NEC

ZENER DIODES
RD2.0S to RD120S

ZENER DIODES
200 mW 2 PIN SUPER MINI MOLD

DESCRIPTION

Type RD2.0S to RD120S series are 2 pin super mini mold package zener diodes possessing an allowable power dissipation of 200 mW.

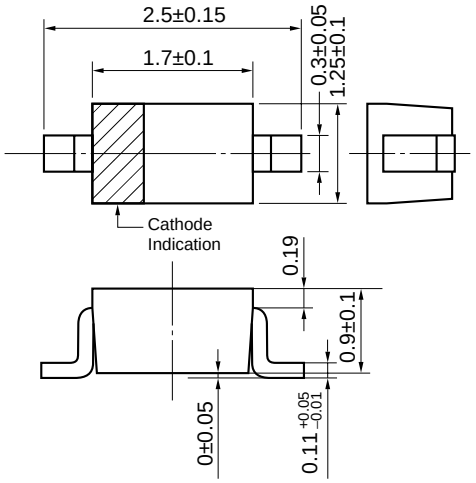
FEATURES

- Sharp breakdown characteristic.
- V_Z: Applied E24 standard.

APPLICATIONS

Circuit for constant voltage, constant current, wave form clipper, surge absorver, etc.

PACKAGE DIMENSIONS
(in millimeter)



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Power Dissipation	P	200	mW	
Forward Current	I_F	100	mA	
Reverse Surge Power	P_{RSM}	85	W	(at t = 10 μs/ 1 pulse) Show Fig.12
Junction Temperature	T_j	150	°C	
Storage Temperature	T_{stg}	–55 to +150	°C	

Document No. D11444EJ4V0DS00 (4th edition)
Date Published March 2002 NS CP(K)
Printed in Japan

The mark ★ shows major revised points.

ELECTRICAL CHARACTERISTICS (T_A = 25 ±2°C)

Type Number	Class	Zener Voltage V_Z (V) Note1			Dynamic Impedance Z_Z (Ω) Note2		Reverse Current I_R (μA)	
		MIN.	MAX.	I_Z (mA)	MAX.	I_Z (mA)	MAX.	V_R (V)
RD2.0S	B	1.90	2.20	5	100	5	120	0.5
RD2.2S	B	2.10	2.40	5	100	5	120	0.7
RD2.4S	B	2.30	2.60	5	100	5	120	1.0
RD2.7S	B	2.50	2.90	5	110	5	120	1.0
	B1	2.50	2.75					
	B2	2.65	2.90					
RD3.0S	B	2.80	3.20	5	120	5	50	1.0
	B1	2.80	3.05					
	B2	2.95	3.20					
RD3.3S	B	3.10	3.50	5	130	5	20	1.0
	B1	3.10	3.35					
	B2	3.25	3.50					
RD3.6S	B	3.40	3.80	5	130	5	10	1.0
	B1	3.40	3.65					
	B2	3.55	3.80					
RD3.9S	B	3.70	4.10	5	130	5	10	1.0
	B1	3.70	3.97					
	B2	3.87	4.10					
RD4.3S	B	4.00	4.49	5	130	5	10	1.0
	B1	4.00	4.22					
	B2	4.14	4.35					
	B3	4.27	4.49					
RD4.7S	B	4.40	4.92	5	130	5	10	1.0
	B1	4.40	4.63					
	B2	4.53	4.77					
	B3	4.67	4.92					
RD5.1S	B	4.82	5.39	5	130	5	5	1.5
	B1	4.82	5.06					
	B2	4.96	5.22					
	B3	5.12	5.39					
RD5.6S	B	5.29	5.94	5	80	5	5	2.5
	B1	5.29	5.57					
	B2	5.47	5.75					
	B3	5.65	5.94					
RD6.2S	B	5.84	6.55	5	50	5	2	3.0
	B1	5.84	6.14					
	B2	6.04	6.35					
	B3	6.24	6.55					

