

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

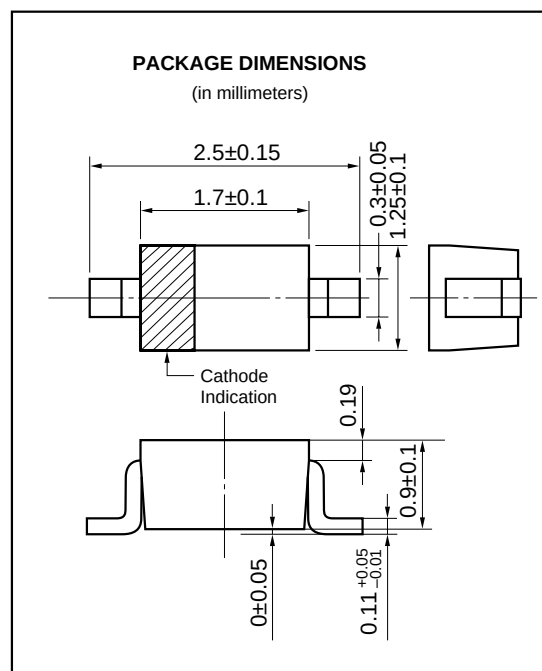
- Low Noise
- Sharp Breakdown characteristic.
- Vz: Applied E24 standard.

APPLICATIONS

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

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

Power Dissipation	P	200 mW
Forward Current	I_F	100 mA
Reverse Surge Power	P_{RSM}	2.2W (at $t=10\text{ }\mu\text{s}/1\text{ pulse}$) Show fig. 8
Junction Temperature	T_j	150 $^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to +150 $^{\circ}\text{C}$



ELECTRICAL CHARACTERISTICS (T_A = 25 ± 2 °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)
RD4.7SL	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					
RD9.2SL	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 ($T_A = 25 \pm 2 \text{ }^\circ\text{C}$)

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)
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. V_Z is tested with puls (40 ms).

