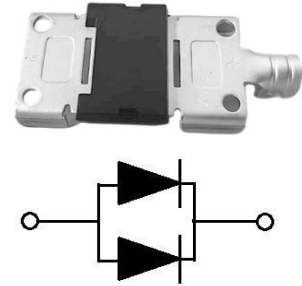


Schottky Bypass Diode Module

Features

- High frequency operation
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation forenhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability



Applications

Photovoltaic solar cell protection schottky rectifier

Mechanical Data

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal tin plated leads
- Polarity: As marked

Maximum Ratings & Electrical Characteristics (T_A=25°C unless otherwise noted)

| Parameter | Symbol | MK4045 | Unit |
|--|--------------------|-------------|------|
| Repetitive Peak Reverse Voltage | V _{RRM} | 45 | V |
| Average Rectified Output Current @60Hz sine wave, R-load, T _a =25°C | I _{F(AV)} | 50 | A |
| Surge(Non-repetitive)Forward Current @60Hz sine wave, 1 cycle, T _j =25°C | I _{FSM} | 700 | A |
| Storage Temperature | T _{stg} | -55 to +150 | °C |
| Junction Temperature IN DC Forward Mode-Forward Operations, without reverse bias, t ≤1 h (Fig. 1) (1) | T _J | 200 | °C |

Note

(1) Meets the requirements of IEC 61215 Ed. 2 bypass diode thermal test.

Electrical Specifications (T_A=25°C unless otherwise noted)

| Parameter | Symbol | Test Conditions | Typ | Min | Max | Unit |
|---------------------------|-----------------|-----------------|-------|------|------|------|
| Reverse breakdown voltage | V _{BR} | IR=500μA | 55 | 48 | - | V |
| Forward voltage drop | V _F | IF=50A | 0.475 | 0.44 | 0.54 | V |
| Reverse leakage current | I _R | VR=45V | - | - | 60 | μA |

Thermal-Mechanical Specifications (T_A=25°C unless otherwise noted)

| Parameter | Symbol | Typ | Max | Unit |
|--------------------------------------|------------------|-----|------|-------|
| Thermal Resistance, Junction to Case | R _{θJC} | - | 1.5- | °C /W |

Note

(1) Thermal resistance from Between junction and case, On glass-epoxi substrate.

Ordering Information (Example)

| PREFERRED P/N | UNIT WEIGHT(g) | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|-----------------|-----------------------|-------------------------|----------------------------|---------------|
| MK5045 | Approximate 4.9 | 30 | 450 | 2700 | Tube |

Note 1: Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Note 2: Junction Temperature In DC forward current without reverse bias, t ≤ 1 h (Fig.1). Meets the Requirements of IEC 61215 Ed. 2 bypass diode thermal test.

Note 3: Pulse test with PW=300 μ s, 1% duty cycle

Characteristics(Typical)

