BZD27C Series

Voltage Regulator Diodes

RoHS COMPLIANT

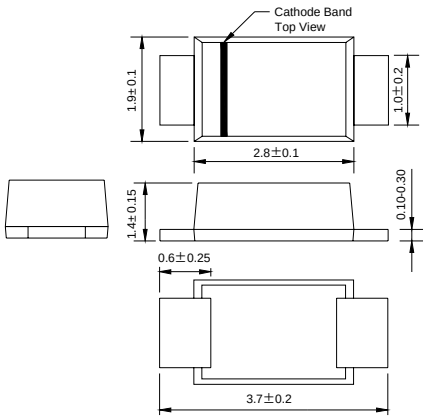
BREAKDOWN VOLTAGE : 7 - 188 VOLTS

PEAK PULSE POWER : 150 WATTS

Features

- ◇ Sillicon planar zener diodes.
- ◇ Low profile surface-mount package.
- ◇ Zener and surge current specification
- ◇ Low leakage current
- ◇ Excellent stability
- ◇ High temperature soldering guaranteed: 265°C/10 seconds, at terminals

SOD-123FL



Dimensions in millimeters

Mechanical Data

- ◇ Case: JEDEC SOD-123FL molded plastic
- ◇ Polarity: Color band denotes positive end (cathode) except for bidirectional
- ◇ Marking code: see TABLE 1
- ◇ Weight: 0.006 ounces, 0.02 grams
- ◇ Mounting position: Any

ABSOLUTE MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

	SYMBOL	VALUE	UNITS
Non-repetitive peak pulse power dissipation with a 10/1000μs waveform (NOTE 1)	P_{PPM}	150	Watts
Power dissipation at T_A=25°C (NOTE 2)	P_{tot}	0.8	Watts
Reverse current at stand-off voltage @ V_{WM}	I_R	SEE TABLE 1	μ A
Maximum instantaneous forward voltage at 0.2A	V_F	1.2	Volts
Thermal resistance junction to ambient	$R_{\theta JA}$	180	K/W
Operating temperature junction range	T_J	- 55 to +150	°C
Storage temperature range	T_{STG}	- 55 to +150	°C

NOTES:(1)T_J=25°C prior to surge.

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

(3)Non-repetitive peak reverse current in accordance with "IEC 60-1,Section 8" (10/1000μs pulse)

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ELECTRICAL CHARACTERISTICS (at T_J=25°C unless otherwise noted)

When used as voltage regulator diodes

Partnumber	Marking code	Working voltage (NOTE 1)		Differential resistance		Temperature coefficient		Test current	Reverse current at reverse voltage	
		V_z@I_{ZT}		r_{dif}@I_z		α_z@I_z		I_{ZT}	I_R	V_R
		V		Ω		%/°C		m A	μ A	V
		min	max	typ	max	min	max		max	
BZD27C3V6P	D0	3.4	3.8	4	8	-0.14	-0.04	100	100	1
BZD27C3V9P	D1	3.7	4.1	4	8	-0.14	-0.04	100	50	1
BZD27C4V3P	D2	4	4.6	4	7	-0.12	-0.02	100	25	1
BZD27C4V7P	D3	4.4	5	3	7	-0.1	0	100	10	1
BZD27C5V1P	D4	4.8	5.4	3	6	-0.08	0.02	100	5	1
BZD27C5V6P	D5	5.2	6	2	4	-0.04	0.04	100	10	2
BZD27C6V2P	D6	5.8	6.6	2	3	-0.01	0.06	100	5	2
BZD27C6V8P	D7	6.4	7.2	1	3	0	0.07	100	10	3
BZD27C7V5P	D8	7	7.9	1	2	0	0.07	100	50	3
BZD27C8V2P	D9	7.7	8.7	1	2	0.03	0.08	100	10	3
BZD27C9V1P	E0	8.5	9.6	2	4	0.03	0.08	50	10	5
BZD27C10P	E1	9.4	10.6	2	4	0.05	0.09	50	7	7.5
BZD27C11P	E2	10.4	11.6	4	7	0.05	0.1	50	4.0	8.2
BZD27C12P	E3	11.4	12.7	4	7	0.05	0.1	50	3.0	9.1
BZD27C13P	E4	12.4	14.1	5	10	0.05	0.1	50	2	10
BZD27C15P	E5	13.8	15.6	5	10	0.05	0.1	50	1	11
BZD27C16P	E6	15.3	17.1	6	15	0.06	0.11	25	1	12
BZD27C18P	E7	16.8	19.1	6	15	0.06	0.11	25	1	13
BZD27C20P	E8	18.8	21.2	6	15	0.06	0.11	25	1	15
BZD27C22P	E9	20.8	23.3	6	15	0.06	0.11	25	1	16
BZD27C24P	F0	22.8	25.6	7	15	0.06	0.11	25	1	18
BZD27C27P	F1	25.1	28.9	7	15	0.06	0.11	25	1	20
BZD27C30P	F2	28	32	8	15	0.06	0.11	25	1	22
BZD27C33P	F3	31	35	8	15	0.06	0.11	25	1	24
BZD27C36P	F4	34	38	21	40	0.06	0.11	10	1	27
BZD27C39P	F5	37	41	21	40	0.06	0.11	10	1	30
BZD27C43P	F6	40	46	24	45	0.07	0.12	10	1	33
BZD27C47P	F7	44	50	24	45	0.07	0.12	10	1	36
BZD27C51P	F8	48	54	25	60	0.07	0.12	10	1	39
BZD27C56P	F9	52	60	25	60	0.07	0.12	10	1	43
BZD27C62P	G0	58	66	25	80	0.08	0.13	10	1	47
BZD27C68P	G1	64	72	25	80	0.08	0.13	10	1	51
BZD27C75P	G2	70	79	30	100	0.08	0.13	10	1	56
BZD27C82P	G3	77	87	30	100	0.08	0.13	10	1	62
BZD27C91P	G4	85	96	60	200	0.08	0.13	5	1	68
BZD27C100P	G5	94	106	60	200	0.09	0.13	5	1	75
BZD27C110P	G6	104	116	80	250	0.09	0.13	5	1	82
BZD27C120P	G7	114	127	80	250	0.09	0.13	5	1	91
BZD27C130P	G8	124	141	110	300	0.09	0.13	5	1	100
BZD27C150P	G9	138	156	130	300	0.09	0.13	5	1	110
BZD27C160P	H0	153	171	150	350	0.09	0.13	5	1	120
BZD27C180P	H1	168	191	180	400	0.09	0.13	5	1	130
BZD27C200P	H2	188	212	200	500	0.09	0.13	5	1	150

