

# ZENER DIODES

## RD2.0MW to RD39MW

### ZENER DIODES

#### 200 mW 3-PIN MINI MOLD

#### DESCRIPTION

Type RD2.0MW to RD39MW Series are 3-PIN Mini Mold Package zener diodes possessing allowable power dissipation of 200 mW.

#### FEATURES

- Vz; Applied E24 standard
- Surge absorber on either side

#### APPLICATIONS

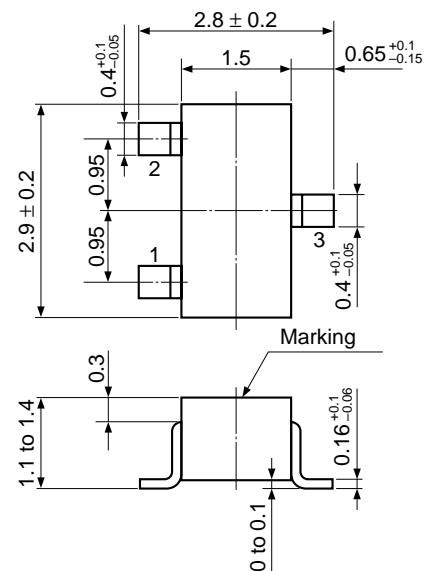
Circuits for Constant Voltage, Constant Current, Wavefore clipper, Surge absorber, ESD Protect circuit, etc.

#### MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

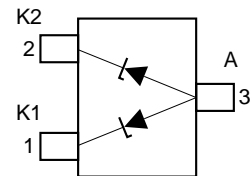
Power Dissipation	P	200 mW
Junction Temperature	T <sub>j</sub>	150°C
Storage Temperature	T <sub>stg</sub>	-55 to +150°C
Peak Reverse Power	P <sub>RSM</sub>	85 W (t = 10 μs)
Forward Current	I <sub>F</sub>	100 mA

#### PACKAGE DIMENSIONS

(Unit: mm)



1. Cathode : K1
2. Cathode : K2 SC-59 (EIAJ)
3. Anode : A



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 Not all devices/types available in every country. Please check with local NEC representative for availability and additional information.

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

Type Number	Class	Zener Voltage $V_Z$ (V) <sup>Note 1</sup>			Dynamic Impedance $Z_Z$ ( $\Omega$ ) <sup>Note 2</sup>		Reverse Current $I_R$ ( $\mu\text{A}$ )	
		MIN.	MAX.	$I_Z$ (mA)	MAX.	$I_Z$ (mA)	MAX.	$V_R$ (V)
RD2.0MW	B	1.90	2.20	5	100	5	120	0.5
RD2.2MW	B	2.10	2.40	5	100	5	120	0.7
RD2.4MW	B	2.30	2.60	5	100	5	120	1.0
RD2.7MW	B	2.50	2.90	5	110	5	120	1.0
RD3.0MW	B	2.80	3.20	5	120	5	50	1.0
RD3.3MW	B	3.10	3.50	5	130	5	20	1.0
RD3.6MW	B	3.40	3.80	5	130	5	10	1.0
RD3.9MW	B	3.70	4.10	5	130	5	10	1.0
RD4.3MW	B	4.01	4.48	5	130	5	10	1.0
RD4.7MW	B	4.42	4.90	5	130	5	10	1.0
RD5.1MW	B	4.84	5.37	5	130	5	5	1.0
RD5.6MW	B	5.31	5.92	5	80	5	5	1.5
RD6.2MW	B	5.86	6.53	5	50	5	2	2.5
RD6.8MW	B	6.47	7.14	5	30	5	2	3.5
RD7.5MW	B	7.06	7.84	5	30	5	2	4.0
RD8.2MW	B	7.76	8.64	5	30	5	2	5.0
RD9.1MW	B	8.56	9.55	5	30	5	2	6.0
RD10MW	B	9.45	10.55	5	30	5	2	7.0
RD11MW	B	10.44	11.56	5	30	5	2	8.0
RD12MW	B	11.42	12.60	5	35	5	2	9.0
RD13MW	B	12.47	13.96	5	35	5	2	10
RD15MW	B	13.84	15.52	5	40	5	2	11
RD16MW	B	15.37	17.09	5	40	5	2	12
RD18MW	B	16.94	19.03	5	45	5	2	13
RD20MW	B	18.86	21.08	5	50	5	2	15
RD22MW	B	20.88	23.17	5	55	5	2	17
RD24MW	B	22.93	25.57	5	60	5	2	19
RD27MW	B	25.10	28.90	2	70	2	2	21
RD30MW	B	28.00	32.00	2	80	2	2	23
RD33MW	B	31.00	35.00	2	80	2	2	25
RD36MW	B	34.00	38.00	2	90	2	2	27
RD39MW	B	37.00	41.00	2	100	2	2	30