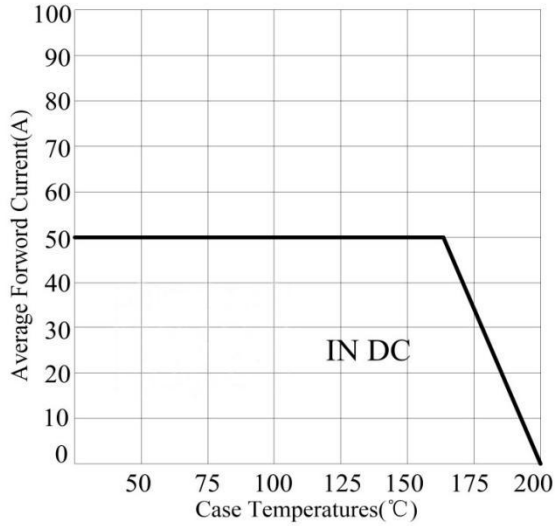


FIG. 1-FORWARD CURRENT DERATING CURVE

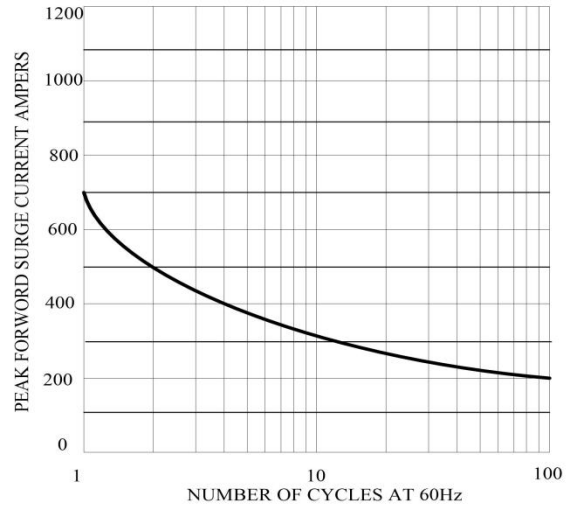


FIG. 2- MAXIMUM NON-REPETITIVE SURGE

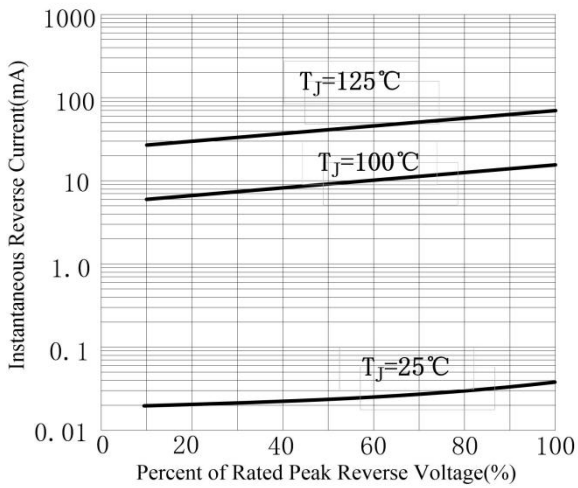


FIG. 3-TYPICAL REVERSE CHARACTERISTICS

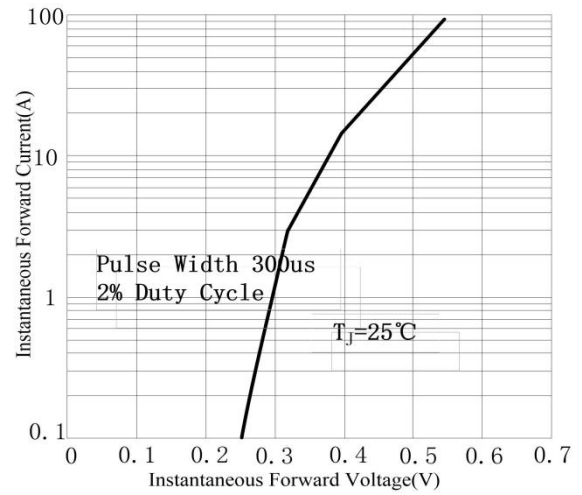
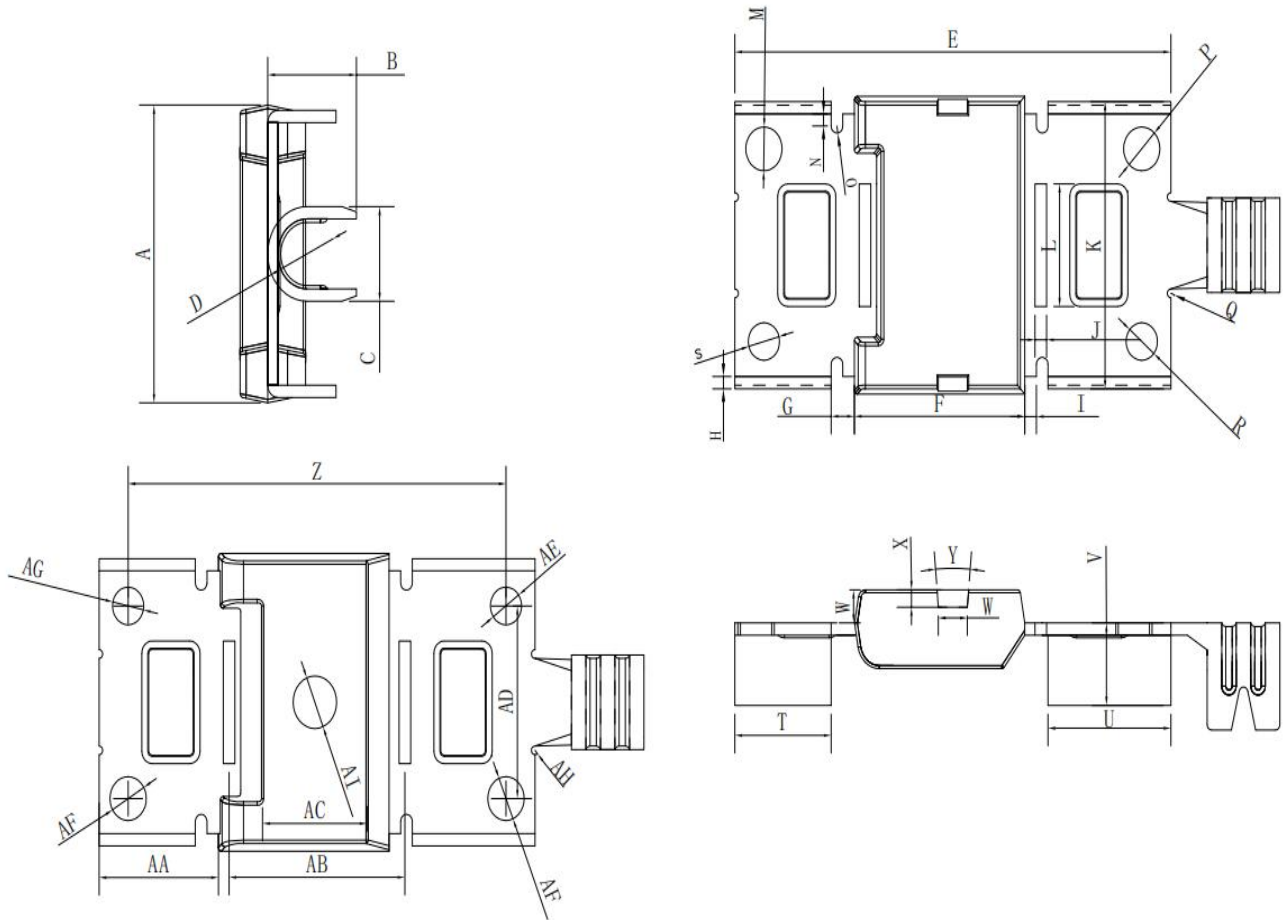


