



## SM2Z5V1 / SM2Z200

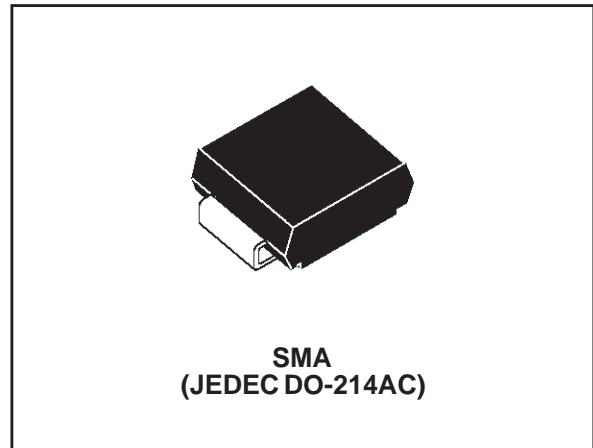
### 2W ZENER DIODES

#### FEATURES

- VOLTAGE RANGE : 5.1V to 200V
- SMA PACKAGE
- HIGH SURGE CAPABILITY : 40 W (10 ms)

#### DESCRIPTION

- 2 W Zener diodes
- Tinned copper leads.
- Full compatibility with both gluing and paste soldering techniques.



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

Symbol	Parameter	Value	Unit
P	Power dissipation on infinite heatsink	T <sub>amb</sub> = 115°C 2	W
T <sub>stg</sub> T <sub>j</sub>	Storage temperature range Junction temperature range	- 65 to + 175 175	°C °C
T <sub>L</sub>	Maximum lead temperature for soldering	260	°C

#### THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R <sub>th(j-l)</sub>	Junction to lead	30	°C/W
R <sub>th(j-a)</sub>	Junction to ambient on printed circuit On recommended pad layout	120	°C/W

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## ELECTRICAL CHARACTERISTICS (T<sub>amb</sub> = 25°C)

Types	Marking	V <sub>ZT</sub> @ I <sub>zT</sub>		R <sub>ZT</sub> @ I <sub>zT</sub> max. Ω (1)	I <sub>zT</sub> mA (1)	R <sub>ZK</sub> @ I <sub>zK</sub> max. Ω mA		αV <sub>Z</sub> typ. 10 <sup>-4</sup> /°C	I <sub>R</sub> @ V <sub>R</sub> max.		I <sub>zm</sub> max. mA (2) T <sub>amb</sub> =115°C	I <sub>zsm</sub> max. A (3)
		min. V (1)	max.			μA	V					
SM2Z5V1	ZHK	4.8	5.4	5	100	350	2	1	5	1	370	7.8
SM2Z5V6	ZHL	5.2	6	2	100	250	2	2.5	5	1	330	7.1
SM2Z6V2	ZHN	5.8	6.6	2	100	200	2	3.2	5	1	300	6.4
SM2Z7V5	ZHQ	7	7.9	2	100	450	1	4.5	5	2	250	5.4
SM2Z10	ZHU	9.4	10.6	4	50	200	1	6	1	8.3	170	3.6
SM2Z12	ZHW	11.4	12.7	7	50	150	1	6.5	1	9.1	155	3.3
SM2Z15	ZHZ	13.8	15.6	10	50	150	1	7	1	11.4	130	2.7
SM2Z18	ZJF	16.8	19.1	15	25	150	1	7.5	0.5	13.7	105	2.2
SM2Z20	ZJG	18.8	21.2	15	25	180	1	7.5	0.5	15.2	94	2
SM2Z22	ZJK	20.8	23.3	15	25	180	1	8	0.5	16.7	86	1.8
SM2Z24	ZJL	22.8	25.6	15	25	180	1	8	0.5	18.2	78	1.6
SM2Z27	ZJN	25.1	28.9	15	25	200	1	8.5	0.5	20.5	69	1.4
SM2Z30	ZJQ	28	32	15	25	250	1	8.5	0.5	22.8	62	1.1
SM2Z36	ZJS	34	38	40	10	350	1	8.5	0.5	27.4	52	0.9
SM2Z39	ZJT	37	41	40	10	450	1	9	0.5	29.6	48	0.83
SM2Z43	ZJU	40.4	45.6	40	10	550	1	9	0.5	32.7	45	0.76
SM2Z47	ZJV	44	50	45	10	600	1	9	0.5	35.7	40	0.7
SM2Z62	ZKD	58.3	65.7	80	10	1000	1	9	0.5	47.1	35	0.67
SM2Z68	ZKM	64	72	80	10	1000	1	9	0.5	47.1	30	0.64
SM2Z100	ZKQ	94	106	200	5	2000	1	9	0.5	76	18	0.4
SM2Z150	ZKR	138	156	300	5	4000	0.5	9.5	0.5	114	12.8	0.15
SM2Z200	ZKW	188	212	350	5	6000	0.5	9.5	0.5	152	9.4	0.12

