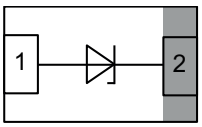
Small Signal Zener Diodes



MARKING (example only)

Bar = cathode marking
X = date code
YY = type code (see page 2)

LINKS TO ADDITIONAL RESOURCES

3D Models | SPICE Models | Application Notes

FEATURES

- Silicon planar Zener diodes
- Low leakage current, low noise
- Excellent stability
- Surge rated
- ± 2 % Zener voltage tolerance
- 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)

PRIMARY CHARACTERISTICS		
PARAMETER	VALUE	UNIT
V_Z range nom.	4.7 to 47	V
Test current I_{ZT}	2; 5	mA
V_Z specification	Pulse current	
Circuit configuration	Single	

ORDERING INFORMATION				
DEVICE NAME	ORDERING CODE	AEC-Q101 QUALIFIED	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
BZX884BxxxL Series	BZX884Bxxx-G3-08	no	10 000 (8 mm tape on 7" reel)	10 000
	BZX884Bxxx-HG3-08	yes		10 000

Note

- xxx stands for any part number/voltage group, as shown in the table of page 2

PACKAGE				
PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
DFN1006-2A	0.83 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	on FR-4 board with recommended soldering footprint	P_{tot}	300	mW
Non-repetitive peak reverse power	t_p = 100 µs	P_{ZSM}	26	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

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

ELECTRICAL SPECIFICATIONS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MAX.**	**UNIT**
Forward voltage	I_F = 10 mA	V_F	0.9	V

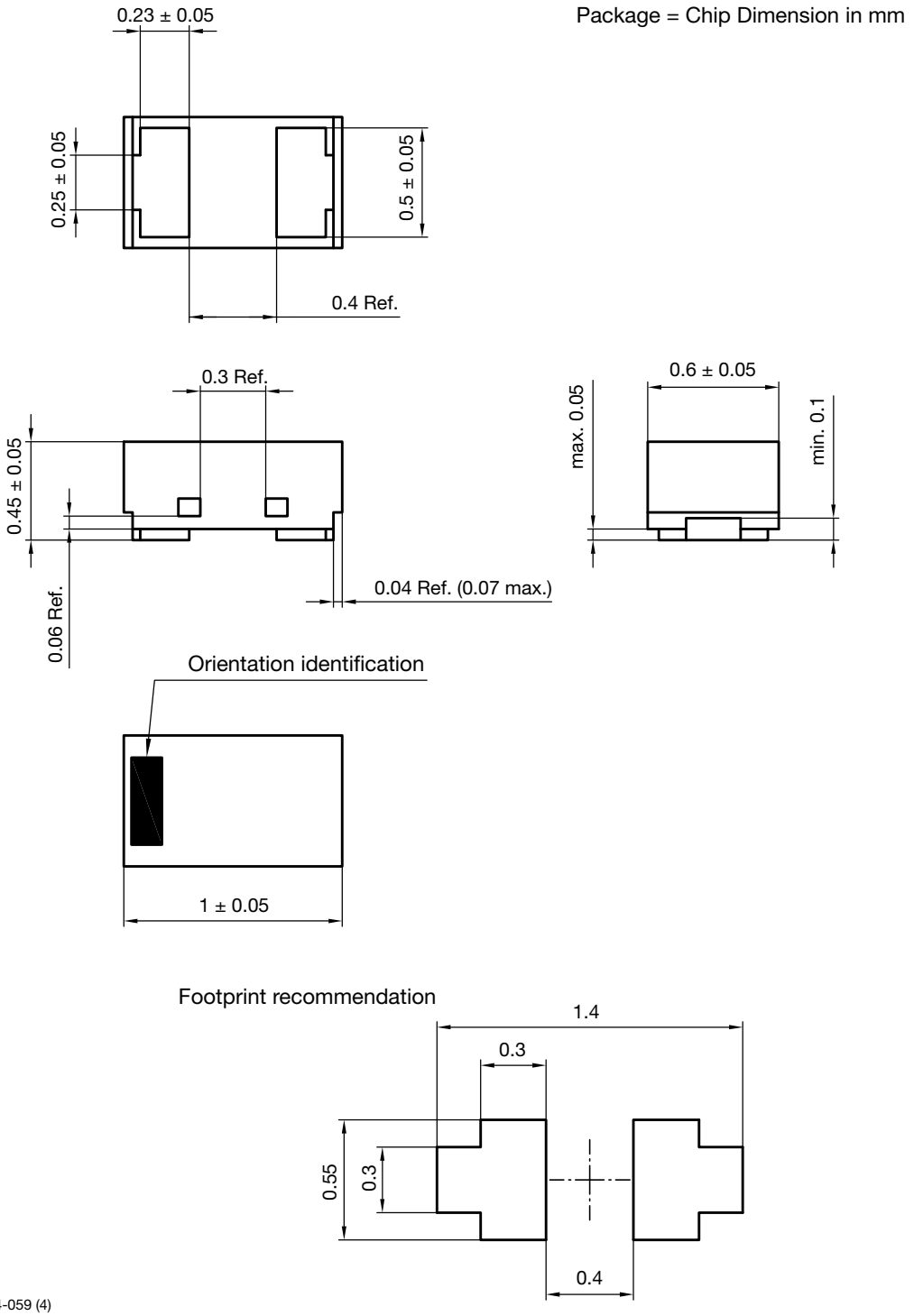
ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

