

BZX55C2V4 THRU BZX55C100

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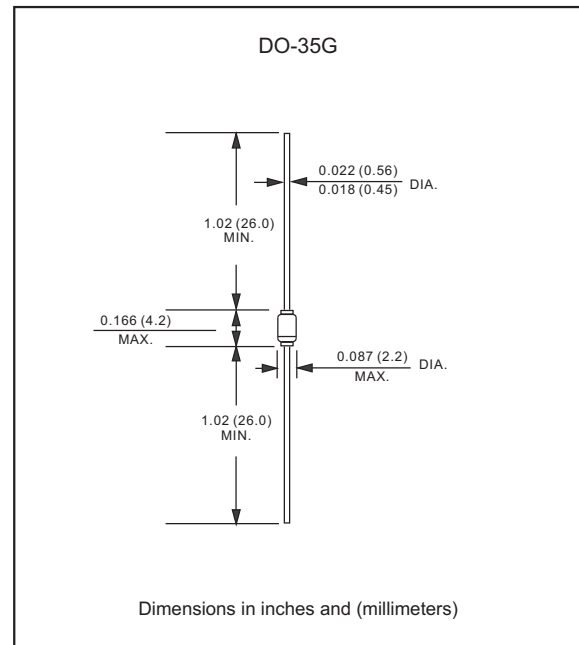
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BZX55C2V4 THRU BZX55C100**500mW Axial Lead Zener Diodes - 2.4V-100V****Features**

- Silicon epitaxial planar chip structure.
- Glass hermetically sealed package.
- Wide zener reverse voltage range 2.4V to 100V.
- V_z Tolerance Selection of $\pm 5\%$
- Small package size for high density applications.
- Ideally suited for automated assembly processes.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

Mechanical data

- Case : Glass, DO-35G
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.125 gram

Package outline**Maximum ratings** (at $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 200 \text{ mA}$	V_F			1.50	V
Power Dissipation	$l=4\text{mm TL}\leq 25^\circ\text{C}$	P_D			500	mW
Operating junction temperature range		T_J	-55		+150	$^\circ\text{C}$
Storage temperature range		T_{STG}	-65		+175	$^\circ\text{C}$

