

# ZENER DIODES

## RD2.0FM to RD120FM

### ZENER DIODES

#### 1 W 2 PIN POWER MINI MOLD

#### DESCRIPTION

Type RD2.0FM to RD120FM series are 2 pin power mini mold package zener diodes possessing an allowable power dissipation of 1 W.

#### QUALITY GRADE

Standard.

Please refer to "Quality Grades On NEC Semiconductor Devices" (Document number C11531E) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

#### FEATURES

- Sharp breakdown characteristics
- Vz: Applied E24 standard

#### APPLICATIONS

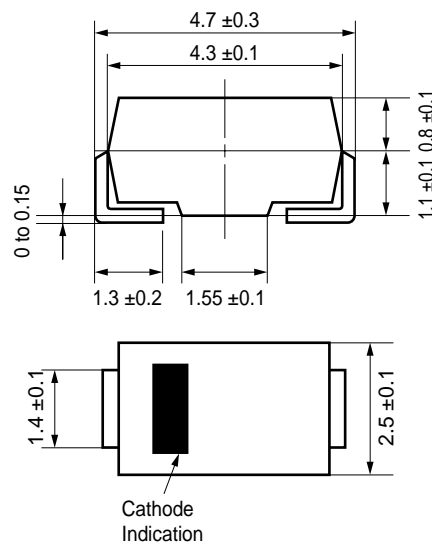
Circuits for, constant voltage, constant current, waveform clipper, surge absorber, etc.

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

Power Dissipation	P	1	W
Forward Current	I <sub>F</sub>	200	mA
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

#### PACKAGE DIMENSIONS

(Unit: mm)



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

(1/2)

Type Number	Class	Zener Voltage $V_Z$ (V) <sup>Note1</sup>			Dynamic Impedance $Z_Z$ ( $\Omega$ ) <sup>Note2</sup>		Reverse Current $I_R$ ( $\mu\text{A}$ )	
		MIN.	MAX.	$I_Z$ (mA)	MAX.	$I_Z$ (mA)	MAX.	$V_R$ (V)
RD2.0FM	B	1.9	2.2	5	140	5	200	0.5
RD2.2FM	B	2.1	2.4	5	140	5	200	0.7
RD2.4FM	B	2.3	2.6	5	140	5	200	1.0
RD2.7FM	B	2.5	2.9	5	140	5	150	1.0
RD3.0FM	B	2.8	3.2	5	140	5	100	1.0
RD3.3FM	B	3.1	3.5	5	140	5	80	1.0
RD3.6FM	B	3.4	3.8	5	140	5	60	1.0
RD3.9FM	B	3.7	4.1	5	140	5	40	1.0
RD4.3FM	B	4.0	4.5	5	140	5	20	1.0
RD4.7FM	B	4.4	4.9	5	100	5	20	1.0
RD5.1FM	B	4.8	5.4	5	100	5	20	1.0
RD5.6FM	B	5.3	6.0	5	70	5	20	1.5
RD6.2FM	B	5.8	6.6	5	40	5	20	3.0
RD6.8FM	B	6.4	7.2	5	25	5	20	3.5
RD7.5FM	B	7.0	7.9	5	25	5	20	4.0
RD8.2FM	B	7.7	8.7	5	25	5	20	5.0
RD9.1FM	B	8.5	9.6	5	25	5	20	6.0
RD10FM	B	9.4	10.6	5	20	5	10	7.0
RD11FM	B	10.4	11.6	5	20	5	10	8.0
RD12FM	B	11.4	12.6	5	25	5	10	9.0
RD13FM	B	12.4	14.1	5	30	5	10	10
RD15FM	B	13.8	15.6	5	30	5	10	11
RD16FM	B	15.3	17.1	5	40	5	10	12
RD18FM	B	16.8	19.1	5	45	5	10	13
RD20FM	B	18.8	21.2	5	55	5	10	15
RD22FM	B	20.8	23.3	2	55	2	10	17
RD24FM	B	22.8	25.6	2	70	2	10	19
RD27FM	B	25.1	28.9	2	80	2	10	21
RD30FM	B	28.0	32.0	2	80	2	10	23
RD33FM	B	31.0	35.0	2	80	2	10	25
RD36FM	B	34.0	38.0	2	90	2	10	27
RD39FM	B	37.0	41.0	2	130	2	10	30
RD43FM	B	40.0	45.0	2	150	2	5	33
RD47FM	B	44.0	49.0	2	170	2	5	36
RD51FM	B	48.0	54.0	2	220	2	5	39
RD56FM	B	53.0	60.0	2	220	2	5	43
RD62FM	B	58.0	66.0	2	220	2	5	47
RD68FM	B	64.0	72.0	2	230	2	5	52

