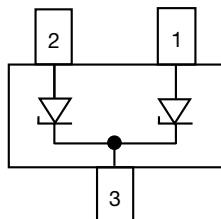


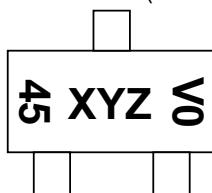
Small Signal Zener Diodes



LINKS TO ADDITIONAL RESOURCES


[SPICE Models](#)

MARKING (example only)



FEATURES

- Silicon planar Zener diodes
- The Zener voltages are graded according to the international E24 standard. Standard Zener voltage tolerance is $\pm 5\%$
- 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



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	Common cathode	

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)		
	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

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^\circ C$, unless otherwise specified)												
PART NUMBER	MARKING CODE	ZENER VOLTAGE RANGE			TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE $f = 1 \text{ kHz}$		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.	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	500	-9	-4
DZ23C3V0	V42	2.85	3.0	3.15	5	1	10	1	95	500	-9	-3
DZ23C3V3	V43	3.14	3.3	3.47	5	1	5	1	95	500	-8	-3
DZ23C3V6	V44	3.42	3.6	3.78	5	1	5	1	90	500	-8	-3
DZ23C3V9	V45	3.71	3.9	4.10	5	1	3	1	90	500	-7	-3
DZ23C4V3	V46	4.09	4.3	4.52	5	1	3	1	90	500	-6	-1
DZ23C4V7	V47	4.47	4.7	4.94	5	1	3	2	78	500	-5	2
DZ23C5V1	V48	4.85	5.1	5.36	5	1	2	2	60	480	-3	4
							0.1	0.8				
DZ23C5V6	V49	5.32	5.6	5.88	5	1	1	2	40	400	-2	6
							0.1	1				
DZ23C6V2	V50	5.89	6.2	6.51	5	1	3	4	10	150	-1	7
							0.1	2				
DZ23C6V8	V51	6.46	6.8	7.14	5	1	2	4	8	80	2	7
							0.1	3				
DZ23C7V5	V52	7.13	7.5	7.88	5	1	0.1	5	7	50	3	7
DZ23C8V2	V53	7.79	8.2	8.61	5	1	0.1	6	7	50	4	7
DZ23C9V1	V54	8.65	9.1	9.56	5	1	0.1	7	10	50	5	8
DZ23C10	V55	9.50	10	10.50	5	1	0.1	7.5	15	70	5	8
DZ23C11	V56	10.45	11	11.55	5	1	0.1	8.5	20	70	5	9
DZ23C12	V57	11.40	12	12.60	5	1	0.1	9	20	90	6	9
DZ23C13	V58	12.40	13	13.65	5	1	0.1	10	25	110	7	9
DZ23C15	V59	14.25	15	15.60	5	1	0.05	11	30	110	7	9
DZ23C16	V60	15.30	16	16.80	5	1	0.05	12	40	170	8	9.5
DZ23C18	V61	17.10	18	18.90	5	1	0.05	14	45	170	8	9.5
DZ23C20	V62	19.00	20	21.00	5	1	0.05	15	50	220	8	10
DZ23C22	V63	20.90	22	23.10	5	1	0.05	17	55	220	8	10
DZ23C24	V64	22.80	24	25.20	5	1	0.05	18	70	220	8	10
DZ23C27	V65	25.65	27	28.35	2	0.5	0.05	20	80	250	8	10
DZ23C30	V66	28.50	30	31.50	2	0.5	0.05	22.5	80	250	8	10
DZ23C33	V67	31.35	33	34.65	2	0.5	0.05	25	80	250	8	10
DZ23C36	V68	34.20	36	37.80	2	0.5	0.05	27	87	250	8	10
DZ23C39	V69	37.05	39	40.95	2	0.5	0.05	29	87	300	10	12
DZ23C43	V70	40.85	43	45.15	2	0.5	0.05	32	97	375	10	12
DZ23C47	V71	44.65	47	49.35	2	0.5	0.05	35	97	375	10	12
DZ23C51	V72	48.45	51	53.55	2	0.5	0.05	38	100	400	10	12
DZ23C56	V73	53.20	56	58.80	2	0.5	0.05	42	135	425	9	11
DZ23C62	V74	58.90	62	65.10	2	0.5	0.05	46.5	150	450	9	12
DZ23C68	V75	64.60	68	71.40	2	0.5	0.05	51	200	475	10	12
DZ23C75	V76	71.25	75	78.75	2	0.5	0.05	56	250	500	10	12

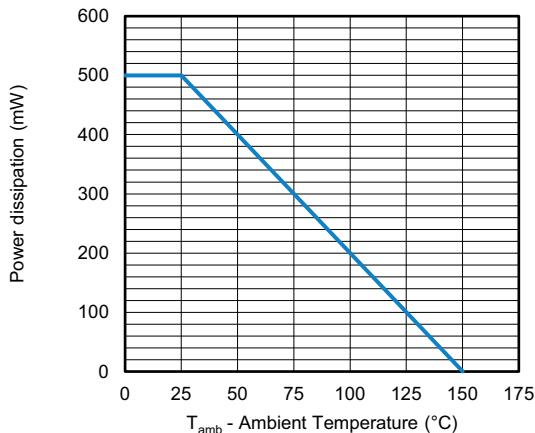
TYPICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

