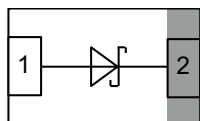


## Small Signal Schottky Diode



### LINKS TO ADDITIONAL RESOURCES



### MECHANICAL DATA

**Case:** DFN1006-2A

**Weight:** 0.83 mg

**Molding compound flammability rating:** UL 94 V-0

**Terminals:** high temperature soldering guaranteed:

Peak temperature max. 260 °C

**Packaging codes/options:**

08/10K per 7" reel (8 mm tape)

### FEATURES

- This diode features very low turn-on voltage and fast switching
- This device is protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- Leadless ultra small DFN1006-2A package (1 mm × 0.6 mm × 0.45 mm)
- Power dissipation better than SOT-23
- Surface-mounted device (SMD) plastic package with visible and sidewall plated / wettable flanks
- Soldering can be checked by standard visual inspection. No X-ray inspection necessary to meet automotive AOI requirements
- AEC-Q101 qualified available
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### PARTS TABLE

| PART   | ORDERING CODE | AEC-Q101 QUALIFIED | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS       |
|--------|---------------|--------------------|-----------------------|--------------|---------------|
| BAS40L | BAS40L-G3-08  | no                 | Single                | A.           | Tape and reel |
|        | BAS40L-HG3-08 | yes                |                       |              |               |

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

| PARAMETER                           | TEST CONDITION                                     | SYMBOL           | VALUE | UNIT |
|-------------------------------------|----------------------------------------------------|------------------|-------|------|
| Reverse voltage                     |                                                    | V <sub>R</sub>   | 40    | V    |
| Forward current                     | on FR-4 board with recommended soldering footprint | I <sub>F</sub>   | 200   | mA   |
| Non-repetitive peak forward current | T <sub>J</sub> = 25 °C, t <sub>p</sub> = 10 ms     | I <sub>FSM</sub> | 500   | mA   |
|                                     | T <sub>J</sub> = 100 °C, t <sub>p</sub> = 10 ms    |                  | 200   |      |
|                                     | T <sub>J</sub> = 125 °C, t <sub>p</sub> = 20 μs    |                  | 500   |      |
| Power dissipation                   | on FR-4 board with recommended soldering footprint | P <sub>tot</sub> | 300   | mW   |
|                                     | R <sub>thJL</sub> = 100 K/W                        |                  | 1250  | mW   |

### THERMAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

| PARAMETER                                  | TEST CONDITION                                                              | SYMBOL              | VALUE       | UNIT |
|--------------------------------------------|-----------------------------------------------------------------------------|---------------------|-------------|------|
| Thermal resistance junction to ambient air | according to JEDEC® 51-3 on FR-4 board with recommended soldering footprint | R <sub>thJA</sub>   | 420         | K/W  |
| Thermal resistance junction to lead        |                                                                             | R <sub>thJL</sub>   | 100         | K/W  |
| Maximum junction temperature               |                                                                             | T <sub>J max.</sub> | 150         | °C   |
| Storage temperature range                  |                                                                             | T <sub>stg</sub>    | -55 to +150 | °C   |
| Operating temperature range                |                                                                             | T <sub>op</sub>     | -55 to +150 | °C   |

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |                                                        |        |      |      |      |               |
|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------|------|------|------|---------------|
| PARAMETER                                                                                                | TEST CONDITION                                         | SYMBOL | MIN. | TYP. | MAX. | UNIT          |
| Leakage current                                                                                          | $V_R = 40\text{ V}, T_J = 25\text{ }^{\circ}\text{C}$  | $I_R$  |      |      | 10   | $\mu\text{A}$ |
|                                                                                                          | $V_R = 30\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$ |        |      |      | 200  | $\mu\text{A}$ |
|                                                                                                          | $V_R = 40\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$ |        |      |      | 500  | $\mu\text{A}$ |
| Forward voltage                                                                                          | $I_F = 1\text{ mA}$                                    | $V_F$  |      |      | 400  | mV            |
|                                                                                                          | $I_F = 10\text{ mA}$                                   |        |      |      | 560  | mV            |
|                                                                                                          | $I_F = 40\text{ mA}$                                   |        |      |      | 1000 | mV            |
| Diode capacitance                                                                                        | $V_R = 0\text{ V}, f = 1\text{ MHz}$                   | $C_D$  |      | 2.9  |      | pF            |

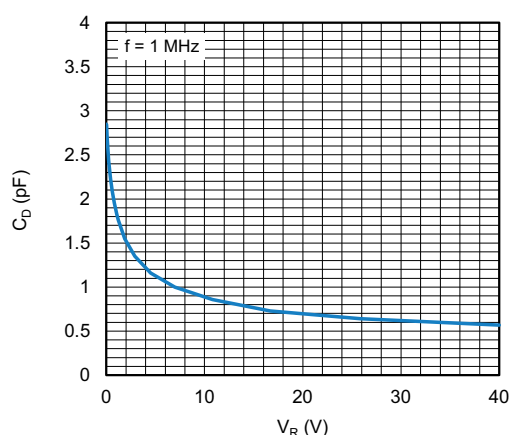
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Typical Capacitance vs. Reverse Voltage

