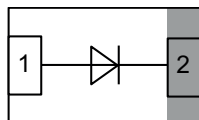


Small Signal Switching Diode with T_J max. = 175 °C



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

AUTOMOTIVE
GRADE
Available



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
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 ⁽¹⁾	$t_p = 1 \mu s$	I_{FSM}	9	A
	$t_p = 1 ms$		1.7	
	$t_p = 1 s$		1	
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

⁽¹⁾ 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® 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



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
	$V_R = 80\text{ V}, T_J = 175\text{ }^{\circ}\text{C}$	I_R		550	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)

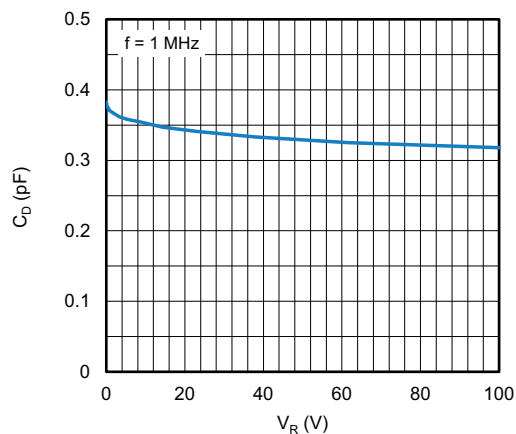


Fig. 1 - Typical Capacitance vs. Reverse Voltage

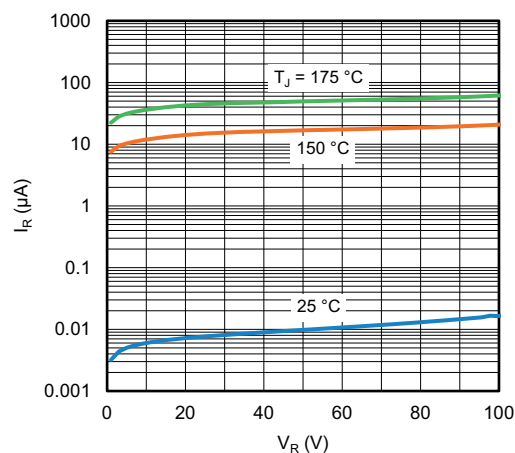


Fig. 3 - Typical Reverse Leakage Current vs. Reverse Voltage

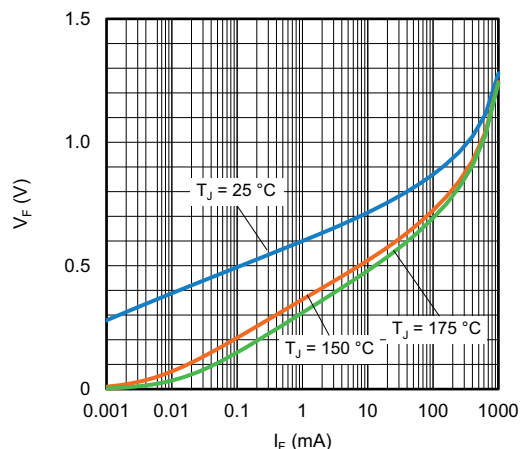
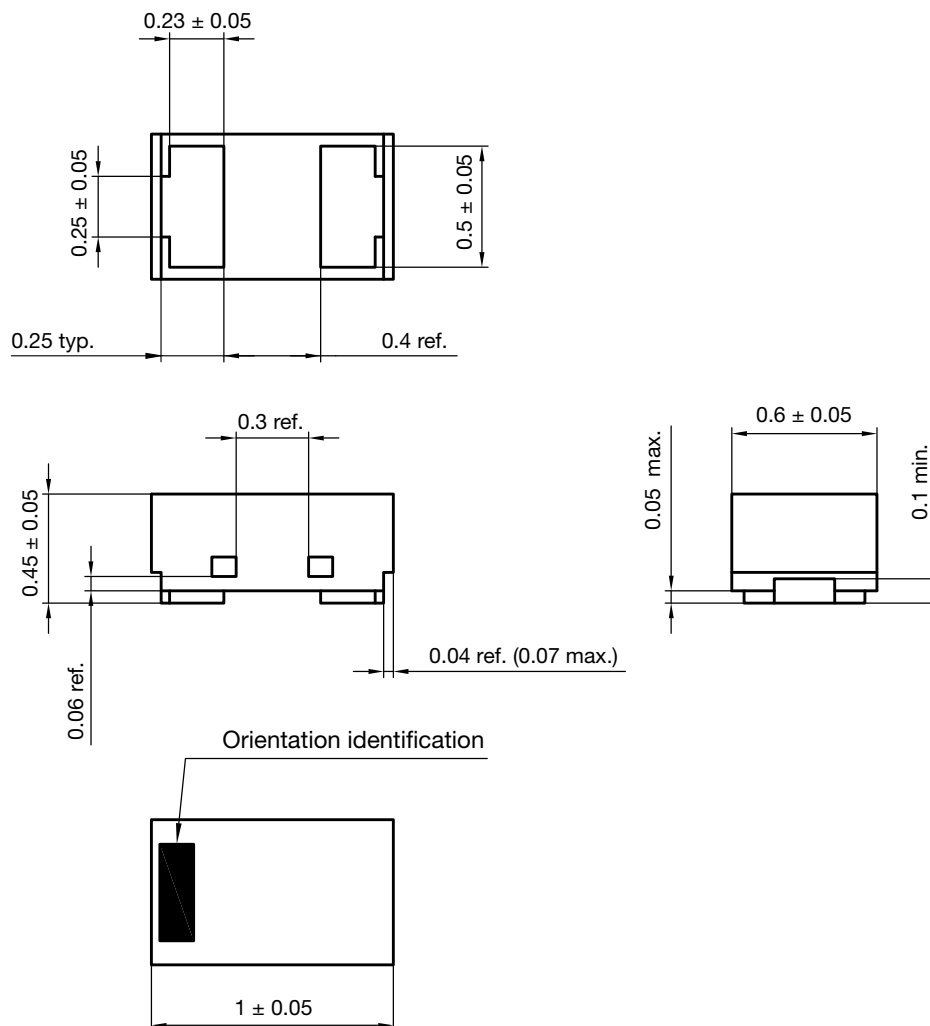


