

2W ZENER DIODES

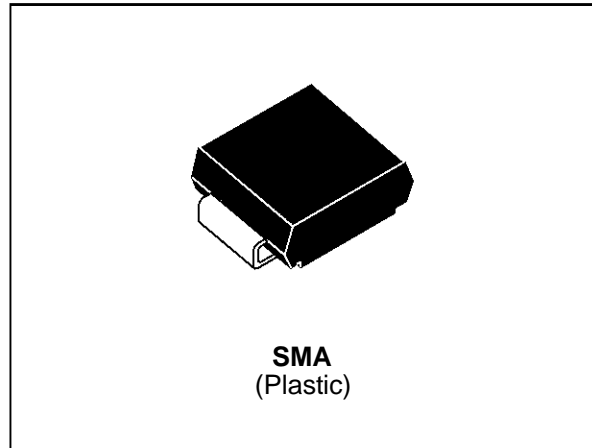
PRELIMINARY DATASHEET

FEATURES

- 2W ZENER DIODES
- SMA PACKAGE
- VOLTAGE RANGE : 5.1V TO 200V

DESCRIPTION

- Body marked with : Logo, Date Code, Type Code and Cathode Band (laser marking).
- Full compatibility with both gluing and paste soldering techniques.
- Excellent on-board stability.
- Tinned copper leads.
- High temperature resistant resin.


ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
P	Power dissipation *	$T_l = 115^{\circ}\text{C}$	2	W
I_{ZM}	Continuous reverse current *	$T_l = 115^{\circ}\text{C}$	See page 2	mA
I_{ZSM}	Peak reverse current	$T_{amb} = 25^{\circ}\text{C}$	See page 2	A
T_{stg} T_j	Storage temperature range Junction temperature range		- 65 to + 175 - 65 to + 175	$^{\circ}\text{C}$ $^{\circ}\text{C}$
T_l	Maximum lead temperature for soldering		260	$^{\circ}\text{C}$

* On infinite heatsink

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction to lead	30	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	Junction to ambient on printed circuit (with standard footprint dimensions)	120	$^{\circ}\text{C}/\text{W}$

SM2Z5V1 ---> SM2Z200

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}C$, unless otherwise specified)

Types	Marking	V_{ZT} @ I_{ZT}		r_{ZT} @ I_{ZT} max. Ω (1)	I_{ZT} mA (1)	R_{ZK} @ I_{ZK} max. Ω mA		α_{VZ} typ. $10^{-4}/^{\circ}C$	I_R @ V_R		I_{ZM} max. $T_I=115^{\circ}C$ mA	I_{ZSM} max. A (2)
		min. V (1)	max. 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
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
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
SM2Z47	ZJV	44	50	45	10	600	1	9	0.5	35.7	40	0.7
SM2Z150	ZKR	138	156	700	5	4000	0.5	9.5	0.5	114	12.8	0.15
SM2Z200	ZKW	188	212	1000	5	6000	0.5	9.5	0.5	152	9.4	0.12

Note 1 : Pulse test : $t_p \leq 50ms$ $\delta < 2\%$

Note 2 : Rectangular waveform $t_p = 10ms$

Forward voltage drop : $V_F \leq 1.2 V$ ($T_{amb} = 25^{\circ}C$, $I_F = 500 mA$)

Fig. 1 : Power dissipation versus ambient temperature.

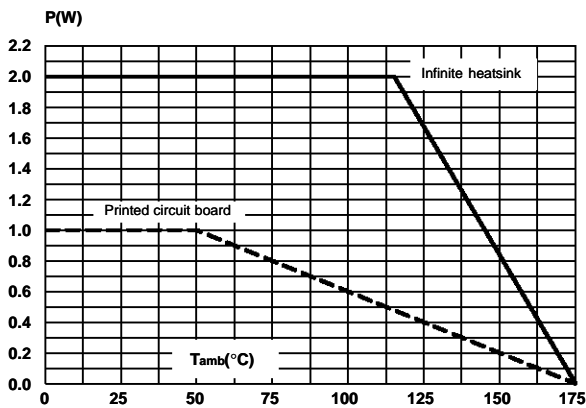


Fig. 2 : Junction to ambient thermal resistance versus copper surface under each lead.