Note:1.Pulse test:tp≤5ms.

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ELECTRICAL CHARACTERISTICS (at T_J=25°C unless otherwise noted)

When used as protection diodes

Partnumber	Marking code	Rev.Breakdown voltage	Test current	Temperature coefficient		Clamping voltage		Reverse current at stand-off voltage	
		$V_{(BR)R}$@I_{test}	I_{test}	α_z@I_{test}		V_C	@I_{RSM} 1)	I_R	@V_{wm}
		V	m A	%/°C		V	A	μ A	V
		min		min	max	max		max	
BZD27C7V5P	J8	7	100	0	0.07	11.3	13.3	1500	6.2
BZD27C8V2P	J9	7.7	100	0.03	0.08	12.3	12.2	1200	6.8
BZD27C9V1P	K0	8.5	50	0.03	0.08	13.3	11.3	100	7.5
BZD27C10P	K1	9.4	50	0.05	0.09	14.8	10.1	20	8.2
BZD27C11P	K2	10.4	50	0.05	0.1	15.7	9.6	5	9.1
BZD27C12P	K3	11.4	50	0.05	0.1	17	8.8	5	10.0
BZD27C13P	K4	12.4	50	0.05	0.1	18.9	7.9	5	11
BZD27C15P	K5	13.8	50	0.05	0.1	20.9	7.2	5	12
BZD27C16P	K6	15.3	25	0.06	0.11	22.9	6.6	5	13
BZD27C18P	K7	16.8	25	0.06	0.11	25.6	5.9	5	15
BZD27C20P	K8	18.8	25	0.06	0.11	28.4	5.3	5	16
BZD27C22P	K9	20.8	25	0.06	0.11	31	4.8	5	18
BZD27C24P	L0	22.8	25	0.06	0.11	33.8	4.4	5	20
BZD27C27P	L1	25.1	25	0.06	0.11	38.1	3.9	5	22
BZD27C30P	L2	28	25	0.06	0.11	42.2	3.6	5	24
BZD27C33P	L3	31	25	0.06	0.11	46.2	3.2	5	27
BZD27C36P	L4	34	10	0.06	0.11	50.1	3	5	30
BZD27C39P	L5	37	10	0.06	0.11	54.1	2.8	5	33
BZD27C43P	L6	40	10	0.07	0.12	60.7	2.5	5	36
BZD27C47P	L7	44	10	0.07	0.12	65.5	2.3	5	39
BZD27C51P	L8	48	10	0.07	0.12	70.8	2.1	5	43
BZD27C56P	L9	52	10	0.07	0.12	78.6	1.9	5	47
BZD27C62P	M0	58	10	0.08	0.13	86.5	1.7	5	51
BZD27C68P	M1	64	10	0.08	0.13	94.4	1.6	5	56
BZD27C75P	M2	70	10	0.08	0.13	103.5	1.5	5	62
BZD27C82P	M3	77	10	0.08	0.13	114	1.3	5	68
BZD27C91P	M4	85	5	0.09	0.13	126	1.2	5	75
BZD27C100P	M5	94	5	0.09	0.13	139	1.1	5	82
BZD27C110P	M6	104	5	0.09	0.13	139	0.72	5	91
BZD27C120P	M7	114	5	0.09	0.13	152	0.65	5	100
BZD27C130P	M8	124	5	0.09	0.13	169	0.59	5	110
BZD27C150P	M9	138	5	0.09	0.13	187	0.53	5	120
BZD27C160P	N1	153	5	0.09	0.13	205	0.48	5	130
BZD27C180P	N2	168	5	0.09	0.13	229	0.43	5	150
BZD27C200P	N3	188	5	0.09	0.13	254	0.39	5	160