BZX55C2V4 THRU BZX55C100**Electrical characteristics** (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Part No.	Marking code	Zener voltage			Test current	Zener impedance			Leakage current	
		$V_Z @ I_{ZT}$ (Volts)				I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	I_R
		Min.	Nom.	Max.	mA	(Ω)Max	(Ω)Max	mA	(μA)Max	Volts
BZX55C2V4	BZX55C2V4	2.28	2.4	2.52	5.0	85	600	0.25	50	1.0
BZX55C2V7	BZX55C2V7	2.57	2.7	2.84	5.0	85	600	0.25	10	1.0
BZX55C3V0	BZX55C3V0	2.85	3.0	3.15	5.0	90	600	0.25	4.0	1.0
BZX55C3V3	BZX55C3V3	3.14	3.3	3.47	5.0	90	600	0.25	2.0	1.0
BZX55C3V6	BZX55C3V6	3.42	3.6	3.78	5.0	90	600	0.25	2.0	1.0
BZX55C3V9	BZX55C3V9	3.71	3.9	4.10	5.0	90	600	0.25	2.0	1.0
BZX55C4V3	BZX55C4V3	4.09	4.3	4.52	5.0	90	600	0.25	1.0	1.0
BZX55C4V7	BZX55C4V7	4.47	4.7	4.94	5.0	80	600	0.25	0.5	1.0
BZX55C5V1	BZX55C5V1	4.85	5.1	5.36	5.0	60	550	0.25	0.1	1.0
BZX55C5V6	BZX55C5V6	5.32	5.6	5.88	5.0	40	450	0.25	0.1	1.0
BZX55C6V2	BZX55C6V2	5.89	6.2	6.51	5.0	10	200	0.25	0.1	2.0
BZX55C6V8	BZX55C6V8	6.46	6.8	7.14	5.0	8	150	0.25	0.1	3.0
BZX55C7V5	BZX55C7V5	7.13	7.5	7.88	5.0	7	50	0.25	0.1	5.0
BZX55C8V2	BZX55C8V2	7.79	8.2	8.61	5.0	7	50	0.25	0.1	6.2
BZX55C9V1	BZX55C9V1	8.65	9.1	9.56	5.0	10	50	0.25	0.1	6.8
BZX55C10	BZX55C10	9.50	10	10.50	5.0	15	70	0.25	0.1	7.5
BZX55C11	BZX55C11	10.45	11	11.55	5.0	20	70	0.25	0.1	8.2
BZX55C12	BZX55C12	11.40	12	12.60	5.0	20	90	0.25	0.1	9.1
BZX55C13	BZX55C13	12.35	13	13.65	5.0	26	110	0.25	0.1	10
BZX55C15	BZX55C15	14.25	15	15.75	5.0	30	110	0.25	0.1	11
BZX55C16	BZX55C16	15.20	16	16.80	5.0	40	170	0.25	0.1	12
BZX55C18	BZX55C18	17.10	18	18.90	5.0	50	170	0.25	0.1	13
BZX55C20	BZX55C20	19.00	20	21.00	5.0	55	220	0.25	0.1	15
BZX55C22	BZX55C22	20.90	22	23.10	5.0	55	220	0.25	0.1	16
BZX55C24	BZX55C24	22.80	24	25.20	5.0	80	220	0.25	0.1	18
BZX55C27	BZX55C27	25.65	27	28.35	5.0	80	220	0.25	0.1	20
BZX55C30	BZX55C30	28.50	30	31.50	5.0	80	220	0.25	0.1	22
BZX55C33	BZX55C33	31.35	33	34.65	5.0	80	220	0.25	0.1	24
BZX55C36	BZX55C36	34.20	36	37.80	5.0	80	220	0.25	0.1	27
BZX55C39	BZX55C39	37.05	39	40.95	2.5	90	500	0.25	0.1	30
BZX55C43	BZX55C43	40.85	43	45.15	2.5	90	600	0.50	0.1	33
BZX55C47	BZX55C47	44.65	47	49.35	2.5	110	700	0.50	0.1	36
BZX55C51	BZX55C51	48.45	51	53.55	2.5	125	700	0.50	0.1	39
BZX55C56	BZX55C56	53.20	56	58.80	2.5	135	1000	0.50	0.1	43
BZX55C62	BZX55C62	58.90	62	65.10	2.5	150	1000	0.50	0.1	47
BZX55C68	BZX55C68	64.60	68	71.40	2.5	200	1000	0.50	0.1	51
BZX55C75	BZX55C75	71.25	75	78.75	2.5	250	1500	0.50	0.1	56
BZX55C82	BZX55C82	77.90	82	86.10	2.5	300	2000	0.50	0.1	62
BZX55C91	BZX55C91	86.45	91	95.55	1.0	450	5000	0.10	0.1	68
BZX55C100	BZX55C100	95.00	100	105.0	1.0	450	5000	0.10	0.1	75

Note : 5% tolerance of Zener voltage

Rating and characteristic curves (BZX55C2V4 THRU BZX55C100)