**Note 1.** Tested with pulse (40 ms)

**2.**  $Z_Z$  is measured at  $I_Z$  given a very small A.C. signal

Type Number	Class	Zener Voltage + Forward Voltage (V <sub>Z</sub> + V <sub>F</sub> ) (V)			Zener Voltage + Forward Voltage Δ(V <sub>Z</sub> + V <sub>F</sub> ) (V)		Forward Voltage V <sub>F</sub> (V) A-K1 A-K2	
		MIN.	MAX.	I <sub>Z</sub> (mA)	MAX.	I <sub>Z</sub> (mA)	MAX.	I <sub>F</sub> (mA)
RD2.0MW	B	2.54	3.04	5	0.35	5	1.2	100
RD2.2MW	B	2.74	3.24	5	0.35	5		
RD2.4MW	B	2.97	3.47	5	0.35	5		
RD2.7MW	B	3.17	3.77	5	0.35	5		
RD3.0MW	B	3.47	4.07	5	0.35	5		
RD3.3MW	B	3.77	4.37	5	0.35	5		
RD3.6MW	B	4.07	4.67	5	0.35	5		
RD3.9MW	B	4.37	4.97	5	0.35	5		
RD4.3MW	B	4.68	5.35	5	0.35	5		
RD4.7MW	B	5.09	5.77	5	0.35	5		
RD5.1MW	B	5.51	6.24	5	0.35	5		
RD5.6MW	B	5.98	6.79	5	0.35	5		
RD6.2MW	B	6.53	7.40	5	0.35	5		
RD6.8MW	B	7.14	8.01	5	0.35	5		
RD7.5MW	B	7.73	8.71	5	0.35	5		
RD8.2MW	B	8.07	9.87	5	0.35	5		
RD9.1MW	B	8.87	10.87	5	0.35	5		
RD10MW	B	10.12	11.42	5	0.70	5		
RD11MW	B	11.11	12.43	5	0.70	5		
RD12MW	B	12.09	13.47	5	0.70	5		
RD13MW	B	13.14	14.83	5	0.90	5		
RD15MW	B	14.51	16.37	5	0.90	5		
RD16MW	B	16.04	17.96	5	0.90	5		
RD18MW	B	17.61	19.90	5	1.20	5		
RD20MW	B	19.53	21.95	5	1.20	5		
RD22MW	B	21.55	24.04	5	1.20	5		
RD24MW	B	23.60	26.44	5	1.20	5		
RD27MW	B	25.73	29.73	2	1.70	2		
RD30MW	B	28.63	32.83	2	1.70	2		
RD33MW	B	31.63	35.83	2	1.70	2		
RD36MW	B	34.63	38.83	2	1.70	2		
RD39MW	B	37.63	41.83	2	1.70	2		

TYPICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)

