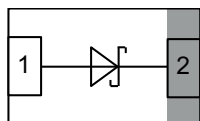


## Small Signal Schottky Diode



### LINKS TO ADDITIONAL RESOURCES



3D Models

**SPICE**

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)

### 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

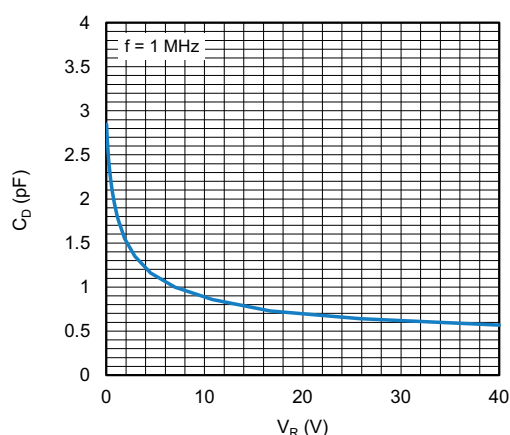
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Typical Capacitance vs. Reverse Voltage

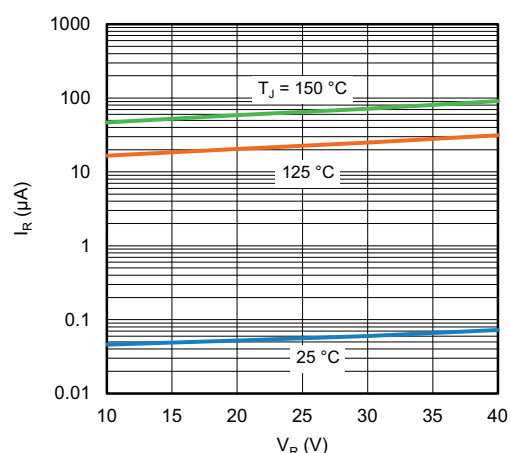


Fig. 3 - Typical Reverse Leakage Current vs. Reverse Voltage

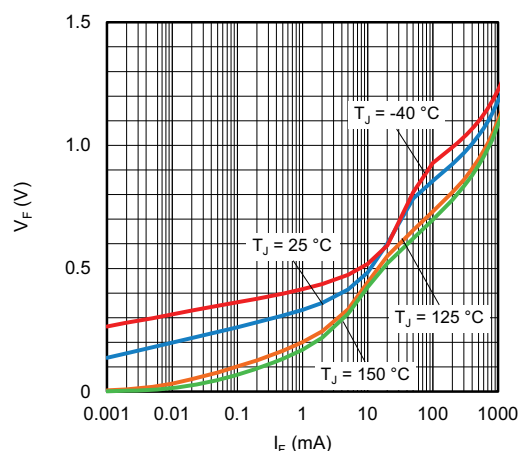
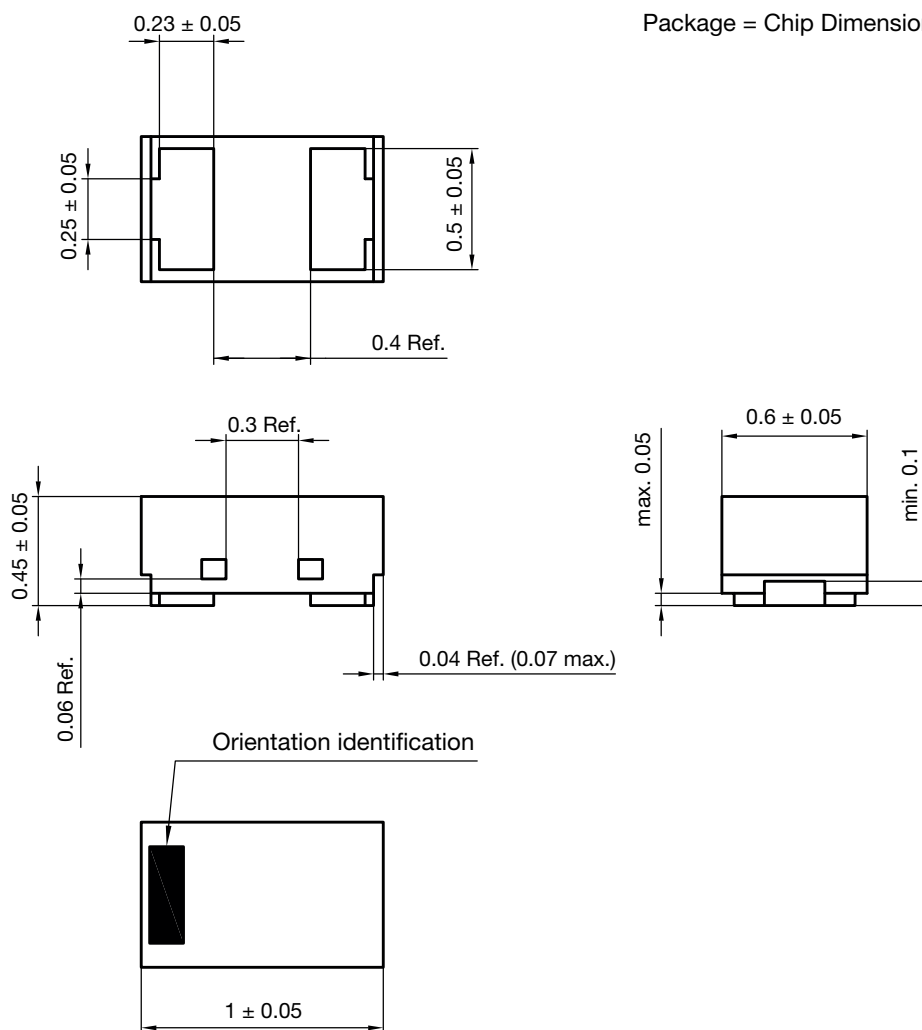
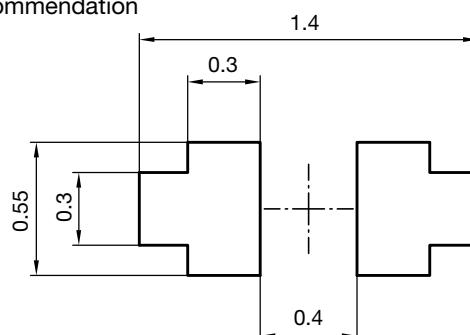


