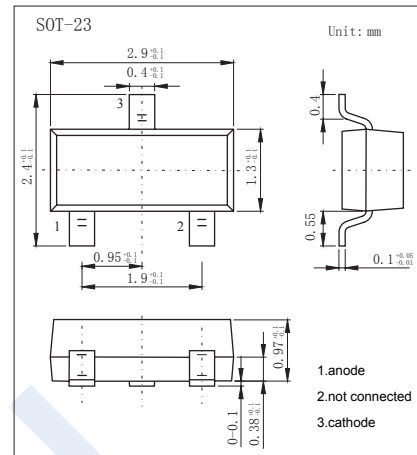
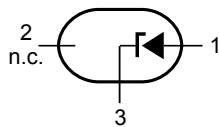


Zener Diodes

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 $T_a = 25^\circ\text{C}$

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

Note.1: $t_p = 100 \mu\text{s}$; square wave; $T_J = 25^\circ\text{C}$ prior to surge

PZM-N Series (KZM-N Series)

■ Electrical Characteristics Ta = 25°C

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	V _R =1 V			50	uA	
			PZM2.4N				20
			PZM2.7N				10
			PZM3.0N				5
			PZM3.3N				5
			PZM3.6N				3
			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
		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	nA		
PZM43N				50			
PZM47N				50			
PZM51N				50			
PZM56N				50			
PZM62N				50			
PZM68N				50			
PZM75N				50			

PZM-N Series (KZM-N Series)

■ Electrical Characteristics Ta = 25 °C

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.			
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.			
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

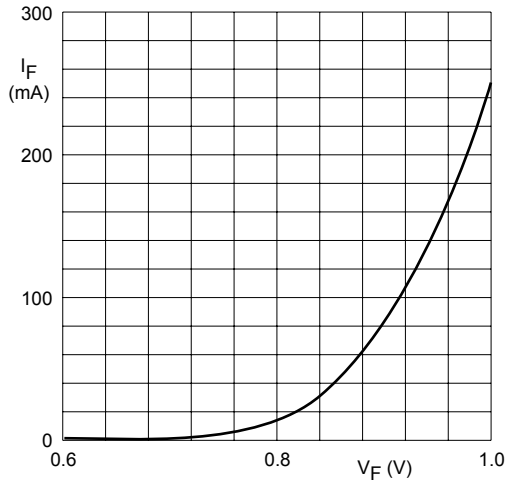
PZM-N Series (KZM-N Series)

■ 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	–	–	–	–	–

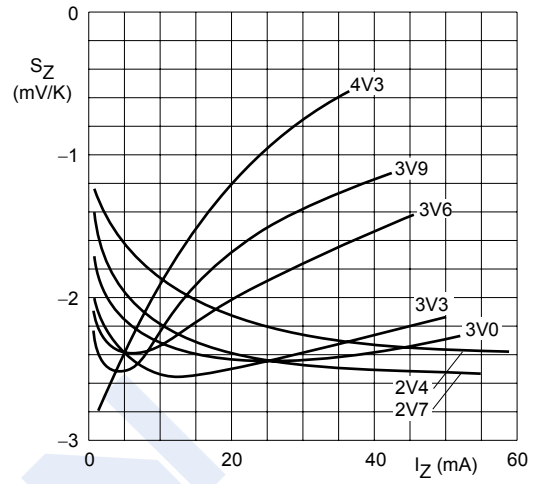
PZM-N Series (KZM-N Series)

■ Typical Characteristics



T_j = 25 °C.

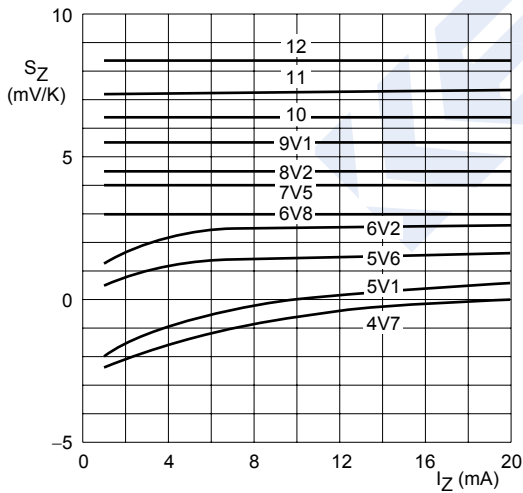
Fig.1 Forward current as a function of forward voltage; typical values.



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.

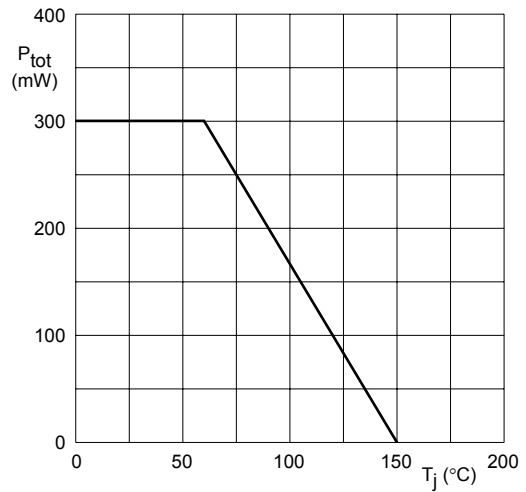


Fig.4 Power derating curve.