New Jersey Semi-Conductor Products, Inc.

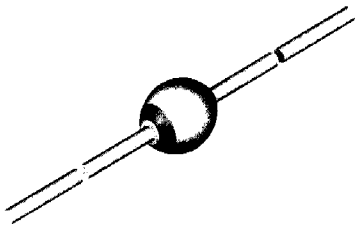
20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

BZT03-Series

Zener Diodes with Surge Current Specification

Features

- Glass passivated junction
- Hermetically sealed package
- Clamping time in picoseconds



Applications

Medium power voltage regulators and medium power transient suppression circuits

Mechanical Data

Case: SOD-57 Sintered glass case

Weight: approx. 369 mg

Packaging Codes/Options:

TAP / 5 k Ammopack (52 mm tape) / 25 k/box

TR / 5 k 10" reel

Absolute Maximum Ratings

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Power dissipation	l = 10 mm, T_L = 25 °C	P_V	3.25	W
	T_{amb} = 25 °C	P_V	1.3	W
Repetitive peak reverse power dissipation		P_{ZRM}	10	W
Non repetitive peak surge power dissipation	t_p = 100 µs, T_j = 25 °C	P_{ZSM}	600	W
Junction temperature		T_j	175	°C
Storage temperature range		T_{stg}	- 65 to + 175	°C

Thermal Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Junction ambient	l = 10 mm, T_L = constant	R_{thJA}	46	K/W
	on PC board with spacing 25 mm	R_{thJA}	100	K/W

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Min	Typ.	Max	Unit
Forward voltage	I_F = 0.5 A	V_F			1.2	V

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

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BZT03-Series

Electrical Characteristics

BZT03C...

