



Features

- Total power dissipation: Max. 1.5 W.
- Wide zener reverse voltage range 3.3V to 68V.
- Package Design for Top Side or Bottom Circuit Board Mounting.

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
1SMA59xxA	SMA	XX	5000

XX=Device code, see table on page2 the marking code.

The marking bar indicates the cathode.



SMA



Absolute Maximum Ratings(Ta=25°C)

Characteristic	Symbol	Value	Unit
Forward voltage @I _F =200mA	V _F	1.5	V
Power Dissipation	P _D	1.5	W
Thermal Resistance, Junction to Ambient Air	R _{θJA}	250	°C/W
Junction Temperature	T _j	-65 to +150	°C
Storage Temperature Range	T _{stg}	-55 ~ +150	°C

Notes: Device mounted on ceramic PCB;5.0mm×7.0mm with pad areas 35 mm²



Electrical Characteristics (Ta=25°C unless otherwise specified)

Device* (Note 1)	Device Marking	Zener Voltage (Note 2)				Zener Impedance			Leakage Current		I _{ZM}
		V _Z (Volts)			@ I _{ZT}	Z _{YT} @ I _{ZT}	Z _{ZK} @ I _{ZK}		I _R @ V _R		
		Min	Nom	Max	mA	Ω	Ω	mA	μA	Volts	
1SMA5913A	813B	3.13	3.3	3.47	113.6	10	500	1.0	50	1.0	455
1SMA5914A	814B	3.42	3.6	3.78	104.2	9.0	500	1.0	35.5	1.0	417
1SMA5915A	815B	3.70	3.9	4.10	96.1	7.5	500	1.0	12.5	1.0	385
1SMA5916A	816B	4.08	4.3	4.52	87.2	6.0	500	1.0	2.5	1.0	349
1SMA5917A	817B	4.46	4.7	4.94	79.8	5.0	500	1.0	2.5	1.5	319
1SMA5918A	818B	4.84	5.1	5.36	73.5	4.0	350	1.0	2.5	2.0	294
1SMA5919A	819B	5.32	5.6	5.88	66.9	2.0	250	1.0	2.5	3.0	268
1SMA5920A	820B	5.89	6.2	6.51	60.5	2.0	200	1.0	2.5	4.0	242
1SMA5921A	821B	6.46	6.8	7.14	55.1	2.5	200	1.0	2.5	5.2	221
1SMA5922A	822B	7.12	7.5	7.88	50	3.0	400	0.5	2.5	6.0	200
1SMA5923A	823B	7.79	8.2	8.61	45.7	3.5	400	0.5	2.5	6.5	183
1SMA5924A	824B	8.64	9.1	9.56	41.2	4.0	500	0.5	2.5	7.0	165
1SMA5925A	825B	9.5	10	10.5	37.5	4.5	500	0.25	2.5	8.0	150
1SMA5926A	826B	10.45	11	11.55	34.1	5.5	550	0.25	0.5	8.4	136
1SMA5927A	827B	11.4	12	12.6	31.2	6.5	550	0.25	0.5	9.1	125
1SMA5928A	828B	12.35	13	13.65	28.8	7.0	550	0.25	0.5	9.9	115
1SMA5929A	829B	14.25	15	15.75	25	9.0	600	0.25	0.5	11.4	100
1SMA5930A	830B	15.2	16	16.8	23.4	10	600	0.25	0.5	12.2	94
1SMA5931A	831B	17.1	18	18.9	20.8	12	650	0.25	0.5	13.7	83
1SMA5932A	832B	19	20	21	18.7	14	650	0.25	0.5	15.2	75
1SMA5933A	833B	20.9	22	23.1	17	17.5	650	0.25	0.5	16.7	68
1SMA5934A	834B	22.8	24	25.2	15.6	19	700	0.25	0.5	18.2	63
1SMA5935A	835B	25.65	27	28.35	13.9	23	700	0.25	0.5	20.6	56
1SMA5936A	836B	28.5	30	31.5	12.5	26	750	0.25	0.5	22.8	50
1SMA5937A	837B	31.35	33	34.65	11.4	33	800	0.25	0.5	25.1	45
1SMA5938A	838B	34.2	36	37.8	10.4	38	850	0.25	0.5	27.4	42
1SMA5939A	839B	37.05	39	40.95	9.6	45	900	0.25	0.5	29.7	38
1SMA5940A	840B	40.85	43	45.15	8.7	53	950	0.25	0.5	32.7	35
1SMA5941A	841B	44.65	47	49.35	8.0	67	1000	0.25	0.5	35.8	32
1SMA5942A	842B	48.45	51	53.55	7.3	70	1100	0.25	0.5	38.8	29
1SMA5943A	843B	53.2	56	58.8	6.7	86	1300	0.25	0.5	42.6	27
1SMA5945A	845B	64.6	68	71.4	5.5	120	1700	0.25	0.5	51.7	22

