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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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RD4.7UJ to RD39UJ

LOW NOISE SHARP BREAKDOWN CHARACTERISTICS ZENER DIODES 2PIN ULTRA SUPER MINI MOLD

DESCRIPTION

Type RD4.7UJ to RD39UJ Series are 2PIN Ultra Super Mini Mold Package zener diodes possessing an allowable power dissipation of 150 mW featuring low noise and sharp breakdown characteristic. They are intended for use in audio equipment, instrument equipment.

FEATURES

- Low Noise
- Sharp Breakdown characteristics
- V_z ; Applied E24 standard

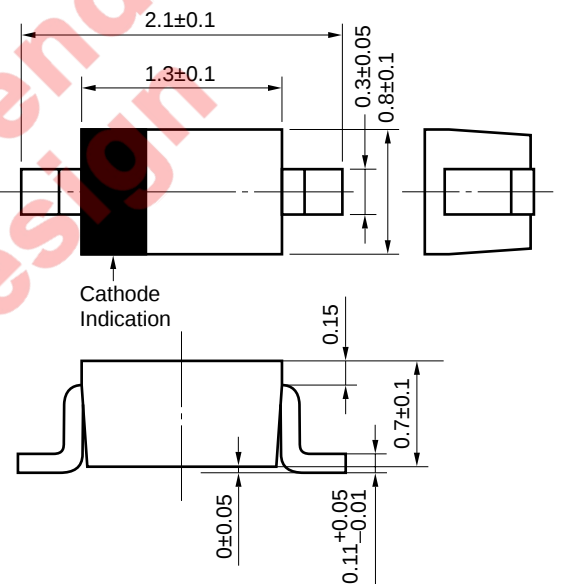
APPLICATIONS

Circuits for Constant Voltage, Constant Current, Waveform clipper, Surge absorber, etc.

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Power Dissipation	P	150 mW
Forward Current	I_F	100 mA
Reverse Surge Power	P_{RSM}	2.2 W (at $t = 10 \mu\text{s}/1 \text{ pulse}$) Show Fig. 6
Junction Temperature	T_j	150°C
Storage Temperature	T_{stg}	$-55 \text{ to } +150^\circ\text{C}$

PACKAGE DIMENSIONS (Unit: mm)



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ELECTRICAL CHARACTERISTICS ($T_A = 25 \pm 2 \text{ }^{\circ}\text{C}$)

Type Number	Class	Zener Voltage V_Z (V) ^{Note 1}			Dynamic Impedance Z_Z (Ω) ^{Note 2}		Reverse Current I_R (μA)	
		MIN.	MAX.	I_Z (mA)	MAX.	I_Z (mA)	MAX.	V_R (V)
RD4.7UJ	N	4.39	4.91	0.5	800	0.5	2	1.0
	N1	4.39	4.62					
	N2	4.52	4.76					
	N3	4.66	4.91					
RD5.1UJ	N	4.81	5.36	0.5	500	0.5	2	1.5
	N1	4.81	5.05					
	N2	4.95	5.20					
	N3	5.10	5.36					
RD5.6UJ	N	5.26	5.91	0.5	200	0.5	1	2.5
	N1	5.26	5.54					
	N2	5.44	5.73					
	N3	5.63	5.91					
RD6.2UJ	N	5.81	6.53	0.5	100	0.5	1	3.0
	N1	5.81	6.11					
	N2	6.01	6.32					
	N3	6.21	6.53					
RD6.8UJ	N	6.41	7.14	0.5	60	0.5	0.5	3.5
	N1	6.41	6.74					
	N2	6.60	6.94					
	N3	6.80	7.14					
RD7.5UJ	N	7.00	7.83	0.5	60	0.5	0.5	4.0
	N1	7.00	7.35					
	N2	7.21	7.60					
	N3	7.46	7.83					
RD8.2UJ	N	7.69	8.61	0.5	60	0.5	0.5	5.0
	N1	7.69	8.08					
	N2	7.94	8.34					
	N3	8.20	8.61					
RD9.1UJ	N	8.47	9.51	0.5	60	0.5	0.5	6.0
	N1	8.47	8.91					
	N2	8.76	9.21					
	N3	9.06	9.51					
RD10UJ	N	9.35	10.51	0.5	60	0.5	0.1	7.0
	N1	9.35	9.82					
	N2	9.66	10.16					
	N3	10.00	10.51					
RD11UJ	N	10.32	11.50	0.5	60	0.5	0.1	8.0
	N1	10.32	10.84					
	N2	10.64	11.17					
	N3	10.97	11.50					
RD12UJ	N	11.28	12.52	0.5	80	0.5	0.1	9.0
	N1	11.28	11.83					
	N2	11.59	12.17					
	N3	11.93	12.52					
RD13UJ	N	12.29	13.86	0.5	80	0.5	0.1	10.0
	N1	12.29	12.95					
	N2	12.72	13.40					
	N3	13.17	13.86					