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

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

Fig. 1 POWER DISSIPATION vs. AMBIENT TEMPERATURE

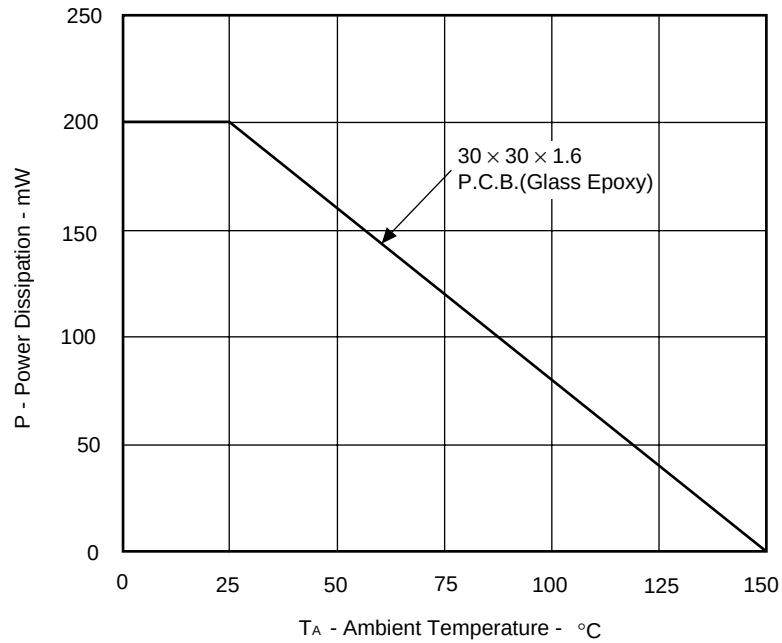


Fig.2 ZENER CURRENT vs. ZENER VOLTAGE

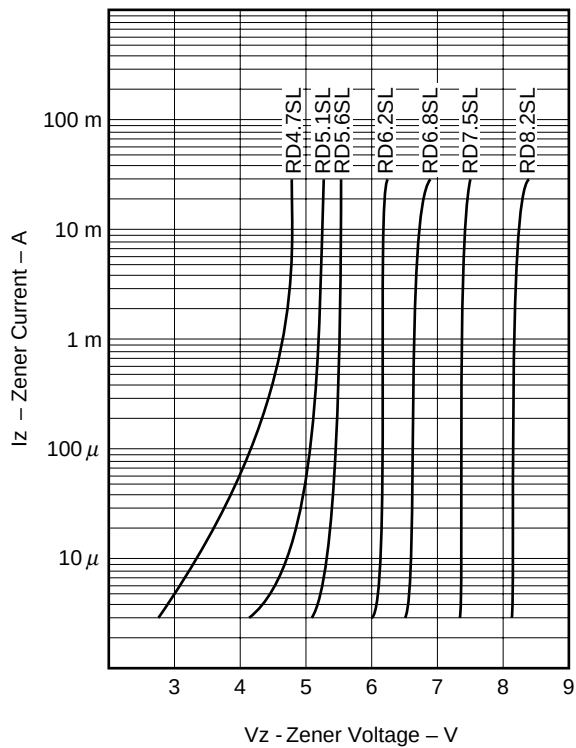


Fig. 3 ZENER CURRENT vs. ZENER VOLTAGE

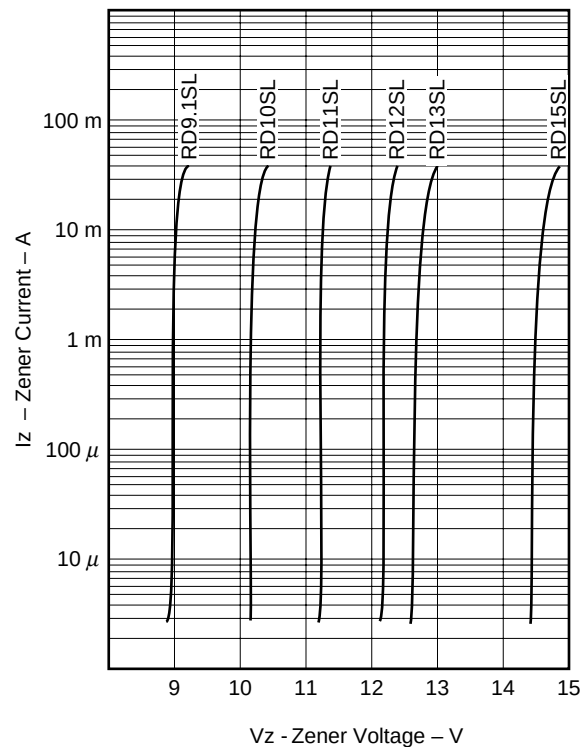


Fig. 4 ZENER CURRENT vs. ZENER VOLTAGE

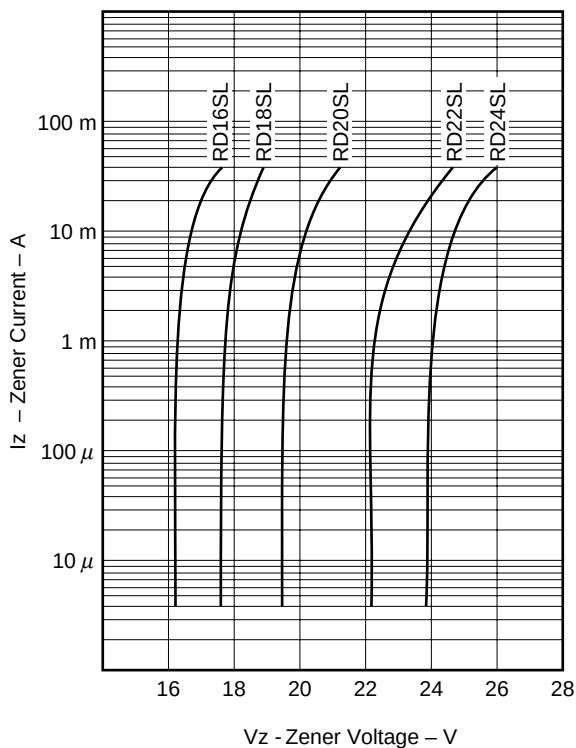


Fig.5 ZENER CURRENT vs. ZENER VOLTAGE

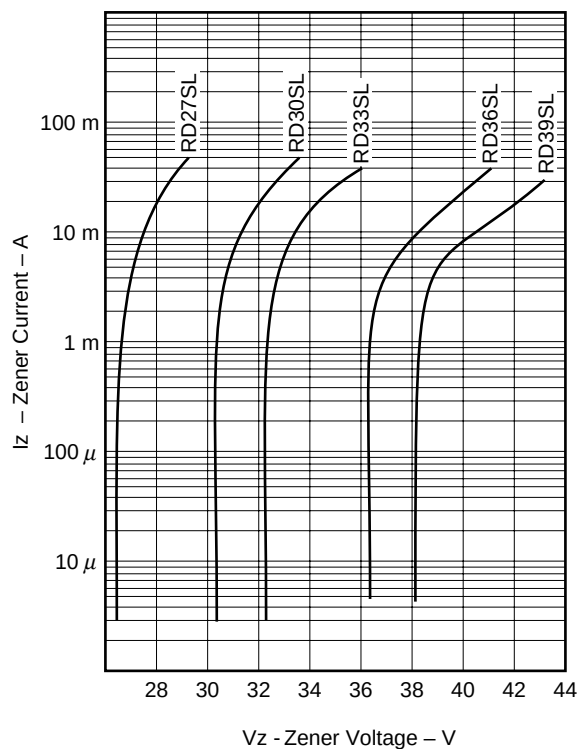


Fig. 6 ZENER VOLTAGE TEMPERATURE COEFFICIENT vs. ZENER VOLTAGE

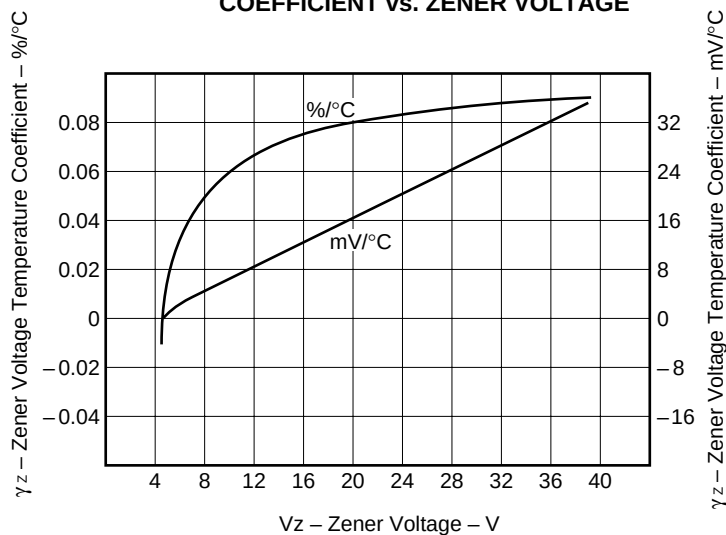


Fig.7 TRANSIENT THERMAL IMPEDANCE CHARACTERISTIC

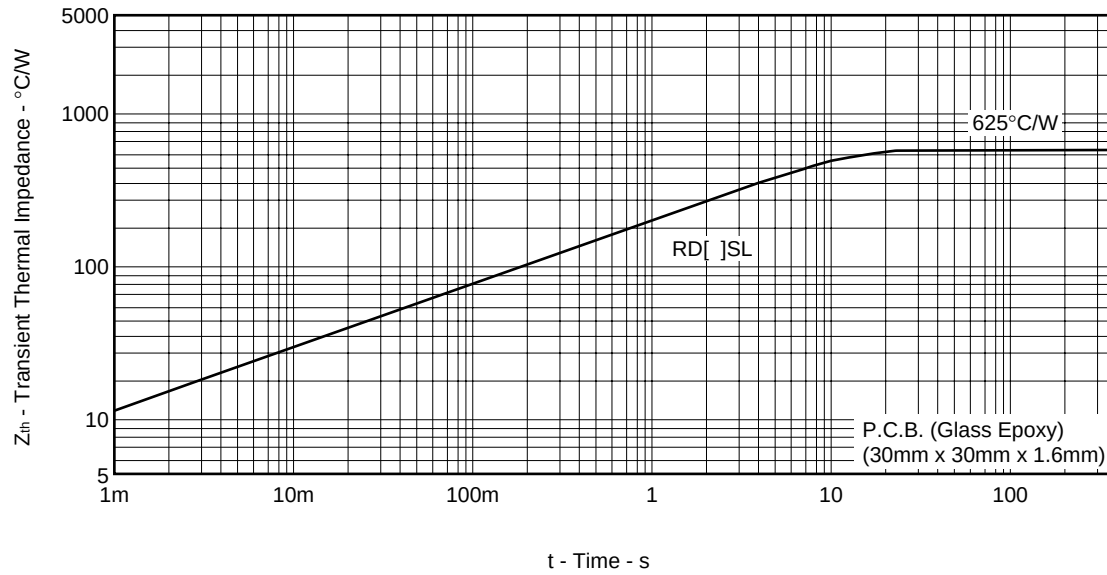
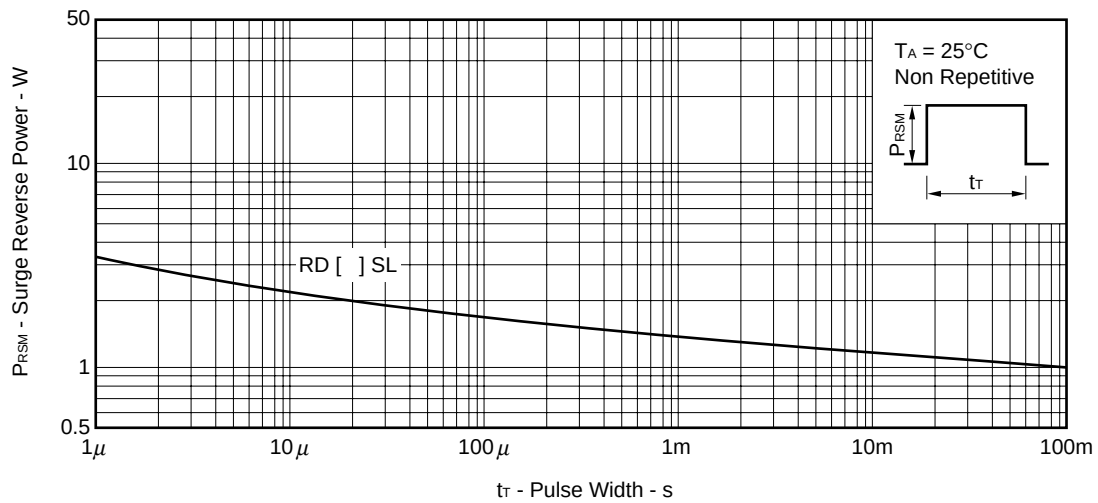


Fig.8 SURGE REVERSE POWER RATINGS



[MEMO]

[MEMO]

No part of this document may be copied or reproduced in any form or by any means without the prior written consent of NEC Corporation. NEC Corporation assumes no responsibility for any errors which may appear in this document.