Partnumber	Zener Voltage Range			Dynamic Resistance		Test Current	Temperature Coefficient of Zener Voltage		Reverse Leakage Current		Clamping		Stand-off	
	V_Z @ I_{ZT}			r_{zj} and TK_{VZ} @ I_Z		I_{ZT}	TC_{VZ} @ I_{ZT}		I_R @ V_R		$V_{(CL)R}$ [1] @ I_{RMS}		I_R @ V_R [2]	
	V			Ω		mA	%/K		µA	V	V	A	µA	V
	min	typ	max	typ	max		min	max	max		max		max	
BZT03C6V2	5.8	6.2	6.6	1	2	100	0	0.07	1500	4.7	9.3	34.0	3000	5.1
BZT03C6V8	6.4	6.8	7.2	1	2	100	0	0.07	1000	5.1	10.2	31.0	2000	5.6
BZT03C7V5	7	7.5	7.9	1	2	100	0	0.07	750	5.6	11.3	26.5	1500	6.2
BZT03C8V2	7.7	8.2	8.7	1	2	100	0.03	0.08	600	6.2	12.3	24.4	1200	6.8
BZT03C9V1	8.5	9.1	9.6	2	4	50	0.03	0.08	20	6.8	13.3	22.7	50	7.5
BZT03C10	9.4	10	10.6	2	4	50	0.05	0.09	10	7.5	14.8	20.3	20	8.2
BZT03C11	10.4	11	11.6	4	7	50	0.05	0.1	4	8.2	15.7	19.1	5	9.1
BZT03C12	11.4	12	12.7	4	7	50	0.05	0.1	3	9.1	17.0	17.7	5	10
BZT03C13	12.4	13	14.1	5	10	50	0.05	0.1	2	10	18.9	15.9	5	11
BZT03C15	13.8	15	15.6	5	10	50	0.05	0.1	1	11	20.9	14.4	5	12
BZT03C16	15.3	16	17.1	6	15	25	0.06	0.11	1	12	22.9	13.1	5	13
BZT03C18	16.8	18	19.1	6	15	25	0.06	0.11	1	13	25.6	11.7	5	15
BZT03C20	18.8	20	21.2	6	15	25	0.06	0.11	1	15	28.4	10.6	5	16
BZT03C22	20.8	22	23.3	6	15	25	0.06	0.11	1	16	31.0	9.7	5	18
BZT03C24	22.8	24	25.6	7	15	25	0.06	0.11	1	18	33.8	8.9	5	20
BZT03C27	25.1	27	28.9	7	15	25	0.06	0.11	1	20	38.1	7.9	5	22
BZT03C30	28	30	32	8	15	25	0.06	0.11	1	22	42.2	7.1	5	24
BZT03C33	31	33	35	8	15	25	0.06	0.11	1	24	46.2	6.5	5	27
BZT03C36	34	36	38	21	40	10	0.06	0.11	1	27	50.1	6.0	5	30
BZT03C39	37	39	41	21	40	10	0.06	0.11	1	30	54.1	5.5	5	33
BZT03C43	40	43	46	24	45	10	0.07	0.12	1	33	60.7	4.9	5	36
BZT03C47	44	47	50	24	45	10	0.07	0.12	1	36	65.5	4.6	5	39
BZT03C51	48	51	54	25	60	10	0.07	0.12	1	39	70.8	4.2	5	43
BZT03C56	52	56	60	25	60	10	0.07	0.12	1	43	78.6	3.8	5	47
BZT03C62	58	62	66	25	80	10	0.08	0.13	1	47	86.5	3.5	5	51
BZT03C68	64	68	72	25	80	10	0.08	0.13	1	51	94.4	3.2	5	56
BZT03C75	70	75	79	30	100	10	0.08	0.13	1	56	103.5	2.9	5	62
BZT03C82	77	82	87	30	100	10	0.08	0.13	1	62	114	2.6	5	68
BZT03C91	85	91	96	60	200	5	0.09	0.13	1	68	126	2.4	5	75
BZT03C100	94	100	106	60	200	5	0.09	0.13	1	75	139	2.2	5	82
BZT03C110	104	110	116	80	250	5	0.09	0.13	1	82	152	2.0	5	91
BZT03C120	114	120	127	80	250	5	0.09	0.13	1	91	167	1.8	5	100
BZT03C130	124	130	141	110	300	5	0.09	0.13	1	100	185	1.6	5	110
BZT03C150	138	150	156	130	300	5	0.09	0.13	1	110	204	1.5	5	120
BZT03C160	153	160	171	150	350	5	0.09	0.13	1	120	224	1.3	5	130
BZT03C180	168	180	191	180	400	5	0.09	0.13	1	130	249	1.2	5	150
BZT03C200	188	200	212	200	500	5	0.09	0.13	1	150	276	1.1	5	160
BZT03C220	208	220	233	350	750	2	0.09	0.13	1	160	305	1.0	5	180
BZT03C240	228	240	256	400	850	2	0.09	0.13	1	180	336	0.9	5	200
BZT03C270	251	270	289	450	1000	2	0.09	0.13	1	200	380	0.8	5	220
BZT03C300	280	300	320	450	1000	2	0.09	0.13	1	220	419	0.72	5	240

