



## 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.



SMA



## Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
1SMA59xxBT3G	SMA	XX	5000

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

The marking bar indicates the cathode.

## Absolute Maximum Ratings(Ta=25°C)

Characteristic	Symbol	Value	Unit
Forward voltage @I <sub>F</sub> =200mA	V <sub>F</sub>	1.5	V
Power Dissipation	P <sub>D</sub>	1.5	W
Thermal Resistance, Junction to Ambient Air	R <sub>θJA</sub>	250	°C/W
Junction Temperature	T <sub>j</sub>	-65 to +150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 ~ +150	°C

Notes: Device mounted on ceramic PCB;5.0mm×7.0mm with pad areas 35 mm<sup>2</sup>



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

Device* (Note 1)	Device Marking	Zener Voltage (Note 2)				Zener Impedance			Leakage Current		I <sub>ZM</sub>
		V <sub>Z</sub> (Volts)			@ I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>		I <sub>R</sub> @ V <sub>R</sub>		
		Min	Nom	Max	mA	Ω	Ω	mA	μA	Volts	
1SMA5913BT3G	913B	3.13	3.3	3.47	113.6	10	500	1.0	50	1.0	455
1SMA5914BT3G	914B	3.42	3.6	3.78	104.2	9.0	500	1.0	35.5	1.0	417
1SMA5915BT3G	915B	3.70	3.9	4.10	96.1	7.5	500	1.0	12.5	1.0	385
1SMA5916BT3G	916B	4.08	4.3	4.52	87.2	6.0	500	1.0	2.5	1.0	349
1SMA5917BT3G	917B	4.46	4.7	4.94	79.8	5.0	500	1.0	2.5	1.5	319
1SMA5918BT3G	918B	4.84	5.1	5.36	73.5	4.0	350	1.0	2.5	2.0	294
1SMA5919BT3G	919B	5.32	5.6	5.88	66.9	2.0	250	1.0	2.5	3.0	268
1SMA5920BT3G	920B	5.89	6.2	6.51	60.5	2.0	200	1.0	2.5	4.0	242
1SMA5921BT3G	921B	6.46	6.8	7.14	55.1	2.5	200	1.0	2.5	5.2	221
1SMA5922BT3G	922B	7.12	7.5	7.88	50	3.0	400	0.5	2.5	6.0	200
1SMA5923BT3G	923B	7.79	8.2	8.61	45.7	3.5	400	0.5	2.5	6.5	183
1SMA5924BT3G	924B	8.64	9.1	9.56	41.2	4.0	500	0.5	2.5	7.0	165
1SMA5925BT3G	925B	9.5	10	10.5	37.5	4.5	500	0.25	2.5	8.0	150
1SMA5926BT3G	926B	10.45	11	11.55	34.1	5.5	550	0.25	0.5	8.4	136
1SMA5927BT3G	927B	11.4	12	12.6	31.2	6.5	550	0.25	0.5	9.1	125
1SMA5928BT3G	928B	12.35	13	13.65	28.8	7.0	550	0.25	0.5	9.9	115
1SMA5929BT3G	929B	14.25	15	15.75	25	9.0	600	0.25	0.5	11.4	100
1SMA5930BT3G	930B	15.2	16	16.8	23.4	10	600	0.25	0.5	12.2	94
1SMA5931BT3G	931B	17.1	18	18.9	20.8	12	650	0.25	0.5	13.7	83
1SMA5932BT3G	932B	19	20	21	18.7	14	650	0.25	0.5	15.2	75
1SMA5933BT3G	933B	20.9	22	23.1	17	17.5	650	0.25	0.5	16.7	68
1SMA5934BT3G	934B	22.8	24	25.2	15.6	19	700	0.25	0.5	18.2	63
1SMA5935BT3G	935B	25.65	27	28.35	13.9	23	700	0.25	0.5	20.6	56
1SMA5936BT3G	936B	28.5	30	31.5	12.5	26	750	0.25	0.5	22.8	50
1SMA5937BT3G	937B	31.35	33	34.65	11.4	33	800	0.25	0.5	25.1	45
1SMA5938BT3G	938B	34.2	36	37.8	10.4	38	850	0.25	0.5	27.4	42
1SMA5939BT3G	939B	37.05	39	40.95	9.6	45	900	0.25	0.5	29.7	38
1SMA5940BT3G	940B	40.85	43	45.15	8.7	53	950	0.25	0.5	32.7	35
1SMA5941BT3G	941B	44.65	47	49.35	8.0	67	1000	0.25	0.5	35.8	32
1SMA5942BT3G	942B	48.45	51	53.55	7.3	70	1100	0.25	0.5	38.8	29
1SMA5943BT3G	943B	53.2	56	58.8	6.7	86	1300	0.25	0.5	42.6	27
1SMA5945BT3G	945B	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<sub>Z</sub> limits are to be guaranteed at thermal equilibrium.



