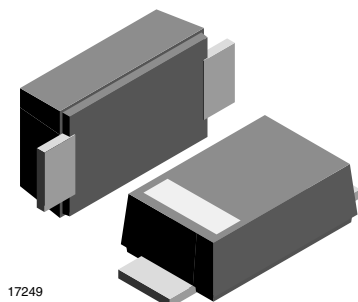


Zener Diodes



17249

LINKS TO ADDITIONAL RESOURCES



3D Models

FEATURES

- Silicon planar Zener diodes
- Low profile surface-mount package
- Low leakage current
- Excellent stability
- High temperature soldering: 260 °C/10 s at terminals
- Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade
- Compatible to SOD-123W package case outline or SOD-123F and SOD-123FL
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT
HALOGEN
FREE

PRIMARY CHARACTERISTICS

PARAMETER	VALUE	UNIT
V _Z range nom.	3.6 to 200	V
Test current I _{ZT}	5 to 100	mA
V _Z specification	Pulse current	
Circuit configuration	Single	

ORDERING INFORMATION

DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
BZD17-M Series	BZD17C3V6P-M3-08 to BZD17C200P-M3-08	3000 per 7" reel (8 mm tape)	30 000/box
	BZD17C3V6P-M3-18 to BZD17C200P-M3-18	10 000 per 13" reel (8 mm tape)	50 000/box

PACKAGE

PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
SMF (DO-219AB)	15 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	T _L = 80 °C	P _{tot}	2300	mW
	T _A = 25 °C ⁽¹⁾	P _{tot}	800	mW
Non repetitive peak pulse power dissipation ⁽²⁾	100 µs square pulse	P _{ZSM}	300	W
Junction to lead		R _{thJL}	30	K/W
Junction to ambient air	Mounted on epoxy-glass PCB with 3 mm x 3 mm Cu pads (≥ 40 µm thick)	R _{thJA}	180	K/W
Junction temperature		T _J	150	°C
Storage temperature range		T _{stg}	-55 to +150	°C
Operating temperature range		T _{op}	-55 to +150	°C

Notes

⁽¹⁾ Mounted on epoxy-glass PCB with 3 mm x 3 mm Cu pads (≥ 40 µm thick)

