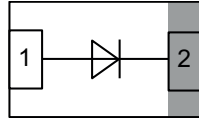


Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- 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



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)

PARTS TABLE

| PART | ORDERING CODE | AEC-Q101 QUALIFIED | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS |
|--------|---------------|--------------------|-----------------------|--------------|---------------|
| BAS16L | BAS16L-G3-08 | no | Single | .D | Tape and reel |
| | BAS16L-HG3-08 | yes | | | |

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ °C}$, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|---|--|-----------|-------|------|
| Reverse voltage | | V_R | 100 | V |
| Forward current | on FR-4 board with recommended soldering footprint | I_F | 250 | mA |
| Non repetitive forward current ⁽¹⁾ | $t_p = 1\ \mu\text{s}$ | I_{FSM} | 9 | A |
| | $t_p = 1\ \text{ms}$ | | 1.7 | |
| | $t_p = 1\ \text{s}$ | | 0.5 | |
| Repetitive peak forward current | $T_L = 100\text{ °C}$, $t_p \leq 1\ \text{ms}$, $D = 0.05$ | I_{FRM} | 500 | mA |
| Power dissipation | on FR-4 board with recommended soldering footprint | P_{tot} | 300 | mW |
| | $R_{thJL} = 100\ \text{K/W}$ | | 1250 | mW |

Note

⁽¹⁾ Square wave, $T_j = 25\text{ °C}$ prior to surge

THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$, 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_{thJA} | 420 | K/W |
| Thermal resistance junction to lead | | R_{thJL} | 100 | K/W |
| Maximum junction temperature | | $T_{j\text{max}}$ | 150 | °C |
| Storage temperature range | | T_{stg} | -55 to +150 | °C |
| Operating temperature range | | T_{op} | -55 to +150 | °C |

| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | |
|--|---|----------|------|-------|---------------|
| PARAMETER | TEST CONDITION | SYMBOL | TYP. | MAX. | UNIT |
| Forward voltage | $I_F = 150\text{ mA}$ | V_F | | 1.250 | V |
| | $I_F = 50\text{ mA}$ | | | 1.0 | V |
| | $I_F = 10\text{ mA}$ | | | 0.86 | V |
| | $I_F = 1\text{ mA}$ | | | 0.715 | V |
| Leakage current | $V_R = 80\text{ V}$ | I_R | | 500 | nA |
| | $V_R = 80\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$ | I_R | | 100 | μA |
| | $V_R = 100\text{ V}$ | I_R | | 1 | μA |
| Diode capacitance | $V_R = 0\text{ V}, f = 1\text{ MHz}$ | C_D | 0.36 | 2 | pF |
| Reverse recovery time | $I_F = 10\text{ mA}, I_R = 10\text{ mA}, i_R = 1\text{ mA}$ | t_{rr} | | 4 | ns |

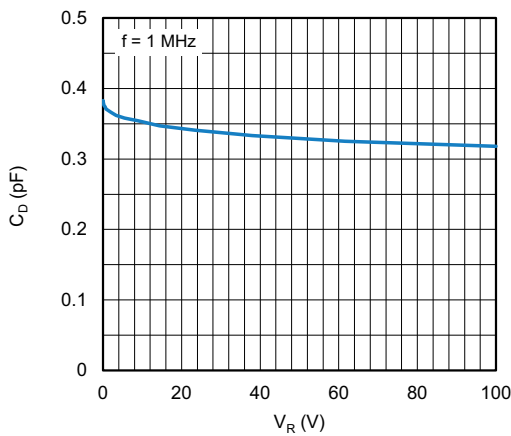
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Typical Capacitance vs. Reverse Voltage

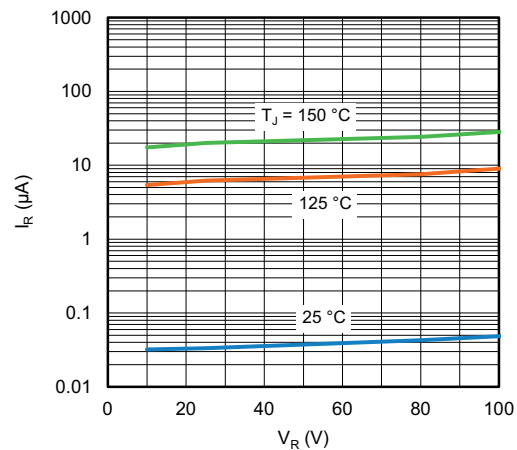


Fig. 3 - Typical Reverse Leakage Current vs. Reverse Voltage

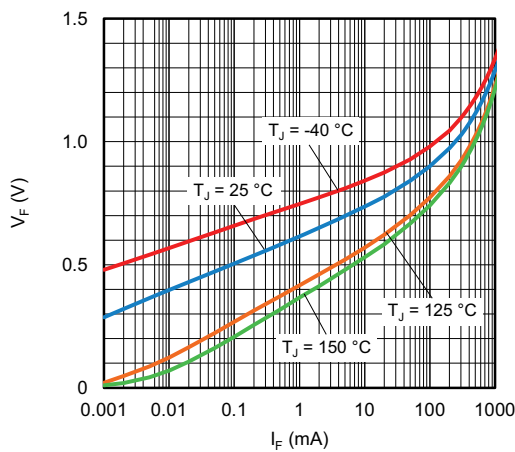
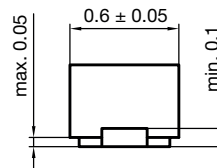
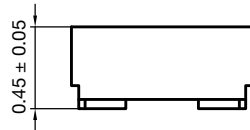
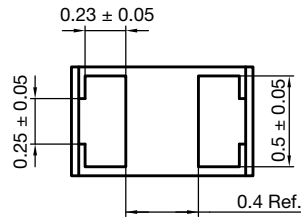
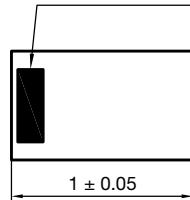