PART NUMBER	TYPE CODE	ZENER VOLTAGE RANGE (1)			TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE		TEMPERATURE COEFFICIENT OF ZENER VOLTAGE	
		V_Z at I_{ZT1}			I_{ZT1}	I_{ZT2}	I_R at V_R		Z_Z at I_{ZT1}	Z_{ZK} at I_{ZT2}	α_{VZ} at I_{ZT1}	
		V			mA		µA	V	Ω		10^{-4}/°C	
		MIN.	NOM.	MAX.			MAX.		MAX.	MAX.	MIN.	MAX.
BZX884B4V7L	AK	4.61	4.7	4.79	5	1	3	2	80	500	-5	2
BZX884B5V1L	AL	5	5.1	5.2	5	1	2	2	60	480	-3	4
BZX884B5V6L	AN	5.49	5.6	5.71	5	1	1	2	40	400	-2	6
BZX884B6V2L	AO	6.08	6.2	6.32	5	1	3	4	10	150	-1	7
BZX884B6V8L	AP	6.66	6.8	6.94	5	1	2	4	15	80	2	7
BZX884B7V5L	AS	7.35	7.5	7.65	5	1	1	5	15	80	3	7
BZX884B8V2L	AT	8.04	8.2	8.36	5	1	0.7	5	15	80	4	7
BZX884B9V1L	AU	8.92	9.1	9.28	5	1	0.5	6	15	100	5	8
BZX884B10L	AV	9.8	10	10.2	5	1	0.2	7	20	150	5	8
BZX884B11L	AX	10.78	11	11.22	5	1	0.1	8	20	150	5	9
BZX884B12L	AY	11.76	12	12.24	5	1	0.1	8	25	150	6	9
BZX884B13L	A2	12.74	13	13.26	5	1	0.1	8	30	170	7	9
BZX884B15L	A3	14.7	15	15.3	5	1	0.05	10.5	30	200	7	9
BZX884B16L	A5	15.68	16	16.32	5	1	0.05	11.2	40	200	8	9.5
BZX884B18L	A9	17.64	18	18.36	5	1	0.05	12.6	45	225	8	10
BZX884B20L	BA	19.6	20	20.4	5	1	0.05	14	55	225	8	10
BZX884B22L	BB	21.56	22	22.44	5	1	0.05	15.4	55	250	8	10
BZX884B24L	BD	23.52	24	24.48	5	1	0.05	16.8	70	250	8	10
BZX884B27L	BE	26.46	27	27.54	2	0.5	0.05	18.9	80	300	8	10
BZX884B30L	BG	29.4	30	30.6	2	0.5	0.05	21	80	300	8	10
BZX884B33L	BH	32.34	33	33.66	2	0.5	0.05	23.1	80	325	8	10
BZX884B36L	BJ	35.28	36	36.72	2	0.5	0.05	25.2	90	350	8	10
BZX884B39L	BK	38.22	39	39.78	2	0.5	0.05	27.3	130	350	10	12
BZX884B43L	BL	42.14	43	43.86	2	35	0.05	30.1	150	375	10	12
BZX884B47L	BN	46.06	47	47.94	2	0.5	0.05	32.9	170	375	10	12