ELECTRICAL CHARACTERISTICS (T_A = 25 ±2°C)

Type Number	Class	Zener Voltage V_Z (V) Note1			Dynamic Impedance Z_Z (Ω) Note2		Reverse Current I_R (μA)	
		MIN.	MAX.	I_Z (mA)	MAX.	I_Z (mA)	MAX.	V_R (V)
RD6.8S	B	6.44	7.17	5	30	5	2	3.5
	B1	6.44	6.76					
	B2	6.62	6.96					
	B3	6.83	7.17					
RD7.5S	B	7.03	7.87	5	30	5	2	4.0
	B1	7.03	7.39					
	B2	7.25	7.63					
	B3	7.49	8.67					
RD8.2S	B	7.73	8.67	5	30	5	2	5.0
	B1	7.73	8.13					
	B2	7.98	8.39					
	B3	8.25	8.67					
RD9.1S	B	8.53	9.58	5	30	5	2	6.0
	B1	8.53	8.96					
	B2	8.81	9.26					
	B3	9.12	9.58					
RD10S	B	9.42	10.58	5	30	5	2	7.0
	B1	9.42	9.90					
	B2	9.74	10.24					
	B3	10.08	10.58					
RD11S	B	10.40	11.60	5	30	5	2	8.0
	B1	10.40	10.92					
	B2	10.72	11.26					
	B3	11.06	11.60					
RD12S	B	11.38	12.64	5	35	5	2	9.0
	B1	11.38	11.94					
	B2	11.69	12.28					
	B3	12.04	12.64					
RD13S	B	12.43	14.00	5	35	5	2	10
RD15S	B	13.80	15.56	5	40	5	2	11
RD16S	B	15.31	17.14	5	40	5	2	12
RD18S	B	16.89	19.08	5	45	5	2	13
RD20S	B	18.80	21.14	5	50	5	2	15
RD22S	B	20.81	23.25	5	55	5	2	17
RD24S	B	22.86	25.66	5	60	5	2	19
RD27S	B	25.10	28.90	2	70	2	2	21
RD30S	B	28.00	32.00	2	80	2	2	23
RD33S	B	31.00	35.00	2	80	2	2	25
RD36S	B	34.00	38.00	2	90	2	2	27

ELECTRICAL CHARACTERISTICS (T_A = 25 ±2°C)

Type Number	Class	Zener Voltage V_Z (V) Note1			Dynamic Impedance Z_Z (Ω) Note2		Reverse Current I_R (μA)	
		MIN.	MAX.	I_Z (mA)	MAX.	I_Z (mA)	MAX.	V_R (V)
RD39S	B	37.00	41.00	2	100	2	2	30
RD43S	B	40.00	45.00	2	130	2	2	33
RD47S	B	44.00	49.00	2	150	2	2	36
RD51S	B	48.00	54.00	2	180	2	1	39
RD56S	B	53.00	60.00	2	180	2	1	43
RD62S	B	58.00	66.00	2	200	2	0.2	47
RD68S	B	64.00	72.00	2	250	2	0.2	52
RD75S	B	70.00	79.00	2	300	2	0.2	57
RD82S	B	77.00	87.00	2	300	2	0.2	63
RD91S	B	85.00	96.00	1	700	1	0.2	69
RD100S	B	94.00	106.0	1	700	1	0.2	76
RD110S	B	104.00	116.00	1	800	1	0.2	84
RD120S	B	114.00	126.00	1	900	1	0.2	91

Note 1. V_Z is tested with pulsed (40 ms).