FIG. 1-TOTAL POWER DISSIPATION VS. AMBIENT TEMPERATURE

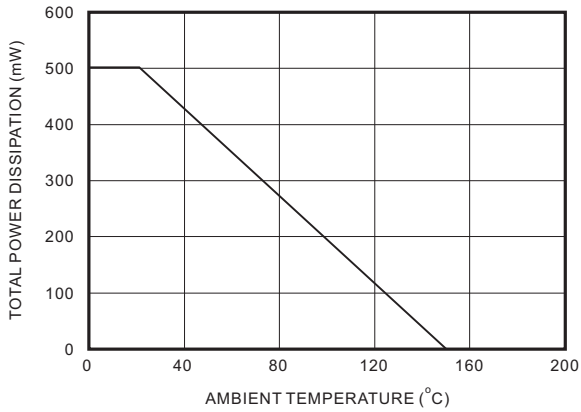


FIG. 2-TYPICAL CHANGE OF WORKING VOLTAGE UNDER OPERATING CONDITIONS AT $T_A = 25^\circ\text{C}$

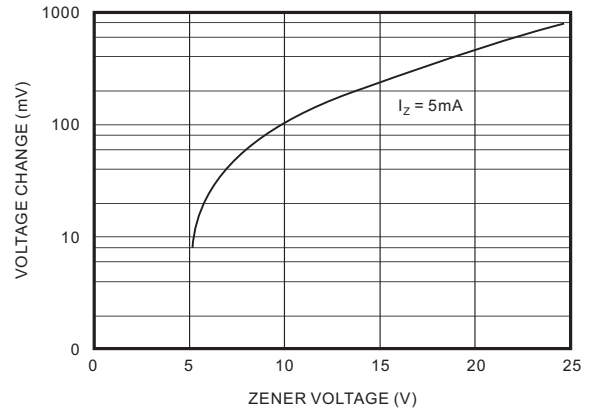


FIG. 3-TYPICAL CHANGE OF WORKING VOLTAGE VS. JUNCTION TEMPERATURE

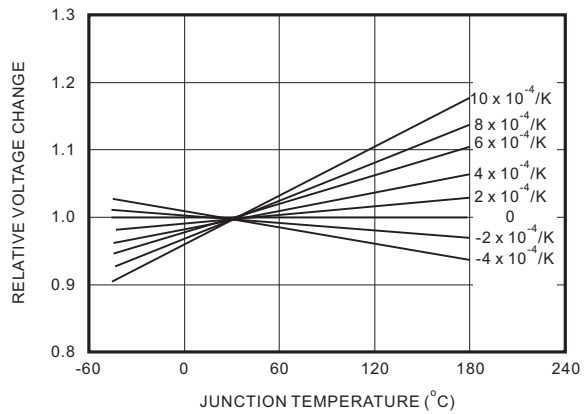


FIG. 4-TEMPERATURE COEFFICIENT OF V_Z VS. Z-VOLTAGE

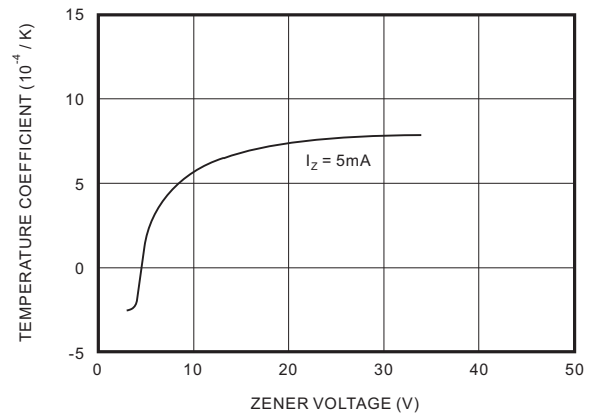
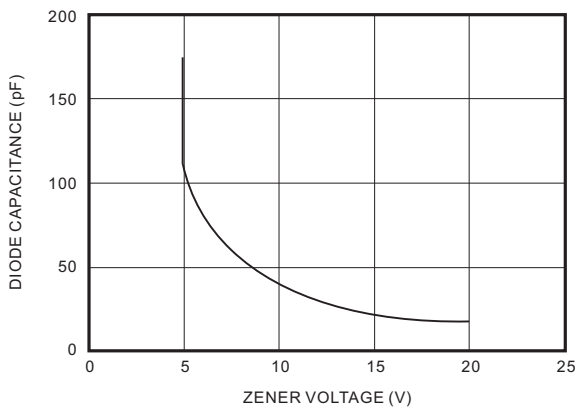


FIG. 5-DIODE CAPACITANCE VS. Z-VOLTAGE



Rating and characteristic curves (BZX55C2V4 THRU BZX55C100)

