

TOSHIBA Zener Diode Silicon Epitaxial Type

CRY62~CRZ47

Applications:

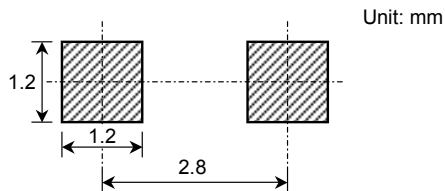
Communication, Control and
Measurement Equipment
Constant Voltage Regulation
Transient Suppressors

- Average power dissipation: $P = 0.7 \text{ W}$
- Zener voltage: $V_Z = 6.2 \sim 47 \text{ V}$
- Suitable for compact assembly due to small surface-mount package
"S-FLAT™" (Toshiba package name)

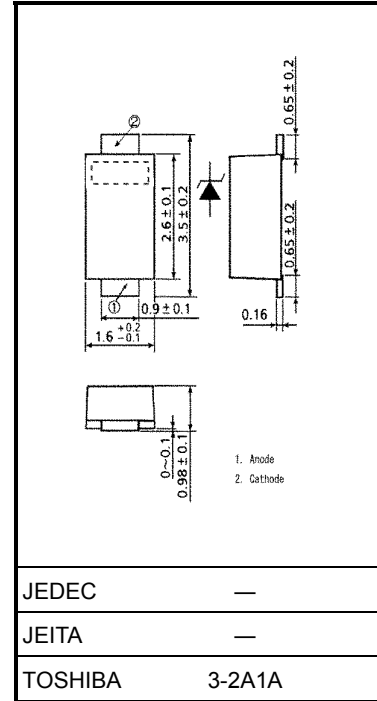
Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Power dissipation	P	700	mW
Junction temperature	T_j	-40 ~ 150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-40 ~ 150	$^\circ\text{C}$

Standard Soldering Pad



Unit: mm



Weight: 0.013 g (typ.)

Electrical Characteristics (Ta = 25°C)

Product No.	Zener Voltage			Measurement Current I_Z (mA)	Zener Impedance		Temperature Coefficient of Zener Voltage α_T (mV / °C)		Forward Voltage		Reverse Current	
	V_Z (V)				r_d (Ω)	Measurement Current I_Z (mA)	Typ.	Max	V_F (V)	Measurement Current I_F (A)	I_R (μ A)	Measurement Voltage V_R (V)
	Min	Typ.	Max	Max	Max							
CRY62	5.6	6.2	6.8	10	60	10	2	3	1.0	0.2	10	3.0
CRY68	6.2	6.8	7.4	10	60	10	3	4	1.0	0.2	10	3.0
CRY75	6.8	7.5	8.3	10	30	10	4	5	1.0	0.2	10	4.5
CRY82	7.4	8.2	9.0	10	30	10	4	6	1.0	0.2	10	4.9
CRY91	8.2	9.1	10.0	10	30	10	5	8	1.0	0.2	10	5.5
CRZ10	9.0	10.0	11.0	10	30	10	6	9	1.0	0.2	10	6.0
CRZ11	9.9	11.0	12.1	10	30	10	7	11	1.0	0.2	10	7.0
CRZ12	10.8	12.0	13.2	10	30	10	8	13	1.0	0.2	10	8.0
CRZ13	11.7	13.0	14.3	10	30	10	9	14	1.0	0.2	10	9.0
CRZ15	13.5	15.0	16.5	10	30	10	11	17	1.0	0.2	10	10.0
CRZ16	14.4	16.0	17.6	10	30	10	12	19	1.0	0.2	10	11.0
CRZ18	16.2	18.0	19.8	10	30	10	14	23	1.0	0.2	10	13.0
CRZ20	18.0	20.0	22.0	10	30	10	16	26	1.0	0.2	10	14.0
CRZ22	19.8	22.0	24.2	10	30	10	18	28	1.0	0.2	10	16.0
CRZ24	21.6	24.0	26.4	10	30	10	20	32	1.0	0.2	10	17.0
CRZ27	24.3	27.0	29.7	10	30	10	23	36	1.0	0.2	10	19.0
CRZ30	27.0	30.0	33.0	10	30	10	25	40	1.0	0.2	10	21.0
CRZ33	29.7	33.0	36.3	10	30	10	26	41	1.0	0.2	10	26.4
CRZ36	32.4	36.0	39.6	9	30	9	28	45	1.0	0.2	10	28.8
CRZ39	35.1	39.0	42.9	8	35	8	30	48	1.0	0.2	10	31.2
CRZ43	38.7	43.0	47.3	7	40	7	33	53	1.0	0.2	10	34.4
CRZ47	42.3	47.0	51.7	6	65	6	38	60	1.0	0.2	10	37.6

Marking

Abbreviation Code	Part No.
6□2	CRY62
6□8	CRY68
7□5	CRY75
8□2	CRY82
9□1	CRY91
□10	CRZ10
□11	CRZ11
□12	CRZ12
□13	CRZ13
□15	CRZ15
□16	CRZ16
□18	CRZ18
□20	CRZ20
□22	CRZ22
□24	CRZ24
□27	CRZ27
□30	CRZ30
□33	CRZ33
□36	CRZ36
□39	CRZ39
□43	CRZ43
□47	CRZ47

Handling Precaution

The 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.