Type Number	Class	Zener Voltage V_Z (V) ^{Note 1}			Dynamic Impedance Z_Z (Ω) ^{Note 2}		Reverse Current I_R (μA)	
		MIN.	MAX.	I_Z (mA)	MAX.	I_Z (mA)	MAX.	V_R (V)
RD15UJ	N	13.63	15.38	0.5	80	0.5	0.1	11
	N1	13.63	14.35					
	N2	14.12	14.85					
	N3	14.62	15.38					
RD16UJ	N	15.13	16.91	0.5	80	0.5	0.1	12
	N1	15.13	15.87					
	N2	15.58	16.36					
	N3	16.07	16.91					
RD18UJ	N	16.63	18.81	0.5	80	0.5	0.1	13
	N1	16.63	17.52					
	N2	17.24	18.15					
	N3	17.87	18.81					
RD20UJ	N	18.51	20.79	0.5	100	0.5	0.1	15
	N1	18.51	19.42					
	N2	19.14	20.12					
	N3	19.80	20.79					
RD22UJ	N	20.46	22.82	0.5	100	0.5	0.1	17
	N1	20.46	21.47					
	N2	21.09	22.15					
	N3	21.76	22.82					
RD24UJ	N	22.42	25.17	0.5	120	0.5	0.1	19
	N1	22.42	23.59					
	N2	23.19	24.38					
	N3	23.98	25.17					
RD27UJ	N	24.75	27.95	0.5	150	0.5	0.1	21
	N1	24.75	26.04					
	N2	25.56	26.96					
	N3	26.46	27.95					
RD30UJ	N	27.38	31.04	0.5	200	0.5	0.1	23
	N1	27.38	29.00					
	N2	28.35	30.04					
	N3	29.37	31.04					
RD33UJ	N	30.30	33.97	0.5	250	0.5	0.1	25
	N1	30.30	32.02					
	N2	31.21	32.98					
	N3	32.14	33.97					
RD36UJ	N	33.08	36.83	0.5	300	0.5	0.1	27
	N1	33.08	34.92					
	N2	33.95	36.85					
	N3	34.87	36.83					
RD39UJ	N	35.78	39.67	0.5	360	0.5	0.1	30
	N1	35.78	37.75					
	N2	36.63	38.69					
	N3	37.56	39.67					

Note 1. Tested with pulse (40 ms)