⁽²⁾ T_J = 25 °C prior to surge

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

PART NUMBER	MARKING CODE	ZENER VOLTAGE RANGE ⁽¹⁾			TEST CURRENT	REVERSE CURRENT		DYNAMIC RESISTANCE		TEMPERATURE COEFFICIENT	
		V_Z at I_{ZT1}			I_{ZT1}	I_R at V_R		Z_Z at I_{ZT1}		α_{VZ} at I_{ZT1}	
		V			mA	μA	V	Ω		%/ $^{\circ}\text{C}$	
		MIN.	NOM.	MAX.		MAX.		TYP.	MAX.	MIN.	MAX.
BZD17C3V6P-M	V0	3.4	3.6	3.8	100	100	1	4	8	-0.14	-0.04
BZD17C3V9P-M	V1	3.7	3.9	4.1	100	50	1	4	8	-0.14	-0.04
BZD17C4V3P-M	V2	4	4.3	4.6	100	25	1	4	7	-0.12	-0.02
BZD17C4V7P-M	V3	4.4	4.7	5	100	10	1	3	7	-0.1	0
BZD17C5V1P-M	V4	4.8	5.1	5.4	100	5	1	3	6	-0.08	0.02
BZD17C5V6P-M	V5	5.2	5.6	6	100	10	2	2	4	-0.04	0.04
BZD17C6V2P-M	V6	5.8	6.2	6.6	100	5	2	2	3	-0.01	0.06
BZD17C6V8P-M	V7	6.4	6.8	7.2	100	10	3	1	3	0	0.07
BZD17C7V5P-M	V8	7	7.5	7.9	100	50	3	1	2	0	0.07
BZD17C8V2P-M	V9	7.7	8.2	8.7	100	10	3	1	2	0.03	0.08
BZD17C9V1P-M	VA	8.5	9.1	9.6	50	10	5	2	4	0.03	0.08
BZD17C10P-M	VB	9.4	10	10.6	50	7	7.5	2	4	0.05	0.09
BZD17C11P-M	VC	10.4	11	11.6	50	4	8.2	4	7	0.05	0.1
BZD17C12P-M	VD	11.4	12	12.7	50	3	9.1	4	7	0.05	0.1
BZD17C13P-M	VE	12.4	13	14.1	50	2	10	5	10	0.05	0.1
BZD17C15P-M	VF	13.8	15	15.6	50	1	11	5	10	0.05	0.1
BZD17C16P-M	VG	15.3	16	17.1	25	1	12	6	15	0.06	0.11
BZD17C18P-M	VH	16.8	18	19.1	25	1	13	6	15	0.06	0.11
BZD17C20P-M	VI	18.8	20	21.2	25	1	15	6	15	0.06	0.11
BZD17C22P-M	VJ	20.8	22	23.3	25	1	16	6	15	0.06	0.11
BZD17C24P-M	VK	22.8	24	25.6	25	1	18	7	15	0.06	0.11
BZD17C27P-M	VL	25.1	27	28.9	25	1	20	7	15	0.06	0.11
BZD17C30P-M	VM	28	30	32	25	1	22	8	15	0.06	0.11
BZD17C33P-M	VN	31	33	35	25	1	24	8	15	0.06	0.11
BZD17C36P-M	VO	34	36	38	10	1	27	21	40	0.06	0.11
BZD17C39P-M	VP	37	39	41	10	1	30	21	40	0.06	0.11
BZD17C43P-M	VQ	40	43	46	10	1	33	24	45	0.07	0.12
BZD17C47P-M	VR	44	47	50	10	1	36	24	45	0.07	0.12
BZD17C51P-M	VS	48	51	54	10	1	39	25	60	0.07	0.12
BZD17C56P-M	VT	52	56	60	10	1	43	25	60	0.07	0.12
BZD17C62P-M	VU	58	62	66	10	1	47	25	80	0.08	0.13
BZD17C68P-M	VV	64	68	72	10	1	51	25	80	0.08	0.13
BZD17C75P-M	VW	70	75	79	10	1	56	30	100	0.08	0.13
BZD17C82P-M	VX	77	82	87	10	1	62	30	100	0.08	0.13
BZD17C91P-M	VY	85	91	96	5	1	68	60	200	0.08	0.13
BZD17C100P-M	VZ	94	100	106	5	1	75	60	200	0.09	0.13
BZD17C110P-M	XA	104	110	116	5	1	82	80	250	0.09	0.13
BZD17C120P-M	XB	114	120	127	5	1	91	80	250	0.09	0.13
BZD17C130P-M	XC	124	130	141	5	1	100	110	300	0.09	0.13
BZD17C150P-M	XD	138	150	156	5	1	110	130	300	0.09	0.13
BZD17C160P-M	XE	153	160	171	5	1	120	150	350	0.09	0.13
BZD17C180P-M	XF	168	180	191	5	1	130	180	400	0.09	0.13
BZD17C200P-M	XG	188	200	212	5	1	150	200	500	0.09	0.13

Notes

- Electrical characteristics when used as regulator diodes
- Maximum $V_F = 1.2\text{ V}$, at $I_F = 0.2\text{ A}$

