

TOSHIBA ZENER DIODE SILICON DIFFUSED TYPE

1ZC12A~1ZC120A

CONSTANT VOLTAGE REGULATION
TELEPHONE, PRINTER USES

Unit: mm

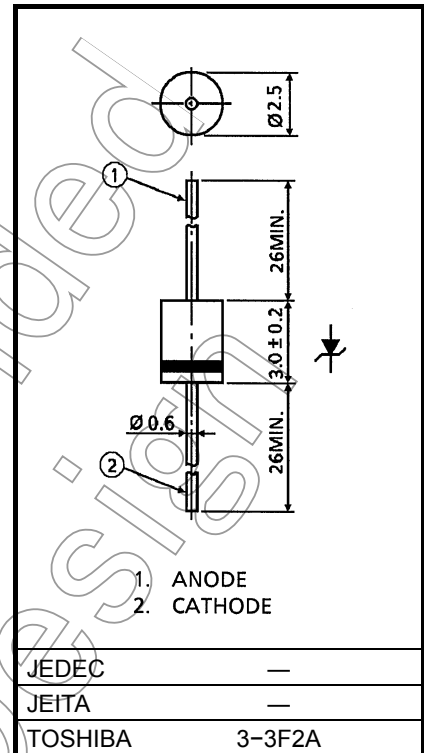
- Average Power Dissipation : P = 1.0W
- Zener Voltage : V_Z = 12 V to 120 V
- Tolerance of Zener Voltage (V_Z) : ±5%
- Plastic Mold Package

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Dissipation	P	1.0	W
Junction Temperature	T _j	-40 to 150	°C
Storage Temperature Range	T _{stg}	-40 to 150	°C

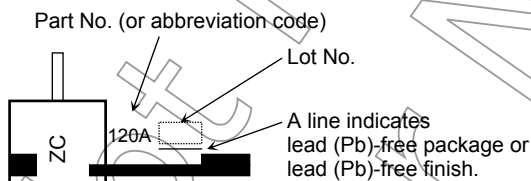
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).



Weight: 0.18g (Typ.)

MARKING



Abbreviation Code	Part No.
ZC12A	1ZC12A

ELECTRICAL CHARACTERISTICS (Ta=25°C)

TYPE	ZENER CHARACTERISTICS					TEMPERATURE COEFFICIENT OF ZENER VOLTAGE α_T (mV / °C)		FORWARD VOLTAGE		REVERSE CURRENT	
	ZENER VOLTAGE V_Z (V)			ZENER IMPEDANCE r_d (Ω)	MEASUREMENT CURRENT I_Z (mA)			V_F (V)	MEASUREMENT CURRENT I_F (A)	I_R (μ A)	MEASUREMENT VOLTAGE V_R (V)
	MIN.	TYP.	MAX.			MAX.	TYP.				
1ZC12A	11.4	12	12.6	30	10	8	13	1.2	0.2	10	8.0
1ZC13A	12.4	13	13.6	30	10	9	14	1.2	0.2	10	9.0
1ZC15A	14.3	15	15.8	30	10	11	17	1.2	0.2	10	10.0
1ZC16A	15.2	16	16.8	30	10	12	19	1.2	0.2	10	11.0
1ZC18A	17.1	18	18.9	30	10	14	23	1.2	0.2	10	13.0
1ZC20A	19.0	20	21.0	30	10	16	26	1.2	0.2	10	14.0
1ZC22A	20.9	22	23.1	30	10	18	28	1.2	0.2	10	16.0
1ZC24A	22.8	24	25.2	30	10	20	32	1.2	0.2	10	17.0
1ZC27A	25.7	27	28.3	30	10	23	36	1.2	0.2	10	19.0
1ZC30A	28.5	30	31.5	30	10	25	40	1.2	0.2	10	21.0
1ZC33A	31.4	33	34.6	30	10	26	41	1.2	0.2	10	26.4
1ZC36A	34.2	36	37.8	30	9	28	45	1.2	0.2	10	28.8
1ZC39A	37.1	39	40.9	35	8	30	48	1.2	0.2	10	31.2
1ZC43A	40.9	43	45.1	40	7	33	53	1.2	0.2	10	34.4
1ZC47A	44.7	47	49.3	65	6	38	60	1.2	0.2	10	37.6
1ZC51A	48.5	51	53.5	65	6	43	68	1.2	0.2	10	40.8
1ZC56A	53.2	56	58.8	85	5	48	77	1.2	0.2	10	44.8
1ZC62A	58.9	62	65.1	105	5	53	85	1.2	0.2	10	49.6
1ZC68A	64.6	68	71.4	120	4	57	90	1.2	0.2	10	54.4
1ZC75A	71.3	75	78.7	150	4	66	104	1.2	0.2	10	60.0
1ZC82A	77.9	82	86.1	170	3	71	113	1.2	0.2	10	65.4
1ZC91A	81.5	91	95.5	240	3	79	127	1.2	0.2	10	72.8
1ZC100A	95.0	100	105.0	300	3	87	138	1.2	0.2	10	80.0
1ZC110A	104.5	110	115.5	300	3	96	152	1.2	0.2	10	88.0
1ZC120A	114.0	120	126.0	350	2.5	106	171	1.2	0.2	10	96.0