FIG. 6-FORWARD CURRENT VS. FORWARD VOLTAGE

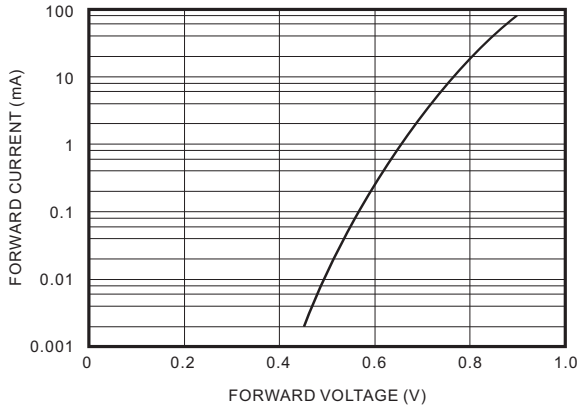


FIG. 7-Z-CURRENT VS. Z-VOLTAGE

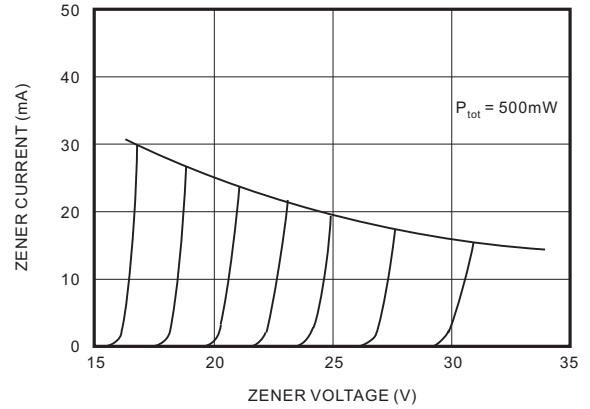


FIG. 8-Z-CURRENT VS. Z-VOLTAGE

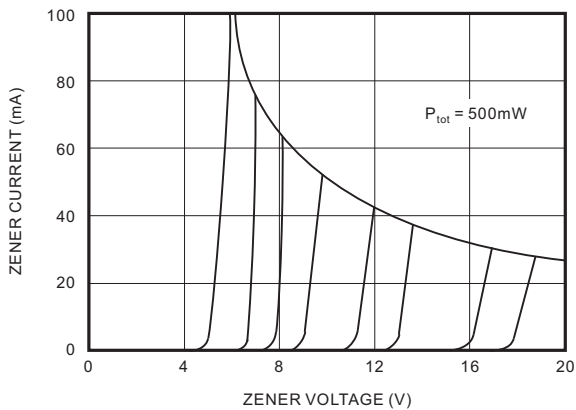


FIG. 9-DIFFERENTIAL Z-RESISTANCE VS. Z-VOLTAGE

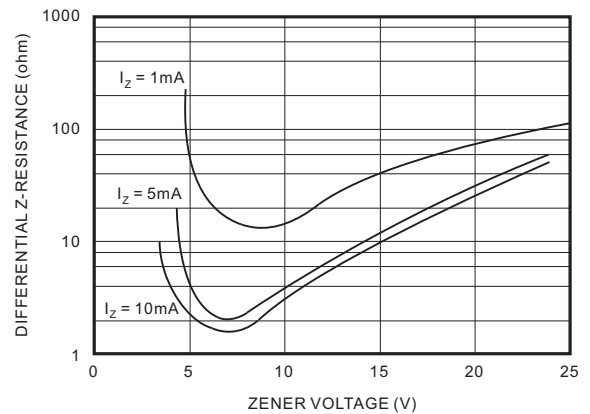
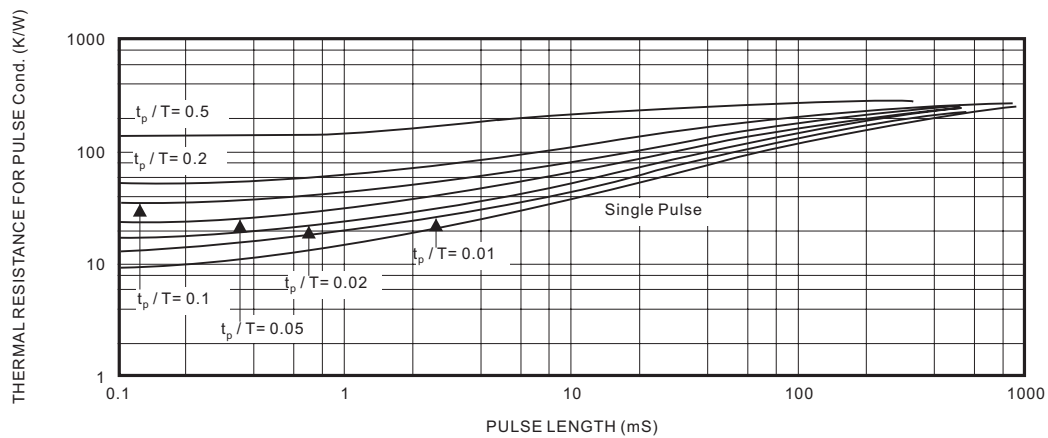