1. Tolerance and Voltage Regulation Designation – The type number listed indicates a tolerance of ±5%.
2. V_Z limits are to be guaranteed at thermal equilibrium.



Typical Characteristics

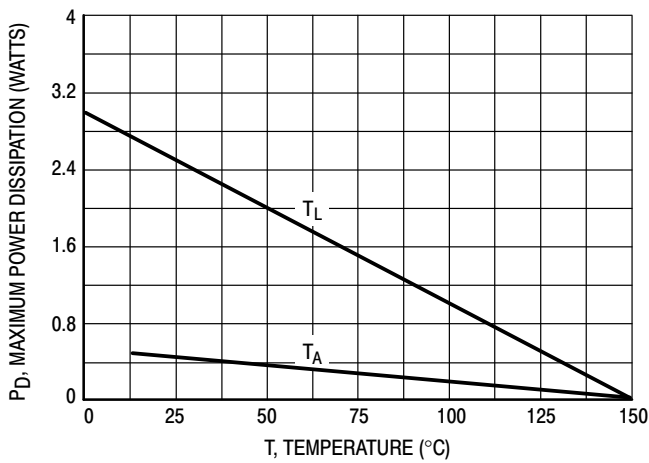


Figure 1. Steady State Power Derating

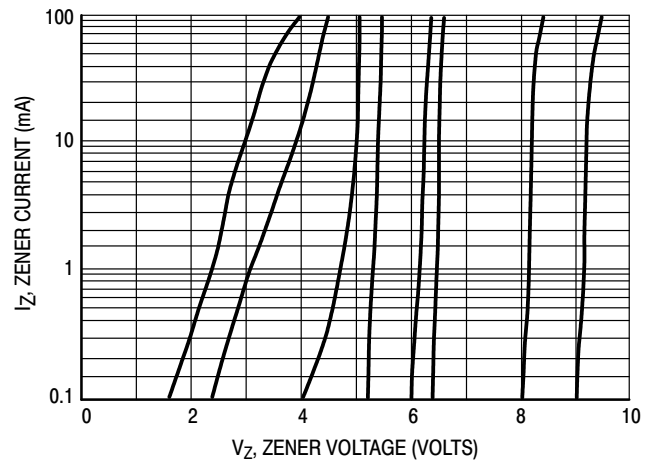


Figure 2. V_Z - 3.3 thru 10 Volts

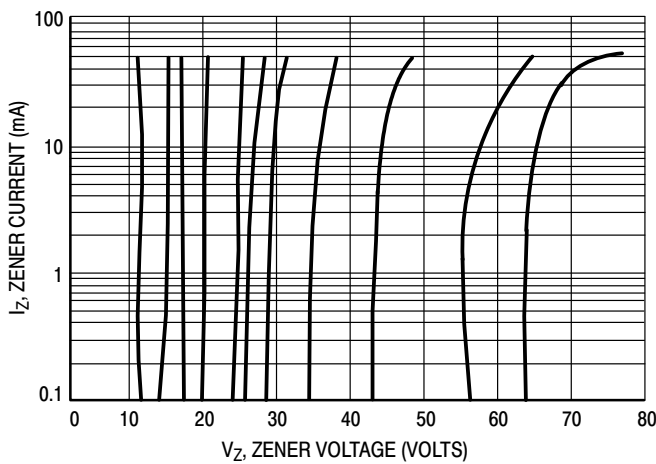


Figure 3. V_Z = 12 thru 68 Volts

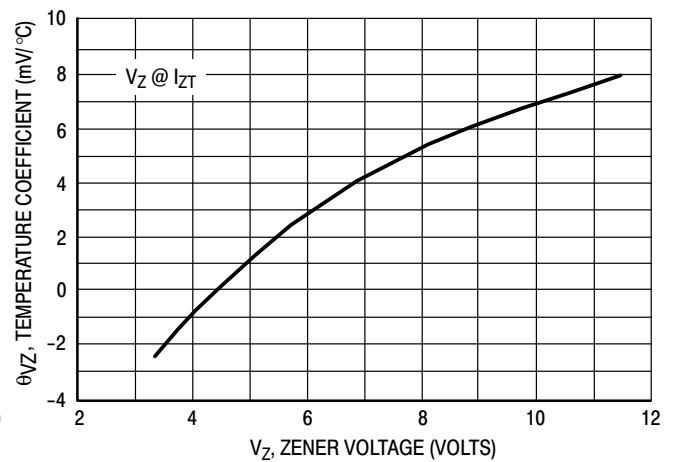


