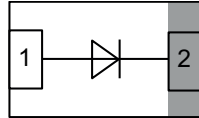


## Small Signal Switching Diode with $T_J$ max. = 175 °C



### FEATURES

- $T_J$  max. = 175 °C, rated for high temperature, mission critical applications
- 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)



### 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
BAS16LTH	BAS16LTH-G3-08	no	Single	GD	Tape and reel
	BAS16LTH-HG3-08	yes			

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25$ °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 <sup>(1)</sup>	$t_p = 1 \mu s$	$I_{FSM}$	9	A
	$t_p = 1 ms$		1.7	
	$t_p = 1 s$		0.5	
Repetitive peak forward current	$T_L = 100$ °C, $t_p = \leq 1 ms$ , $D = 0.05$	$I_{FRM}$	500	mA
Power dissipation	on FR-4 board with recommended soldering footprint	$P_{tot}$	350	mW
	$R_{thJL} = 100 K/W$		1500	mW

#### Note

<sup>(1)</sup> Square wave,  $T_J = 25$  °C prior to surge

### THERMAL CHARACTERISTICS ( $T_{amb} = 25$ °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	according to JEDEC <sup>®</sup> 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		$T_{J max.}$	175	°C
Storage temperature range		$T_{stg}$	-55 to +175	°C
Operating temperature range		$T_{op}$	-55 to +175	°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	$\mu\text{A}$
	$V_R = 80\text{ V}, T_J = 175\text{ }^{\circ}\text{C}$	$I_R$		550	$\mu\text{A}$
	$V_R = 100\text{ V}$	$I_R$		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

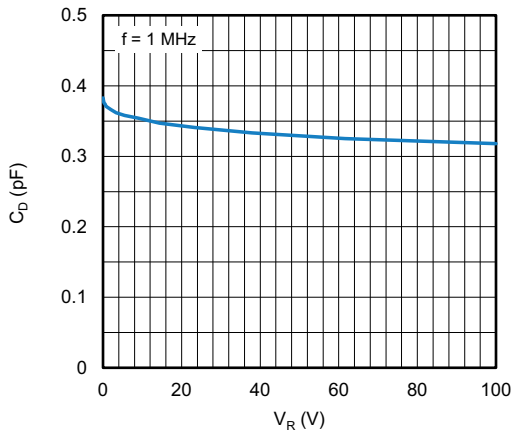
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Typical Capacitance vs. Reverse Voltage