Fig. 1 P - T<sub>A</sub> RATING

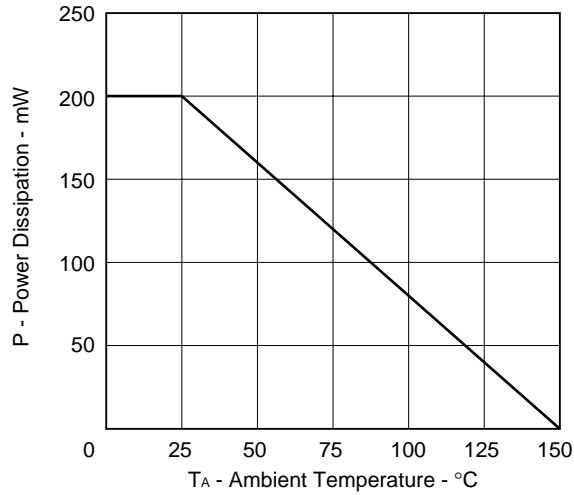
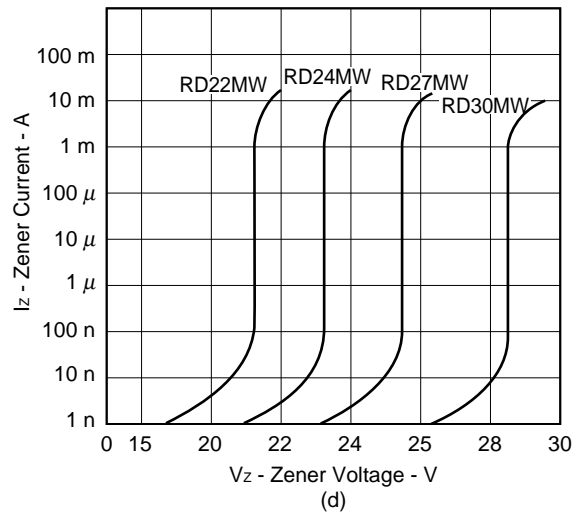
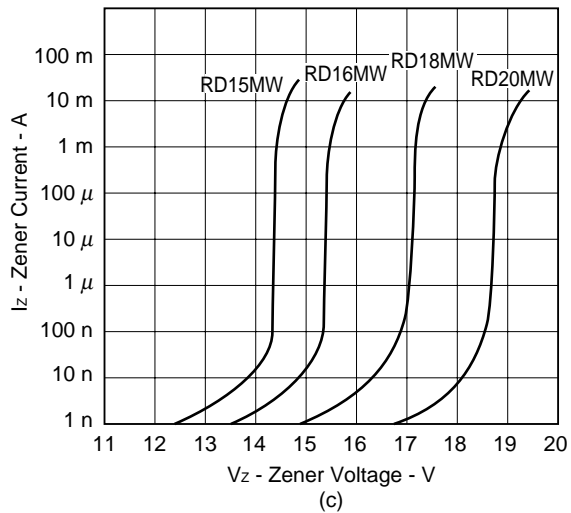
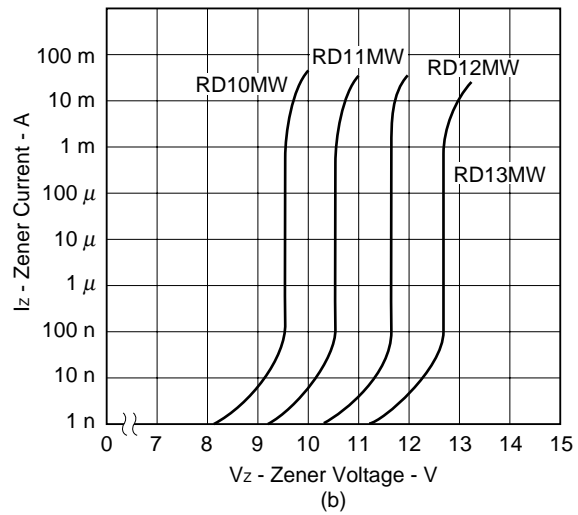
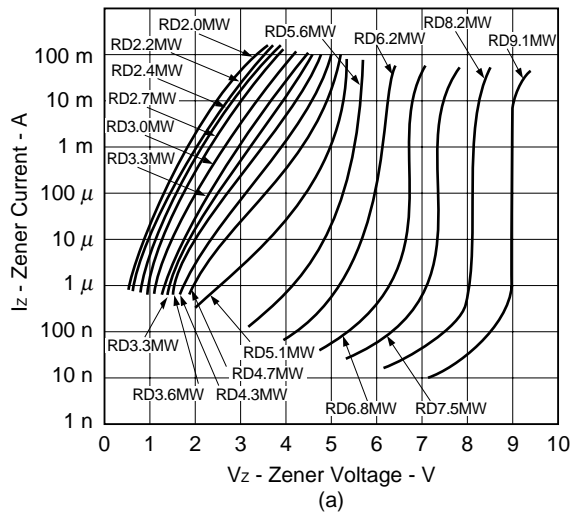


