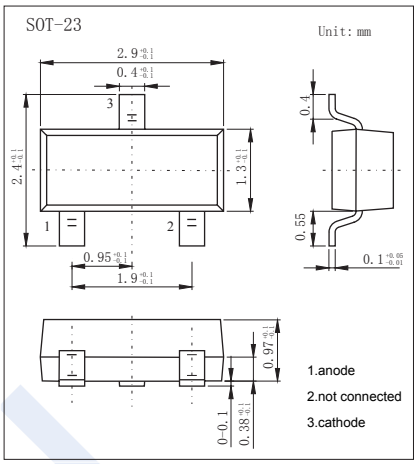
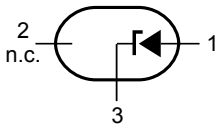
Zener Diodes
PZM-N Series (KZM-N Series)



■ Features

- Total power dissipation: max. 300 mW
- Small plastic package suitable for surface mounted design
- Wide working voltage range:nom. 2.4 to 75 V



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Continuous forward current	I_F	250	mA
Peak forward surge current (Note.1)	I_{ZSM}	see Tables 1and 2	
Power Dissipation	P_D	300	mW
Thermal Resistance Junction to soldering point Ts = 60 °C	$R_{\theta J-S}$	300	K/W
Junction Temperature	T_J	150	℃
Storage temperature range	T_{stg}	-65 to 150	

Note.1: tp = 100 μs; square wave; Tj = 25 °C prior to surge

PZM-N Series (KZM-N Series)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol		Test Conditions	Min	Typ	Max	Unit
Forward voltage	V_F		I_F= 10 mA			0.9	V
			I_F= 100 mA			1.1	
Reverse voltage leakage current	I_R	PZM2.4N	V_R=1 V			50	uA
		PZM2.7N				20	
		PZM3.0N				10	
		PZM3.3N				5	
		PZM3.6N				5	
		PZM3.9N				3	
		PZM4.3N				3	
		PZM4.7N				3	
		PZM5.1N	V_R=1.5V			3	
		PZM5.6N	V_R=2.5V			2	
		PZM6.2N	V_R=3.0V			2	
		PZM6.8N	V_R=3.5 V			2	
		PZM7.5N	V_R=4.0 V			1	
		PZM8.2N	V_R=5.0 V			700	nA
		PZM9.1N	V_R=6.0 V			500	
		PZM10N	V_R=7.0 V			200	
		PZM11N	V_R=8 .0V			100	
		PZM12N	V_R=9.0 V			100	
		PZM13N	V_R=10 V			100	
		PZM15N	V_R=11 V			70	
		PZM16N	V_R=12 V			70	
		PZM18N	V_R=13 V			70	
		PZM20N	V_R=15 V			70	
		PZM22N	V_R=17 V			70	
		PZM24N	V_R=19 V			70	
		PZM27N	V_R=21 V			70	
		PZM30N	V_R=23 V			70	
		PZM33N	V_R=25 V			70	
		PZM36N	V_R=27 V			70	
		PZM39N	V_R=0.7 V_{znom}			50	
		PZM43N				50	
		PZM47N				50	
		PZM51N				50	
		PZM56N				50	
		PZM62N				50	
		PZM68N				50	
		PZM75N				50	

PZM-N Series (KZM-N Series)

■ Electrical Characteristics Ta = 25℃

Table1 Per type; PZM2.4N to PZM24N
T_j = 25 °C unless otherwise specified.