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

TYPICAL CHARACTERISTICS (T_A = 25°C)

Fig.1 POWER DISSIPATION vs. AMBIENT TEMPERATURE

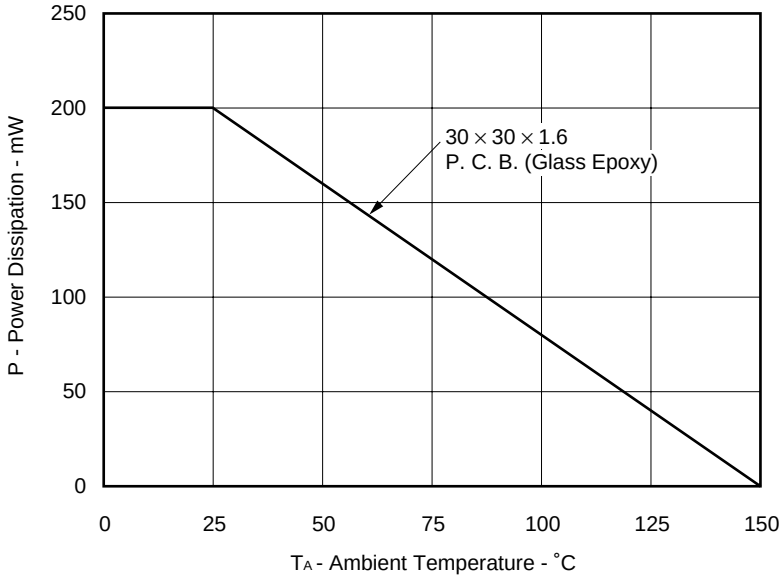


Fig.2 ZENER CURRENT vs. ZENER VOLTAGE

