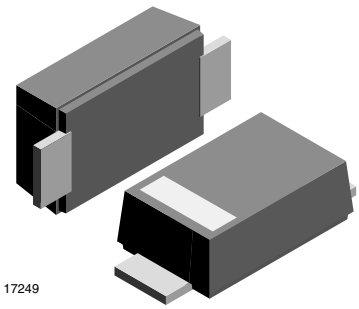
Zener Diodes



FEATURES

- Sillicon 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-E3 - RoHS-compliant, 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

LINKS TO ADDITIONAL RESOURCES

3D Models

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 Series	BZD17C3V6P-E3-08 to BZD17C200P-E3-08	3000 per 7" reel (8 mm tape)	30 000/box
	BZD17C3V6P-E3-18 to BZD17C200P-E3-18	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 °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		%/°C	
		MIN.	NOM.	MAX.		MAX.		TYP.	MAX.	MIN.	MAX.
BZD17C3V6P	I0	3.4	3.6	3.8	100	100	1	4	8	-0.14	-0.04
BZD17C3V9P	I1	3.7	3.9	4.1	100	50	1	4	8	-0.14	-0.04
BZD17C4V3P	I2	4	4.3	4.6	100	25	1	4	7	-0.12	-0.02
BZD17C4V7P	I3	4.4	4.7	5	100	10	1	3	7	-0.1	0
BZD17C5V1P	I4	4.8	5.1	5.4	100	5	1	3	6	-0.08	0.02
BZD17C5V6P	I5	5.2	5.6	6	100	10	2	2	4	-0.04	0.04
BZD17C6V2P	I6	5.8	6.2	6.6	100	5	2	2	3	-0.01	0.06
BZD17C6V8P	I7	6.4	6.8	7.2	100	10	3	1	3	0	0.07
BZD17C7V5P	I8	7	7.5	7.9	100	50	3	1	2	0	0.07
BZD17C8V2P	I9	7.7	8.2	8.7	100	10	3	1	2	0.03	0.08
BZD17C9V1P	J0	8.5	9.1	9.6	50	10	5	2	4	0.03	0.08
BZD17C10P	J1	9.4	10	10.6	50	7	7.5	2	4	0.05	0.09
BZD17C11P	J2	10.4	11	11.6	50	4	8.2	4	7	0.05	0.1
BZD17C12P	J3	11.4	12	12.7	50	3	9.1	4	7	0.05	0.1
BZD17C13P	J4	12.4	13	14.1	50	2	10	5	10	0.05	0.1
BZD17C15P	J5	13.8	15	15.6	50	1	11	5	10	0.05	0.1
BZD17C16P	J6	15.3	16	17.1	25	1	12	6	15	0.06	0.11
BZD17C18P	J7	16.8	18	19.1	25	1	13	6	15	0.06	0.11
BZD17C20P	J8	18.8	20	21.2	25	1	15	6	15	0.06	0.11
BZD17C22P	J9	20.8	22	23.3	25	1	16	6	15	0.06	0.11
BZD17C24P	K0	22.8	24	25.6	25	1	18	7	15	0.06	0.11
BZD17C27P	K1	25.1	27	28.9	25	1	20	7	15	0.06	0.11
BZD17C30P	K2	28	30	32	25	1	22	8	15	0.06	0.11
BZD17C33P	K3	31	33	35	25	1	24	8	15	0.06	0.11
BZD17C36P	K4	34	36	38	10	1	27	21	40	0.06	0.11
BZD17C39P	K5	37	39	41	10	1	30	21	40	0.06	0.11
BZD17C43P	K6	40	43	46	10	1	33	24	45	0.07	0.12
BZD17C47P	K7	44	47	50	10	1	36	24	45	0.07	0.12
BZD17C51P	K8	48	51	54	10	1	39	25	60	0.07	0.12
BZD17C56P	K9	52	56	60	10	1	43	25	60	0.07	0.12
BZD17C62P	L0	58	62	66	10	1	47	25	80	0.08	0.13
BZD17C68P	L1	64	68	72	10	1	51	25	80	0.08	0.13
BZD17C75P	L2	70	75	79	10	1	56	30	100	0.08	0.13
BZD17C82P	L3	77	82	87	10	1	62	30	100	0.08	0.13
BZD17C91P	L4	85	91	96	5	1	68	60	200	0.08	0.13
BZD17C100P	L5	94	100	106	5	1	75	60	200	0.09	0.13
BZD17C110P	L6	104	110	116	5	1	82	80	250	0.09	0.13
BZD17C120P	L7	114	120	127	5	1	91	80	250	0.09	0.13
BZD17C130P	L8	124	130	141	5	1	100	110	300	0.09	0.13
BZD17C150P	L9	138	150	156	5	1	110	130	300	0.09	0.13
BZD17C160P	M0	153	160	171	5	1	120	150	350	0.09	0.13
BZD17C180P	M1	168	180	191	5	1	130	180	400	0.09	0.13
BZD17C200P	M2	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 V, at I_F = 0.2 A