Note 1 : Pulse test : t<sub>p</sub> ≤ 50ms

Note 2 : Infinite heatsink

Note 3 : Rectangular waveform t<sub>p</sub> = 10ms

Fig. 1 : Power dissipation versus ambient temperature.

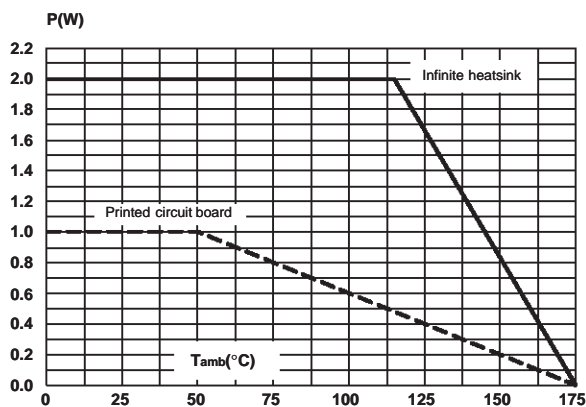
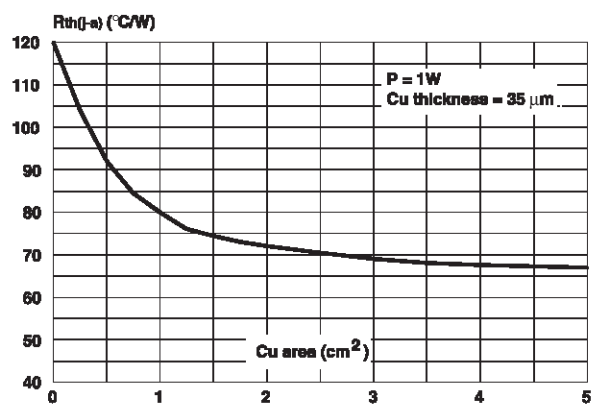
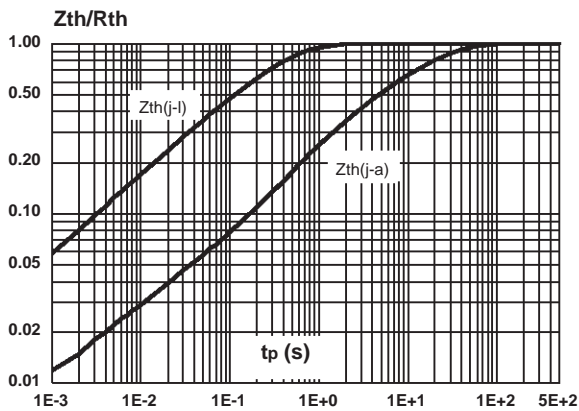