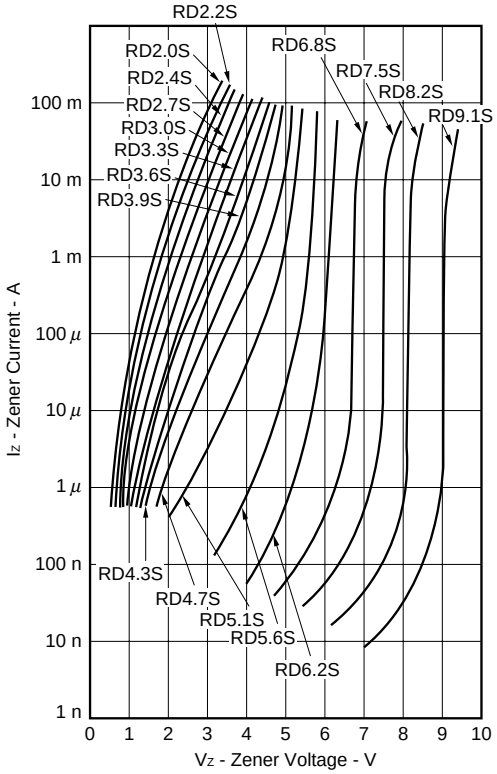


Fig.3 ZENER CURRENT vs. ZENER VOLTAGE

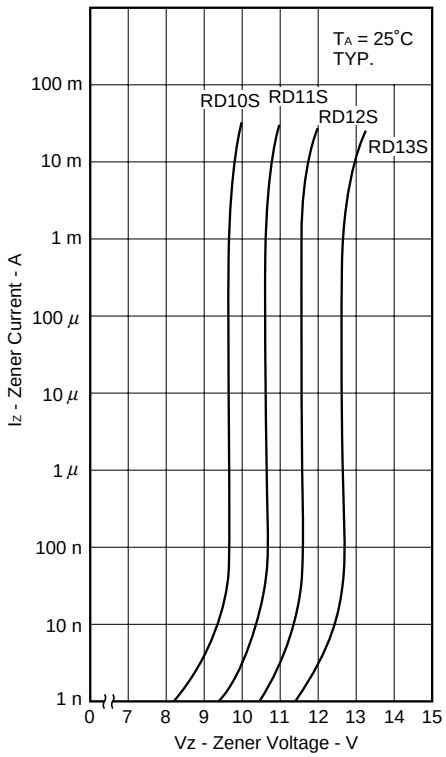


Fig.4 ZENER CURRENT vs. ZENER VOLTAGE

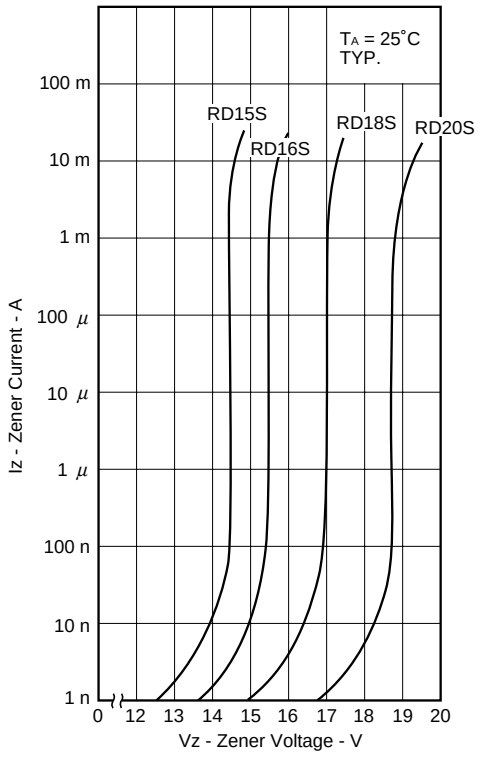
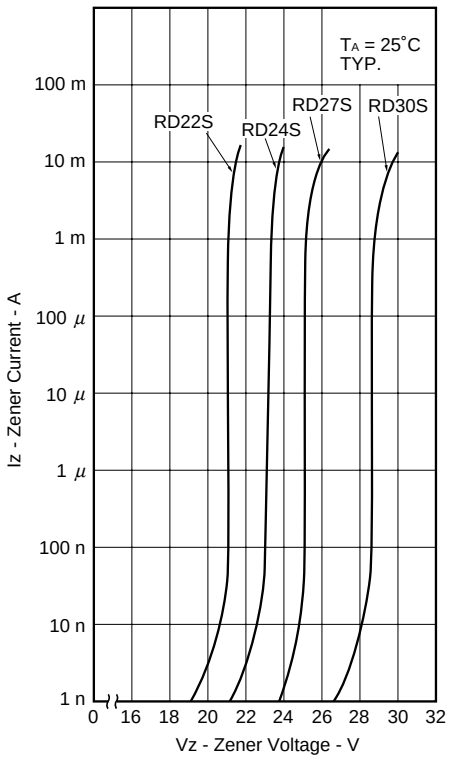