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

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

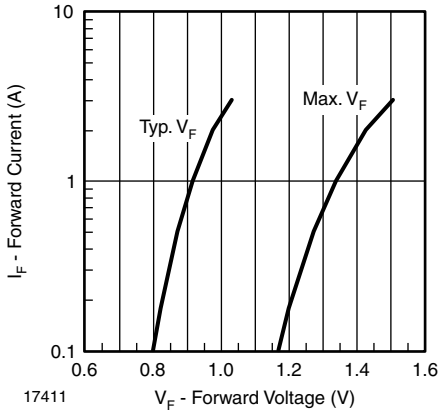


Fig. 1 - Forward Current vs. Forward Voltage

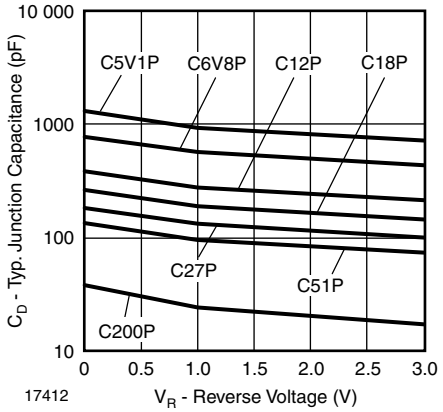


Fig. 2 - Typ. Diode Capacitance vs. Reverse Voltage

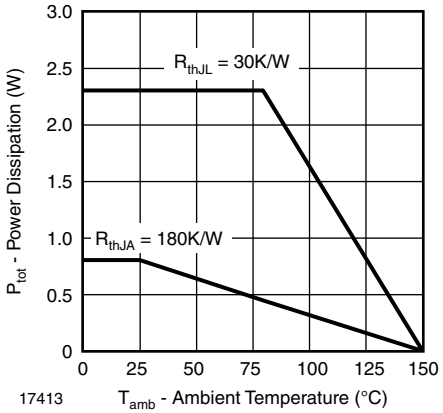
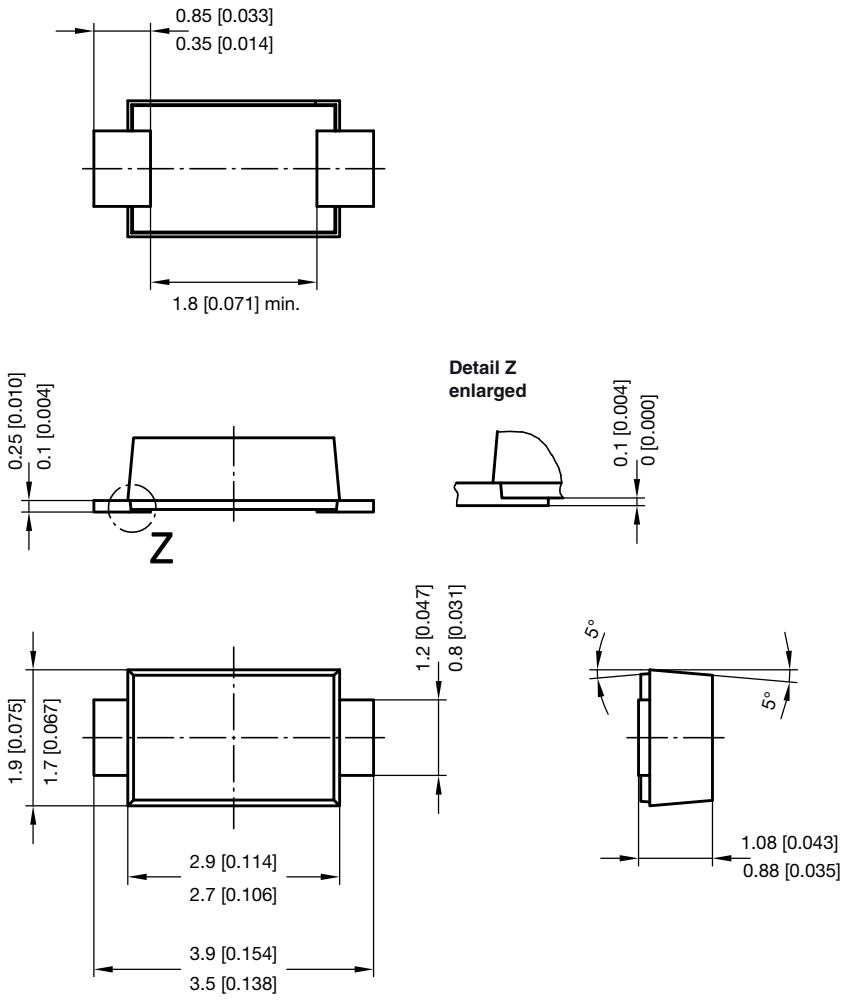