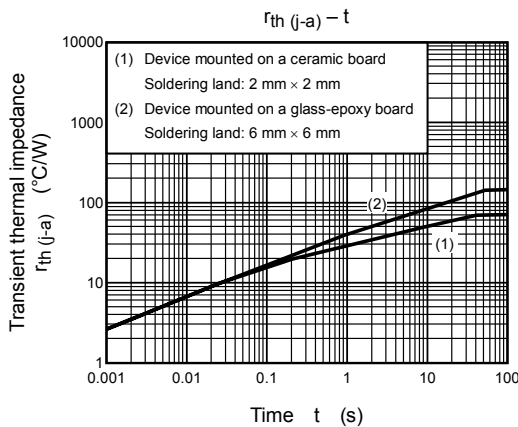
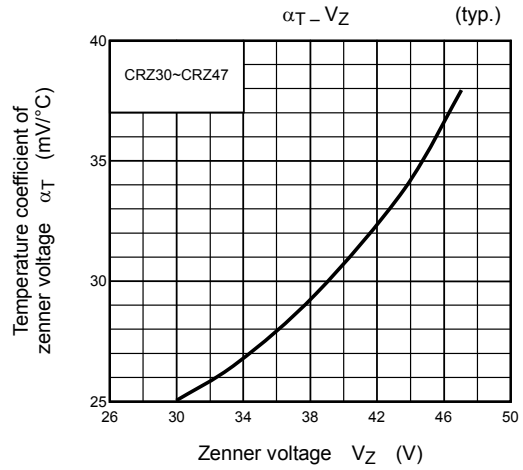
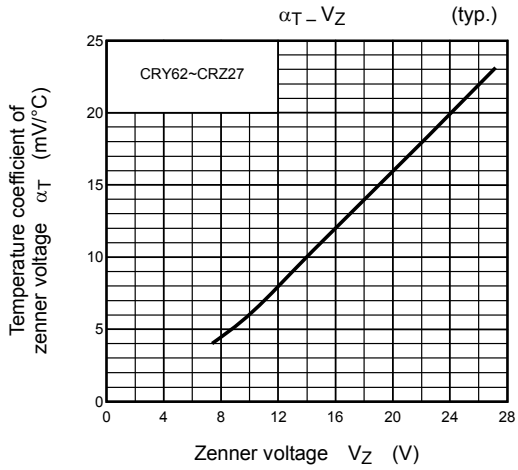
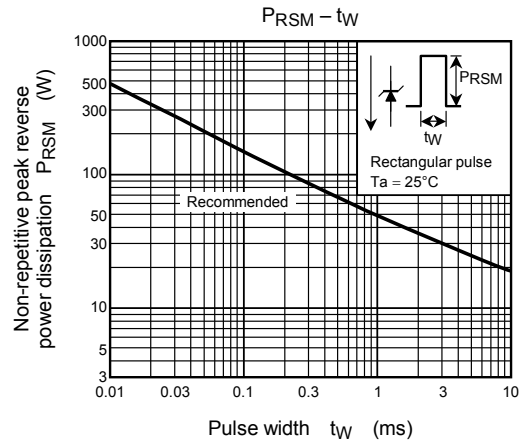
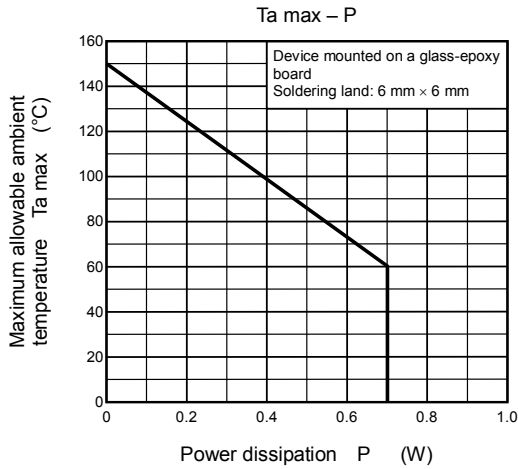
P: We recommend that the worst case power dissipation be no greater than 50% of the maximum rating of power dissipation. Carry out adequate heat design.

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

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.

Please refer to the Rectifiers databook for further information.



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