Fig. 2 I<sub>Z</sub> - V<sub>Z</sub> CHARACTERISTICS (a to e)



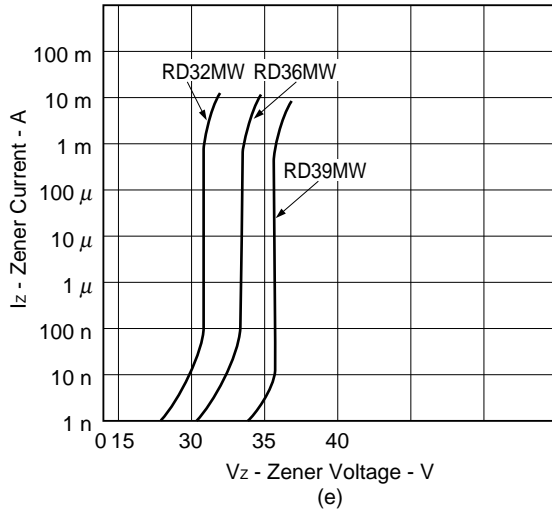


Fig. 3  $\gamma_z - V_z$  CHARACTERISTICS

Fig. 4  $Z_z - I_z$  CHARACTERISTICS

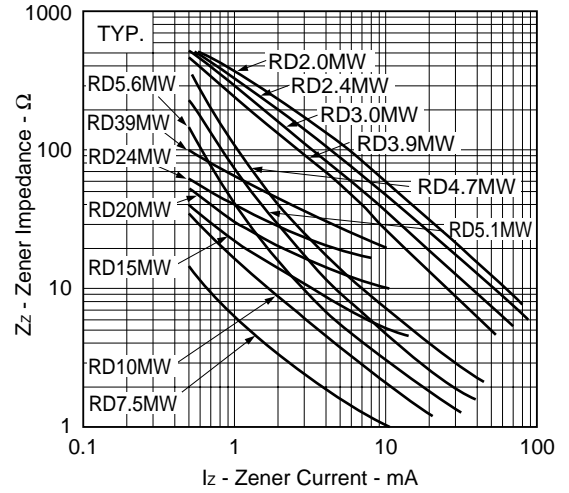
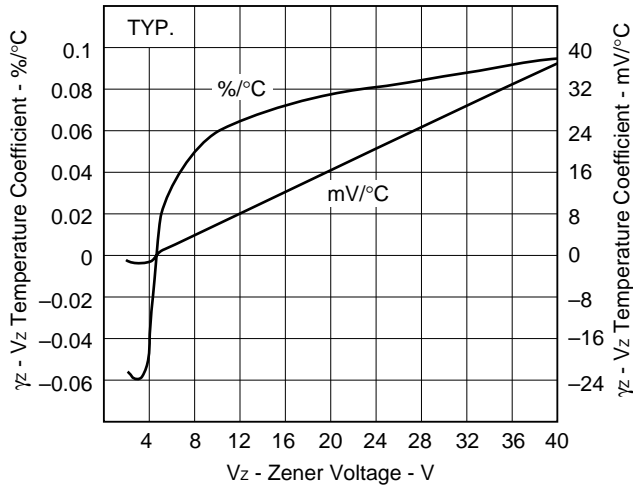