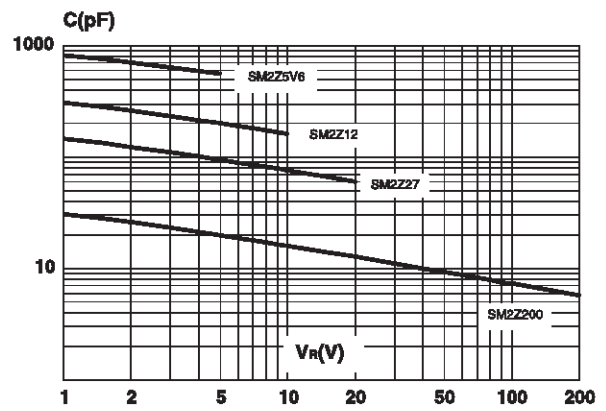
Fig. 2 : Junction to ambient thermal resistance versus copper surface under each lead.



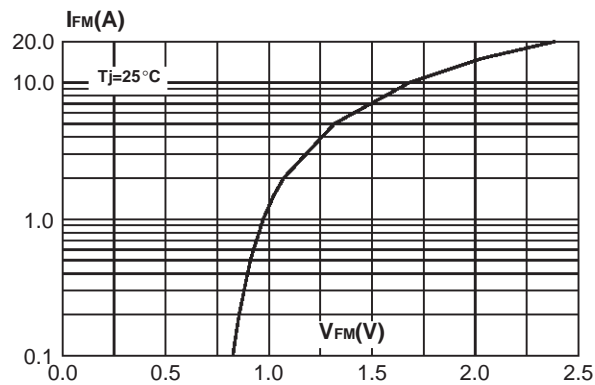
**Fig. 3 :** Relative variation of thermal impedance versus pulse duration (PC board FR4) for  $Z_{th(j-a)}$  only.



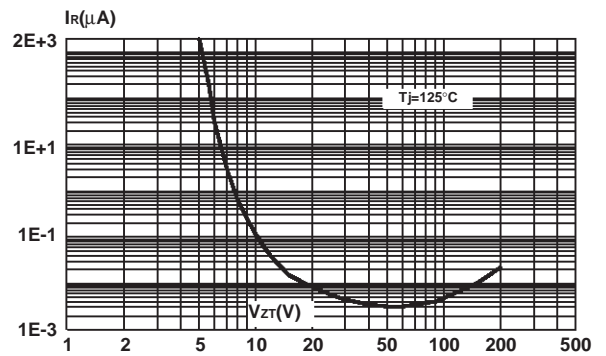
**Fig. 4 :** Junction capacitance versus reverse voltage applied (typical values).



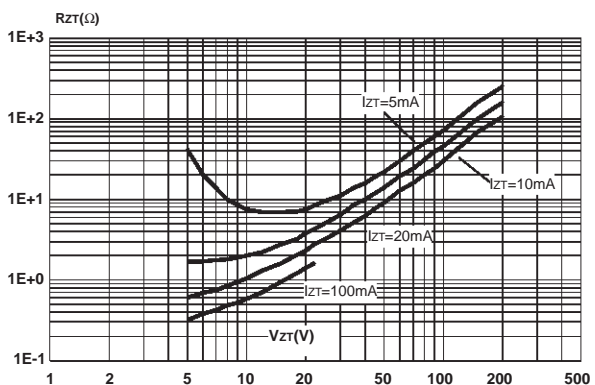
**Fig. 5 :** Peak forward current versus peak forward voltage drop (typical values).



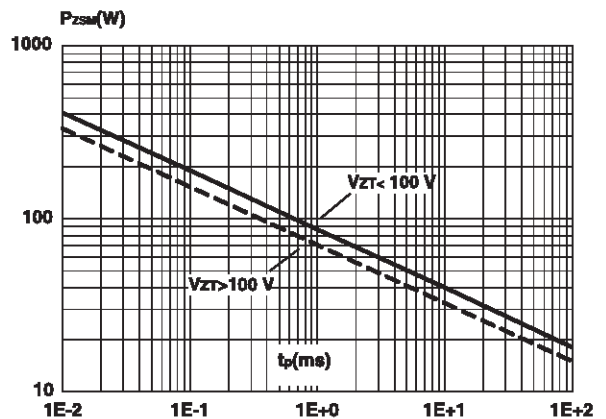
**Fig. 6 :** Leakage current versus regulation voltage (typical values).