Fig. 2 - Typical Forward Voltage vs. Forward Current

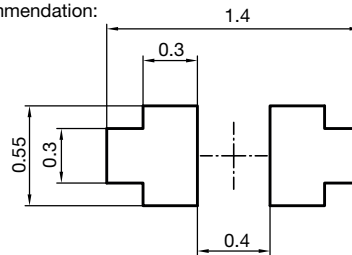
PACKAGE DIMENSIONS in millimeters: **DFN1006-2A**



Orientation identification



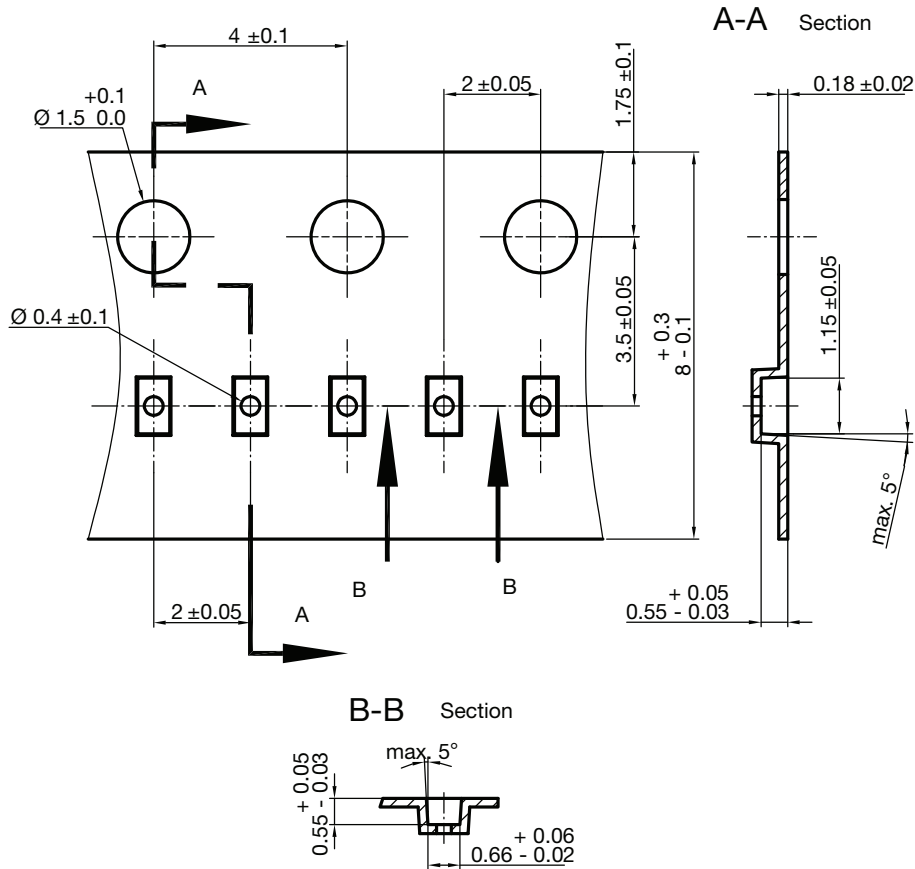
Footprint recommendation:



Document no.: S8-V3906.04-059 (4)
Created - Date: 11-July-2018
Rev.3 - Date: 02-Nov-2020

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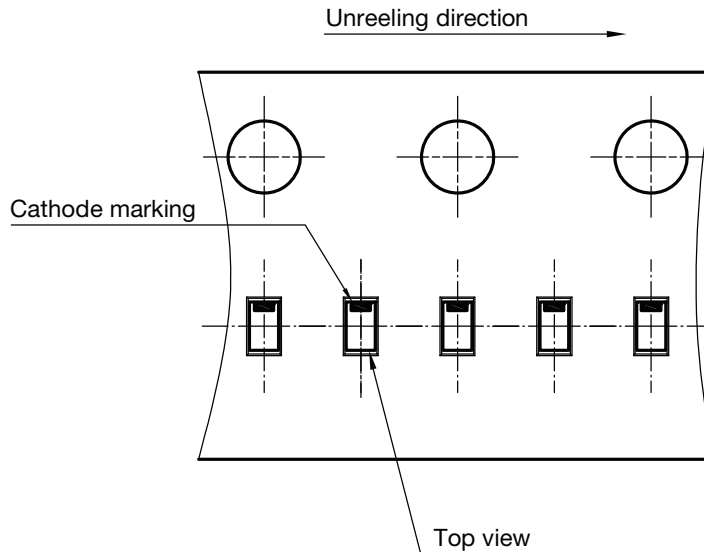
CARRIER TAPE DFN1006-2A



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 ± 0.2 mm

ORIENTATION IN CARRIER TAPE DFN1006-2A



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



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