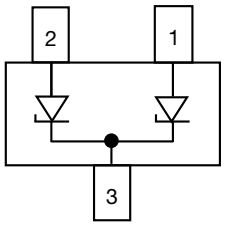
Small Signal Zener Diodes





FEATURES

- Silicon planar Zener diodes
- The Zener voltages are graded according to the international E24 standard. Standard Zener voltage tolerance is ± 5 %
- AEC-Q101 qualified available
- ESD capability acc. to AEC-Q101: human body model: > 8 kV, machine model: > 800 V
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3_A - RoHS-compliant , AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE GRADE

Pb-free

e3

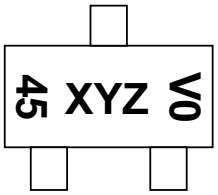
RoHS COMPLIANT

LINKS TO ADDITIONAL RESOURCES

3D Models

SPICE Models

MARKING (example only)



XYZ = type code
45 = working week
0 = year
V = Vishay

PRIMARY CHARACTERISTICS		
PARAMETER	VALUE	UNIT
V_Z range nom.	2.2 to 75	V
Test current I_{ZT}	2; 5	mA
V_Z specification	Pulse current	
Circuit configuration	Single	

ORDERING INFORMATION					
DEVICE NAME	ORDERING CODE	ZENER VOLTAGE TOLERANCE	AEC-Q101 QUALIFIED	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
DZ23 series	DZ23C2V4-E3-08 to DZ23C75-E3-08	5 %	no	3000 (8 mm tape on 7" reel)	15 000
	DZ23C2V4-HE3_A-08 to DZ23C75-HE3_A-08	5 %	yes		
	DZ23C2V4-E3-18 to DZ23C75-E3-18	5 %	no	10 000 (8 mm tape on 13" reel)	10 000
	DZ23C2V4-HE3_A-18 to DZ23C75-HE3_A-18	5 %	yes		

PACKAGE				
PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
SOT-23	9.2 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C

ABSOLUTE MAXIMUM RATINGS				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	R_{thJL} = 250 K/W	P_{tot}	500	mW
	On FR-4 board with recommended soldering footprint	P_{tot}	300	mW
Thermal resistance junction to lead		R_{thJL}	250	K/W
Thermal resistance junction to ambient	According to JEDEC® 51-3 on FR-4 board with recommended soldering footprint	R_{thJA}	420	K/W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-65 to +150	°C
Operating temperature range		T_{op}	-55 to +150	°C

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

PART NUMBER	MARKING CODE	ZENER VOLTAGE RANGE			TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE f = 1 kHz		TEMPERATURE COEFFICIENT	
		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.	MIN.	MAX.
DZ23C2V2	V77	2.09	2.2	2.31	5	1	100	1	120	600	-9	-4
DZ23C2V4	V78	2.28	2.4	2.52	5	1	50	1	100	600	-9	-4
DZ23C2V7	V41	2.57	2.7	2.84	5	1	20	1	83	600	-9	-4
DZ23C3V0	V42	2.85	3.0	3.15	5	1	10	1	95	600	-9	-3
DZ23C3V3	V43	3.14	3.3	3.47	5	1	5	1	95	600	-8	-3
DZ23C3V6	V44	3.42	3.6	3.78	5	1	5	1	90	600	-8	-3
DZ23C3V9	V45	3.71	3.9	4.10	5	1	3	1	90	600	-7	-3
DZ23C4V3	V46	4.09	4.3	4.52	5	1	3	1	90	600	-6	-1
DZ23C4V7	V47	4.47	4.7	4.94	5	1	3	2	80	500	-5	2
DZ23C5V1	V48	4.85	5.1	5.36	5	1	2	2	60	480	-3	4
DZ23C5V6	V49	5.32	5.6	5.88	5	1	1	2	40	400	-2	6
DZ23C6V2	V50	5.89	6.2	6.51	5	1	3	4	10	150	-1	7
DZ23C6V8	V51	6.46	6.8	7.14	5	1	2	4	15	80	2	7
DZ23C7V5	V52	7.13	7.5	7.88	5	1	1	5	15	80	3	7
DZ23C8V2	V53	7.79	8.2	8.61	5	1	0.7	5	15	80	4	7
DZ23C9V1	V54	8.65	9.1	9.56	5	1	0.5	6	15	100	5	8
DZ23C10	V55	9.50	10	10.50	5	1	0.2	7	20	150	5	8
DZ23C11	V56	10.45	11	11.55	5	1	0.1	8	20	150	5	9
DZ23C12	V57	11.40	12	12.60	5	1	0.1	8	25	150	6	9
DZ23C13	V58	12.40	13	13.65	5	1	0.1	8	30	170	7	9
DZ23C15	V59	14.25	15	15.60	5	1	0.05	10.5	30	200	7	9
DZ23C16	V60	15.30	16	16.80	5	1	0.05	11.2	40	200	8	9.5
DZ23C18	V61	17.10	18	18.90	5	1	0.05	12.6	45	225	8	9.5
DZ23C20	V62	19.00	20	21.00	5	1	0.05	14.0	55	225	8	10
DZ23C22	V63	20.90	22	23.10	5	1	0.05	15.4	55	250	8	10
DZ23C24	V64	22.80	24	25.20	5	1	0.05	16.8	70	250	8	10
DZ23C27	V65	25.65	27	28.35	2	0.5	0.05	18.9	80	300	8	10
DZ23C30	V66	28.50	30	31.50	2	0.5	0.05	21.0	80	300	8	10
DZ23C33	V67	31.35	33	34.65	2	0.5	0.05	23.1	80	325	8	10
DZ23C36	V68	34.20	36	37.80	2	0.5	0.05	25.2	90	350	8	10
DZ23C39	V69	37.05	39	40.95	2	0.5	0.05	27.3	130	350	10	12
DZ23C43	V70	40.85	43	45.15	2	0.5	0.05	30.1	150	375	10	12
DZ23C47	V71	44.65	47	49.35	2	0.5	0.05	32.9	170	375	10	12
DZ23C51	V72	48.45	51	53.55	2	0.5	0.05	35.7	180	400	10	12
DZ23C56	V73	53.20	56	58.80	2	0.5	0.05	39.2	200	425	9	11
DZ23C62	V74	58.90	62	65.10	2	0.5	0.05	43.4	215	450	9	12
DZ23C68	V75	64.60	68	71.40	2	0.5	0.05	47.6	240	475	10	12
DZ23C75	V76	71.25	75	78.75	2	0.5	0.05	52.5	255	500	10	12

