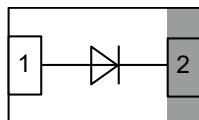


## Small Signal Fast Switching Diode



### 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](http://www.vishay.com/doc?99912)

AUTOMOTIVE  
GRADE  
Available



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### LINKS TO ADDITIONAL RESOURCES



3D Models



Models



Application Notes

### 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<sub>amb</sub> = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V <sub>R</sub>	100	V
Forward current	on FR-4 board with recommended soldering footprint	I <sub>F</sub>	250	mA
Non repetitive forward current <sup>(1)</sup>	t <sub>p</sub> = 1 μs	I <sub>FSM</sub>	9	A
	t <sub>p</sub> = 1 ms		1.7	
	t <sub>p</sub> = 1 s		1	
Repetitive peak forward current	T <sub>L</sub> = 100 °C, t <sub>p</sub> ≤ 1 ms, D = 0.05	I <sub>FRM</sub>	500	mA
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

**Note**

<sup>(1)</sup> Square wave, T<sub>j</sub> = 25 °C prior to surge

### 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	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	$\mu\text{A}$
	$V_R = 100\text{ V}$	$I_R$		1	$\mu\text{A}$
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)

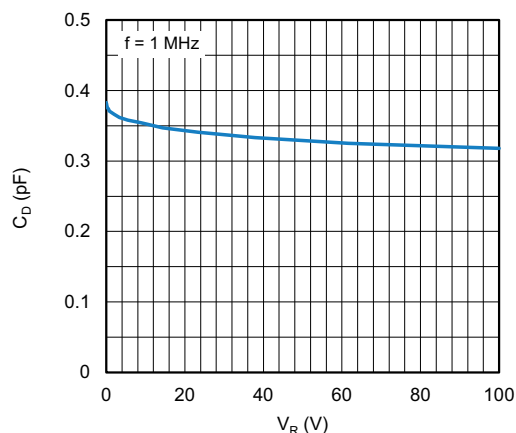


Fig. 1 - Typical Capacitance vs. Reverse Voltage

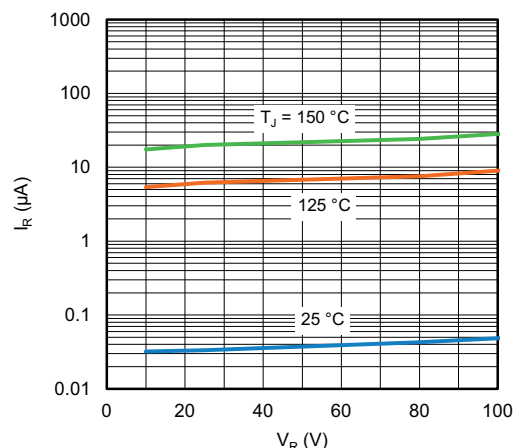


Fig. 3 - Typical Reverse Leakage Current vs. Reverse Voltage

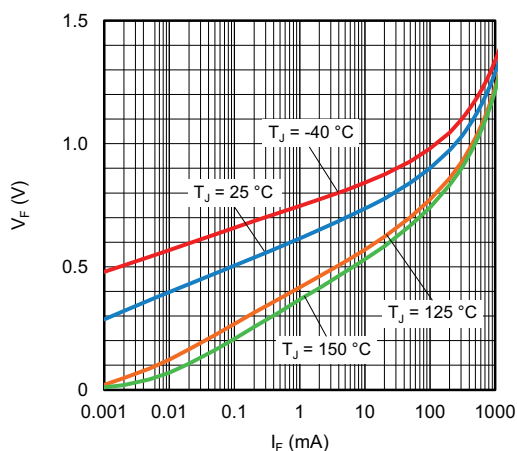
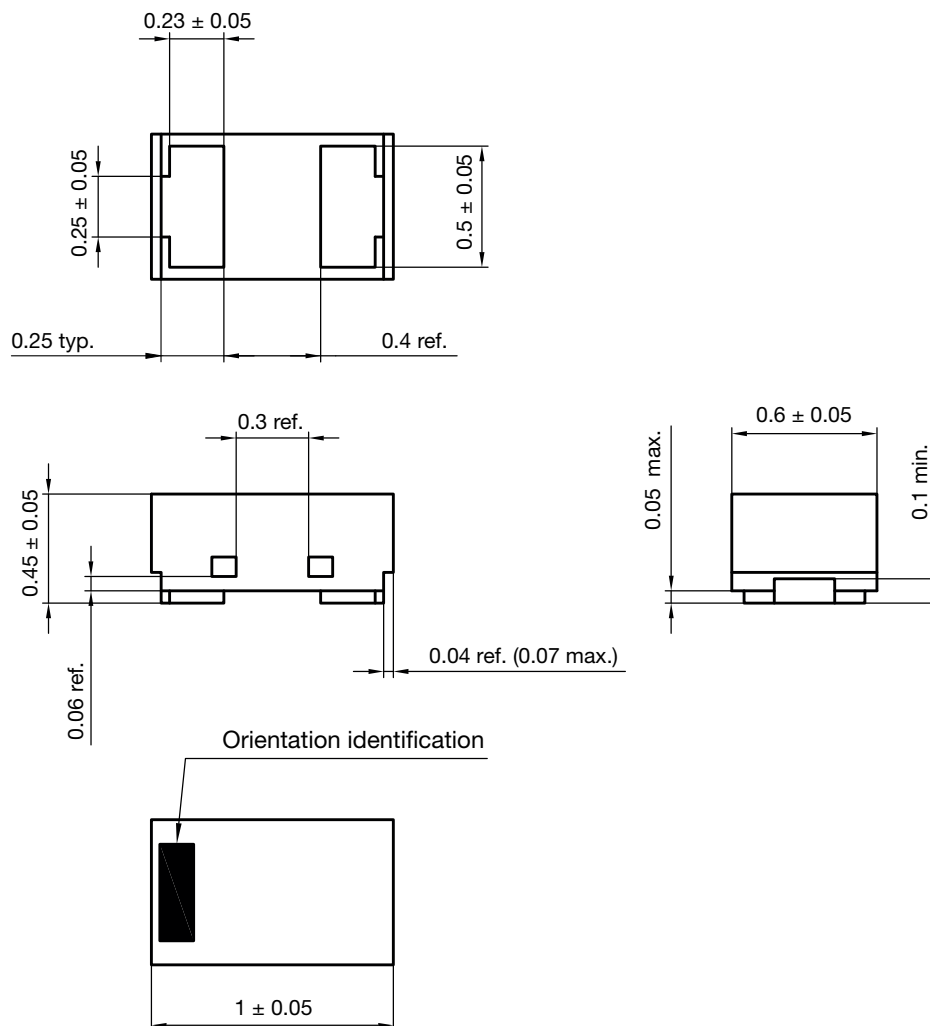
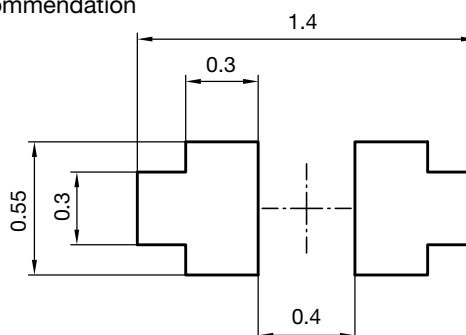
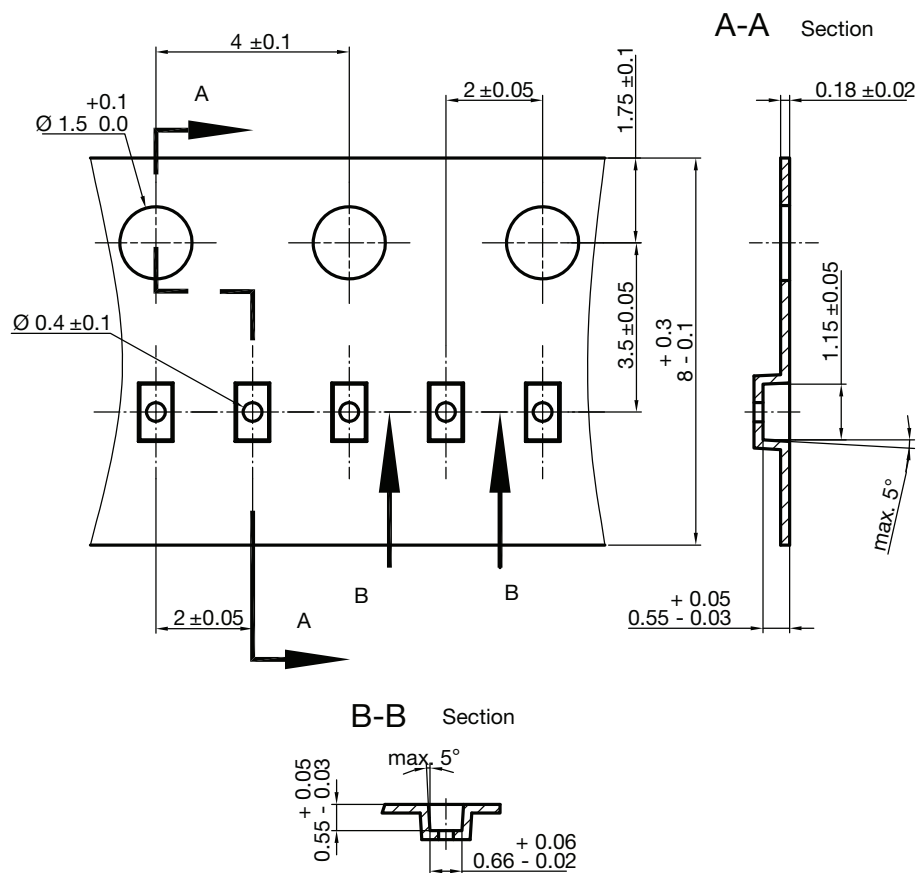