Fig. 5 TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

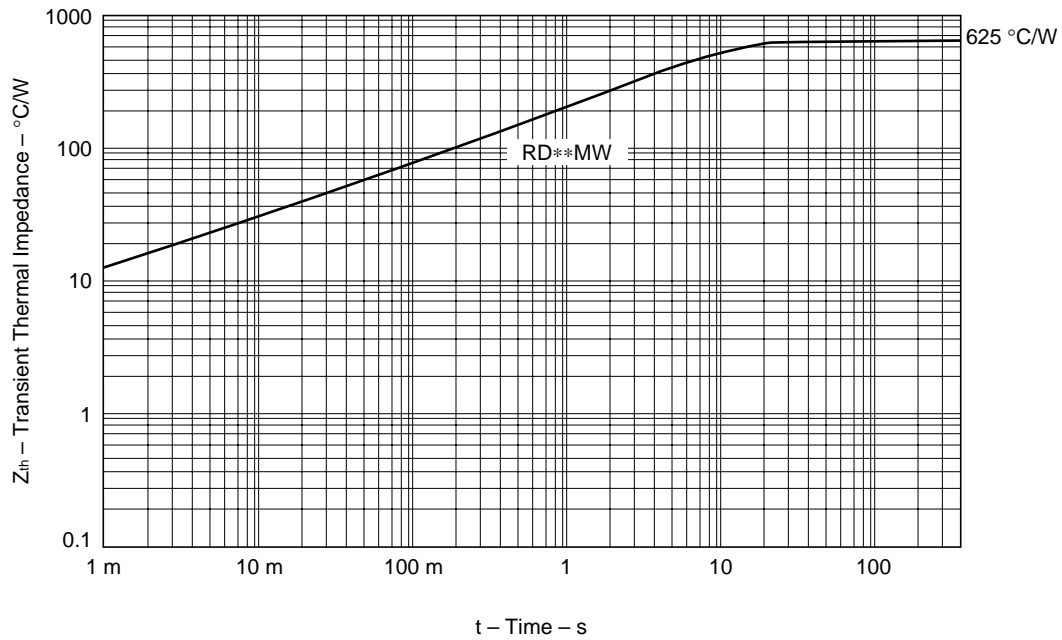
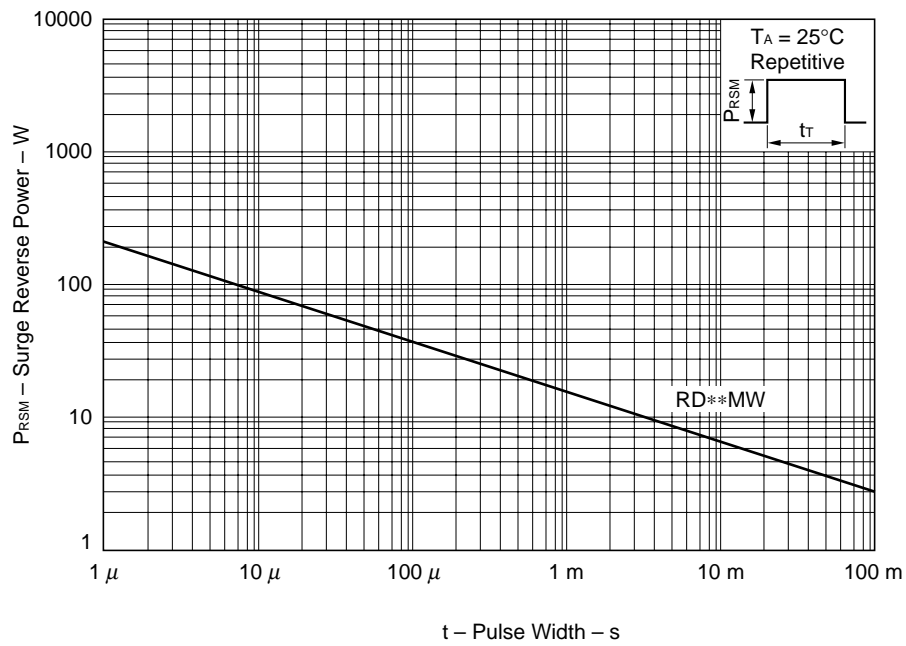


Fig. 6 SURGE REVERSE POWER RATINGS



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