

To our customers,

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## Old Company Name in Catalogs and Other Documents

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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Not recommended  
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# RD4.7SL to RD39SL

## ZENER DIODES 200 mW 2 PIN SUPER MINI MOLD

### DESCRIPTION

Type RD4.7SL to RD39SL Series are 2 PIN Super Mini Mold Package zener diodes possessing an allowable power dissipation of 200 mW featuring low noise and sharp breakdown characteristic. They are intended for use in audio equipment, instrument equipment.

### FEATURES

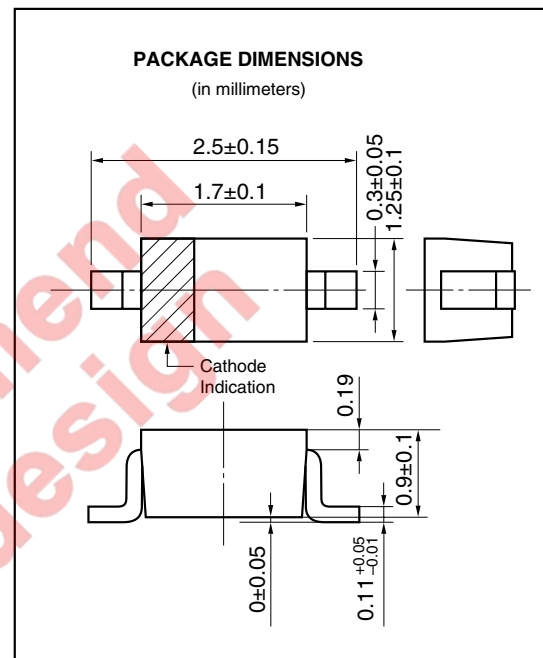
- Low Noise
- Sharp Breakdown characteristic.
- Vz: Applied E24 standard.

### APPLICATIONS

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

### ABSOLUTE MAXIMUM RATINGS (TA = 25°C)

Power Dissipation	P	200 mW
Forward Current	IF	100 mA
Reverse Surge Power	PRSM	2.2W (at t=10 μs/1 pulse) Show fig. 8
Junction Temperature	Tj	150°C
Storage Temperature	Tstg	-55 to +150°C



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**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 ± 2°C)**

Type Number	Class	Zener Voltage V <sub>Z</sub> (V) <sup>Note 1</sup>			Dynamic Impedance Z <sub>Z</sub> (Ω) <sup>Note 2</sup>		Reverse Current I <sub>R</sub> (μA)	
		MIN.	MAX.	I <sub>Z</sub> (mA)	MAX.	I <sub>Z</sub> (mA)	MAX.	V <sub>R</sub> (V)
RD4.7SL	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					
RD5.1SL	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					
RD5.6SL	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					
RD6.2SL	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					
RD6.8SL	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					
RD7.5SL	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					
RD8.2SL	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					
RD9.1SL	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					
RD10SL	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					
RD11SL	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					

**ELECTRICAL CHARACTERISTICS (Ta = 25 ± 2°C)**

Type Number	Class	Zener Voltage Vz (V) <sup>Note 1</sup>			Dynamic Impedance Zz (Ω) <sup>Note 2</sup>		Reverse Current IR (μA)	
		MIN.	MAX.	Iz (mA)	MAX.	Iz (mA)	MAX.	VR (V)
RD12SL	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					
RD13SL	N	12.29	13.86	0.5	80	0.5	0.1	10
RD15SL	N	13.63	15.38	0.5	80	0.5	0.1	11
RD16SL	N	15.13	16.91	0.5	80	0.5	0.1	12
RD18SL	N	16.63	18.81	0.5	80	0.5	0.1	13
RD20SL	N	18.51	20.79	0.5	100	0.5	0.1	15
RD22SL	N	20.46	22.82	0.5	100	0.5	0.1	17
RD24SL	N	22.42	25.17	0.5	120	0.5	0.1	19
RD27SL	N	24.75	27.95	0.5	150	0.5	0.1	21
RD30SL	N	27.38	31.04	0.5	200	0.5	0.1	23
RD33SL	N	30.30	33.97	0.5	250	0.5	0.1	25
RD36SL	N	33.08	36.83	0.5	300	0.5	0.1	27
RD39SL	N	35.78	39.67	0.5	360	0.5	0.1	30

- Note** 1. Vz is tested with puls (40 ms).  
 2. Zz is measured at Iz by given a very small A.C. current signal.