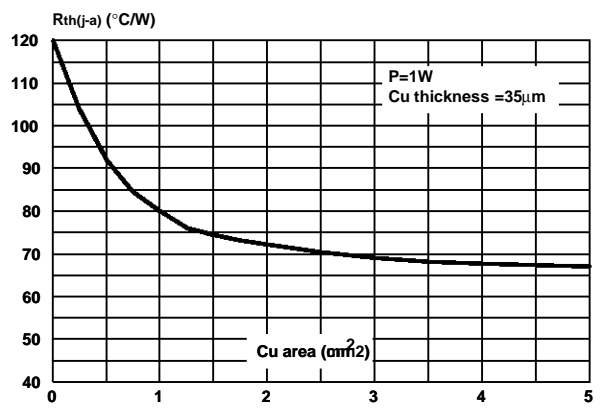


Fig. 3 : Relative variation of thermal impedance versus pulse duration.

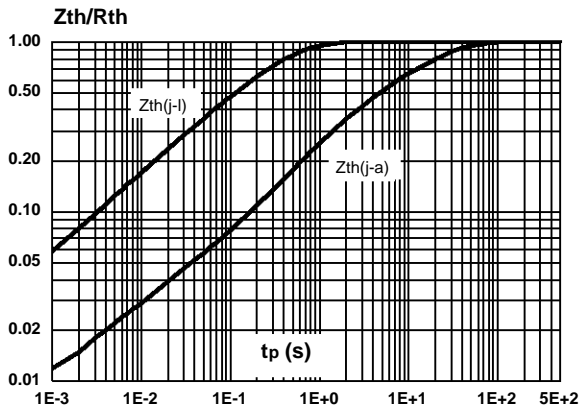


Fig. 4 : Junction capacitance versus reverse voltage applied (typical values).

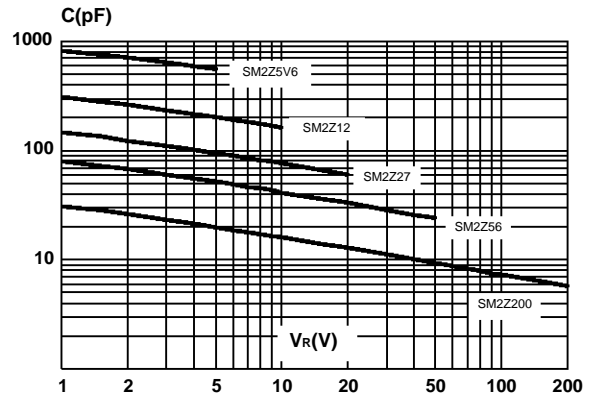


Fig. 5 : Peak forward voltage drop versus peak forward current (typical values).

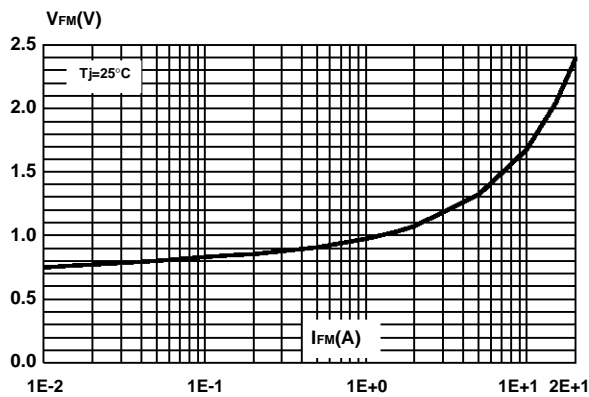


Fig. 6 : Leakage current versus regulation voltage (typical values).

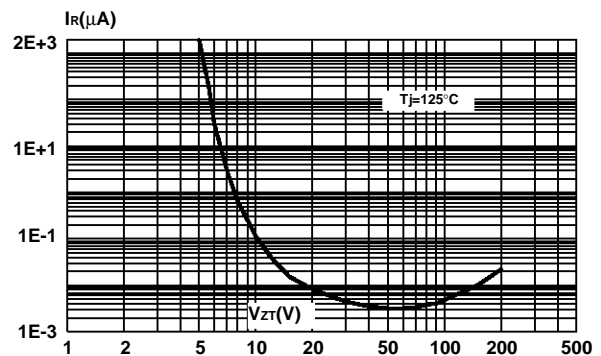


Fig. 7 : Differential resistance versus regulation voltage (typical values).