Figure 4. Zener Voltage - 3.3 to 12 Volts

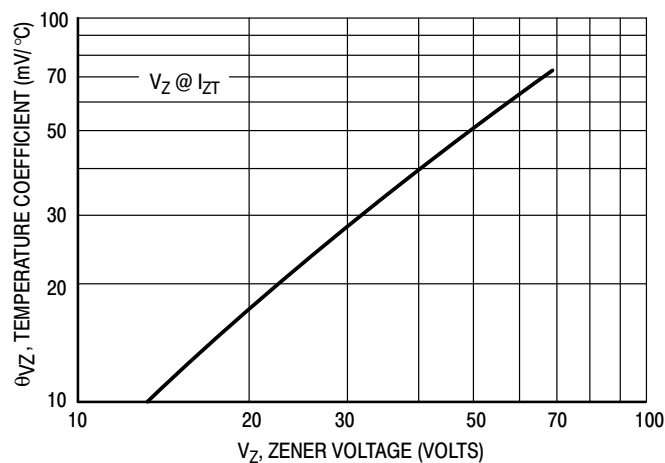


Figure 5. Zener Voltage - 12 to 68 Volts

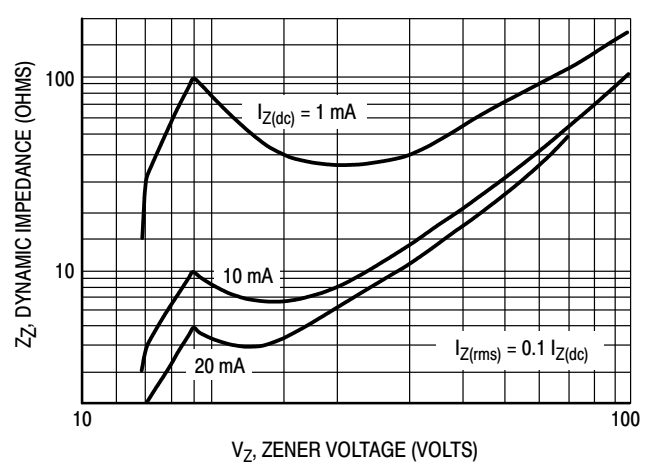


Figure 6. Effect of Zener Voltage

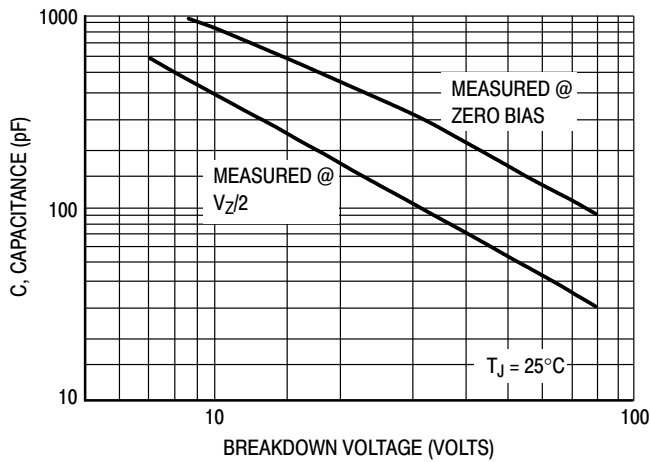


Figure 7. Capacitance Curve

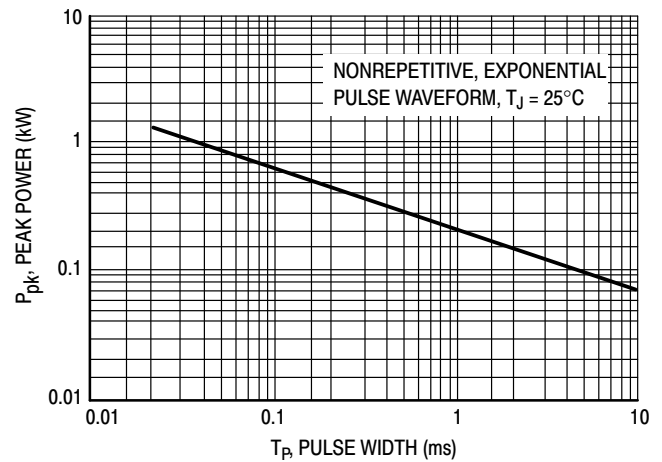


Figure 8. Typical Pulse Rating Curve

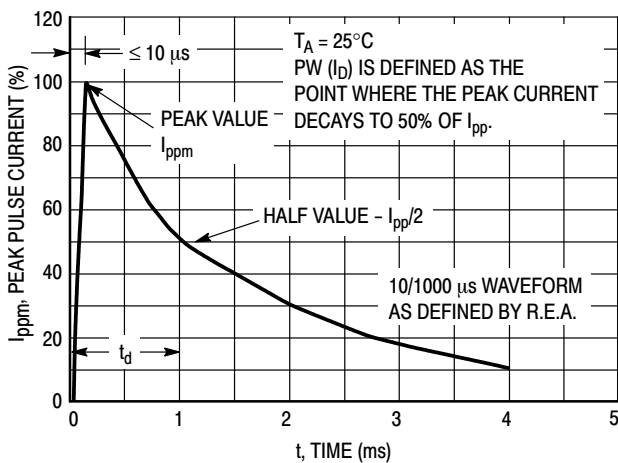


Figure 9. Pulse Waveform

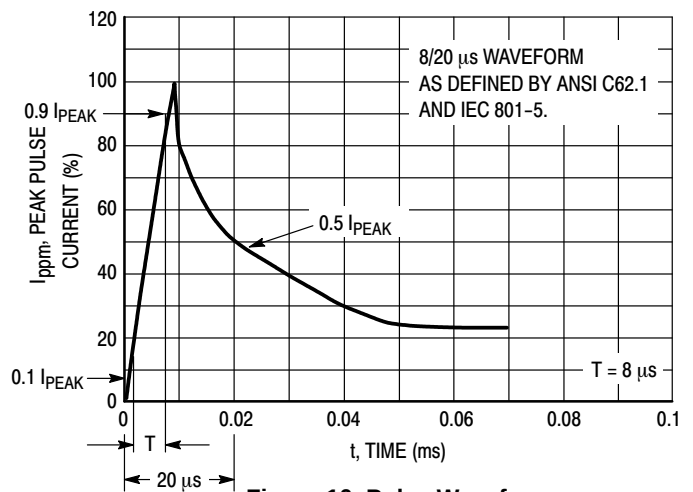
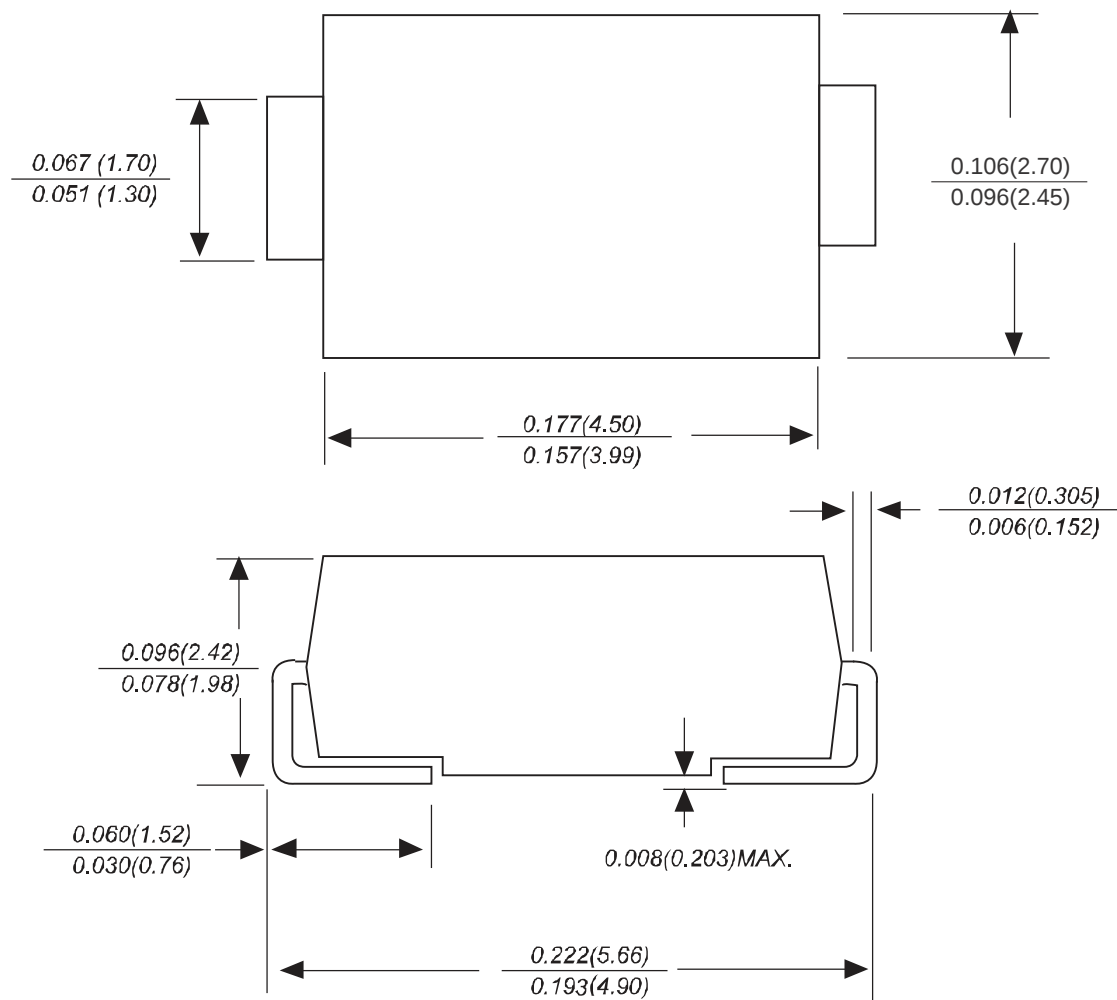


Figure 10. Pulse Waveform



SMA Package Outline Dimensions



Dimensions in inches and (millimeters)



Attention

- Any and all HUA XUAN YANG ELECTRONICS products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your HUA XUAN YANG ELECTRONICS representative nearest you before using any HUA XUAN YANG ELECTRONICS products described or contained herein in such applications.
- HUA XUAN YANG ELECTRONICS assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein.
- Specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- HUA XUAN YANG ELECTRONICS CO.,LTD. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all HUA XUAN YANG ELECTRONICS products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of HUA XUAN YANG ELECTRONICS CO.,LTD.
- Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. HUA XUAN YANG ELECTRONICS believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the HUA XUAN YANG ELECTRONICS product that you intend to use.