**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. signal.

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

**(2/2)**

Type Number	Class	Zener Voltage V <sub>Z</sub> (V) <sup>Note1</sup>			Dynamic Impedance Z <sub>Z</sub> (Ω) <sup>Note2</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)
RD75FM	B	70.0	79.0	2	250	2	5	57
RD82FM	B	77.0	87.0	2	270	2	5	63
RD91FM	B	85.0	96.0	2	340	2	5	69
RD100FM	B	94.0	106.0	2	430	2	5	76
RD110FM	B	104.0	116.0	2	530	2	5	84
RD120FM	B	114.0	126.0	2	620	2	5	91

**Note 1.** V<sub>Z</sub> is tested with pulsed (40 ms).

**2.** Z<sub>Z</sub> is measured at I<sub>Z</sub> by given a very small A.C. signal.

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

Fig.1 P -  $T_A$  RATING

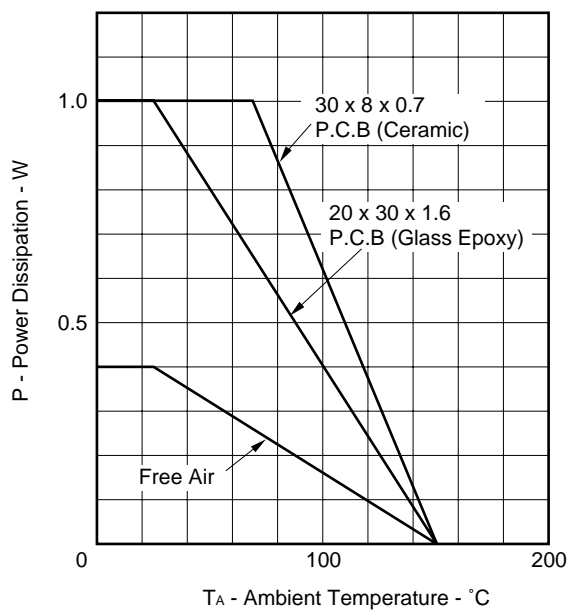
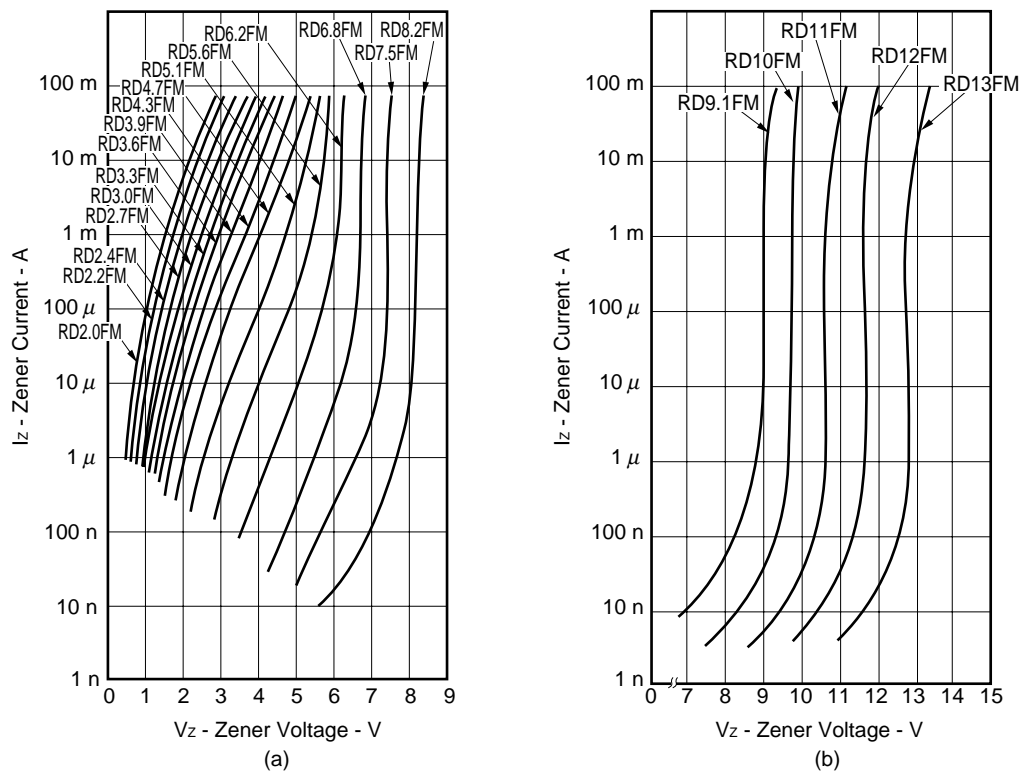
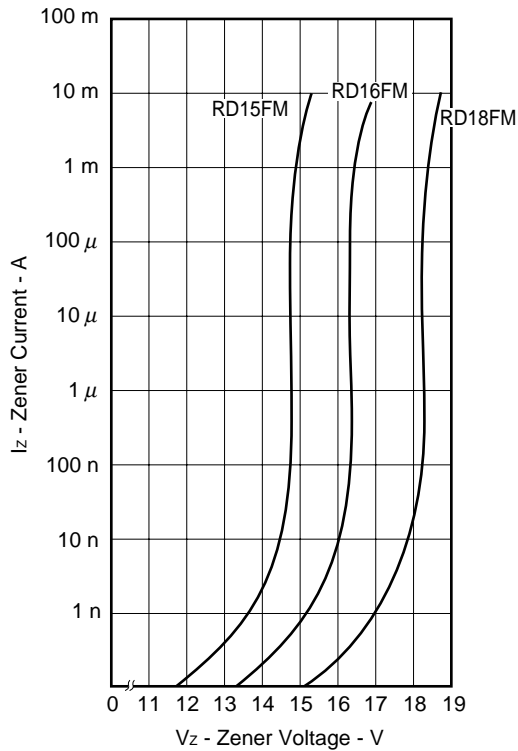
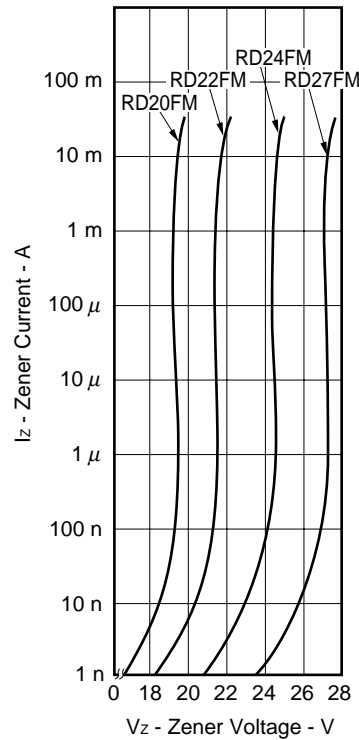


