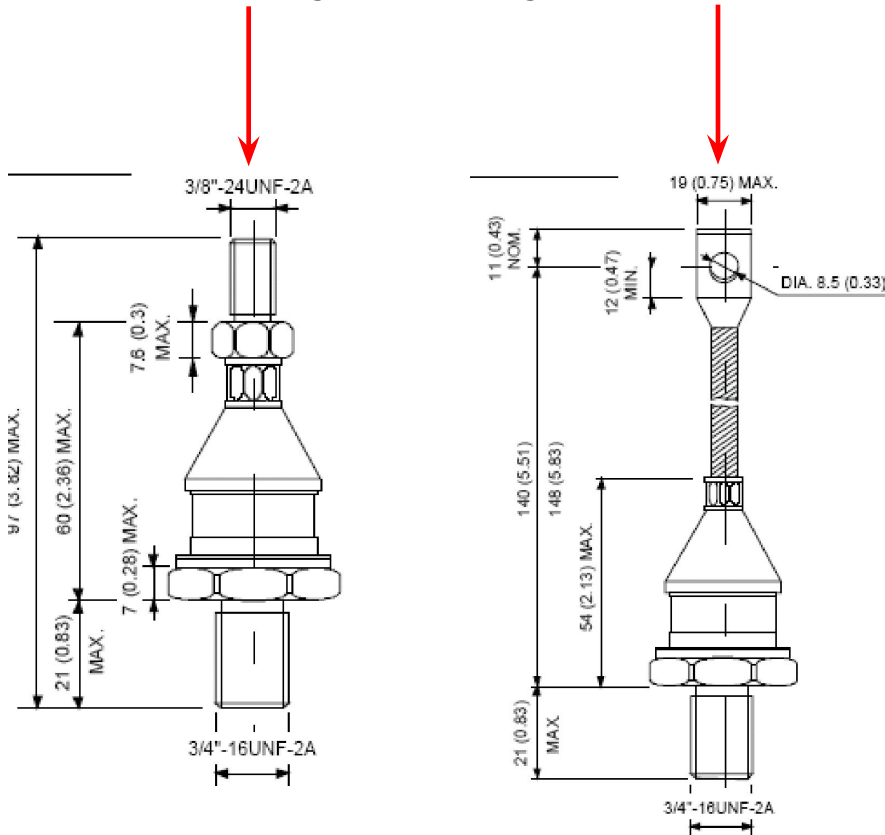
Top lead torque

Double click to open data on torque

# Customized Diodes for Rotating Applications

## STUD DO9 (for $I_{favg}$ 300 A)

Centrifuge Force during rotation



Double click to open data sheet. See **305U, 307U, 309U Series**

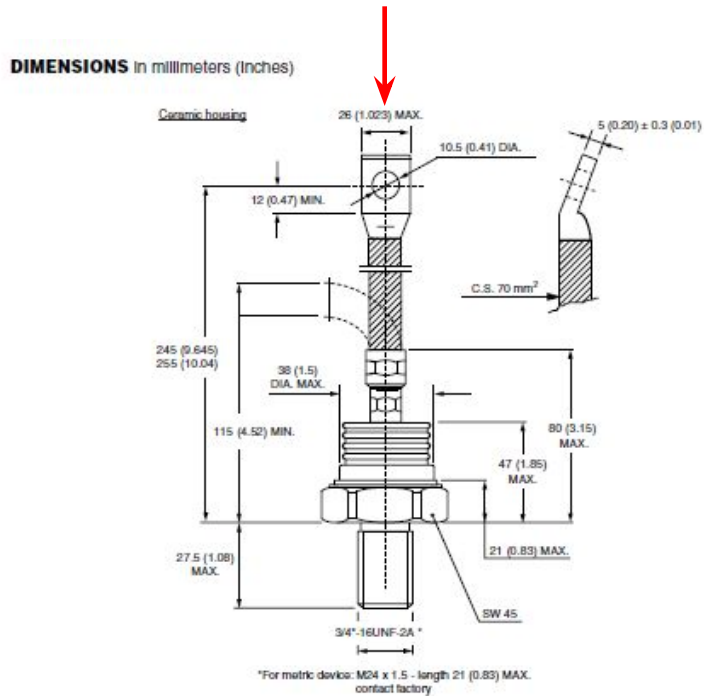


305-307-309U series

# Customized Diodes for Rotating Applications

## STUD B8 (for $I_{favg} > 300 A$ )

Centrifuge Force during rotation

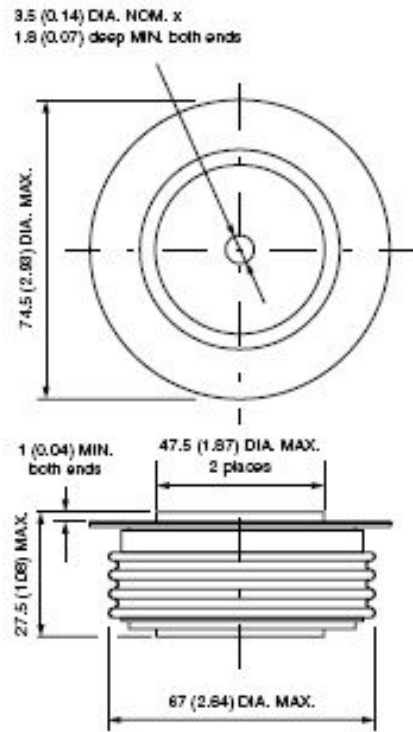
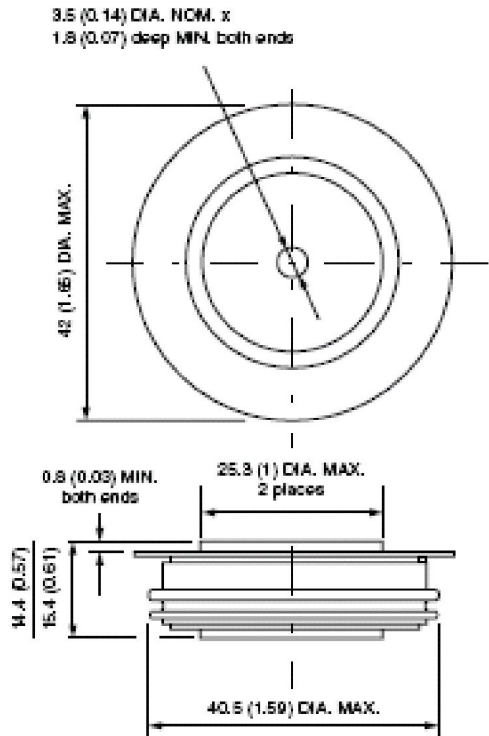


B8 series

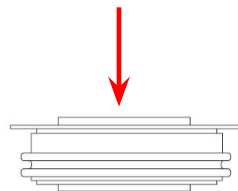
Double click to open data sheet. **See B8 Series**

# Customized Diodes for Rotating Applications

Power Discs – Hockey-puk (for  $I_{avg} > 500$  A)



Centrifuge Force during rotation



SD700 series



SD1100 series

See Data sheets,  
SD700C,  
SD1100C  
Series

## Customized Diodes for Rotating Applications

Diodes for Rotating application are hermetic devices designed to survive at severe mechanical and environmental working conditions. Typically MIL-STD are used as guideline for Thermal Shock, Vibration, HTRB, Temperature Cycling, Centrifuge, Power Cycling tests.

Typical application were used are:

Alternators

Power Generators

Converters

Power Supply

## Customized Diodes for Rotating Applications

When requested, the devices can be tested accordingly to the special flows agreed with the customer.

Example (valid for DO9 and hockey-puk) :

- Peak Reverse Current ( $I_{rr}$ ) and Forward Voltage Drop ( $V_{fm}$ )
- Electrical Endurance (HTRB)
- Peak Reverse Current ( $I_{rr}$ )
- Surge Overload Current
- Acceleration (g-test) up to 6500g
- X-ray (to verify mechanical integrity)
- Peak Reverse Current ( $I_{rr}$ ) and Forward Voltage Drop ( $V_{fm}$ )

Devices can be supplied with data logging reporting test conditions and results.

In such cases, a special product part number is created and uniquely dedicated to the customer.

Standard “catalog” part numbers do not have special test flow and data log report.