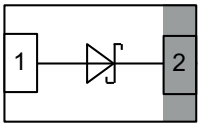
Small Signal Schottky Diode



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

AUTOMOTIVE GRADE Available

Pb-free

e3

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

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)

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_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	40	V
Forward current	on FR-4 board with recommended soldering footprint	I_F	200	mA
Non-repetitive peak forward current	T_j = 25 °C, t_p = 10 ms	I_{FSM}	500	mA
	T_j = 100 °C, t_p = 10 ms		200	
	T_j = 125 °C, t_p = 20 µs		500	
Power dissipation	on FR-4 board with recommended soldering footprint	P_{tot}	300	mW
	R_{thJL} = 100 K/W		1250	mW

THERMAL CHARACTERISTICS (T_{amb} = 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_{thJA}	420	K/W
Thermal resistance junction to lead		R_{thJL}	100	K/W
Maximum junction temperature		$T_{j\,max.}$	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 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Leakage current	V_R = 40 V, T_j = 25 °C	I_R			10	µA
	V_R = 30 V, T_j = 150 °C				200	µA
	V_R = 40 V, T_j = 150 °C				500	µA
Forward voltage	I_F = 1 mA	V_F			400	mV
	I_F = 10 mA				560	mV
	I_F = 40 mA				1000	mV
Diode capacitance	V_R = 0 V, f = 1 MHz	C_D		2.9		pF