FIG. 10-THERMAL RESPONSE

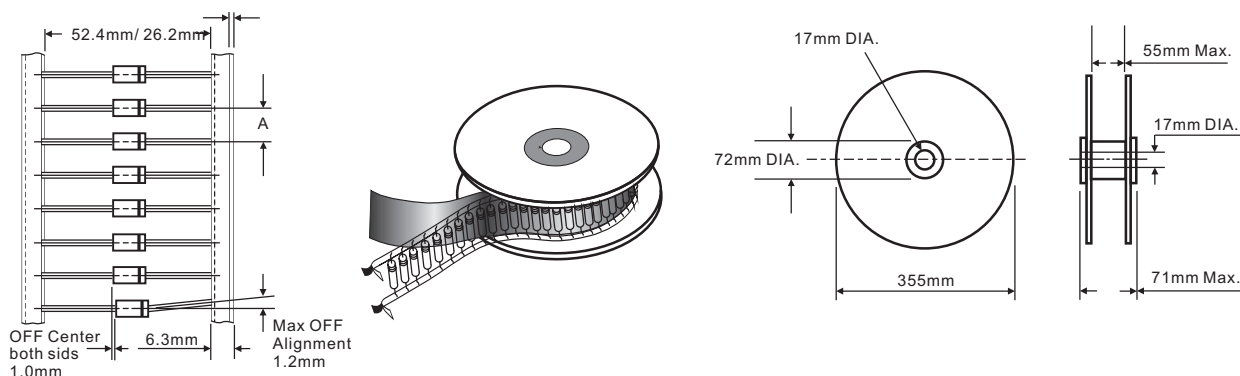


BZX55C2V4 THRU BZX55C100

Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Taping & bulk specifications for AXIAL devices



REEL PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / REEL)	COMPONENT SPACING "A" in FIG. A	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-35G/52mm	5,000	5 mm	360 * 340 * 370	20,000	7.3

AMMO PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-35G/26mm	5,000	250 * 78 * 48	420 * 270 * 330	150,000	16.7
DO-35G/52mm	5,000	250 * 78 * 78	420 * 270 * 330	100,000	15.0