**Fig. 7 :** Differential resistance versus regulation voltage (typical values).

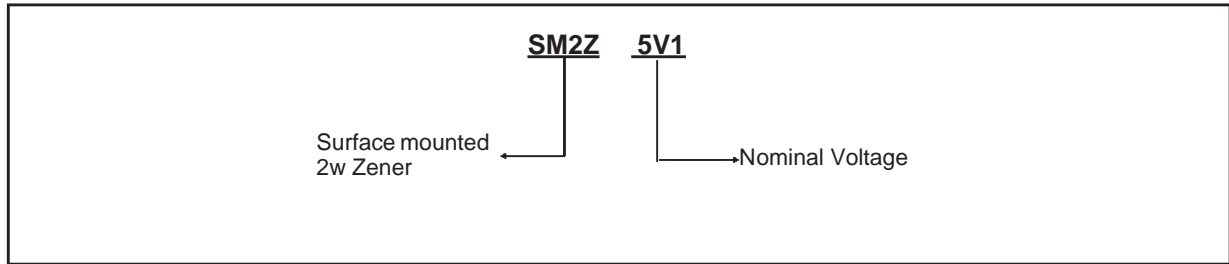


**Fig. 8 :** Peak pulse power versus pulse duration (rectangular waveform, maximum values).



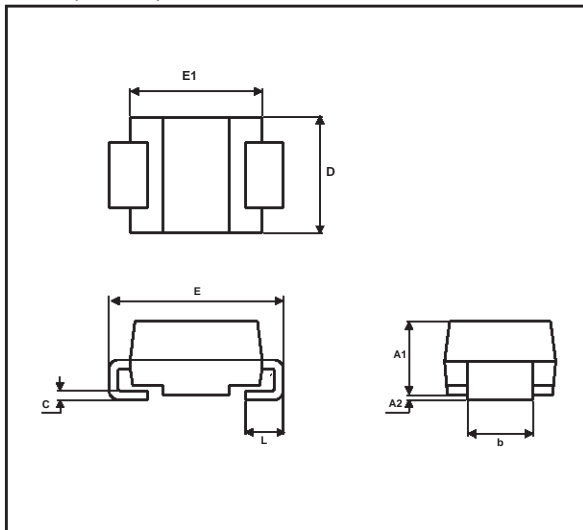
## SM2Z5V1 / SM2Z200

### ORDER CODE



### PACKAGE MECHANICAL DATA

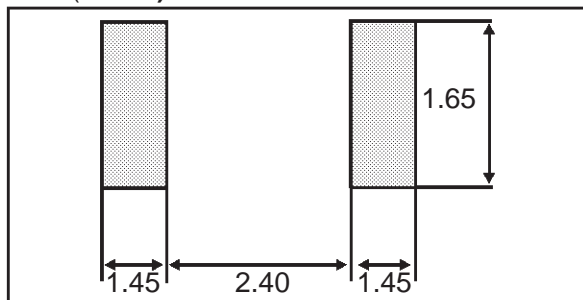
SMA (Plastic)



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A1	1.90	2.70	0.075	0.106
A2	0.05	0.20	0.002	0.008
b	1.25	1.65	0.049	0.065
c	0.15	0.41	0.006	0.016
E	4.80	5.60	0.189	0.220
E1	3.95	4.60	0.156	0.181
D	2.25	2.95	0.089	0.116
L	0.75	1.60	0.030	0.063

### FOOT PRINT DIMENSIONS (in millimeters)

SMA (Plastic)



**Packaging** : standard packaging is in tape and reel.

**Weight** = 0.068 g

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