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

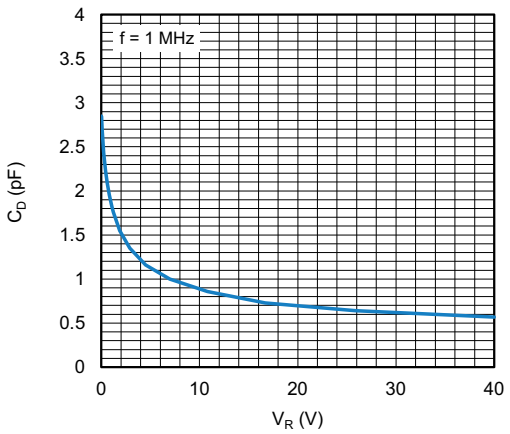


Fig. 1 - Typical Capacitance vs. Reverse Voltage

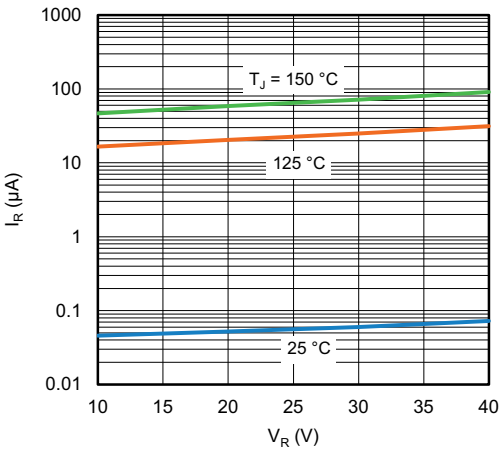


Fig. 3 - Typical Reverse Leakage Current vs. Reverse Voltage

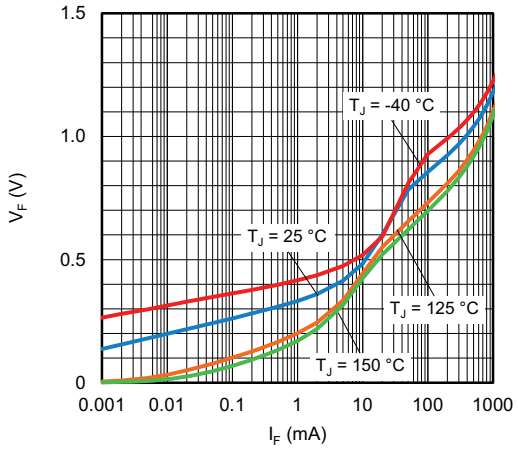
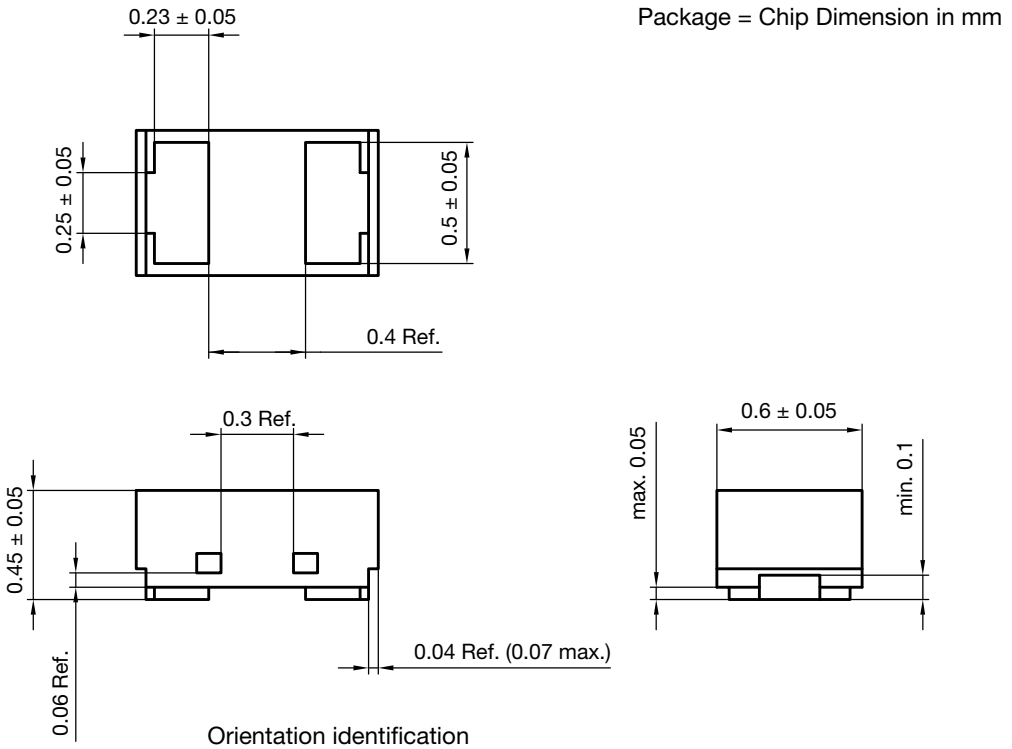
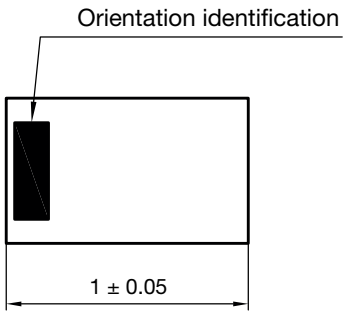
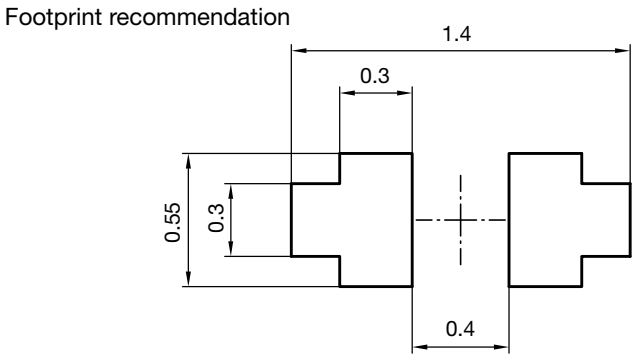


