

TOSHIBA ZENER DIODE SILICON DIFFUSED JUNCTION TYPE

# 1Z6.2~1Z390, 1Z6.8A~1Z30A

CONSTANT VOLTAGE REGULATION

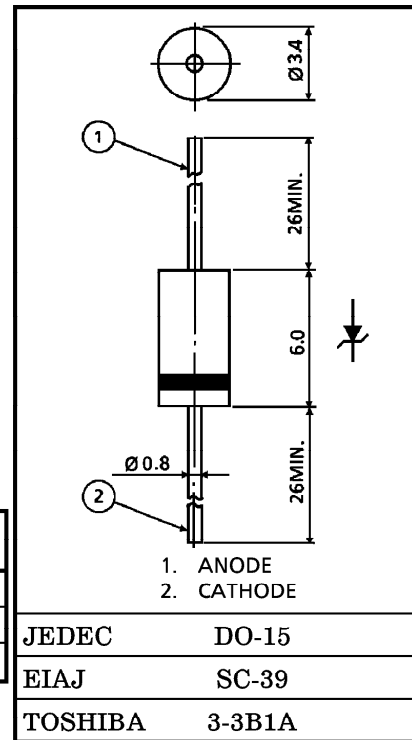
Unit in mm

TRANSIENT SUPPRESSORS

- Average Power Dissipation :  $P=1W$
- Peak Reverse Power Dissipation :  $P_{RSM}=200W$  at  $t_w=200\mu s$
- Zener Voltage :  $V_Z=6.2\sim 390V$
- Tolerance of Zener Voltage  
 1Z6.2 Series :  $\pm 10\%$   
 1Z6.8A Series :  $\pm 5\%$
- Plastic Mold Package

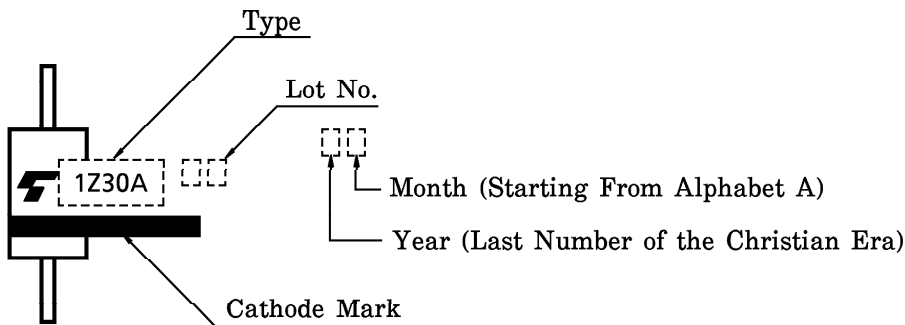
MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Dissipation	P	1	W
Junction Temperature	$T_j$	-40 ~ 150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-40 ~ 150	$^\circ C$



