

TOSHIBA Zener Diode Silicon Diffused Type

CMZB18~CMZB51

Applications:

Communication, Control and
Measurement Equipment
Constant Voltage Regulation
Transient Suppressors

- Average power dissipation : P = 1.0 W
- Zener voltage : V_Z = 18 V ~ 51 V
- Suitable for high-density board assembly due to the use of a small surface-mount package, M-FLAT™

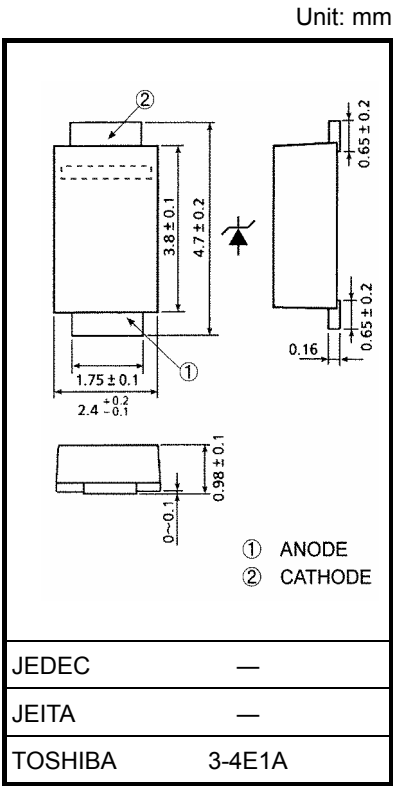
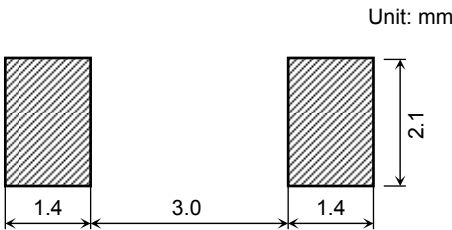
Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Power dissipation	P	1.0 (Note 1)	W
Junction temperature	T _j	−40~150	°C
Storage temperature range	T _{stg}	−40~150	°C

Note 1: Ta = 40°C
Device mounted on a glass-epoxy board
Board size: 50 mm × 50 mm
Soldering size: 6 mm × 6 mm
Board thickness: 1.6 t

Note 2: 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).

Standard Soldering Pad



Weight: 0.023 g (typ.)

Electrical Characteristics (Ta = 25°C)

Type	Zener Voltage V _Z (V)				Zener Impedance r _d (Ω)		Temperature Coefficient Of Zener αT (mV/°C)		Forward Voltage V _F (V)		Reverse Current I _R (μA)	
	Min	Typ.	Max	Measure- ment Current I _Z (mA)	Max	Measure- ment Current I _Z (mA)	Typ.	Max	Max	Measure- ment Current I _F (A)	Max	Measure- ment Voltage V _R (V)
CMZB18	16.2	18	19.8	10	30	10	14	23	1.2	0.2	10	13
CMZB27	24.3	27	29.7	10	30	10	23	36	1.2	0.2	10	19
CMZB33	29.7	33	36.3	10	30	10	26	41	1.2	0.2	10	26.4
CMZB36	32.4	36	39.6	9	30	9	28	45	1.2	0.2	10	28.8
CMZB39	35.1	39	42.9	8	35	8	30	48	1.2	0.2	10	31.2
CMZB47	42.3	47	51.7	6	65	6	38	60	1.2	0.2	10	37.6
CMZB51	45.9	51	56.1	6	65	6	43	68	1.2	0.2	10	40.8