Fig.2  $I_z$  -  $V_z$  CHARACTERISTICS (a to f)

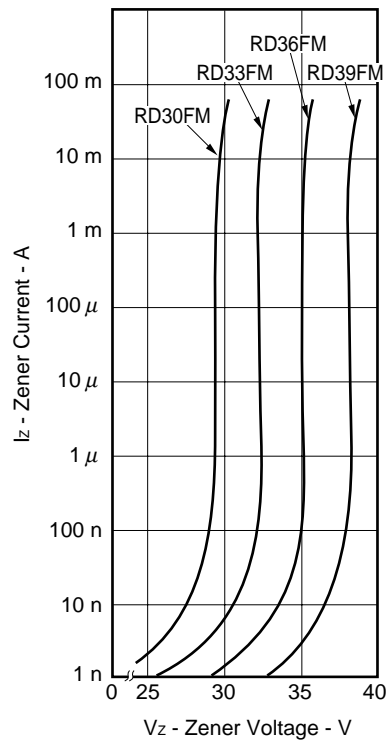




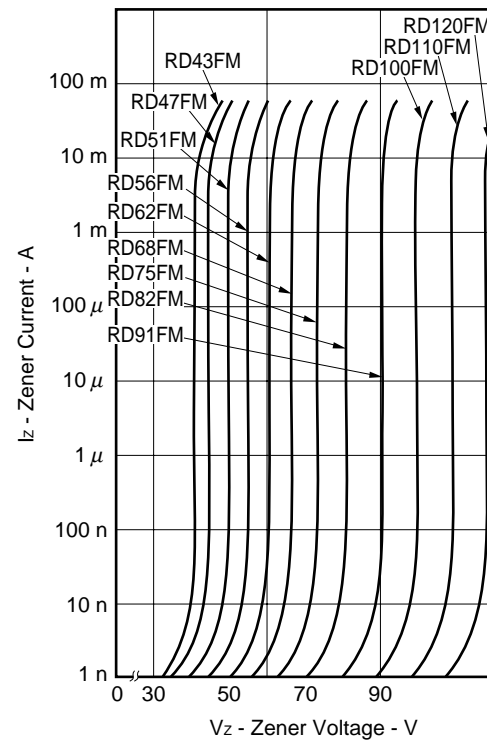
(c)