Not recommended for new design

TYPICAL CHATACTERISTICS (TA = 25°C)

Fig. 1 POWER DISSIPATION vs. AMBIENT TEMPERATURE

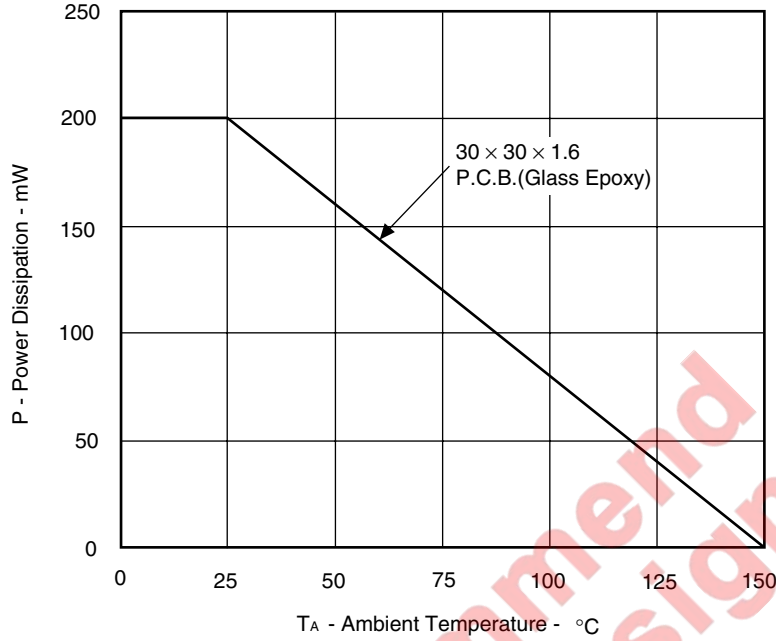


Fig.2 ZENER CURRENT vs. ZENER VOLTAGE

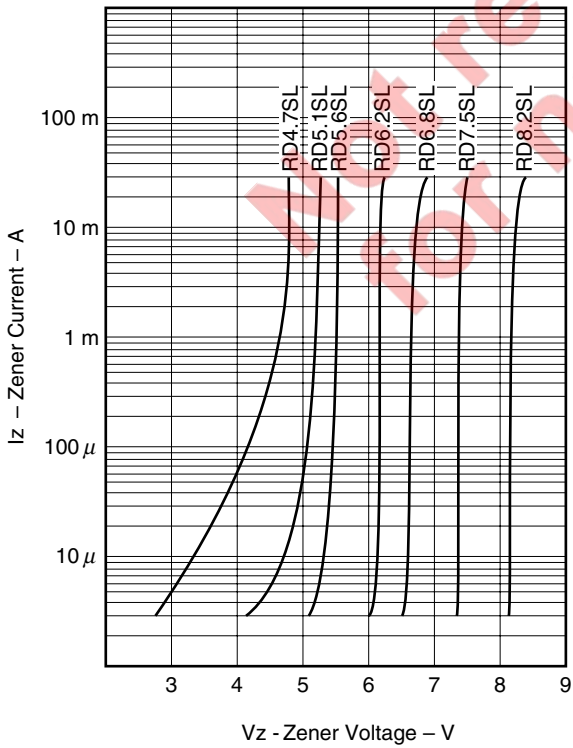


Fig. 3 ZENER CURRENT vs. ZENER VOLTAGE