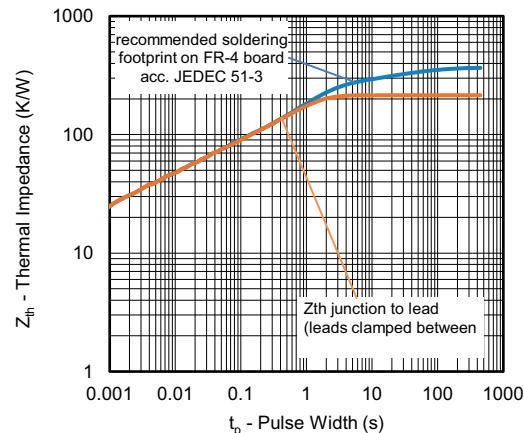
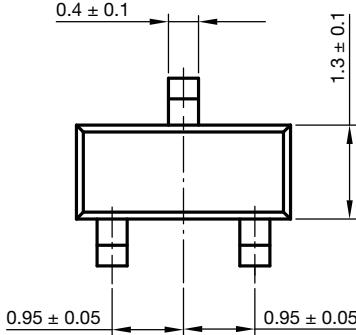
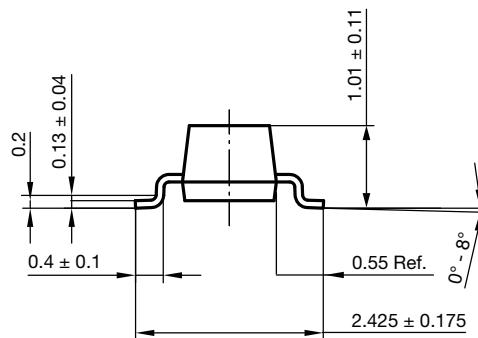
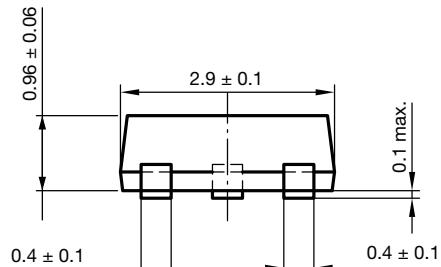
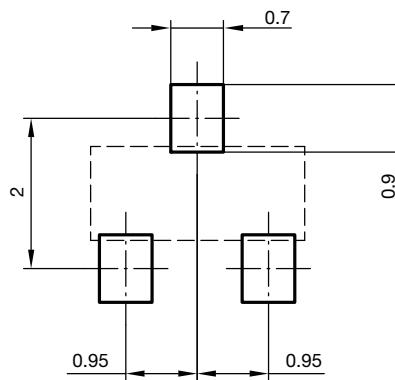


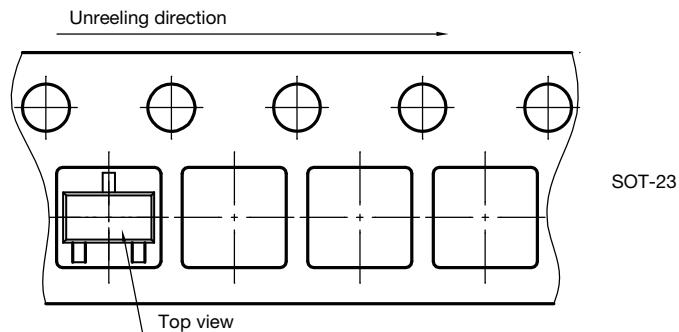
Fig. 2 - Thermal Impedance vs. Time

PACKAGE DIMENSIONS in millimeters (inches): **SOT-23**


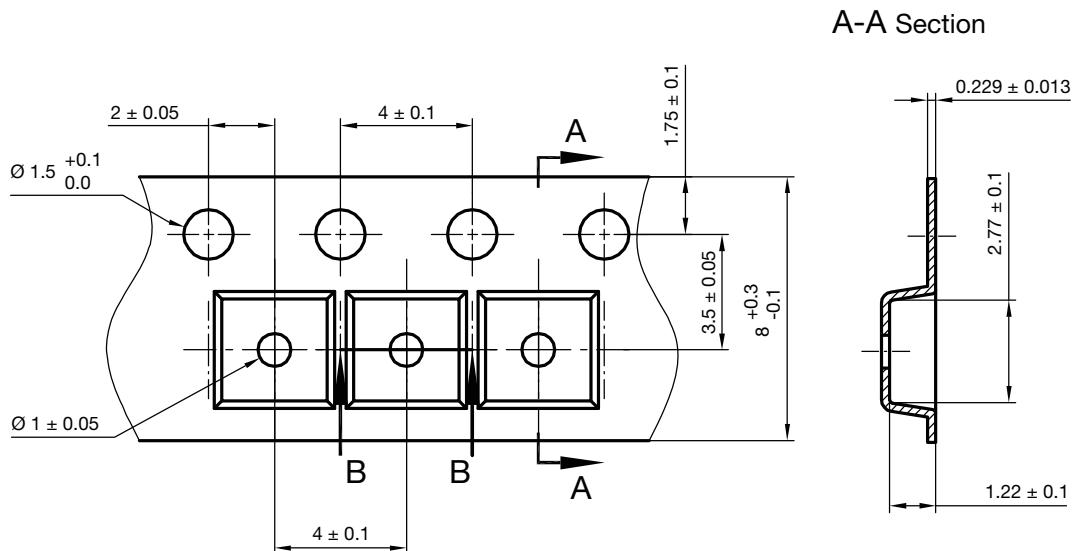
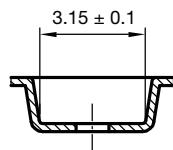
Foot print recommendation:



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ORIENTATION IN CARRIER TAPE


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 Rev. 02 Date: 07.11.2022

CARRIER TAPE

B-B Section


Document no.: S8-V-3929.01-005 (4)
 Created - Date: 04. Feb. 2010

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