### Typical Characteristics

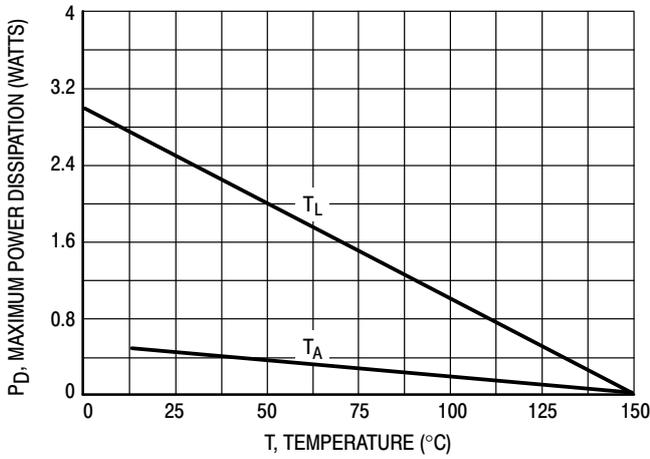


Figure 1. Steady State Power Derating

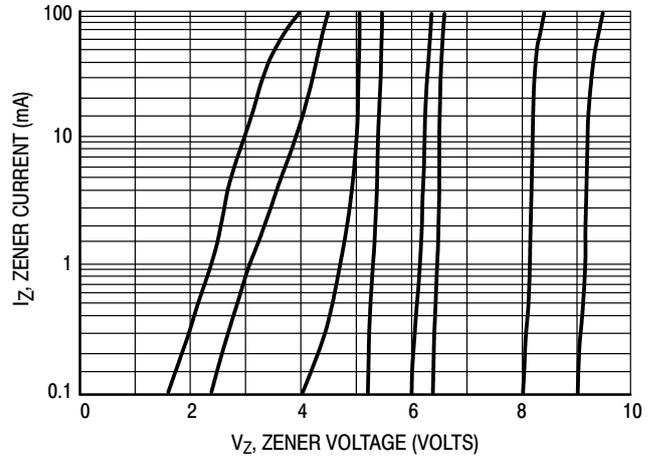


Figure 2.  $V_Z$  - 3.3 thru 10 Volts

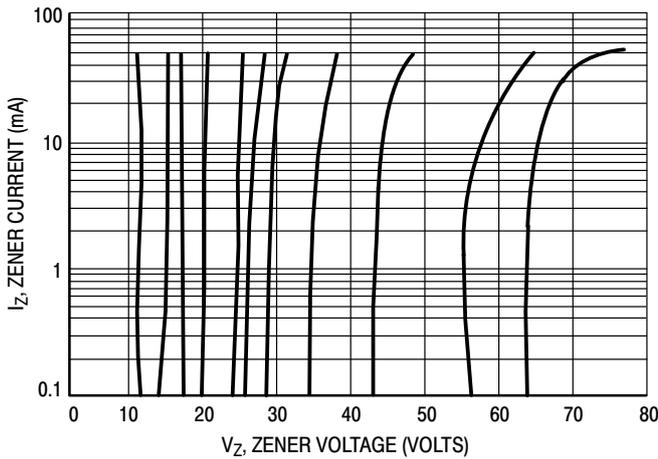