(d)



(e)



(f)

Fig.3  $\gamma_z$  -  $V_z$  CHARACTERISTICS

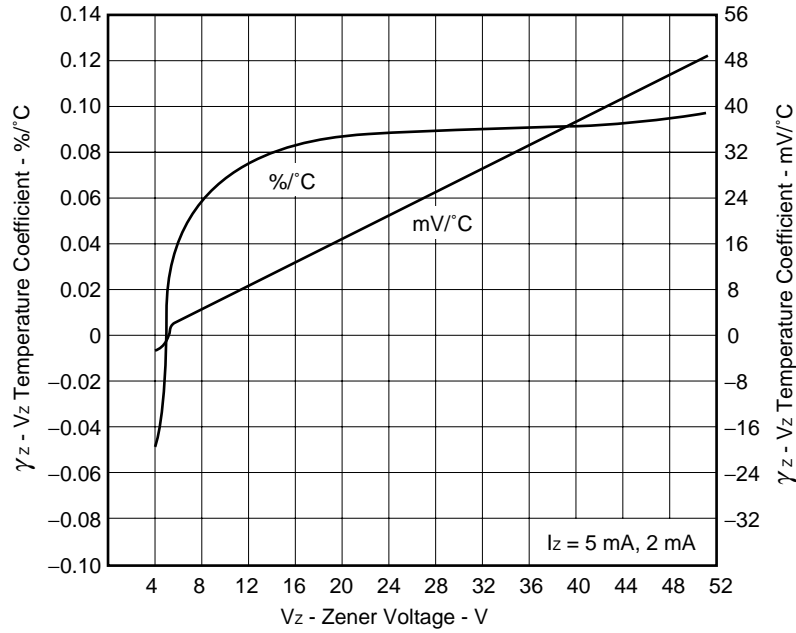
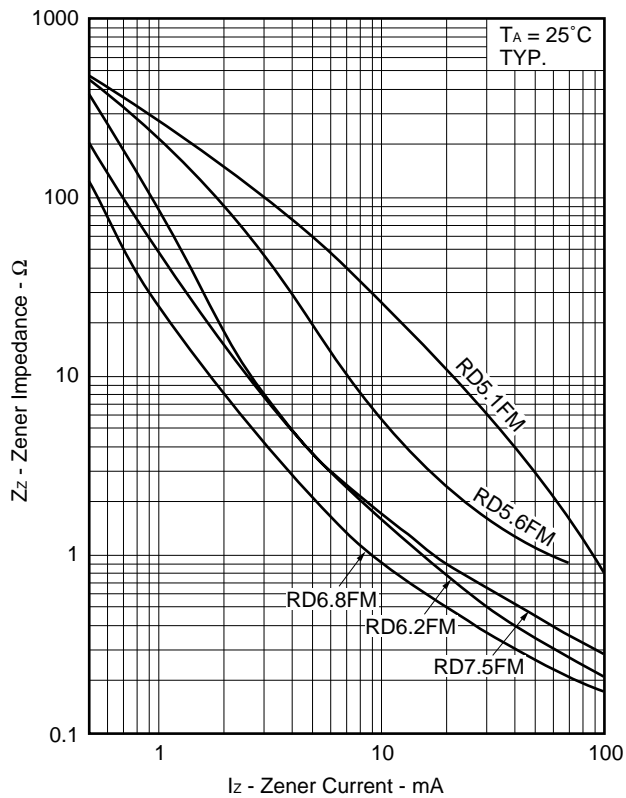
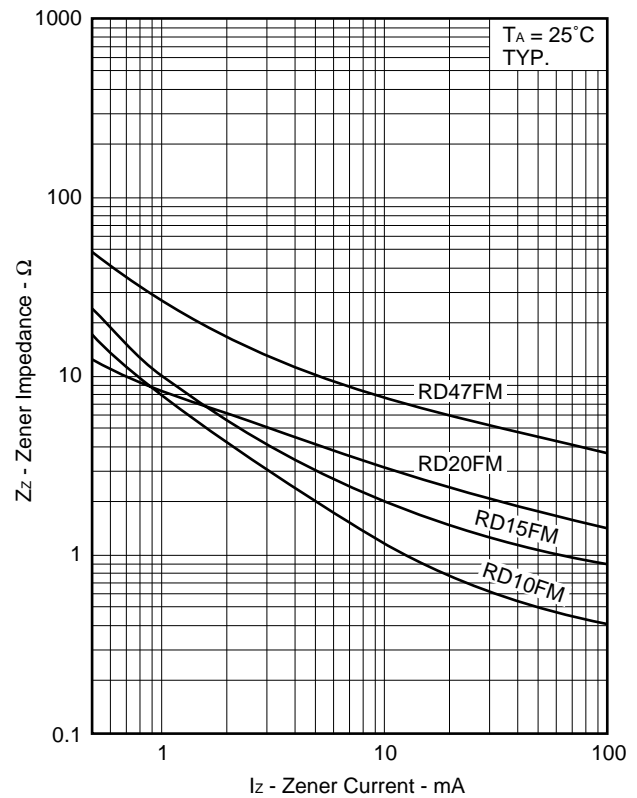