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

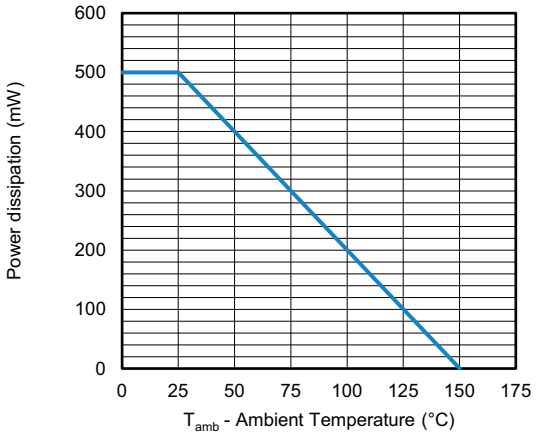


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

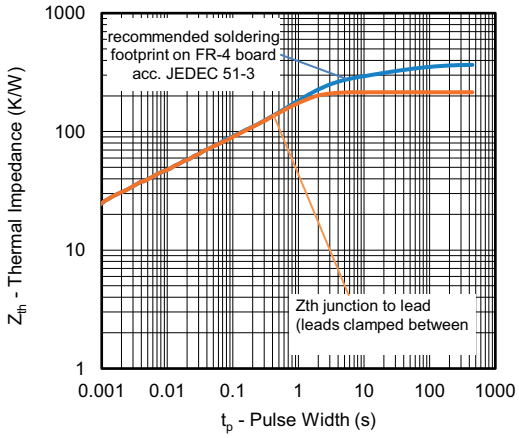
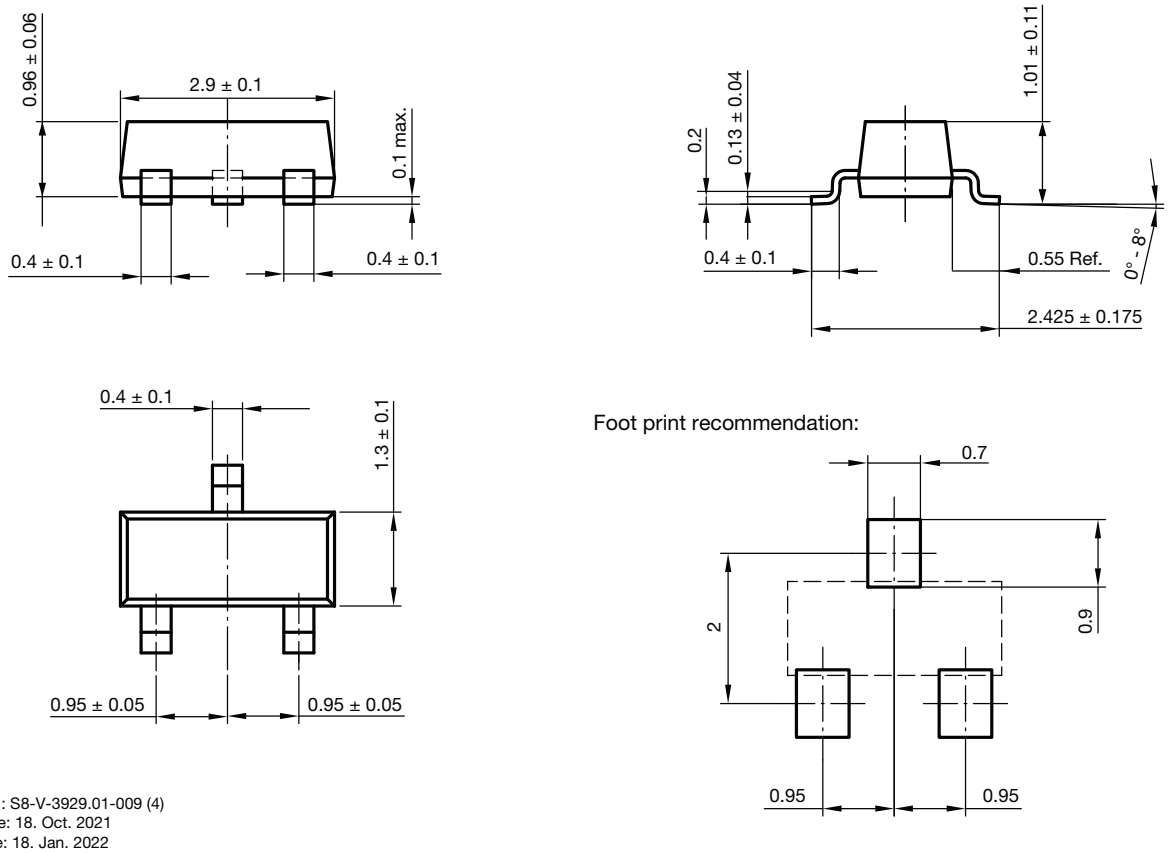