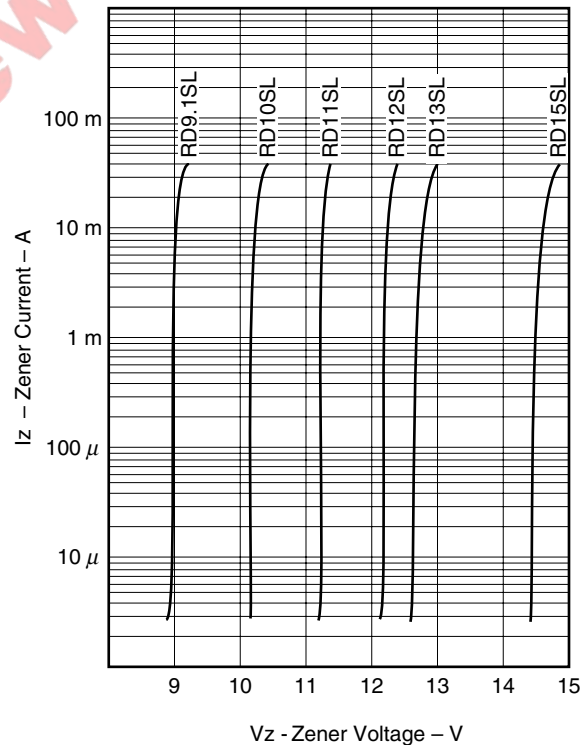


Fig. 4 ZENER CURRENT vs. ZENER VOLTAGE

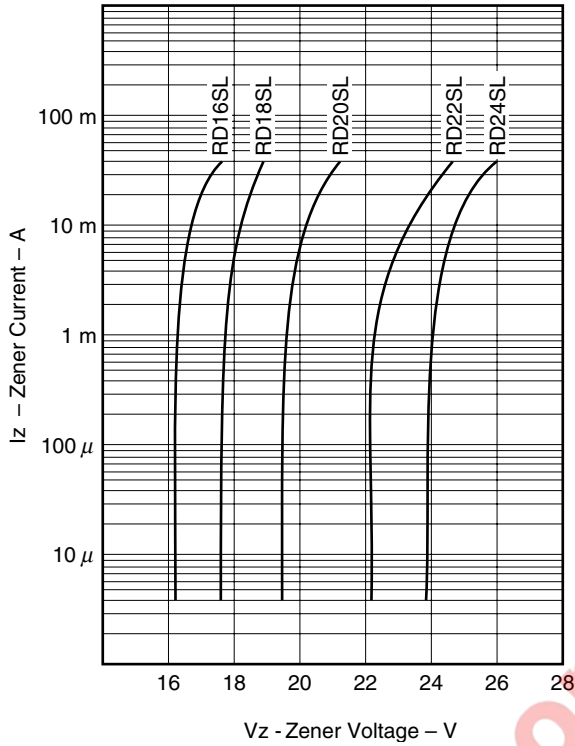


Fig.5 ZENER CURRENT vs. ZENER VOLTAGE

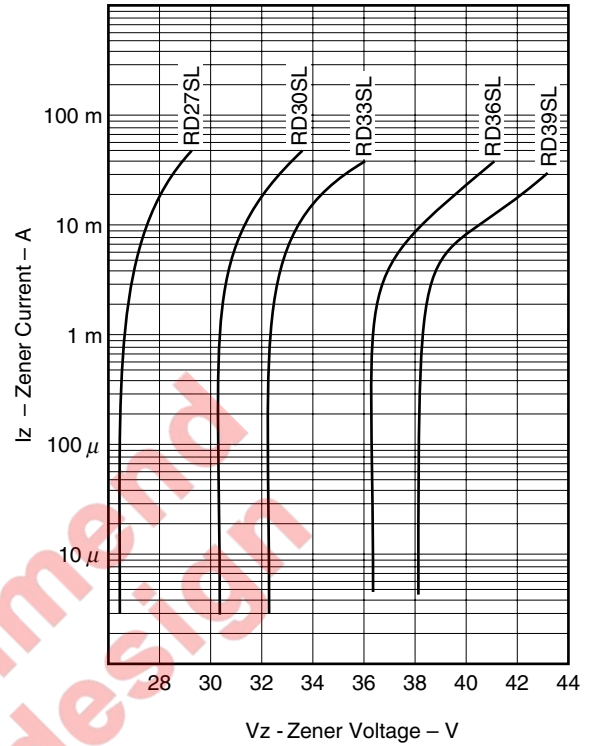


Fig. 6 ZENER VOLTAGE TEMPERATURE COEFFICIENT vs. ZENER VOLTAGE