2. Z_Z is measured at I_Z by given a very small A.C. current signal

TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

Fig. 1 P - T_A RATING

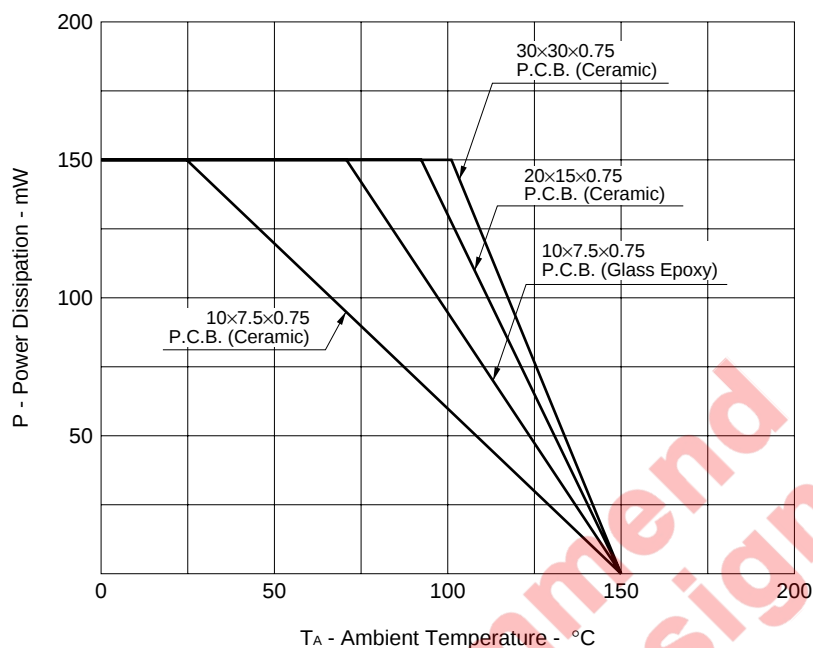
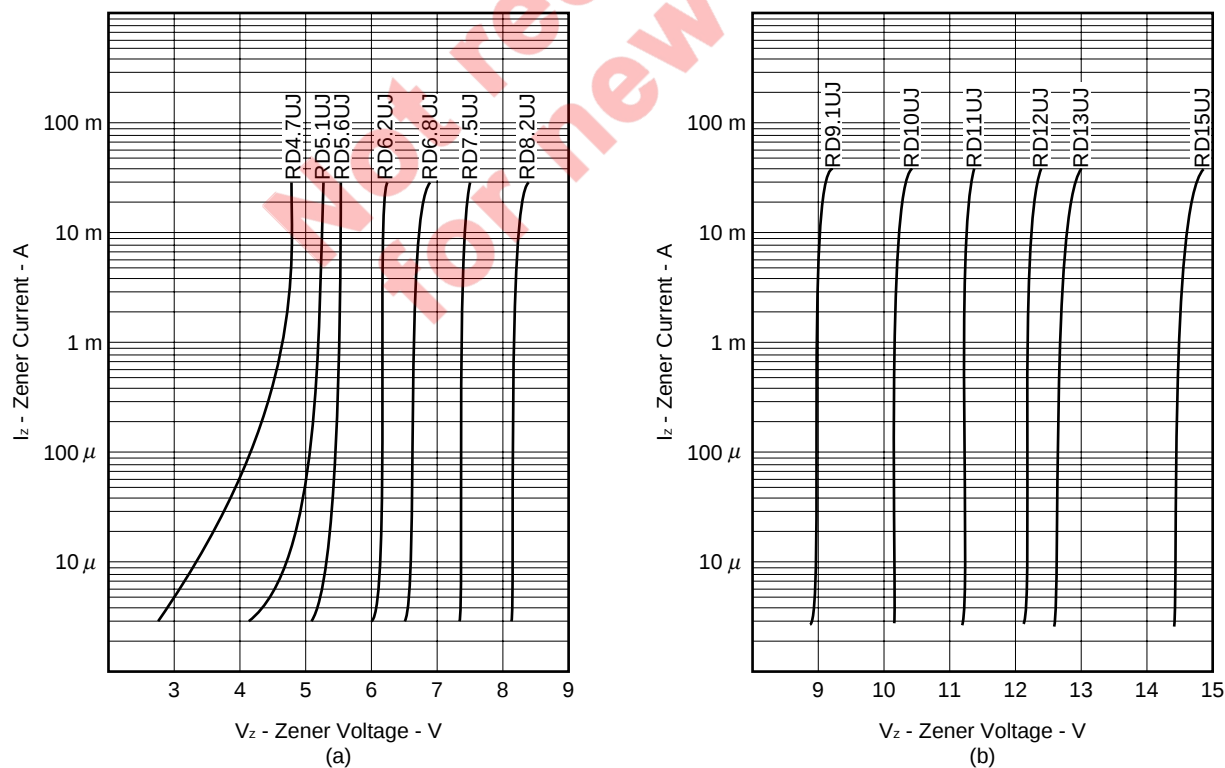


Fig. 2 I_Z - V_Z CHARACTERISTICS (a to d)