Fig. 2 - Thermal Impedance vs. Time

PACKAGE DIMENSIONS in millimeters (inches): SOT-23

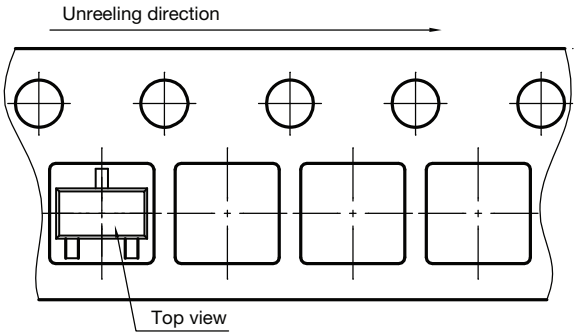


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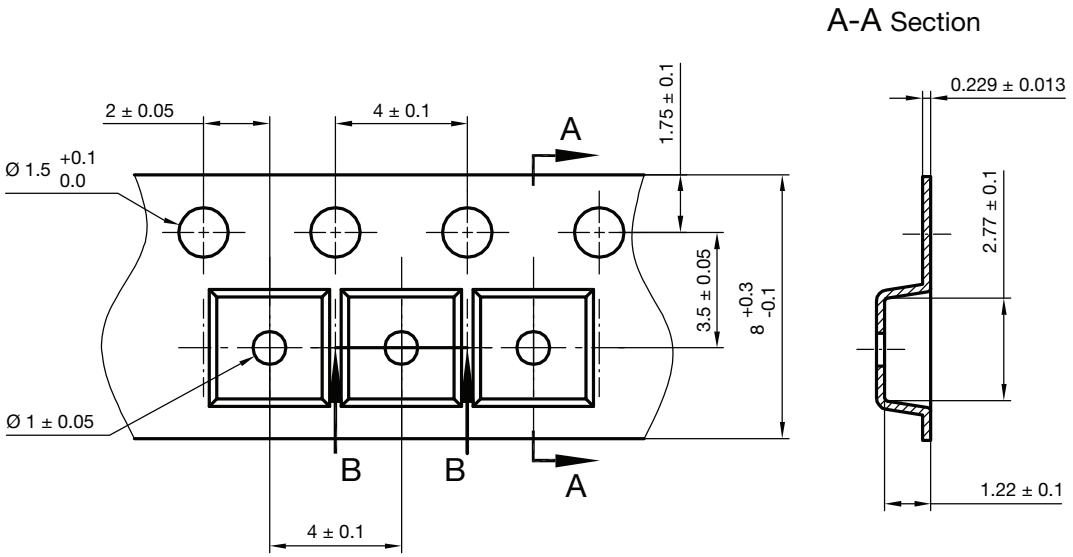
ORIENTATION IN CARRIER TAPE



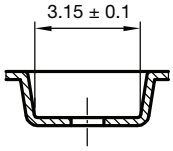
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CARRIER TAPE



B-B Section



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