Weight : 0.42g

MARK



Color : Silver

961001EAA2

● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

TYPE	ZENER CHARACTERISTICS					TEMPERATURE COEFFICIENT OF ZENER VOLTAGE $\alpha_T$ (mV/°C)		FORWARD VOLTAGE		REVERSE CURRENT	
	ZENER VOLTAGE $V_Z$ (V)			ZENER IMPEDANCE $r_d$ ( $\Omega$ )	MEASUREMENT CURRENT $I_Z$ (mA)	TYP.	MAX.	$V_F$ (V)	MEASUREMENT CURRENT $I_F$ (A)	$I_R$ ( $\mu$ A)	MEASUREMENT VOLTAGE $V_R$ (V)
	MIN.	TYP.	MAX.	MAX.	MAX.						
1Z6.2	5.6	6.2	6.8	60	10	1.5	2	1.2	0.2	10	3
1Z6.8	6.2	6.8	7.4	60	10	3	4	1.2	0.2	10	2
1Z6.8A	6.45	6.8	7.14								
1Z7.5	6.8	7.5	8.3	30	10	4	5	1.2	0.2	10	4.5
1Z7.5A	7.13	7.5	7.87								
1Z8.2	7.4	8.2	9.1	30	10	4	6	1.2	0.2	10	4.9
1Z8.2A	7.79	8.2	86.1								
1Z9.1	8.2	9.1	10.1	30	10	5	8	1.2	0.2	10	5.5
1Z9.1A	8.65	9.1	9.55								
1Z10	9.0	10	11.0	30	10	6	9	1.2	0.2	10	6
1Z10A	9.5	10	10.5								
1Z11	9.9	11	12.1	30	10	7	11	1.2	0.2	10	7
1Z11A	10.5	11	11.5								
1Z12	10.8	12	13.2	30	10	8	13	1.2	0.2	10	8
1Z12A	11.4	12	12.6								
1Z13	11.7	13	14.3	30	10	9	14	1.2	0.2	10	9
1Z13A	12.4	13	13.6								
1Z15	13.5	15	16.5	30	10	11	17	1.2	0.2	10	10
1Z15A	14.3	15	15.8								
1Z16	14.4	16	17.6	30	10	12	19	1.2	0.2	10	11
1Z16A	15.2	16	16.8								
1Z18	16.2	18	19.8	30	10	14	23	1.2	0.2	10	13
1Z18A	17.1	18	18.9								
1Z20	18.0	20	22.0	30	10	16	26	1.2	0.2	10	14
1Z20A	19.0	20	21								
1Z22	19.8	22	24.2	30	10	18	28	1.2	0.2	10	16
1Z22A	20.9	22	23.1								
1Z24	21.6	24	26.4	30	10	20	32	1.2	0.2	10	17
1Z24A	22.8	24	25.2								
1Z27	24.3	27	29.7	30	10	23	36	1.2	0.2	10	19
1Z27A	25.7	27	28.3								
1Z30	27.0	30	33.0	30	10	25	40	1.2	0.2	10	21
1Z30A	28.5	30	31.5								
1Z33	29.7	33	36.3	30	10	26	41	1.2	0.2	10	26.4
1Z36	32.4	36	39.6	30	9	28	45	1.2	0.2	10	28.8
1Z43	38.7	43	47.3	40	7	33	53	1.2	0.2	10	34.4
1Z47	42.3	47	51.7	65	6	38	60	1.2	0.2	10	37.6

961001EAA2'

- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

TYPE	ZENER CHARACTERISTICS					TEMPERATURE COEFFICIENT OF ZENER VOLTAGE $\alpha_T$ (mV/°C)		FORWARD VOLTAGE		REVERSE CURRENT	
	ZENER VOLTAGE $V_Z$ (V)			ZENER IMPEDANCE $r_d$ ( $\Omega$ )	MEASUREMENT CURRENT $I_Z$ (mA)	TYP.	MAX.	$V_F$ (V)	MEASUREMENT CURRENT $I_F$ (A)	$I_R$ ( $\mu A$ )	MEASUREMENT VOLTAGE $V_R$ (V)
	MIN.	TYP.	MAX.	MAX.							
	MAX.	MAX.	MAX.	MAX.							
1Z51	45.9	51	56.1	65	6	43	68	1.2	0.2	10	40.8
1Z68	61.2	68	74.8	120	4	57	90	1.2	0.2	10	54.4
1Z75	67.5	75	82.5	150	4	66	104	1.2	0.2	10	60
1Z82	73.8	82	90.2	170	3	71	113	1.2	0.2	10	65.4
1Z100	90	100	110	300	3	87	138	1.2	0.2	10	80
1Z110	99	110	121	300	3	96	152	1.2	0.2	10	88
1Z150	135	150	165	450	2	136	212	1.2	0.2	10	120
1Z180	162	180	198	500	1.5	161	255	1.2	0.2	10	144
1Z330	297	330	363	5000	1	297	472	1.2	0.2	10	264
1Z390	351	390	429	10000	0.5	350	555	1.2	0.2	10	312