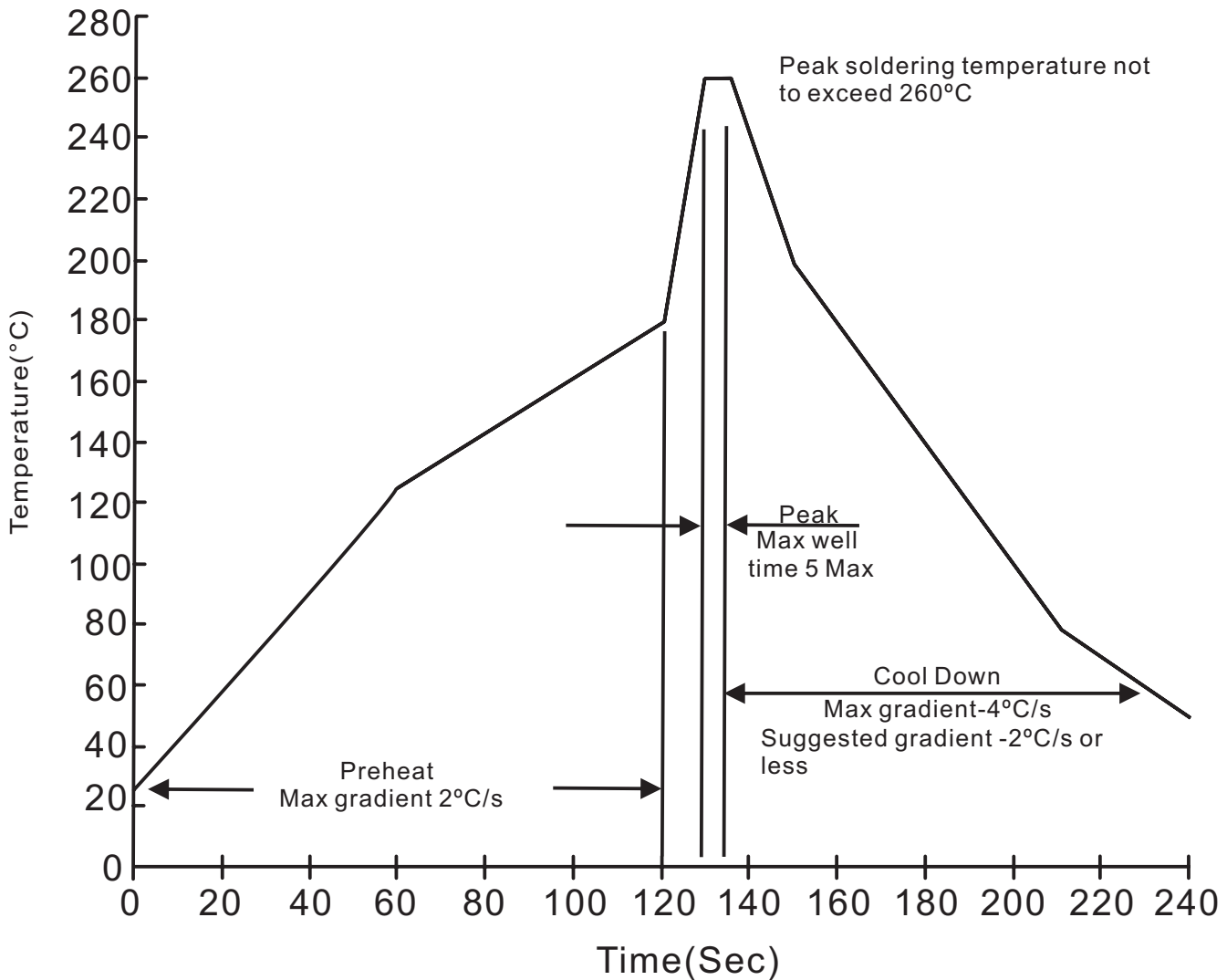
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BULK PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-35G	2,000	96 * 80 * 42	410 * 335 * 265	120,000	17.4

Suggested thermal profiles for soldering processes

1. Lead free temperature profile wave-soldering



BZX55C2V4 THRU BZX55C100**High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. Pull Test	0.25kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036
4. Bend Lead	0.25kg weight applied to each lead bending arc 90°±5° for 3 times.	MIL-STD-750D METHOD-2036
5. High Temperature Reverse Bias	V _R =80% rate at T _J =150°C for 168 hrs.	MIL-STD-750D METHOD-1038
6. Pressure Cooker	15P _{sig} at T _A =121°C for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Thermal Shock	0°C for 5 min. rise to 100°C for 5 min. total 10 cycles.	MIL-STD-750D METHOD-1056
9. Humidity	at T _A =85°C, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031