Figure 3.  $V_Z$  = 12 thru 68 Volts

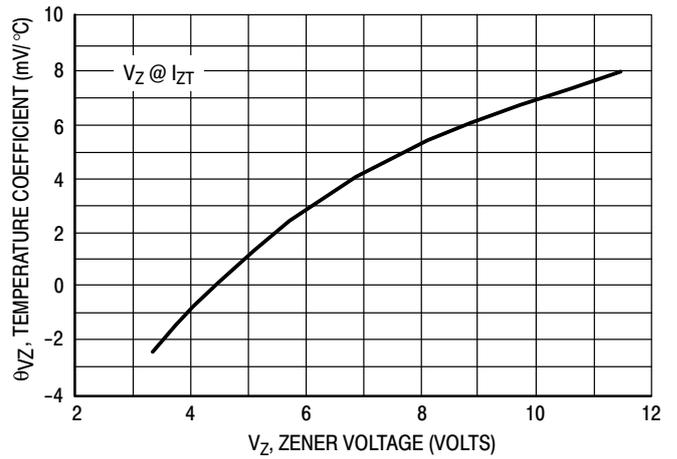


Figure 4. Zener Voltage - 3.3 to 12 Volts

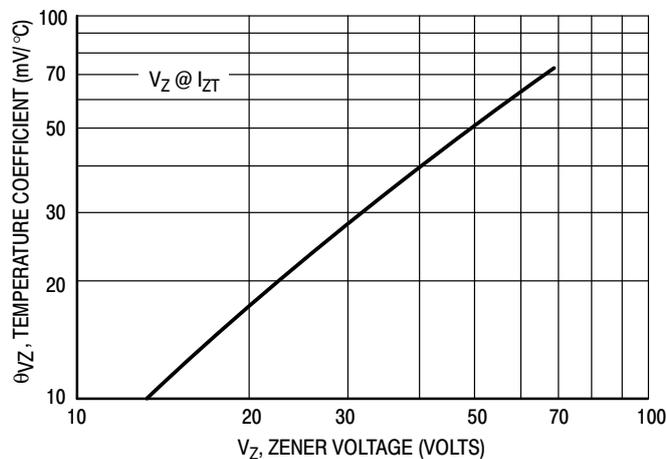


Figure 5. Zener Voltage - 12 to 68 Volts