PZM -XXX	WORKING VOLTAGE V_Z (V) at I_Z = 5 mA; t_m = 40 ms								DIFFERENTIAL RESISTANCE r_{dif} (Ω)				TEMP. COEFF. S_Z (mV/K) at I_Z = 5 mA	DIODE CAP. C_d (pF) at f = 1 MHz; V_R = 0	NON-REPETITIVE PEAK REVERSE CURRENT I_{ZSM} (A) at t_p = 100 μs; T_{amb} = 25 °C
	B		B1		B2		B3		I_Z = 1 mA		I_Z = 5 mA				
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	MAX.
2.4N	2.30	2.60	–	–	–	–	–	–	275	400	70	100	–1.6	450	8.00
2.7N	2.50	2.90	2.50	2.75	2.65	2.90	–	–	300	450	75	100	–2.0	440	8.00
3.0N	2.80	3.20	2.80	3.05	2.95	3.20	–	–	325	500	80	95	–2.1	425	8.00
3.3N	3.10	3.50	3.10	3.35	3.25	3.50	–	–	350	500	85	95	–2.4	410	8.00
3.6N	3.40	3.80	3.40	3.65	3.55	3.80	–	–	375	500	85	90	–2.4	390	8.00
3.9N	3.70	4.10	3.70	3.97	3.87	4.10	–	–	400	500	85	90	–2.5	370	8.00
4.3N	4.01	4.48	4.01	4.21	4.15	4.34	4.28	4.48	410	600	80	90	–2.5	350	8.00
4.7N	4.42	4.90	4.42	4.61	4.55	4.75	4.69	4.90	425	500	50	80	–1.4	325	8.00
5.1N	4.84	5.37	4.84	5.04	4.98	5.20	5.14	5.37	400	480	40	60	–0.8	300	8.00
5.6N	5.31	5.92	5.31	5.55	5.49	5.73	5.67	5.92	80	400	15	40	1.2	275	8.00
6.2N	5.86	6.53	5.86	6.12	6.06	6.33	6.26	6.53	40	150	6	10	2.3	250	8.00
6.8N	6.47	7.14	6.47	6.73	6.65	6.93	6.86	7.14	30	80	6	15	3.0	215	8.00
7.5N	7.06	7.84	7.06	7.36	7.28	7.60	7.52	7.84	15	80	2	10	4.0	170	3.50
8.2N	7.76	8.64	7.76	8.10	8.02	8.36	8.28	8.64	20	80	2	10	4.6	150	3.50
9.1N	8.56	9.55	8.56	8.93	8.85	9.23	9.15	9.55	20	100	2	10	5.5	120	3.50
10N	9.45	10.55	9.45	9.87	9.77	10.21	10.11	10.55	20	150	2	10	6.4	110	3.50
11N	10.44	11.56	10.44	10.88	10.76	11.22	11.10	11.56	25	150	2	10	7.4	108	3.00
12N	11.42	12.60	11.42	11.90	11.74	12.24	12.08	12.60	25	150	2	10	8.4	105	3.00
13N	12.47	13.96	12.47	13.03	12.91	13.49	13.37	13.96	25	170	2	10	9.4	103	2.50
15N	13.84	15.52	13.84	14.46	14.34	14.98	14.85	15.52	25	200	3	15	11.4	99	2.00
16N	15.37	17.09	15.37	16.01	15.85	16.51	16.35	17.09	25	200	4	20	12.4	97	1.50
18N	16.94	19.03	16.94	17.70	17.56	18.35	18.21	19.03	25	225	4	20	14.4	93	1.50
20N	18.86	21.08	18.86	19.70	19.52	20.39	20.21	21.08	30	225	4	20	16.4	88	1.50
22N	20.88	23.17	20.88	21.77	21.54	22.47	22.23	23.17	30	250	5	25	18.4	84	1.25
24N	22.93	25.57	22.93	23.96	23.72	24.78	24.54	25.57	30	250	6	30	20.4	80	1.25

Table 2 Per type; PZM27N to PZM75N
T_j = 25 °C unless otherwise specified.

PZM -XXX	WORKING VOLTAGE V_Z (V) at I_Z = 2 mA; t_m = 40 ms								DIFFERENTIAL RESISTANCE r_{dif} (Ω)				TEMP. COEFF. S_Z (mV/K) at I_Z = 2 mA	DIODE CAP. C_d (pF) at f = 1 MHz; V_R = 0	NON-REPETITIVE PEAK REVERSE CURRENT I_{ZSM} (A) at t_p = 100 μs; T_{amb} = 25 °C
	B		B1		B2		B3		I_Z = 0.5 mA		I_Z = 2 mA				
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	MAX.
27N	25.10	28.90	–	–	–	–	–	–	35	250	8	40	23.4	73	1.00
30N	28.00	32.00	–	–	–	–	–	–	35	250	10	40	26.6	66	1.00
33N	31.00	35.00	–	–	–	–	–	–	40	275	11	40	29.7	60	0.90
36N	34.00	38.00	–	–	–	–	–	–	40	300	15	60	33.0	59	0.80
39N	37.00	41.00	–	–	–	–	–	–	40	300	25	75	36.4	58	0.70
43N	40.00	46.00	–	–	–	–	–	–	45	325	30	80	41.2	56	0.60
47N	44.00	50.00	–	–	–	–	–	–	45	325	30	90	46.1	55	0.50
51N	48.00	54.00	–	–	–	–	–	–	45	350	35	110	51.0	52	0.40
56N	52.00	60.00	–	–	–	–	–	–	50	375	40	120	57.0	49	0.30
62N	58.00	66.00	–	–	–	–	–	–	60	400	50	140	64.4	44	0.30
68N	64.00	72.00	–	–	–	–	–	–	75	400	55	160	71.7	40	0.25
75N	70.00	79.00	–	–	–	–	–	–	85	400	70	175	80.2	35	0.20

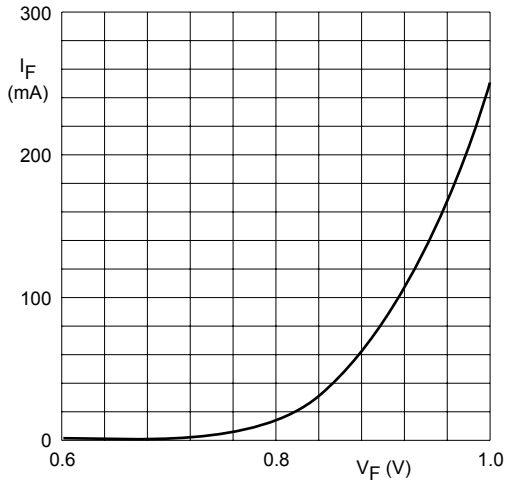
PZM-N Series (KZM-N Series)

