

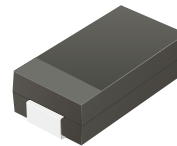
## CZRB3005-HF Thru. CZRB3200-HF

Voltage: 6.2 to 200 V

Power: 3 W

RoHS Device

Halogen Free

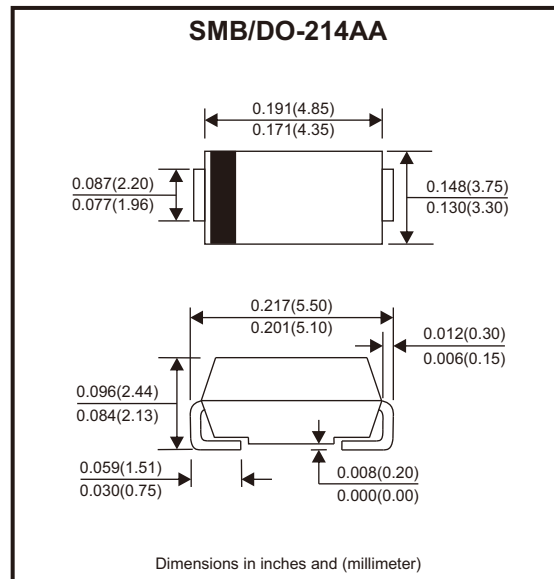


### Features

- Glass passivated chip.
- Low leakage.
- Built-in strain relief.
- Low inductance.
- High peak reverse power dissipation.
- For use in stabilizing and clipping circuits with high power rating.

### Mechanical Data

- Case: SMB/DO-214AA, molded plastic.
- Epoxy: UL 94V-0 rate flame retardant.
- Lead: Solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end.
- Mounting position: Any.



### Circuit Diagram



### Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
DC Power dissipation at $T_L = 75^{\circ}\text{C}$	$P_D$	3	W
Maximum forward voltage at $I_F = 200\text{mA}$	$V_F$	1.5	V
Junction temperature range	$T_J$	-55 to +150	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Part Number	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current	Marking Code
	V <sub>Z</sub> @ I <sub>ZT</sub>	I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>	I <sub>ZK</sub>	I <sub>R</sub> @ V <sub>R</sub>		I <sub>ZM</sub>	
	(V)	(mA)	(Ohm)	(Ohm)	(mA)	(μA)	(V)	(mA)	
CZRB3005-HF	6.2	121.0	1.5	700	1.0	5.0	3.0	435	3A0
CZRB3006-HF	6.8	110.0	2.0	700	1.0	5.0	4.0	393	3A1
CZRB3007-HF	7.5	100.0	2.0	700	0.5	5.0	5.0	360	3A2
CZRB3008-HF	8.2	91.0	2.3	700	0.5	5.0	6.0	330	3A3
CZRB3009-HF	9.1	82.0	2.5	700	0.5	3.0	7.0	297	3A4
CZRB3010-HF	10.0	75.0	3.5	700	0.25	3.0	7.6	270	3A5
CZRB3011-HF	11.0	68.0	4.0	700	0.25	1.0	8.4	225	3A6
CZRB3012-HF	12.0	63.0	4.5	700	0.25	1.0	9.1	246	3A7
CZRB3013-HF	13.0	58.0	4.5	700	0.25	0.5	9.9	208	3A8
CZRB3014-HF	14.0	53.0	5.0	700	0.25	0.5	10.6	193	3A9
CZRB3015-HF	15.0	50.0	5.5	700	0.25	0.5	11.4	180	3B0
CZRB3016-HF	16.0	47.0	5.5	700	0.25	0.5	12.2	169	3B1
CZRB3017-HF	17.0	44.0	6.0	750	0.25	0.5	13.0	159	3B2
CZRB3018-HF	18.0	42.0	6.0	750	0.25	0.5	13.7	150	3B3
CZRB3019-HF	19.0	40.0	7.0	750	0.25	0.5	14.4	142	3B4
CZRB3020-HF	20.0	37.0	7.0	750	0.25	0.5	15.2	135	3B5
CZRB3022-HF	22.0	34.0	8.0	750	0.25	0.5	16.7	123	3B6
CZRB3024-HF	24.0	31.0	9.0	750	0.25	0.5	18.2	112	3B7
CZRB3027-HF	27.0	28.0	10.0	750	0.25	0.5	20.6	100	3B8
CZRB3028-HF	28.0	27.0	12.0	750	0.25	0.5	21.0	96	3B9
CZRB3030-HF	30.0	25.0	16.0	1000	0.25	0.5	22.5	90	3C0
CZRB3033-HF	33.0	23.0	20.0	1000	0.25	0.5	25.1	82	3C1
CZRB3036-HF	36.0	21.0	22.0	1000	0.25	0.5	27.4	75	3C2
CZRB3039-HF	39.0	19.0	28.0	1000	0.25	0.5	29.7	69	3C3
CZRB3043-HF	43.0	17.0	33.0	1500	0.25	0.5	32.7	63	3C4
CZRB3047-HF	47.0	16.0	38.0	1500	0.25	0.5	35.6	57	3C5
CZRB3051-HF	51.0	15.0	45.0	1500	0.25	0.5	38.8	53	3C6
CZRB3056-HF	56.0	13.0	50.0	2000	0.25	0.5	42.6	48	3C7
CZRB3062-HF	62.0	12.0	55.0	2000	0.25	0.5	47.1	44	3C8
CZRB3068-HF	68.0	11.0	70.0	2000	0.25	0.5	51.7	40	3C9
CZRB3075-HF	75.0	10.0	85.0	2000	0.25	0.5	56.0	36	3F0
CZRB3082-HF	82.0	9.1	95.0	3000	0.25	0.5	62.2	33	3F1
CZRB3091-HF	91.0	8.2	115.0	3000	0.25	0.5	69.2	30	3F2
CZRB3100-HF	100.0	7.5	160.0	3000	0.25	0.5	76.0	27	3F3