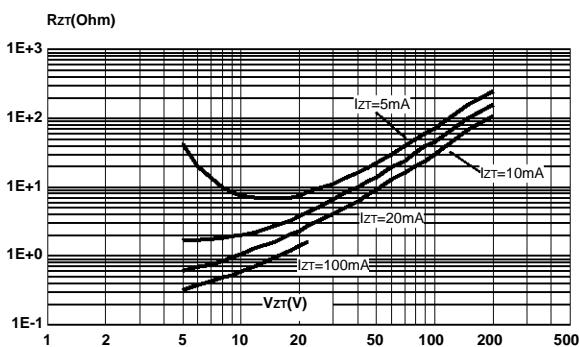
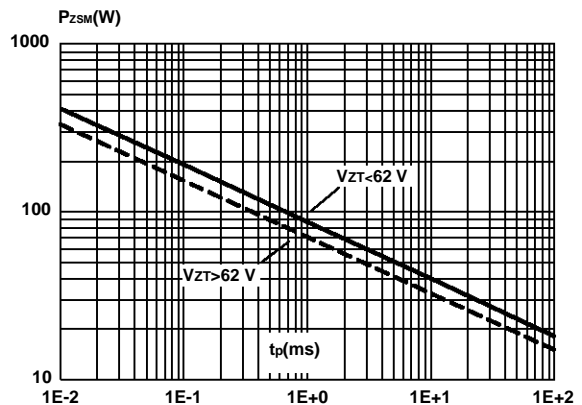


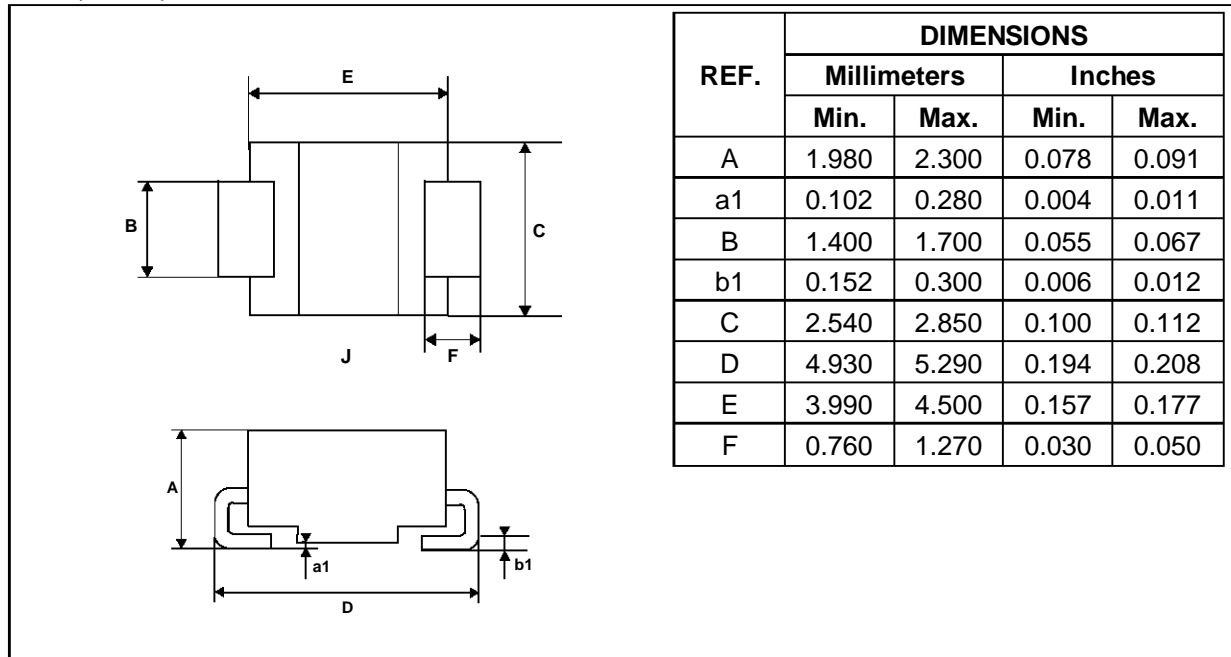
Fig. 8 : Peak pulse power versus pulse duration (rectangular waveform, maximum values).



SM2Z5V1 ---> SM2Z200

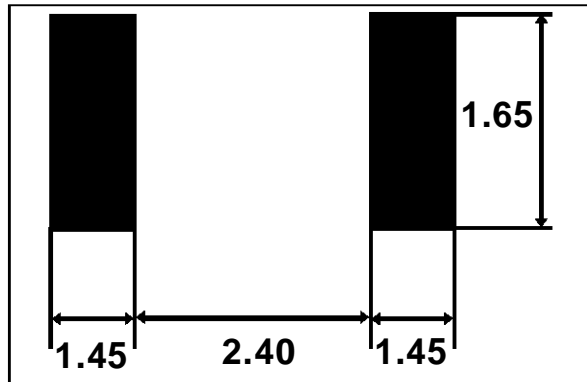
PACKAGE MECHANICAL DATA

SMA (Plastic)



FOOT PRINT DIMENSIONS (in millimeters)

SMA (Plastic)



Packaging : standard packaging is in tape and reel.

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1996 SGS-THOMSON Microelectronics - Printed in Italy - All rights reserved.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.