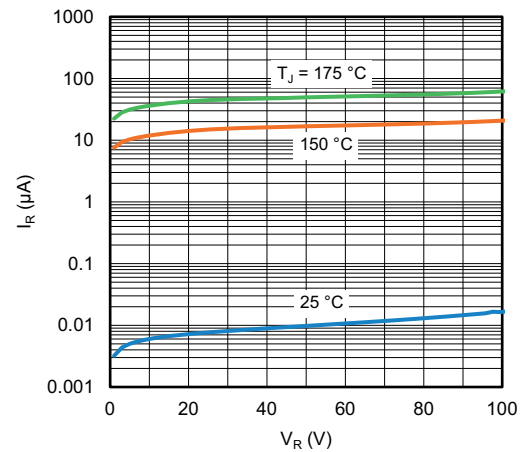


Fig. 3 - Typical Reverse Leakage Current vs. Reverse Voltage

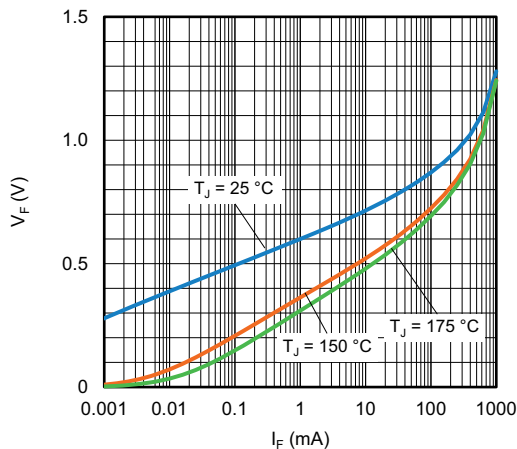
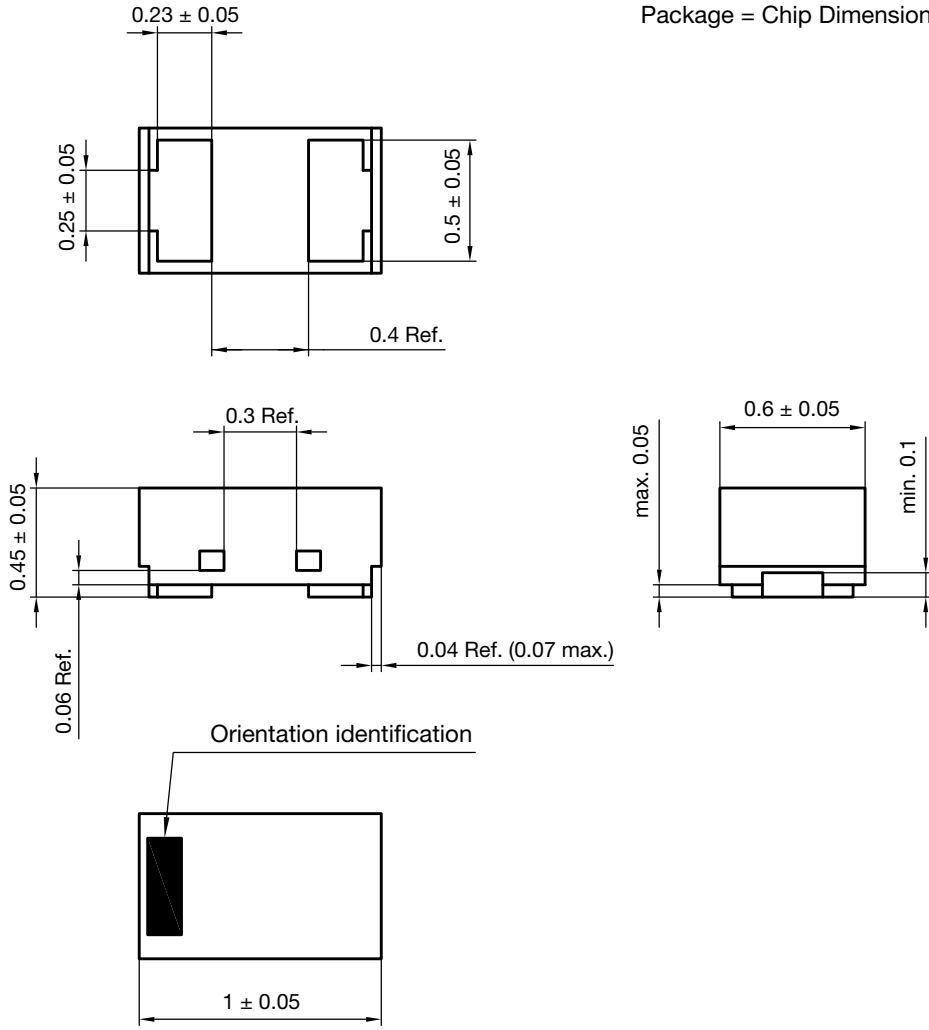


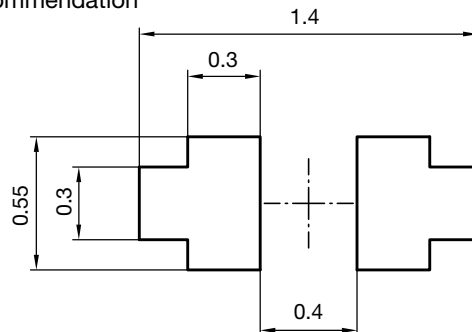
Fig. 2 - Typical Forward Voltage vs. Forward Current