Notes

(1) Pulse test t_p = 5 ms

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



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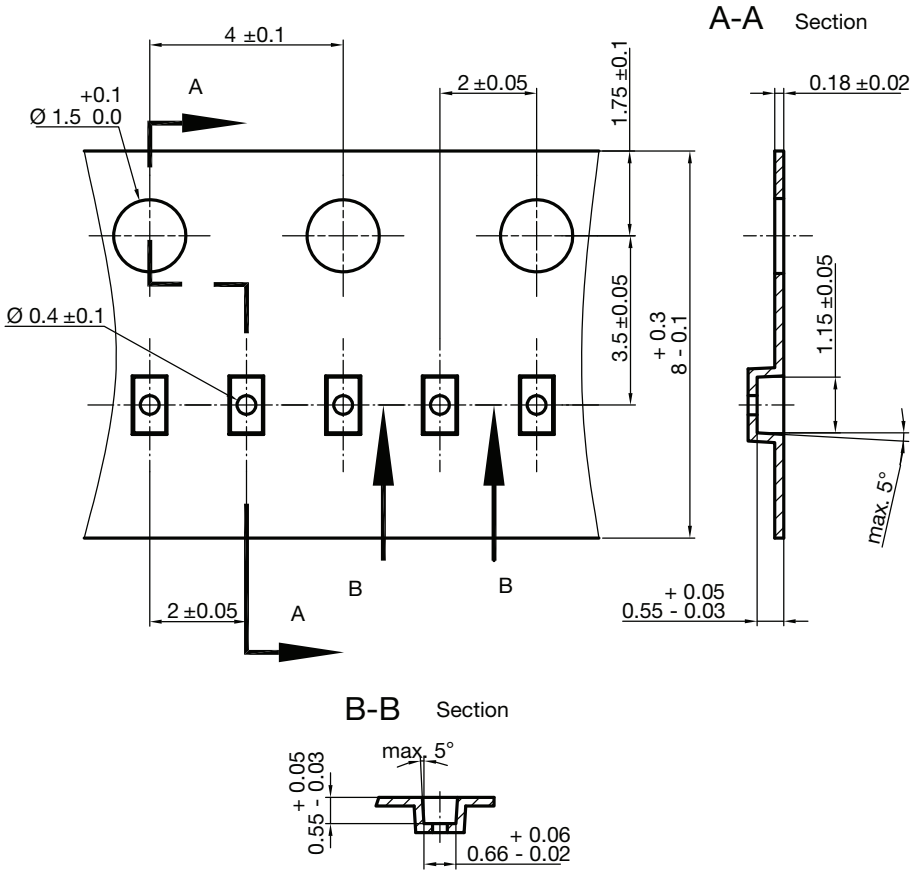
CARRIER TAPE DFN1006-2A



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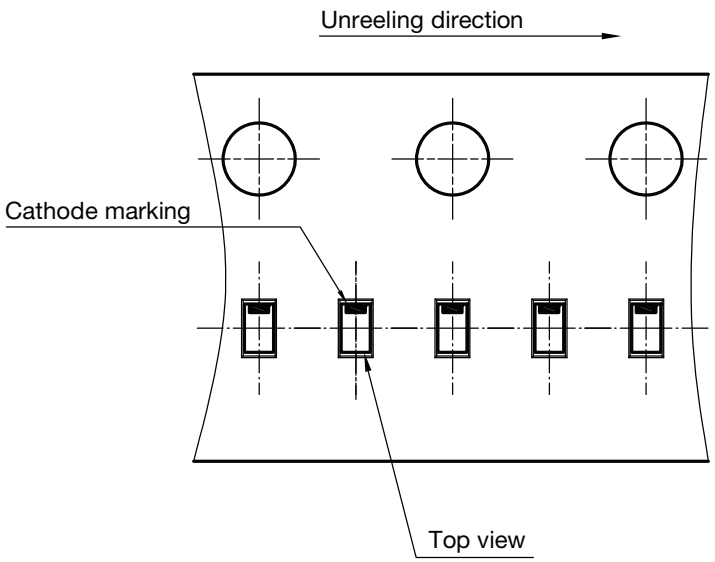
surface resistance: 10^5 - 10^{11} $\frac{\text{OHMS}}{\text{SQ}}$
Cummulative tolerances of 10 sprocket holes is ± 0.2 mm

ORIENTATION IN CARRIER TAPE DFN1006-2A



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