NEC Corporation does not assume any liability for infringement of patents, copyrights or other intellectual property rights of third parties by or arising from use of a device described herein or any other liability arising from use of such device. No license, either express, implied or otherwise, is granted under any patents, copyrights or other intellectual property rights of NEC Corporation or others.

While NEC Corporation has been making continuous effort to enhance the reliability of its semiconductor devices, the possibility of defects cannot be eliminated entirely. To minimize risks of damage or injury to persons or property arising from a defect in an NEC semiconductor device, customers must incorporate sufficient safety measures in its design, such as redundancy, fire-containment, and anti-failure features.

NEC devices are classified into the following three quality grades:

"Standard", "Special", and "Specific". The Specific quality grade applies only to devices developed based on a customer designated "quality assurance program" for a specific application. The recommended applications of a device depend on its quality grade, as indicated below. Customers must check the quality grade of each device before using it in a particular application.

Standard: Computers, office equipment, communications equipment, test and measurement equipment, audio and visual equipment, home electronic appliances, machine tools, personal electronic equipment and industrial robots

Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

Specific: Aircrafts, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems or medical equipment for life support, etc.

The quality grade of NEC devices is "Standard" unless otherwise specified in NEC's Data Sheets or Data Books. If customers intend to use NEC devices for applications other than those specified for Standard quality grade, they should contact an NEC sales representative in advance.

Anti-radioactive design is not implemented in this product.