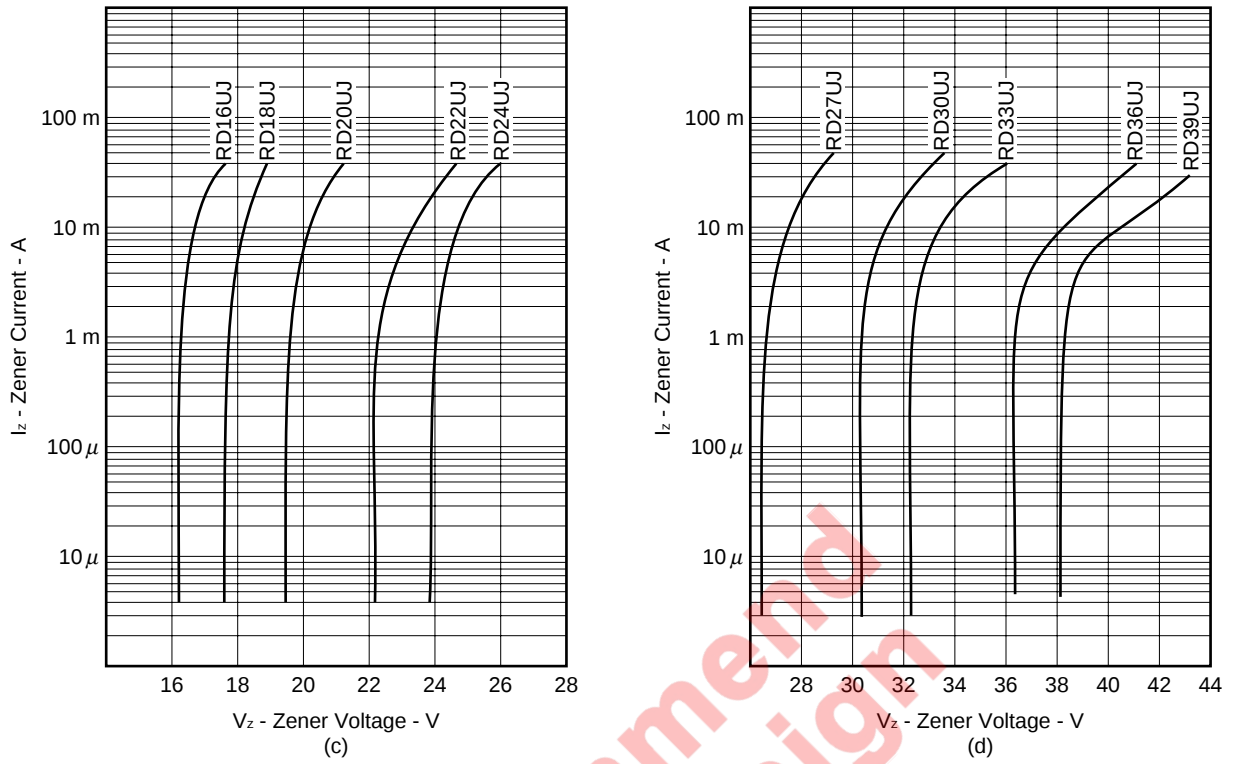


Fig. 3 $\gamma_z - V_z$ CHARACTERISTICS

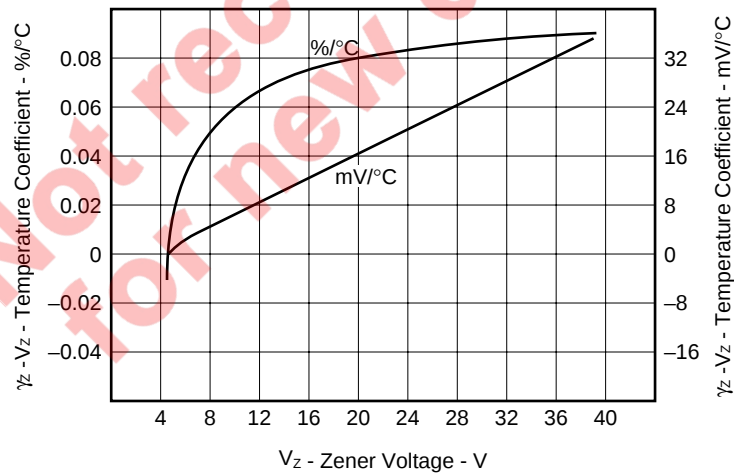


Fig. 4 TRANSIENT THERMAL IMPEDANCE CHARACTERISTIC

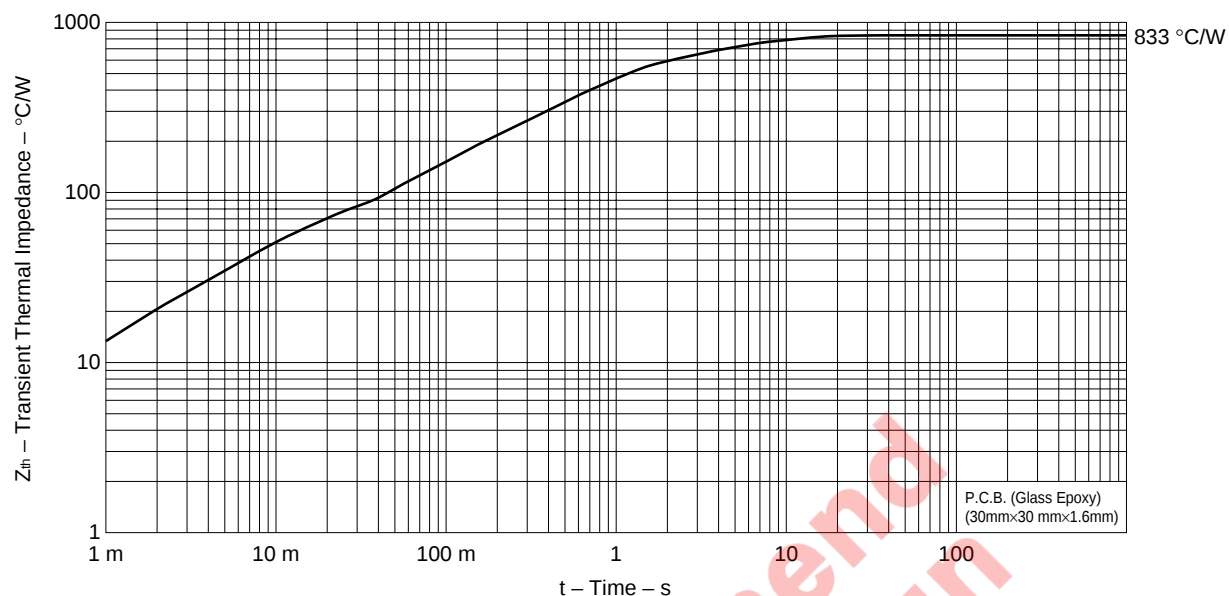