FIG. 4-TYPICAL FORWARD CHARACTERISTICS

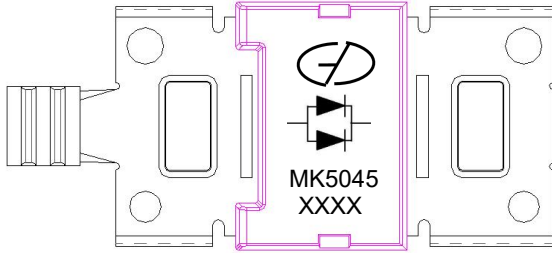
Package Outline Dimensions



(Unit: millimeters)



| DIM | MIN | MAX | DIM | MIN | MAX |
|-----|-------|-------|-----|-------|-------|
| A | 16.9 | 17.1 | R | ∅2.15 | ∅2.15 |
| B | 5.7 | 5.9 | S | ∅2.15 | ∅2.15 |
| C | 5.2 | 5.6 | T | 6.53 | 6.73 |
| D | ∅3.9 | ∅4.1 | U | 8.35 | 8.55 |
| E | 29.9 | 30.1 | V | 4.50 | 4.90 |
| F | 11.63 | 11.83 | W | 1.90 | 1.90 |
| G | 1.59 | 1.59 | X | 1.00 | 1.00 |
| H | 1.40 | 1.40 | Z | 25.90 | 26.10 |
| I | 0.80 | 0.80 | AA | 8.22 | 8.22 |
| J | 0.8 | 1.0 | AB | 12.10 | 12.10 |
| K | 16.30 | 16.50 | AC | 7.18 | 7.18 |
| L | 7.00 | 7.00 | AD | 10.90 | 11.10 |
| M | ∅2.50 | ∅2.50 | AE | ∅2.15 | ∅2.15 |
| N | 1.40 | 1.40 | AF | ∅2.50 | ∅2.50 |
| O | R0.80 | R0.80 | AG | ∅2.15 | ∅2.15 |
| P | ∅2.50 | ∅2.50 | | | |
| Q | R0.50 | R0.50 | | | |

Marking Outline



1. Logo Mark: 
2. Polarity: 
3. Part Name: MK4045
4. Date Code: XXXX

Revision History

| Document Version | Date of release | Description of changes |
|------------------|-----------------|------------------------|
| Rev.A | 2024.01.23 | Preliminary Datasheet |

Disclaimers

These materials are intended as a reference to assist our customers in the selection of the Suzhou Good-Ark product best suited to the customer's application; they do not convey any license under any intellectual property rights, or any other rights, belonging to Suzhou Good-Ark Electronics Co., Ltd. or a third party.

Suzhou Good-Ark Electronics Co., Ltd. assumes no responsibility for any damage, or infringement of any third-party's rights, originating in the use of any product data, diagrams, charts, programs, algorithms, or circuit application examples contained in these materials.

All information contained in these materials, including product data, diagrams, charts, programs and algorithms represents information on products at the time of publication of these materials, and are subject to change by Suzhou Good-Ark Electronics Co., Ltd. without notice due to product improvements or other reasons. It is therefore recommended that customers contact Suzhou Good-Ark Electronics Co., Ltd. or an authorized Suzhou Good-Ark Electronics Co., Ltd. for the latest product information before purchasing a product listed herein. The information described here may contain technical inaccuracies or typographical errors. Suzhou Good-Ark Electronics Co., Ltd. assumes no responsibility for any damage, liability, or other loss rising from these inaccuracies or errors. Please also pay attention to information published by Suzhou Good-Ark Electronics Co., Ltd. by various means, including our website home page.

(<http://www.goodark.com>)

When using any or all of the information contained in these materials, including product data, diagrams, charts, programs, and algorithms, Please be sure to evaluate all information as a total system before making a final decision on the applicability of the information and products. Suzhou Good-Ark Electronics Co., Ltd. assumes no responsibility for any damage, liability or other loss resulting from the information contained herein.

The prior written approval of Suzhou Good-Ark Electronics Co., Ltd. is necessary to reprint or reproduce in whole or in part these materials.

Please contact Suzhou Good-Ark Electronics Co., Ltd. or an authorized distributor for further details on these materials or the products contained herein.