Fig.4  $Z_z$  -  $I_z$  CHARACTERISTICS



(a)



(b)

Fig.5 TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

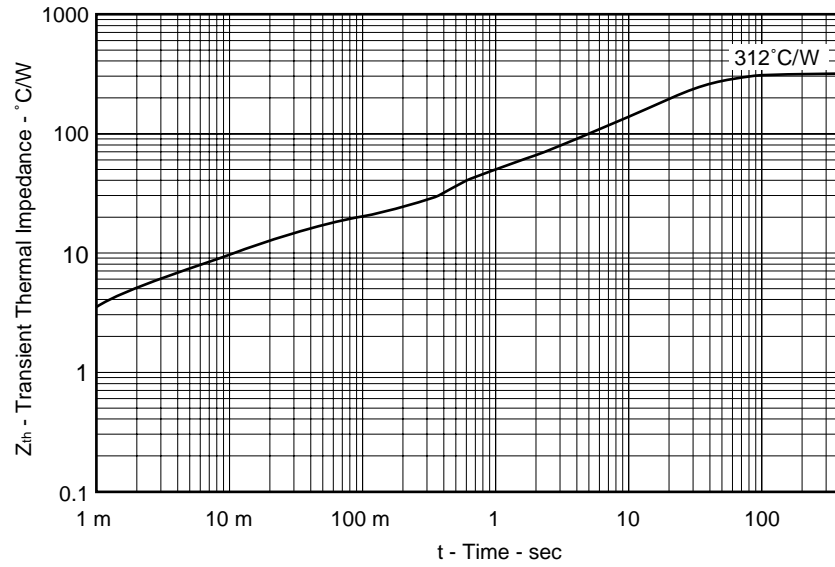
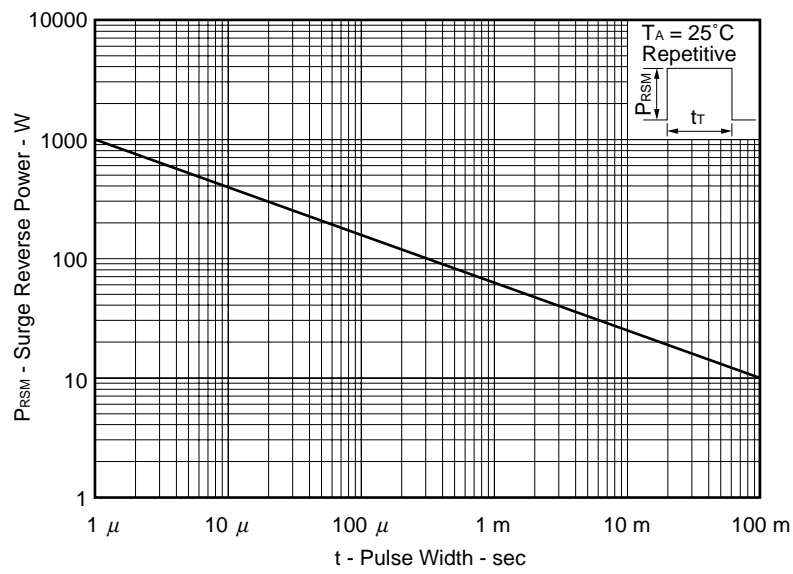


Fig.6 SURGE REVERSE POWER RATINGS



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