Fig.5 ZENER CURRENT vs. ZENER VOLTAGE



★ **Fig.6 ZENER CURRENT vs. ZENER VOLTAGE**

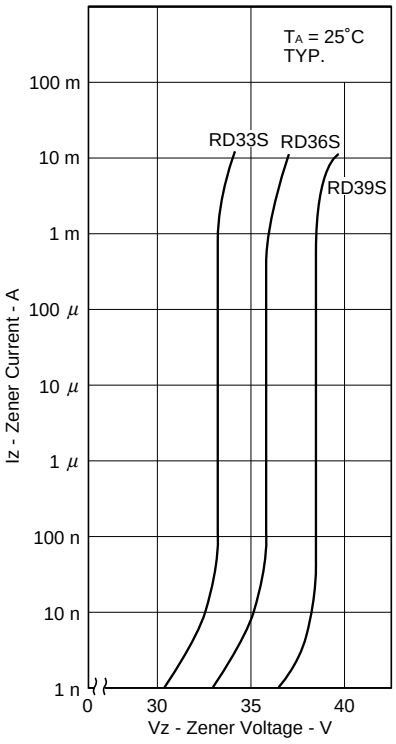


Fig.7 ZENER CURRENT vs. ZENER VOLTAGE

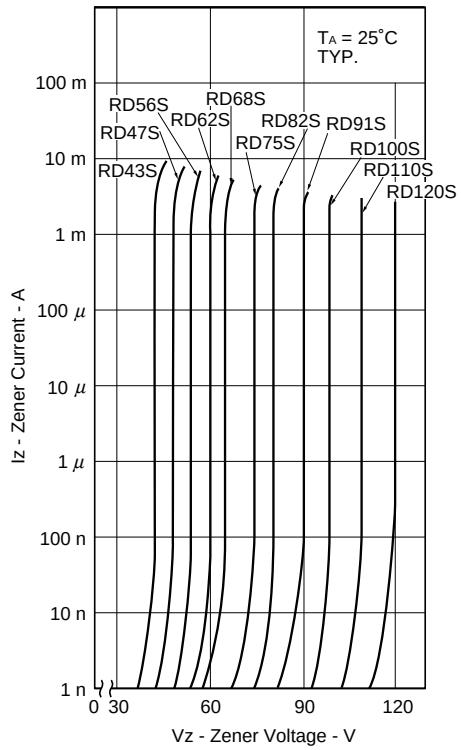


Fig.8 DYNAMIC IMPEDANCE vs. ZENER CURRENT

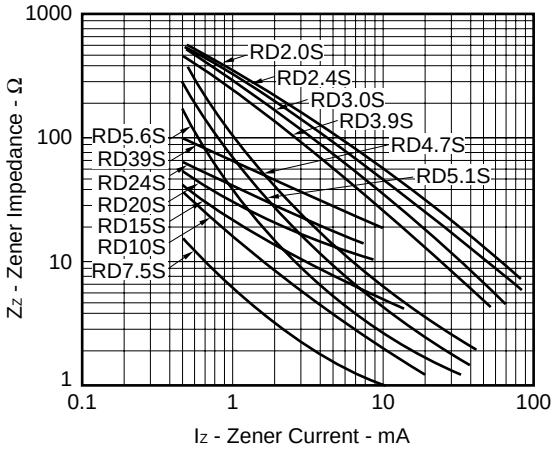


Fig.9 ZENER VOLTAGE TEMPERATURE COEFFICIENT vs. ZENER VOLTAGE