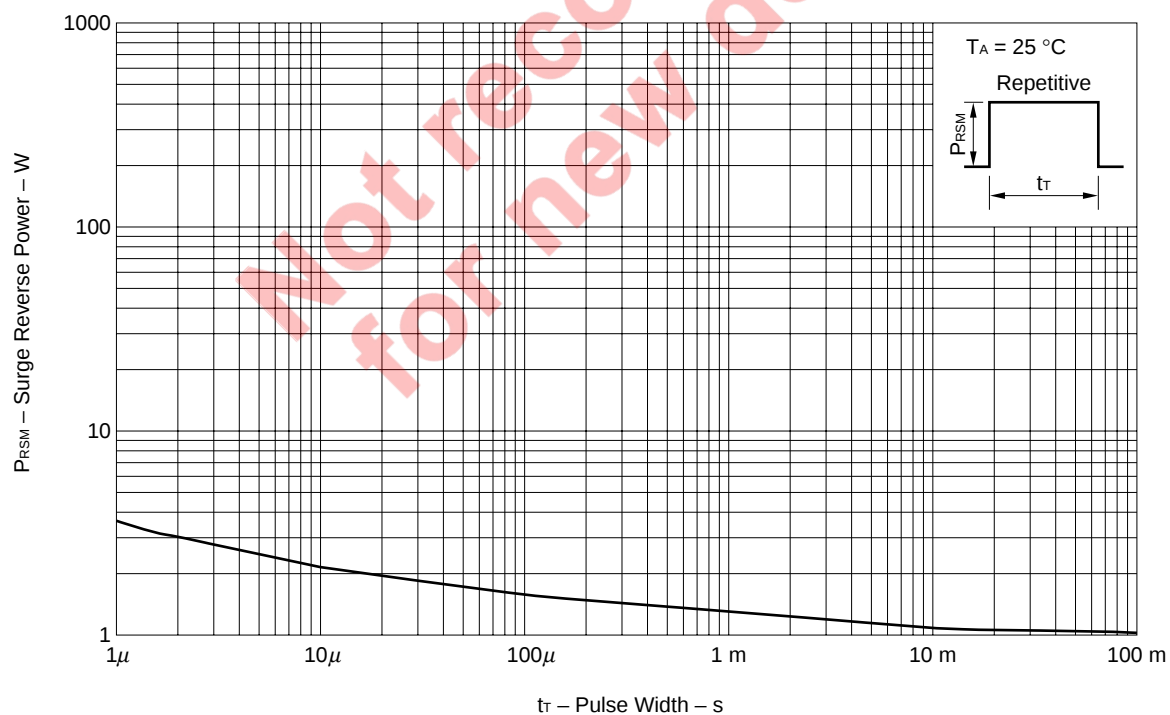


Fig. 5 SURGE REVERSE POWER RATINGS



[MEMO]

Not recommend
for new design

[MEMO]

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