[1] 10/1000 exp. falling pulse tp = 1000 µs down to 50 %

[2] Stand-off voltage = recommended suplly voltage

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Electrical Characteristics

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Partnumber	Zener Voltage Range			Dynamic Resistance		Test Current	Temperature Coefficient of Zener Voltage		Reverse Leakage Current		Clamping		Stand-off	
	V_Z @ I_{ZT}			r_{zj} and TK_{VZ} @ I_Z		I_{ZT}	TC_{VZ} @ I_{ZT}		I_R @ V_R		$V_{(CL)R}$ [1] @ I_{RMS}		I_R @ V_R [2]	
	V			Ω		mA	%/K		µA	V	V	A	µA	V
	min	typ	max	typ	max		min	max	max		max		max	
BZT03D6V2	5.6	6.2	6.8	1	2	100	0	0.07	1500	4.4	9.5	34.0	3000	4.8
BZT03D6V8	6.1	6.8	7.5	1	2	100	0	0.07	1000	4.8	10.5	31.0	2000	5.3
BZT03D7V5	6.75	7.5	8.25	1	2	100	0	0.07	750	5.3	11.6	26.5	1500	5.9
BZT03D8V2	7.4	8.2	9	1	2	100	0.03	0.08	600	5.9	12.6	24.4	1200	6.5
BZT03D9V1	8.2	9.1	10	2	4	50	0.03	0.08	20	6.5	13.7	22.7	50	7.1
BZT03D10	9	10	11	2	4	50	0.05	0.09	10	7.1	15.2	20.3	20	7.9
BZT03D11	9.9	11	12.1	4	7	50	0.05	0.1	4	7.9	16.2	19.1	5	8.6
BZT03D12	10.8	12	13.2	4	7	50	0.05	0.1	3	8.6	17.5	17.7	5	9.3
BZT03D13	11.7	13	14.3	5	10	50	0.05	0.1	2	9.3	19.1	15.9	5	10.6
BZT03D15	13.5	15	16.5	5	10	50	0.05	0.1	1	10.6	21.8	14.4	5	11.6
BZT03D16	14.4	16	17.6	6	15	25	0.06	0.11	1	11.6	23.4	13.1	5	12.6
BZT03D18	16.2	18	19.8	6	15	25	0.06	0.11	1	12.6	26.3	11.7	5	14.4
BZT03D20	18	20	22	6	15	25	0.06	0.11	1	14.4	29.2	10.6	5	15.8
BZT03D22	29.8	22	24.2	6	15	25	0.06	0.11	1	15.8	31.9	9.7	5	17.2
BZT03D24	21.6	24	26.4	7	15	25	0.06	0.11	1	17.2	34.6	8.9	5	19.4
BZT03D27	24.3	27	29.7	7	15	25	0.06	0.11	1	19.4	39	7.9	5	21.5
BZT03D30	27	30	33	8	15	25	0.06	0.11	1	21.5	43.5	7.1	5	23.5
BZT03D33	29.7	33	36.3	8	15	25	0.06	0.11	1	23.5	47.5	6.5	5	25.8
BZT03D36	32.4	36	39.6	21	40	10	0.06	0.11	1	25.8	51.5	6.0	5	28
BZT03D39	35.1	39	42.9	21	40	10	0.06	0.11	1	28	56	5.5	5	31
BZT03D43	38.7	43	47.3	24	45	10	0.07	0.12	1	31	62	4.9	5	33.5
BZT03D47	42.3	47	51.7	24	45	10	0.07	0.12	1	33.5	67.5	4.6	5	36.5
BZT03D51	45.9	51	56.1	25	60	10	0.07	0.12	1	36.5	73	4.2	5	40
BZT03D56	50.4	56	61.6	25	60	10	0.07	0.12	1	40	81	3.8	5	44.5
BZT03D62	55.8	62	68.2	25	80	10	0.08	0.13	1	44.5	89	3.5	5	49
BZT03D68	61.2	68	74.8	25	80	10	0.08	0.13	1	49	97	3.2	5	54
BZT03D75	67.5	75	82.5	30	100	10	0.08	0.13	1	54	107	2.9	5	59
BZT03D82	73.8	82	90.2	30	100	10	0.08	0.13	1	59	117	2.6	5	65
BZT03D91	81.9	91	100	60	200	5	0.09	0.13	1	65	130	2.4	5	71
BZT03D100	90	100	110	60	200	5	0.09	0.13	1	71	143	2.2	5	79
BZT03D110	99	110	121	80	250	5	0.09	0.13	1	79	157	2.0	5	86
BZT03D120	108	120	132	80	250	5	0.09	0.13	1	86	172	1.8	5	93
BZT03D130	117	130	143	110	300	5	0.09	0.13	1	93	187	1.6	5	106
BZT03D150	135	150	165	130	300	5	0.09	0.13	1	106	213	1.5	5	116
BZT03D160	144	160	176	150	350	5	0.09	0.13	1	116	229	1.3	5	126
BZT03D180	162	180	198	180	400	5	0.09	0.13	1	126	256	1.2	5	144
BZT03D200	180	200	220	200	500	5	0.09	0.13	1	144	284	1.1	5	158
BZT03D220	198	220	242	350	750	2	0.09	0.13	1	158	314	1.0	5	172
BZT03D240	216	240	264	400	850	2	0.09	0.13	1	172	364	0.9	5	194
BZT03D270	243	270	297	450	1000	2	0.09	0.13	1	194	388	0.8	5	215

[1] 10/1000 exp. falling pulse tp = 1000 µs down to 50 %

[2] Stand-off voltage = recommended suplly voltage

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