Fig. 2 - Typical Forward Voltage vs. Forward Current

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

**Footprint recommendation**


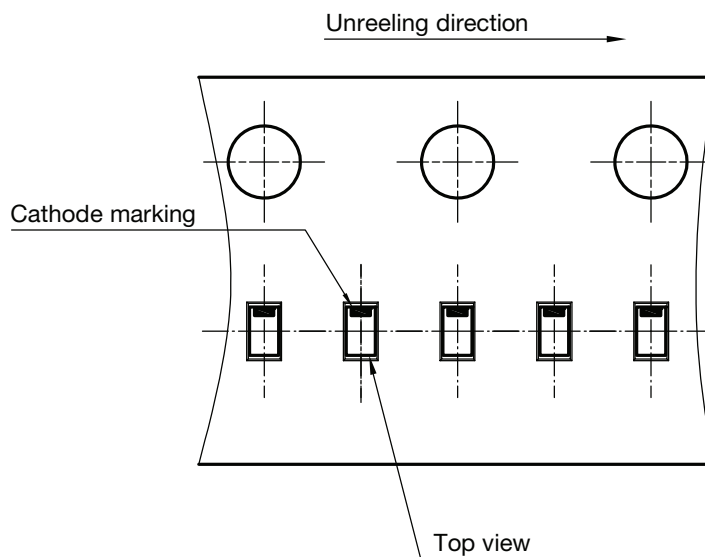
Document no.: S8-V-3906.04-059 (4)  
Created - Date: 11-Jul-2018  
Rev.6 - Date: 12-Nov-2024

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  $\pm 0.2$  mm

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


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



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