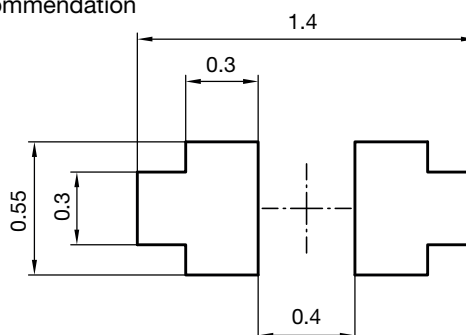
Fig. 2 - Typical Forward Voltage vs. Forward Current



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

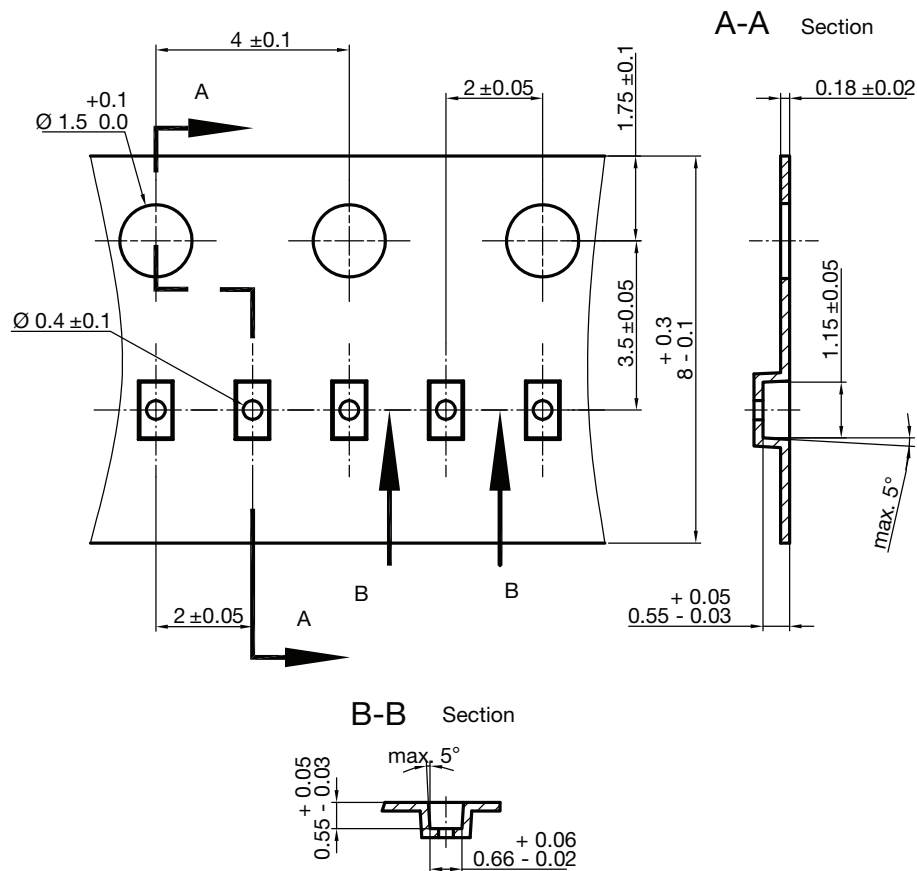


Footprint recommendation



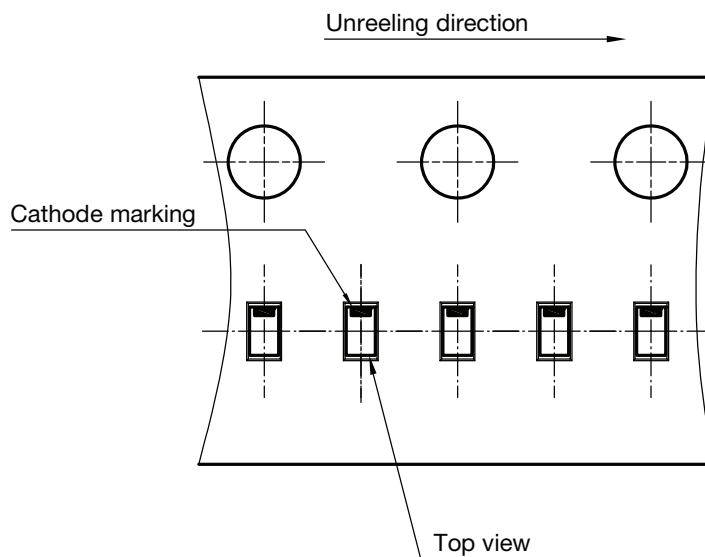
Document no.: S8-V-3906.04-059 (4)
Created - Date: 11-Jul-2018
Rev.6 - Date: 12-Nov-2024

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 $\pm 0.2 \text{ mm}$

ORIENTATION IN CARRIER TAPE DFN1006-2A


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



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