Notes: 1. The type number listed have a standard tolerance on the nominal zener voltage of ± 5%.  
 2. The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on I<sub>ZT</sub> per JEDEC Method.

## Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current	Marking Code
	Vz @ IZT	IZT	ZzT @ IZT	ZzK @ IZK	IZK	IR @ VR		IZM	
	(V)	(mA)	(Ohm)	(Ohm)	(mA)	(μA)	(V)	(mA)	
CZRB3110-HF	110.0	6.8	225.0	4000	0.25	0.5	83.6	25	3F4
CZRB3120-HF	120.0	6.3	300.0	4500	0.25	0.5	91.2	22	3F5
CZRB3130-HF	130.0	5.8	375.0	5000	0.25	0.5	98.8	21	3F6
CZRB3140-HF	140.0	5.3	475.0	5000	0.25	0.5	106.4	19	3F7
CZRB3150-HF	150.0	5.0	550.0	6000	0.25	0.5	114.0	18	3F8
CZRB3160-HF	160.0	4.7	625.0	6500	0.25	0.5	121.6	17	3F9
CZRB3170-HF	170.0	4.4	650.0	7000	0.25	0.5	130.4	16	3G1
CZRB3180-HF	180.0	4.2	700.0	7000	0.25	0.5	136.8	15	3G2
CZRB3190-HF	190.0	4.0	800.0	8000	0.25	0.5	144.8	14	3G3
CZRB3200-HF	200.0	3.7	875.0	8000	0.25	0.5	152.0	13	3G4

Notes: 1. The type number listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .  
 2. The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on IZT per JEDEC Method.