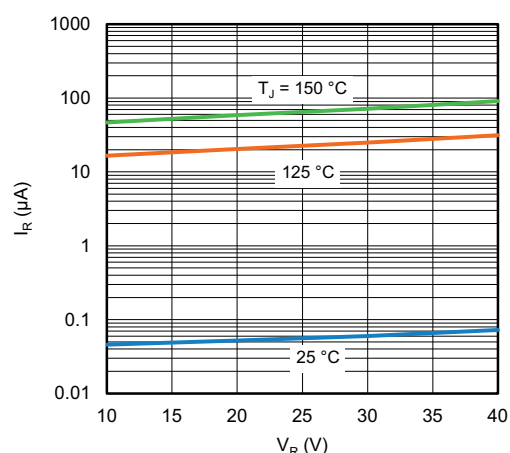


Fig. 3 - Typical Reverse Leakage Current vs. Reverse Voltage

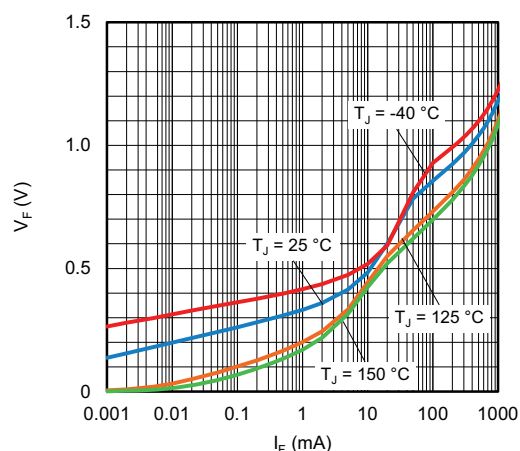
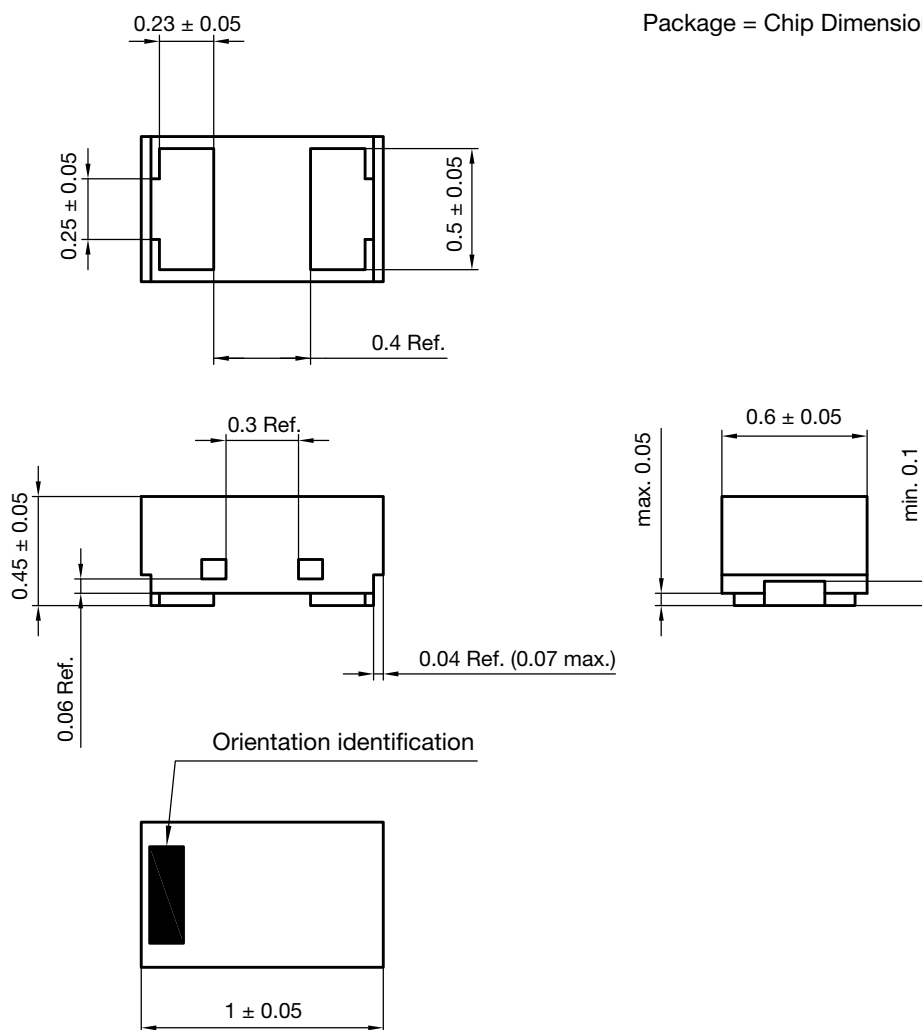
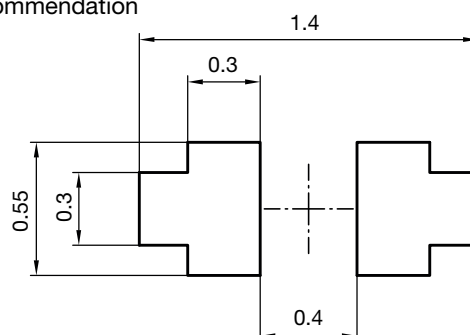