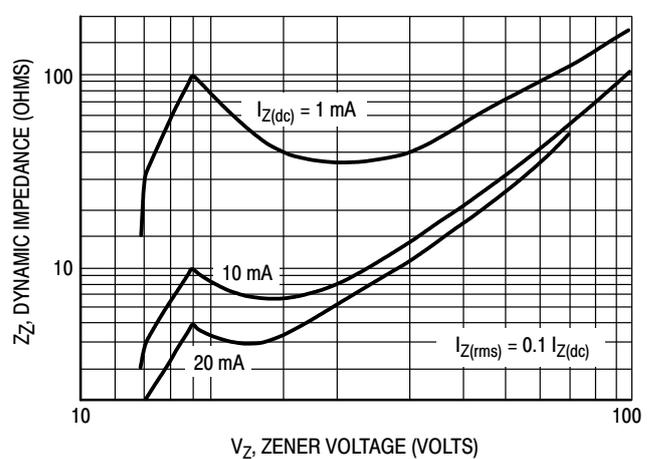


Figure 6. Effect of Zener Voltage

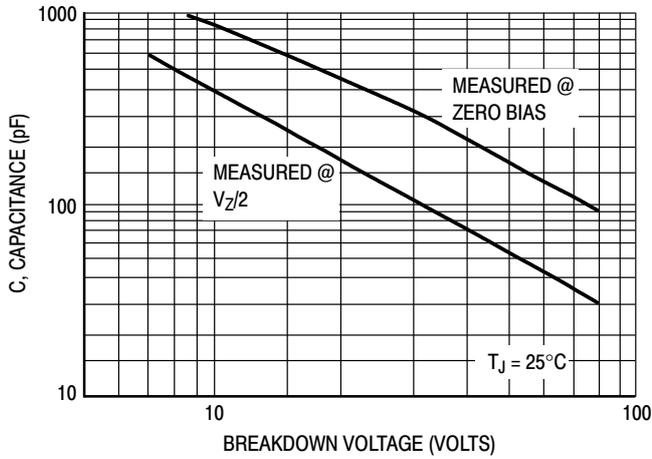


Figure 7. Capacitance Curve

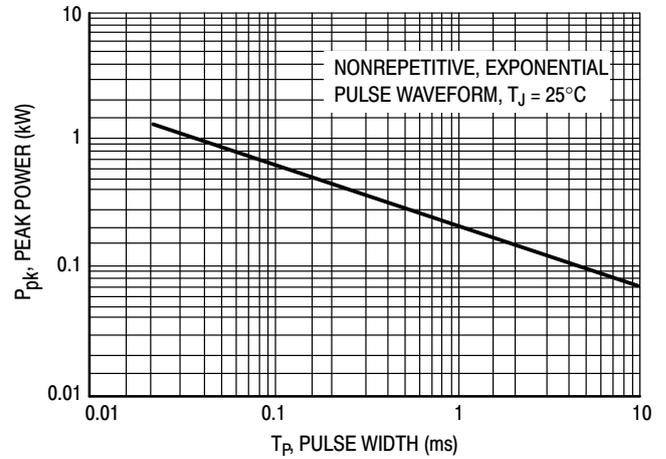


Figure 8. Typical Pulse Rating Curve