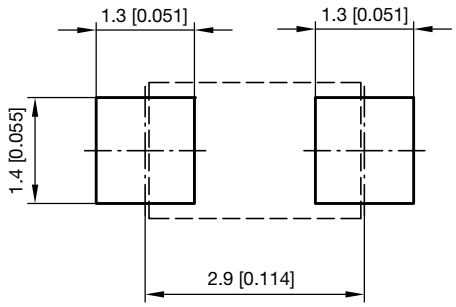
Fig. 3 - Power Dissipation vs. Ambient Temperature

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



foot print recommendation:

Reflow soldering



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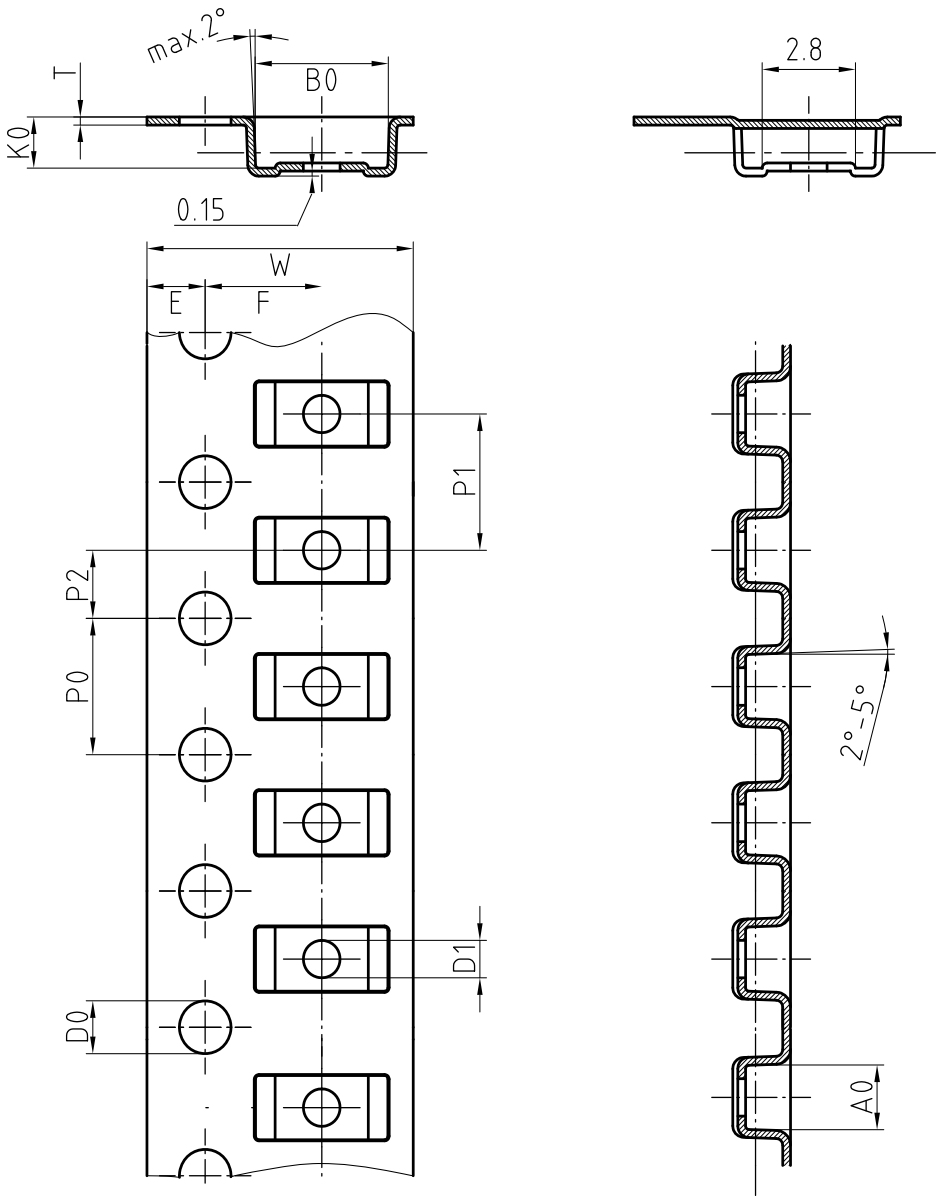
BLISTERTAPE DIMENSIONS FOR SMF in millimeters



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

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