Fig. 2 - Typical Forward Voltage vs. Forward Current

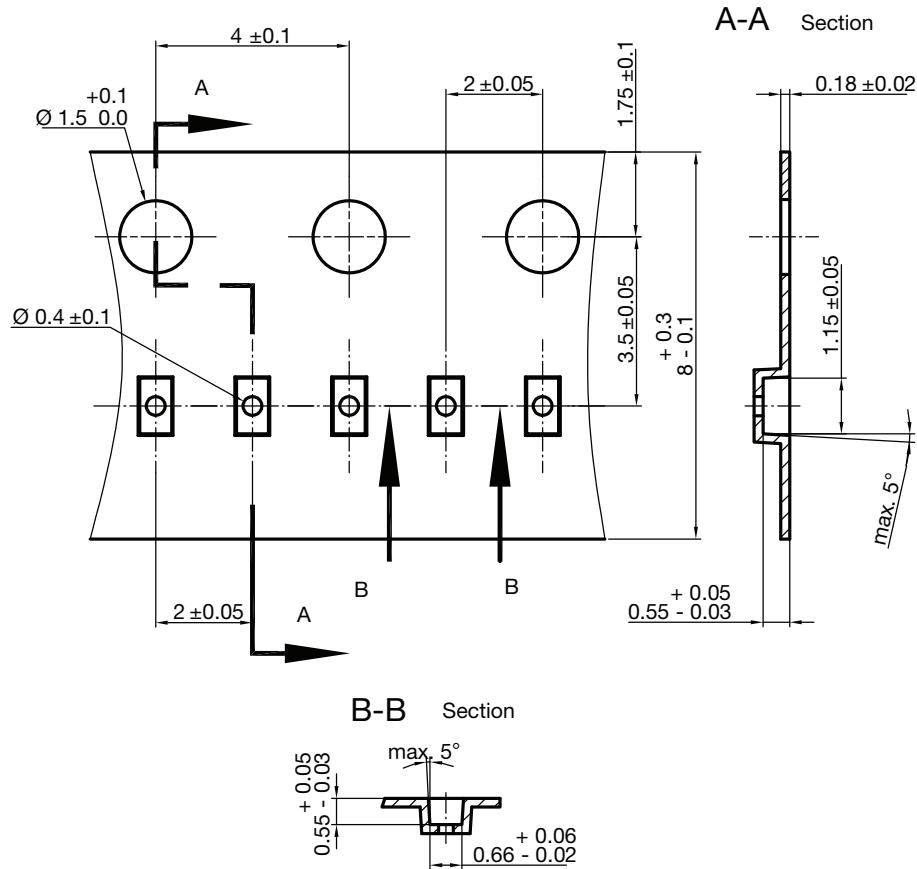
**PACKAGE DIMENSIONS** in millimeters: **DFN1006-2A**

Package = Chip Dimension in mm


**Footprint recommendation**


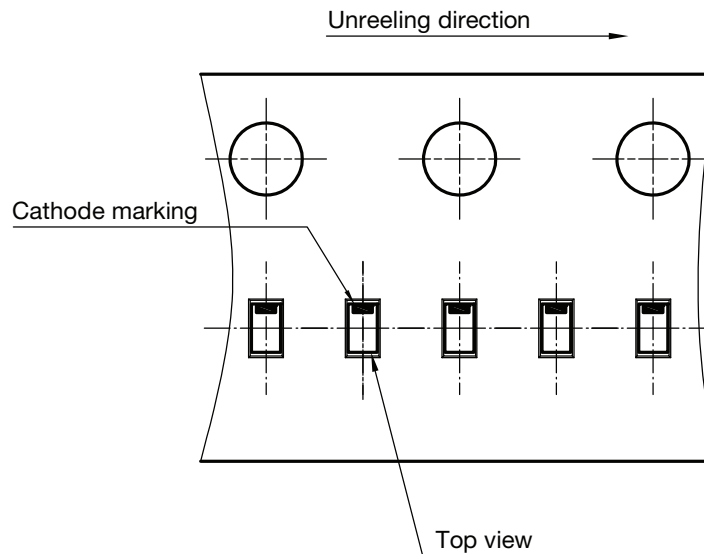
Document no.: S8-V-3906.04-059 (4)  
Created - Date: 11-Jul-2018  
Rev.5 - Date: 17-Sep-2021

23191

**CARRIER TAPE DFN1006-2A**


S8-V-3906.04-063 (4)  
created 28.10.2019

surface resistance:  $10^5 - 10^{11} \frac{\text{OHMS}}{\text{SQ}}$   
Cumulative tolerances of 10 sprocket holes is  $\pm 0.2 \text{ mm}$

**ORIENTATION IN CARRIER TAPE DFN1006-2A**


S8-V-3906.04-064 (4)  
created 28.10.2019



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