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

Package = Chip Dimension in mm



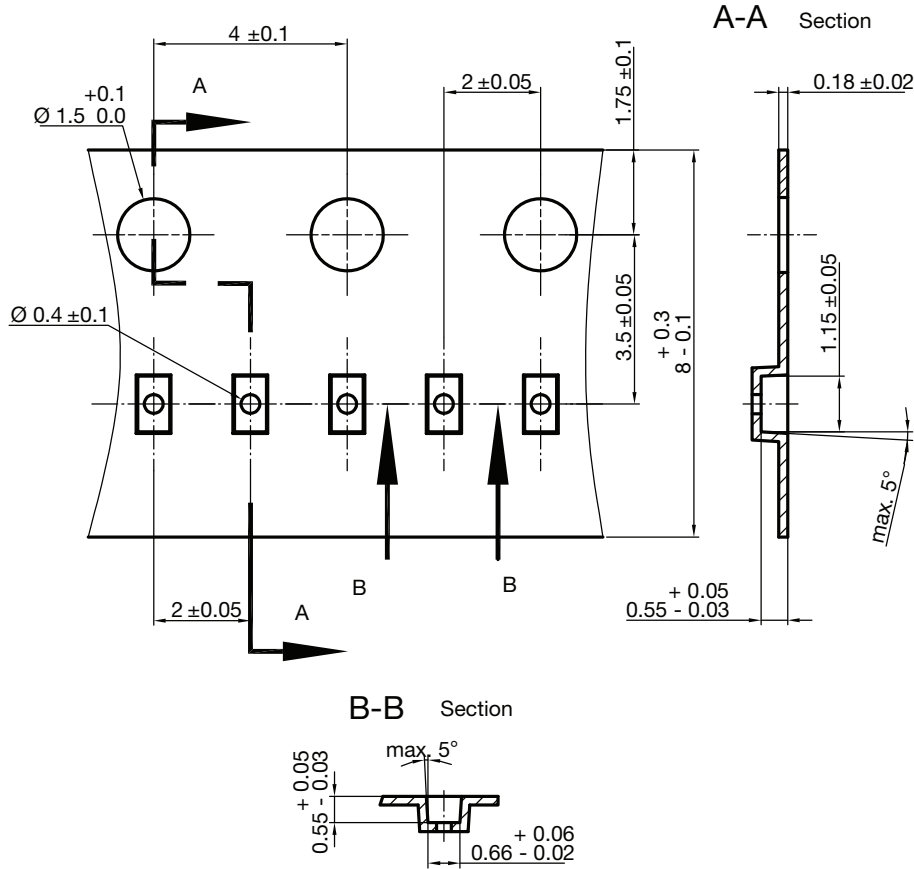
**Footprint recommendation**



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

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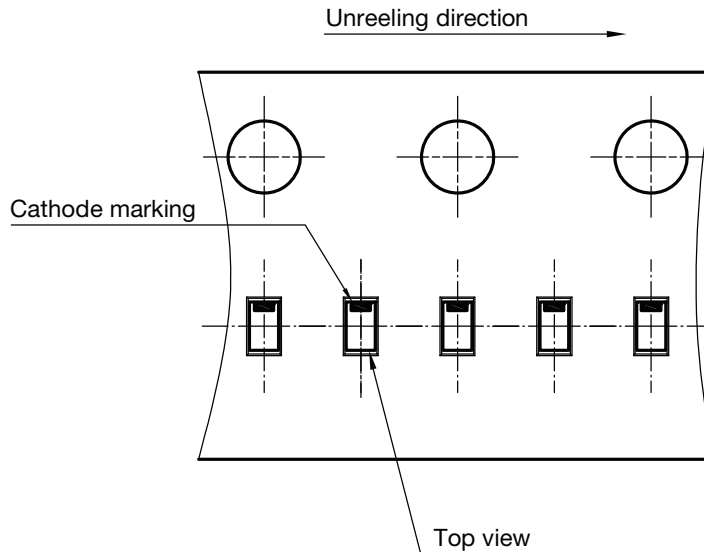
**CARRIER TAPE DFN1006-2A**



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  $\pm 0.2$  mm

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



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



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