Fig. 2 - Typical Forward Voltage vs. Forward Current

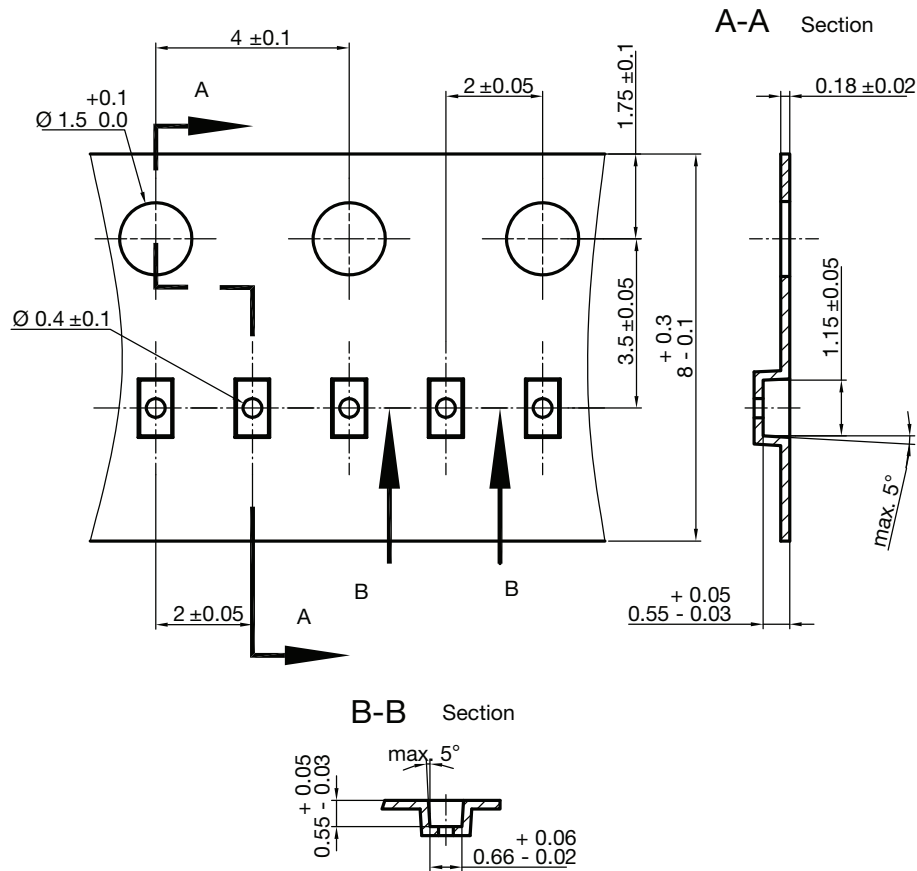
**PACKAGE DIMENSIONS** in millimeters: **DFN1006-2A**

Package = Chip Dimension in mm


**Footprint recommendation**


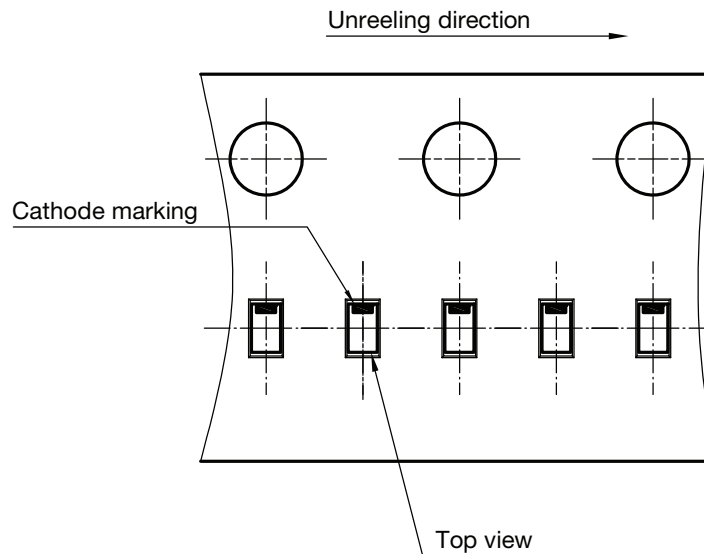
Document no.: S8-V-3906.04-059 (4)  
Created - Date: 11-Jul-2018  
Rev.5 - Date: 17-Sep-2021

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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