Note:1)Non-repetitive peak reverse current in accordance with"IEC 60-1,Section 8"(10/1000μs pulse);see Fig.4.

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Ratings AND Charactieristic Curves

Figure 1. Forward Current vs. Forward Voltage

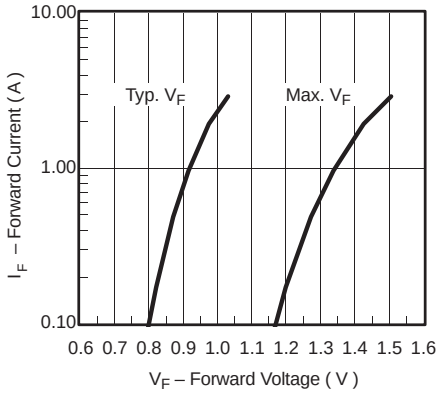


Figure 2. Maximum Pulse Power Dissipation vs. Zener Voltage

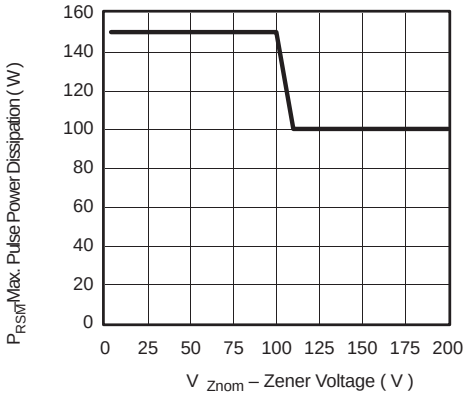


Figure 3. Typ. Diode Capacitance vs. Reverse Voltage

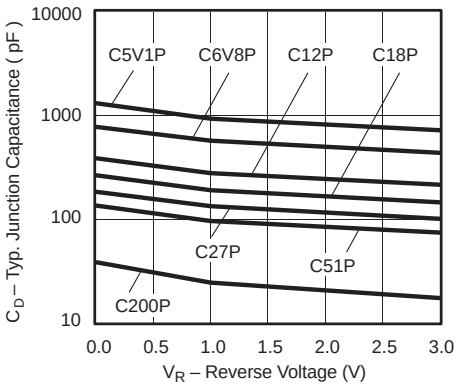


Figure 4. Non-Repetitive Peak Reverse Current Pulse Definition

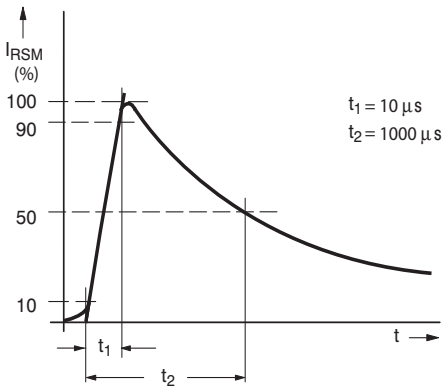
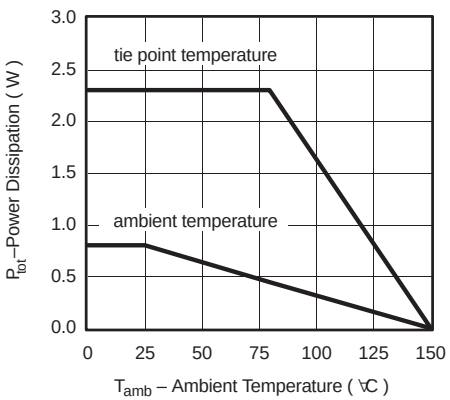


Figure 5. Power Dissipation vs. Ambient Temperature



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