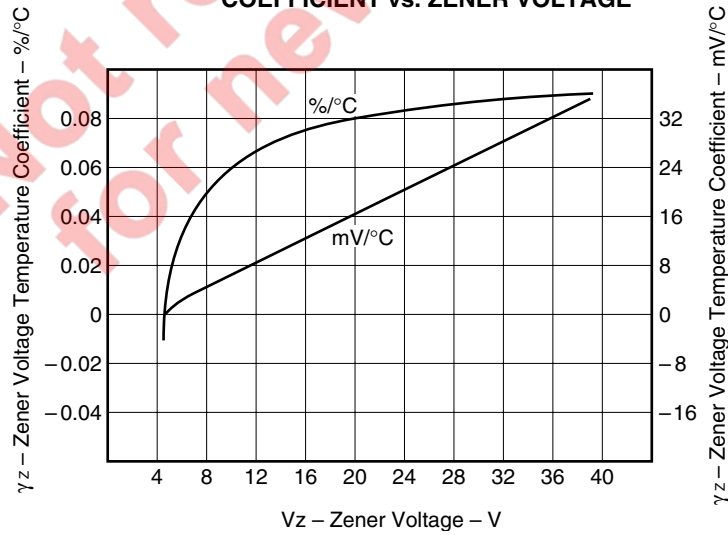


Fig.7 TRANSIENT THERMAL IMPEDANCE CHARACTERISTIC

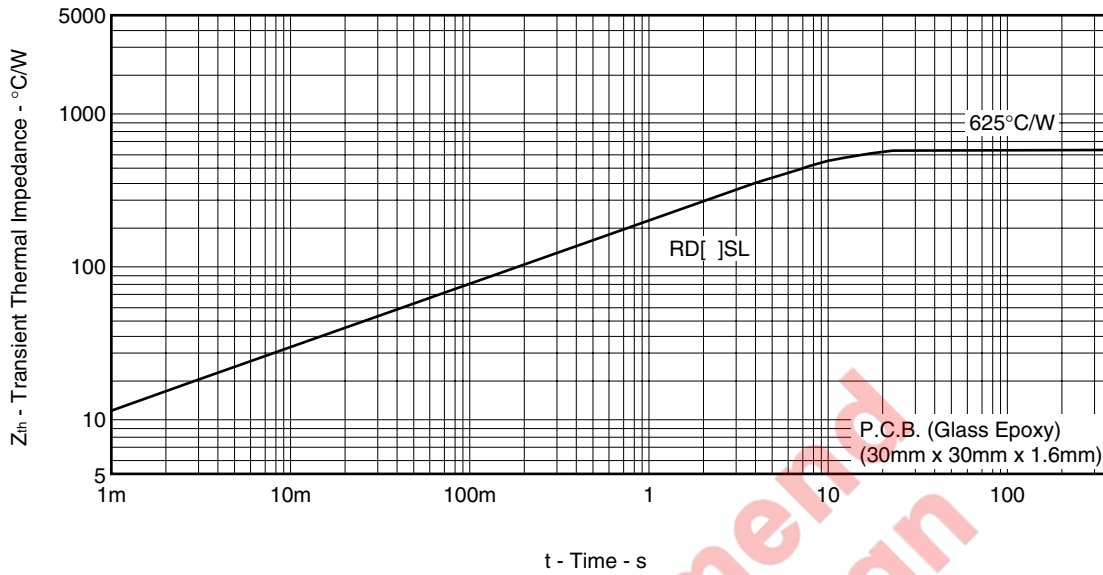
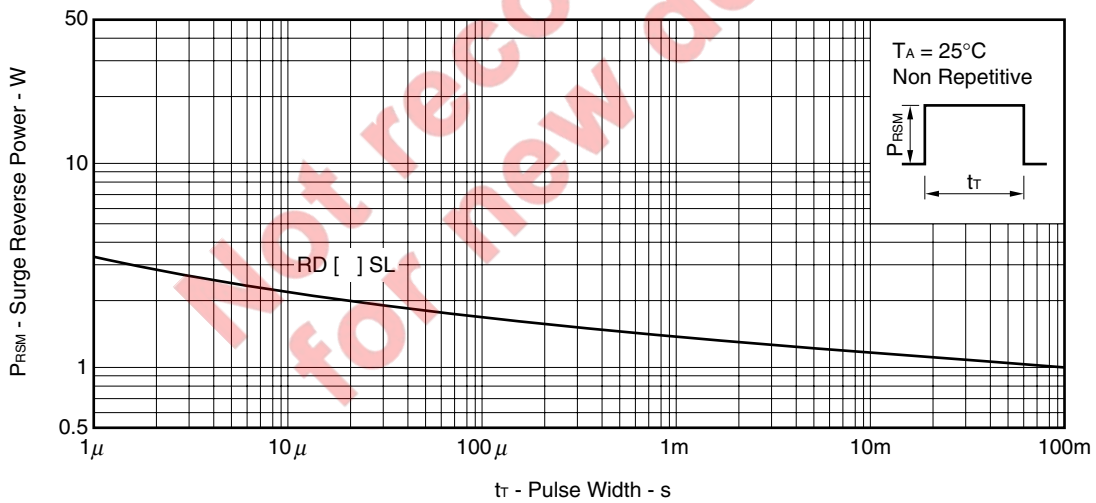


Fig.8 SURGE REVERSE POWER RATINGS





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