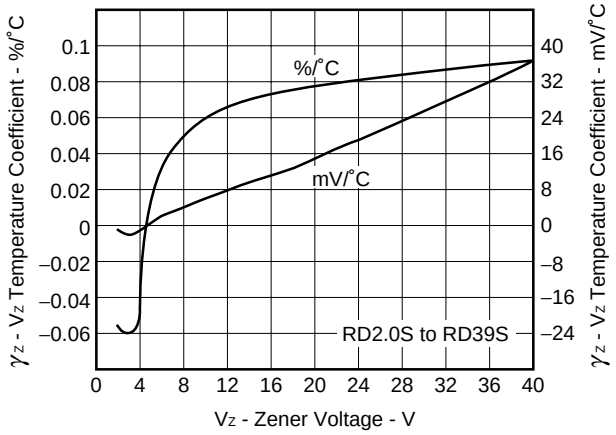


Fig.10 ZENER VOLTAGE TEMPERATURE COEFFICIENT vs. ZENER VOLTAGE

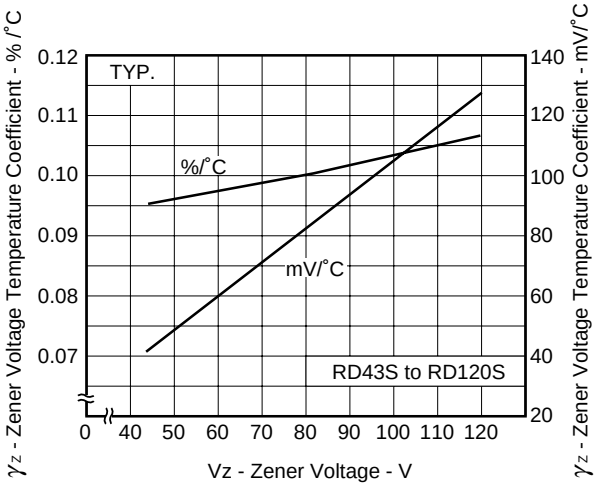


Fig.11 TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

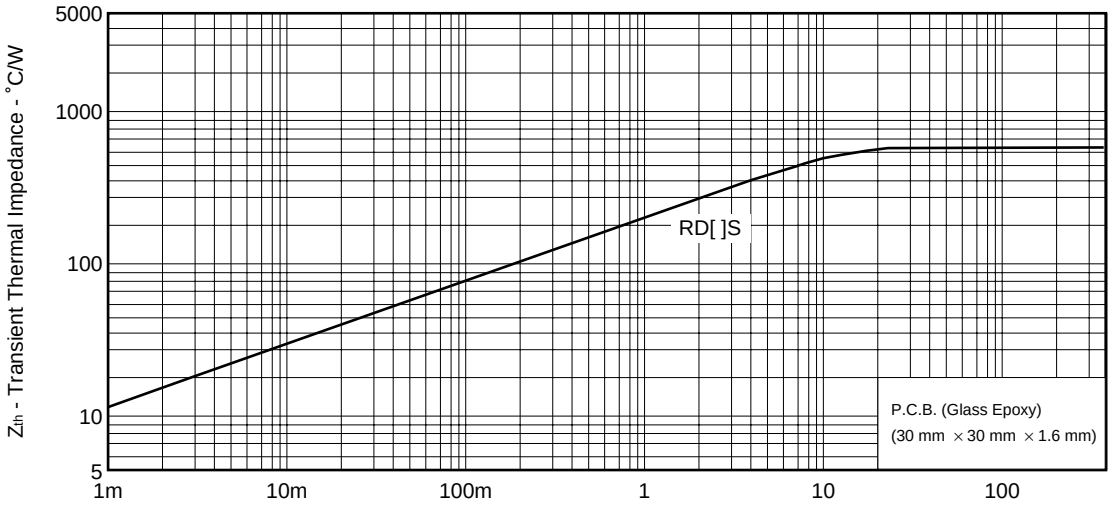
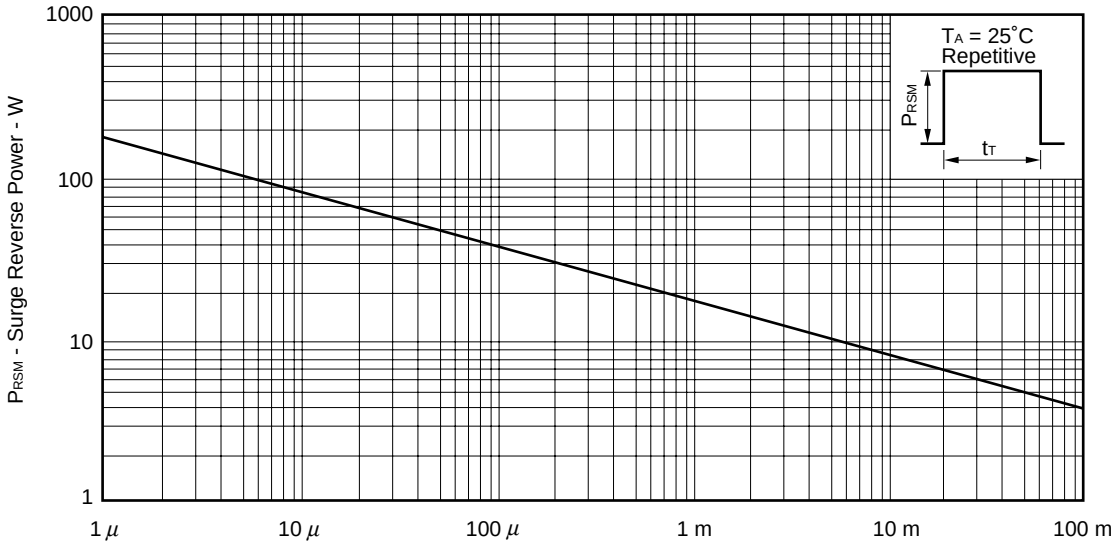


Fig.12 SURGE REVERSE POWER RATINGS



[MEMO]

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