Fig. 2 - Typical Forward Voltage vs. Forward Current

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







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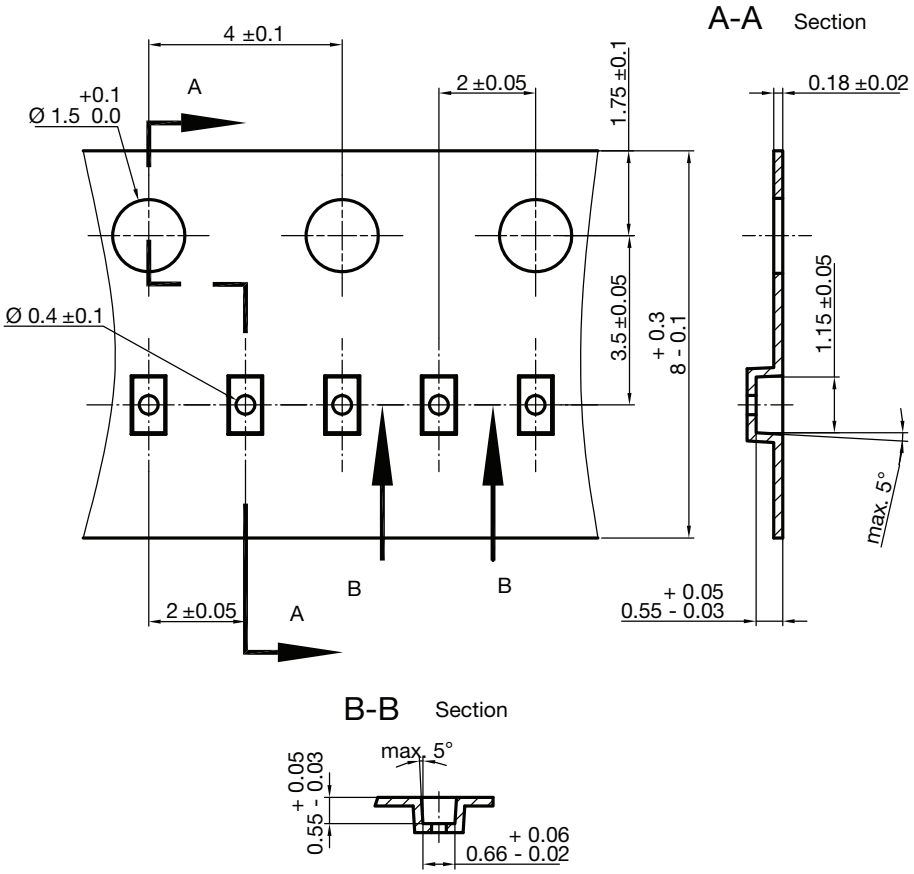
CARRIER TAPE DFN1006-2A



surface resistance: 10^5 - 10^{11} $\frac{\text{OHMS}}{\text{SQ}}$

Cummulative tolerances of 10 sprocket holes is ± 0.2 mm

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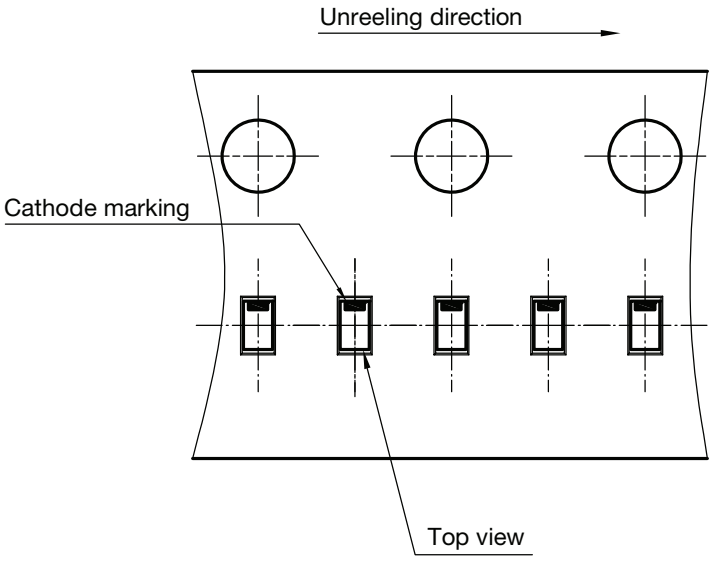
ORIENTATION IN CARRIER TAPE DFN1006-2A



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