Marking

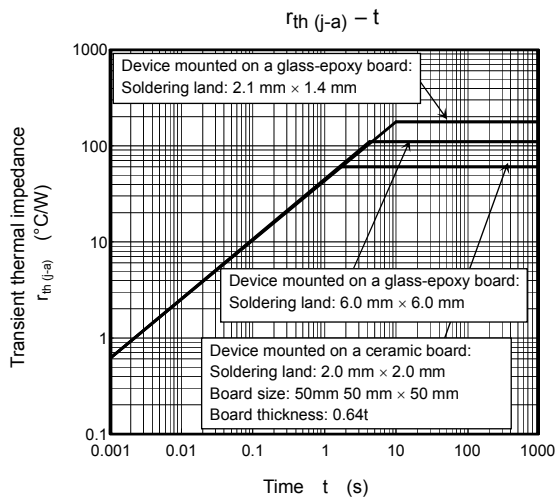
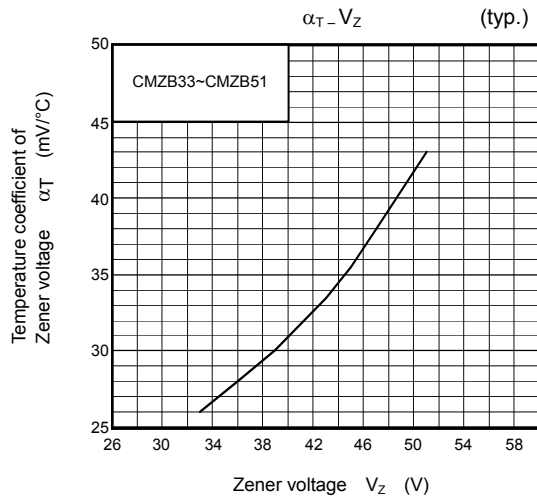
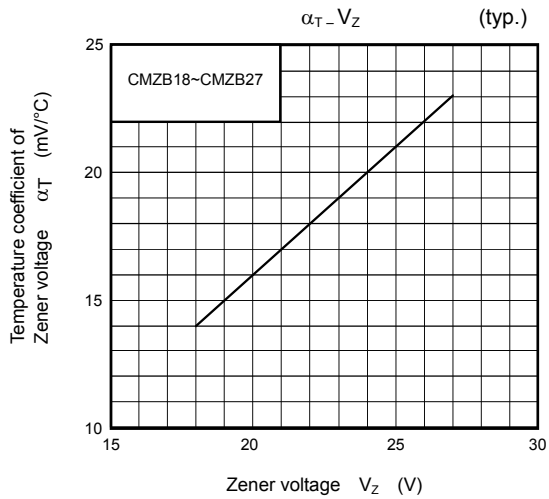
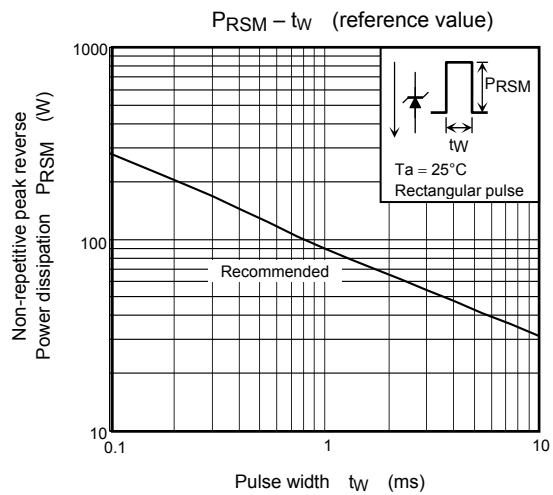
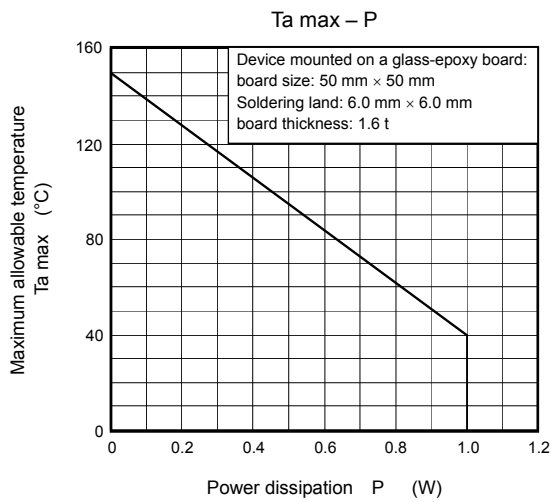
Abbreviation Code	Part No.
B18	CMZB18
B27	CMZB27
B33	CMZB33
B36	CMZB36
B39	CMZB39
B47	CMZB47
B51	CMZB51

Handling Precaution

- 1) The absolute maximum ratings 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.

PRSM : We recommend that a device be used within the recommended area in the figure,
PRSM-tw.

- 2) 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.
- 3) Please refer to the Rectifiers databook for further information.



RESTRICTIONS ON PRODUCT USE

20070701-EN GENERAL

- The information contained herein is subject to change without notice.
- TOSHIBA is continually working to improve the quality and 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 comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
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