## Rating and Characteristic Curves (CZRB3005-HF Thru. CZRB3200-HF)

Fig.1 - Power Temperature Derating Curve

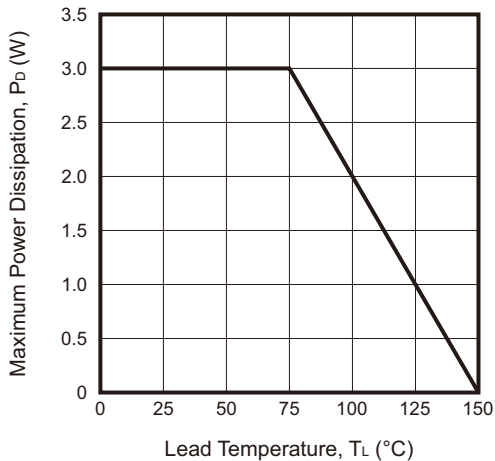


Fig.2 - Temperature Coefficients vs. Zener Voltage

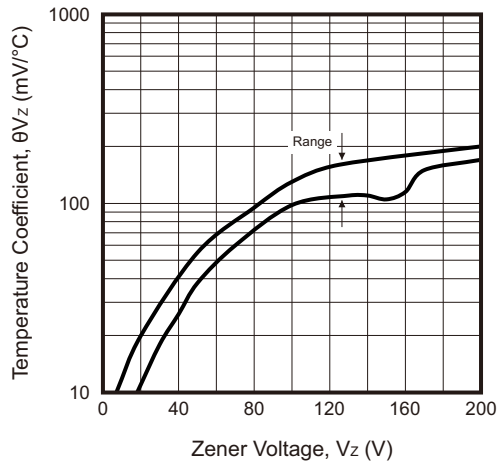


Fig.3 - Pulse Waveform

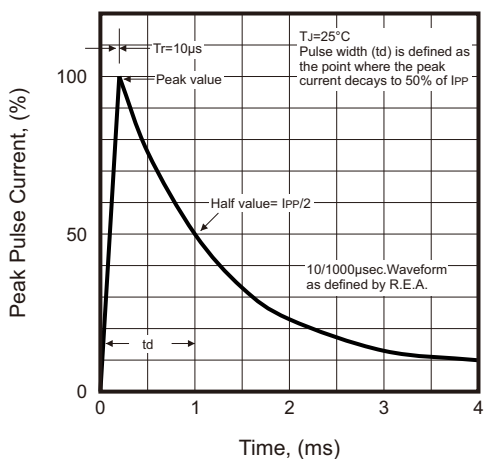
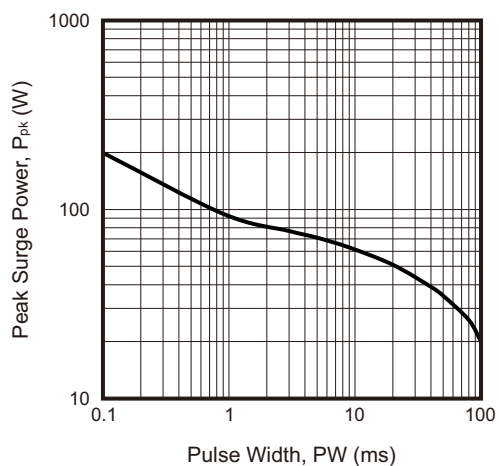
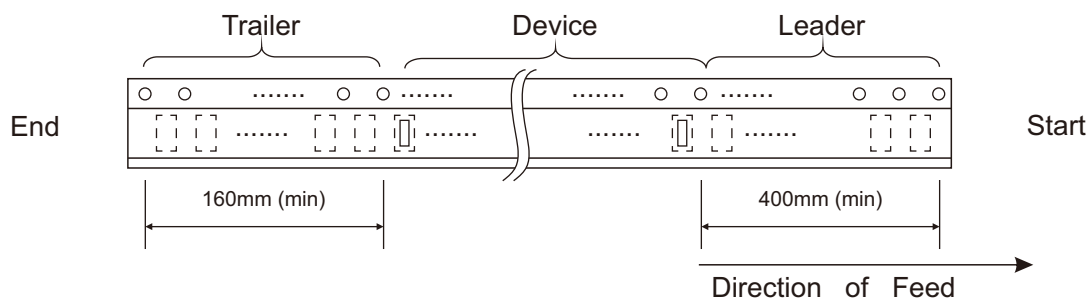
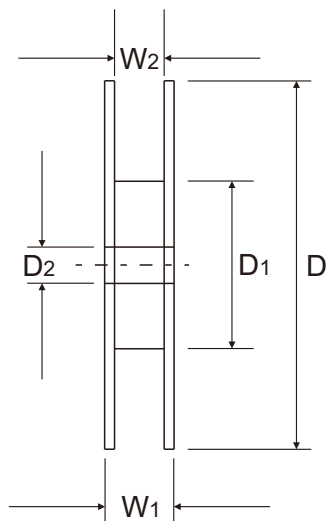
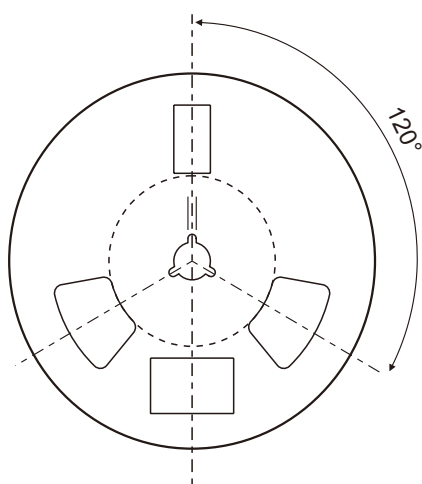
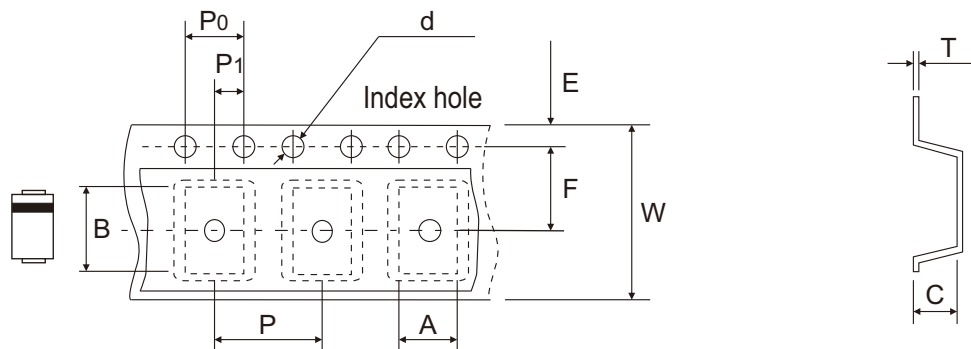


Fig.4 - Maximum Surge Power



## Reel Taping Specification



DO-214AA (SMB)	SYMBOL	A	B	C	d	D	D1	D2	E
	(mm)	See Note 1			1.55 ± 0.05	330.00	50.00 (Min.)	13.00 ± 0.50	1.75 ± 0.05
	(inch)	See Note 1			0.061 ± 0.002	12.992	1.969 (Min.)	0.512 ± 0.020	0.069 ± 0.002

DO-214AA (SMB)	SYMBOL	F	P	P0	P1	T	W	W1	W2
	(mm)	5.50 ± 0.05	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.40 (Max.)	12.00 ± 0.10	18.40 (Max.)	14.40 (Max.)
	(inch)	0.217 ± 0.002	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.016 (Max.)	0.472 ± 0.004	0.724 (Max.)	0.567 (Max.)

Notes: 1. A, B, and C the clearance between the component and the cavity must be within 0.5mm max. for 8mm tape and 12mm tape, 1.0mm max. for 16mm tape and 24mm tape.