Not for

Handling Precaution

The absolute maximum ratings denote the absolute maximum ratings, which are rated values and must not be exceeded during operation, even for an instant. The following are the general derating methods that we recommend when you design a circuit with a device.

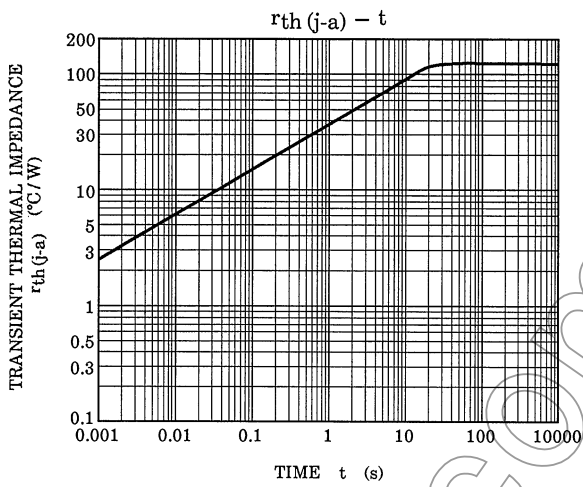
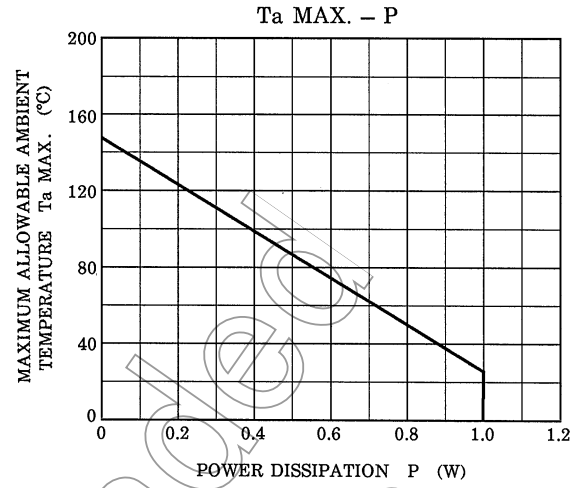
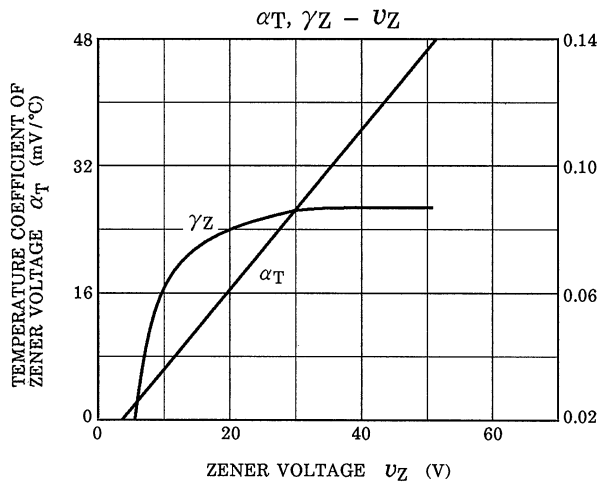
- P: We recommend that the worst case power dissipation be no greater than 50% of the absolute maximum rating of power dissipation. Carry out adequate heat design.
- T_j: Derate this rating when using a device in order to ensure high reliability. We recommend that the device be used at a T_j of below 120°C.

Thermal resistance between junction and ambient fluctuates depending on the device's mounting condition. When using a device, design a circuit board and a soldering land size to match the appropriate thermal resistance value.

Organic silicon is used as encapsulation material for this product, which is resin seal product. Therefore, it is difficult to seal siloxane coming from silicone completely in this product. When using this product, please consider above.

Please refer to the Rectifiers databook for further information.

Not Recommended
for New Design



Not Recommended for New Design

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