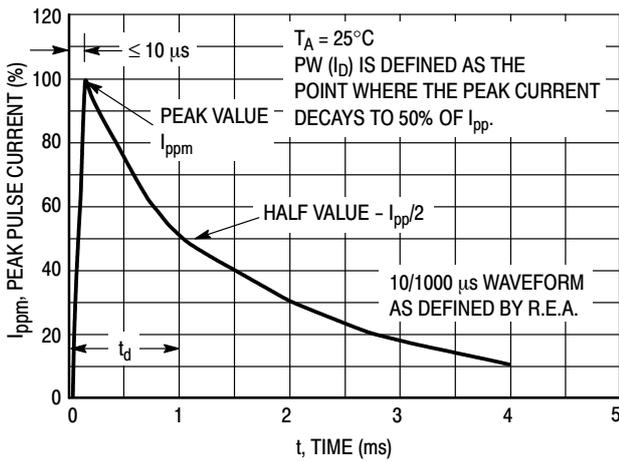


Figure 9. Pulse Waveform

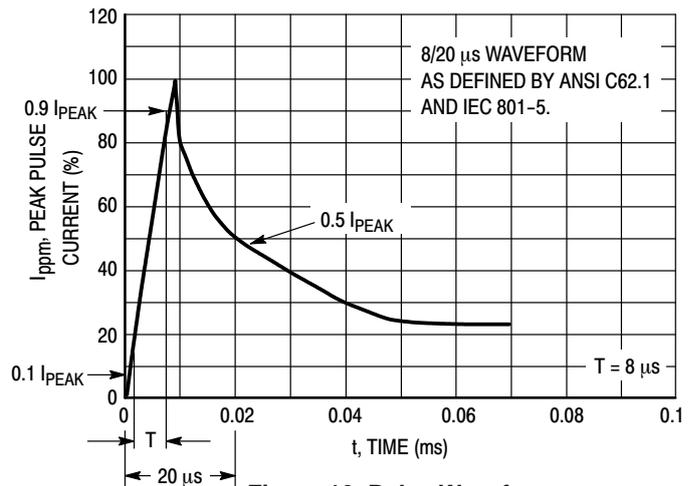
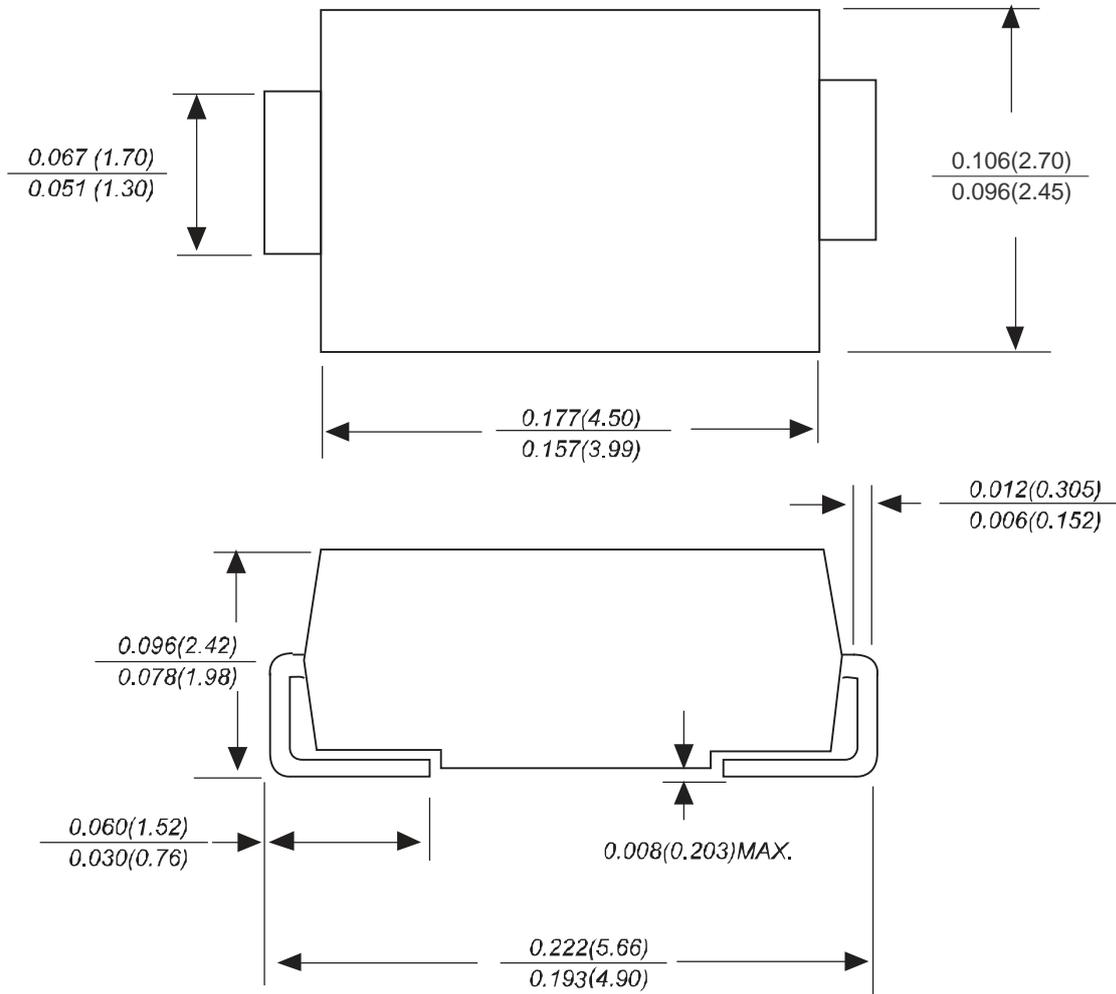


Figure 10. Pulse Waveform



### 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.