■ Marking

TYPE NUMBER	MARKING CODE				TYPE NUMBER	MARKING CODE			
	B	B1	B2	B3		B	B1	B2	B3
PZM2.4N	2V4	–	–	–	PZM15N	15V	151	152	153
PZM2.7N	2V7	271	272	–	PZM16N	16V	161	162	163
PZM3.0N	3V0	301	302	–	PZM18N	18V	181	182	183
PZM3.3N	3V3	331	332	–	PZM20N	20V	201	202	203
PZM3.6N	3V6	361	362	–	PZM22N	22V	221	222	223
PZM3.9N	3V9	391	392	–	PZM24N	24V	241	242	243
PZM4.3N	4V3	431	432	433	PZM27N	27V	–	–	–
PZM4.7N	4V7	471	472	473	PZM30N	30V	–	–	–
PZM5.1N	5V1	511	512	513	PZM33N	33V	–	–	–
PZM5.6N	5V6	561	562	563	PZM36N	36V	–	–	–
PZM6.2N	6V2	621	622	623	PZM39N	39V	–	–	–
PZM6.8N	6V8	681	682	683	PZM43N	43V	–	–	–
PZM7.5N	7V5	751	752	753	PZM47N	47V	–	–	–
PZM8.2N	8V2	821	822	823	PZM51N	51V	–	–	–
PZM9.1N	9V1	911	912	913	PZM56N	56V	–	–	–
PZM10N	10V	101	102	103	PZM62N	62V	–	–	–
PZM11N	11V	111	112	113	PZM68N	68V	–	–	–
PZM12N	12V	121	122	123	PZM75N	75V	–	–	–
PZM13N	13V	131	132	133	–	–	–	–	–

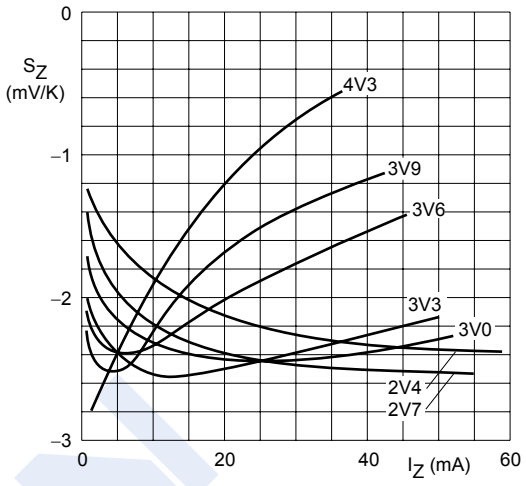
PZM-N Series (KZM-N Series)

■ Typical Characterisitics



T_j = 25 °C.

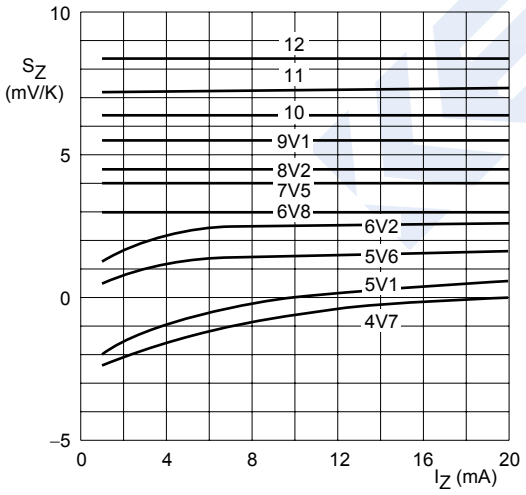
Fig.1 Forward current as a function of forward voltage; typical values.



PZM2.4N to PZM4.3N.

T_j = 25 °C to 150 °C.

Fig.2 Temperature coefficient as a function of working current; typical values.



PZM4.7N to PZM12N.

T_j = 25 °C to 150 °C.

Fig.3 Temperature coefficient as a function of working current; typical values.

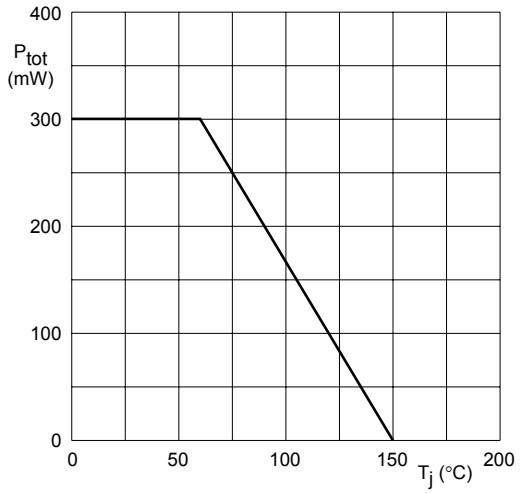


Fig.4 Power derating curve.