⁽¹⁾ Pulse test: $t_p \leq 5\text{ ms}$

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

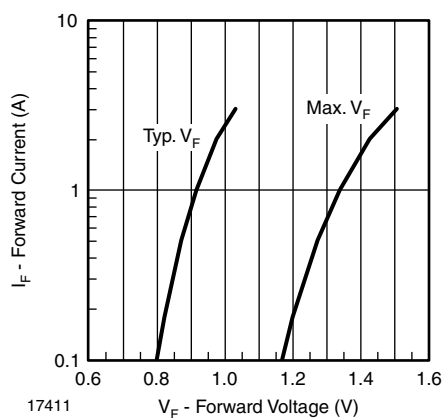


Fig. 1 - Forward Current vs. Forward Voltage

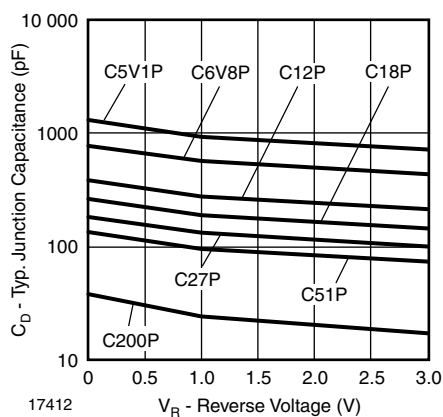


Fig. 2 - Typ. Diode Capacitance vs. Reverse Voltage

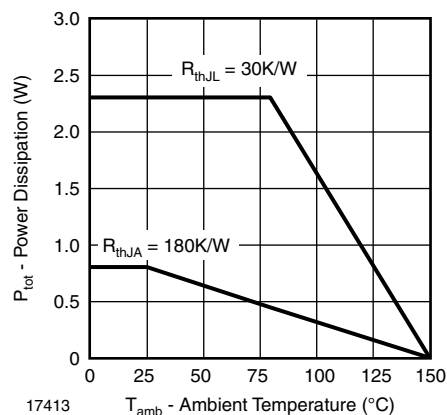
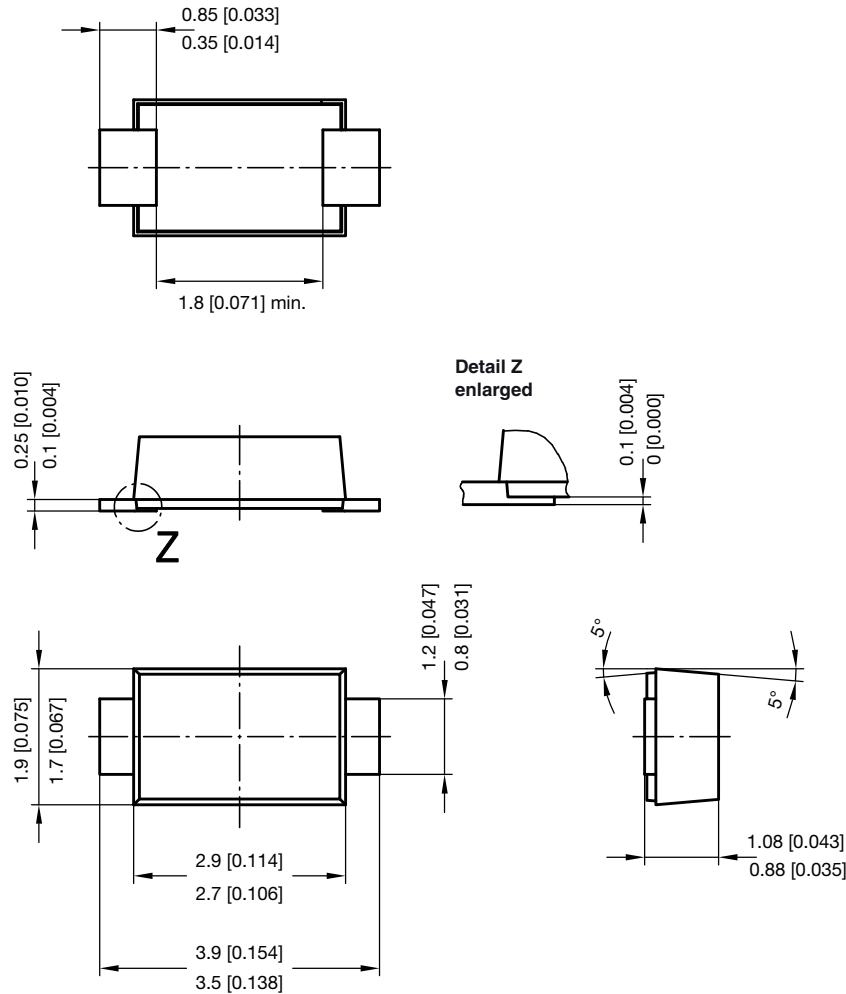


Fig. 3 - Power Dissipation vs. Ambient Temperature

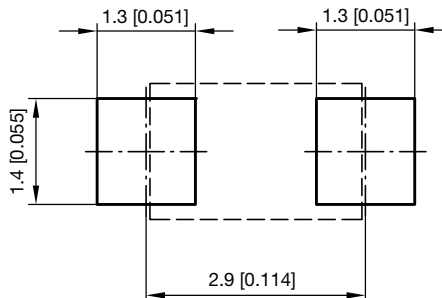


PACKAGE DIMENSIONS in millimeters (inches): **SMF (DO-219AB)**



foot print recommendation:

Reflow soldering

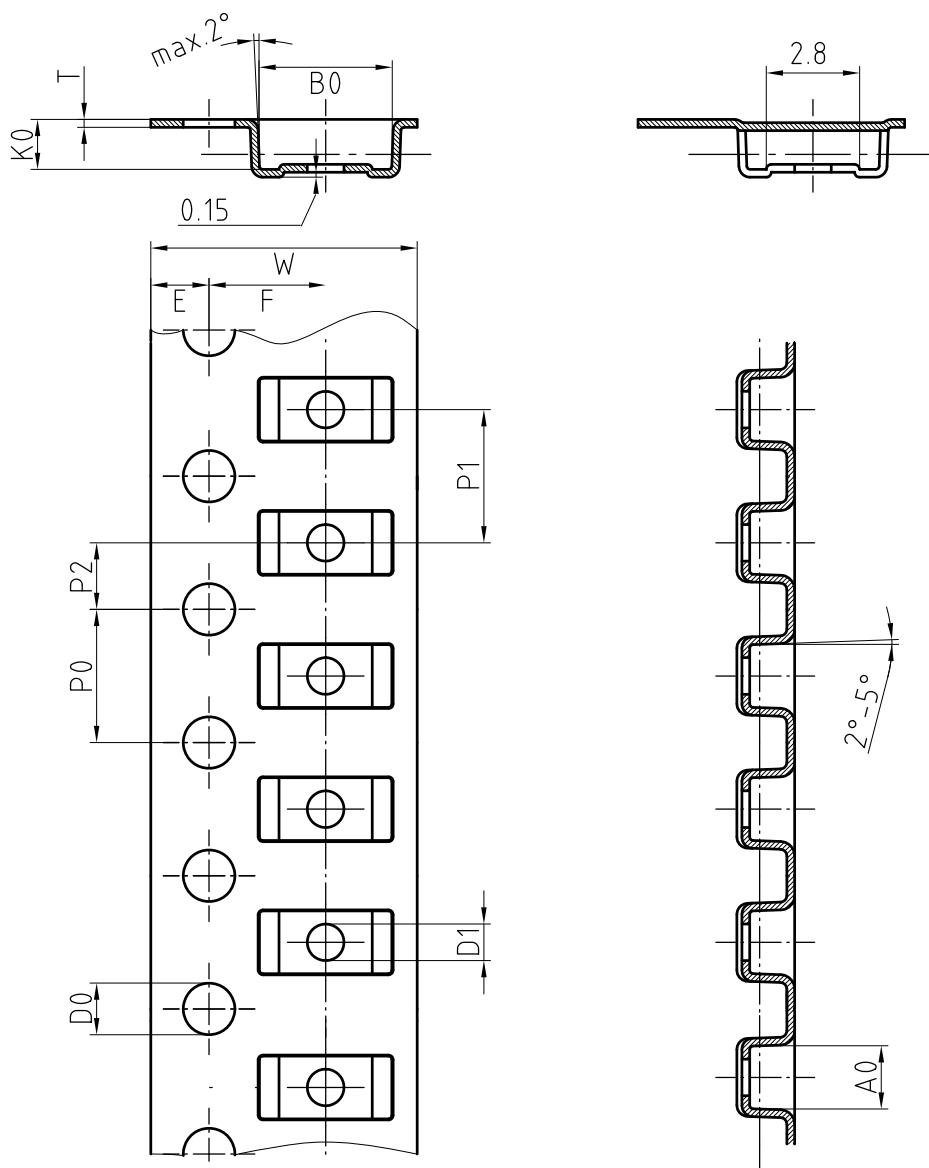


Created - Date: 15. February 2005

Rev. 6 - Date: 24.Feb.2021

Document no.: S8-V-3915.01-001 (4)

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BLISTERTAPE DIMENSIONS FOR SMF in millimeters


Mat:	A0	B0	K0	W	T	P0	P2	P1	D0	D1	E	F
PS	1.9	4.0	1.5	8.0	0.235	4.0	2.0	4.0	1.5	1	1.75	3.5

Document-No.: S8-V-3717.02-001 (3)

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