

1W, 10V - 200V Surface Mount Zener Diode

FEATURES

- AEC-Q101 qualified
- Photo Glass passivated chip junction
- Ideal for automated placement
- Low inductance
- Typical IR less than 1 μ A above 11V
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- For general purpose regulation and protection applications

MECHANICAL DATA

- Case: DO-214AC (SMA)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.060g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_Z	10 - 200	V
Test current I_{ZT}	1.2 - 25	mA
P_{tot}	1	W
$T_{J\ MAX}$	175	$^{\circ}$ C
Package	DO-214AC (SMA)	
Configuration	Single die	


**HALOGEN
FREE**

DO-214AC (SMA)


ABSOLUTE MAXIMUM RATINGS ($T_A = 25^{\circ}$ C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Forward voltage @ $I_F = 200$ mA	V_F	1.2	V
Total power dissipation at $T_A = 50^{\circ}$ C, derate above 50° C ⁽¹⁾	P_{tot}	1.25	W
Total power dissipation at $T_A = 75^{\circ}$ C	P_{tot}	1	W
Junction temperature	T_J	-55 to +175	$^{\circ}$ C
Storage temperature	T_{STG}	-55 to +175	$^{\circ}$ C

Notes:

1. Mounted on 5mm x 5mm Cu pad test board

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	29	$^{\circ}$ C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	120	$^{\circ}$ C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	31	$^{\circ}$ C/W

Thermal Performance Note: Units mounted on PCB (5mm x 5mm Cu pad test board)

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Part number (Note 1)	Marking code	Zener voltage			Test current	Regulator impedance		Test current	Leakage current		Maximum DC Zener Current
		$V_Z @ I_Z$			I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	$I_R @ V_R$		
		V			mA	Ω	Ω	mA	μA	V	mA
		Min	Nom	Max		Max	Max		Max		Max
1PGSMA4740H	P740A	9.5	10	10.5	25	7	700	0.25	5	7.6	91
1PGSMA4741H	P741A	10.5	11	11.6	23	8	700	0.25	1	8.4	83
1PGSMA4742H	P742A	11.4	12	12.6	21	9	700	0.25	1	9.1	76
1PGSMA4743H	P743A	12.4	13	13.7	19	10	700	0.25	1	9.9	69
1PGSMA4744H	P744A	14.3	15	15.8	17	14	700	0.25	1	11.4	61
1PGSMA4745H	P745A	15.2	16	16.8	15.5	16	700	0.25	1	12.2	57
1PGSMA4746H	P746A	17.1	18	18.9	14.0	20	750	0.25	1	13.7	50
1PGSMA4747H	P747A	19	20	21	12.5	22	750	0.25	1	15.2	45
1PGSMA4748H	P748A	20.9	22	23.1	11.5	23	750	0.25	1	16.7	41
1PGSMA4749H	P749A	22.8	24	25.2	10.5	25	750	0.25	1	18.2	38
1PGSMA4750H	P750A	25.7	27	28.4	9.5	35	750	0.25	1	20.6	34
1PGSMA4751H	P751A	28.5	30	31.5	8.5	40	1000	0.25	1	22.8	30
1PGSMA4752H	P752A	31.4	33	34.7	7.5	45	1000	0.25	1	25.1	27
1PGSMA4753H	P753A	34.2	36	37.8	7.0	50	1000	0.25	1	27.4	25
1PGSMA4754H	P754A	37.1	39	41	6.5	60	1000	0.25	1	29.7	23
1PGSMA4755H	P755A	40.9	43	45.2	6.0	70	1500	0.25	1	32.7	22
1PGSMA4756H	P756A	44.7	47	49.4	5.5	80	1500	0.25	1	35.8	19
1PGSMA4757H	P757A	48.5	51	53.6	5.0	95	1500	0.25	1	38.8	18
1PGSMA4758H	P758A	53.2	56	58.8	4.5	110	2000	0.25	1	42.6	16
1PGSMA4759H	P759A	58.9	62	65.1	4.0	125	2000	0.25	1	47.1	14
1PGSMA4760H	P760A	64.6	68	71.4	3.7	150	2000	0.25	1	51.7	13
1PGSMA4761H	P761A	71.3	75	78.8	3.3	175	2000	0.25	1	56.0	12
1PGSMA4762H	P762A	77.9	82	86.1	3.0	200	3000	0.25	1	62.2	11
1PGSMA4763H	P763A	86.5	91	95.6	2.8	250	3000	0.25	1	69.2	10
1PGSMA4764H	P764A	95	100	105	2.5	350	3000	0.25	1	76.0	9
1PGSMA110ZH	P110A	104.5	110	115.5	2.3	450	4000	0.25	1	83.6	8.9
1PGSMA120ZH	P120A	114	120	126	2.0	550	4500	0.25	1	91.2	8.3
1PGSMA130ZH	P130A	123.5	130	136.5	1.9	700	5000	0.25	1	98.8	7.7
1PGSMA150ZH	P150A	142.5	150	157.5	1.7	1000	6000	0.25	1	114.0	6.7
1PGSMA160ZH	P160A	152	160	168	1.6	1100	6500	0.25	1	121.6	6.3
1PGSMA180ZH	P180A	171	180	189	1.4	1200	7000	0.25	1	136.8	5.6
1PGSMA200ZH	P200A	190	200	210	1.2	1500	8000	0.25	1	152.0	5.0

Note:

1. Tolerance and Voltage Regulation Designation. The type number listed indicates a tolerance of $\pm 5\%$.

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾	PACKAGE	PACKING
1PGSMAxH	DO-214AC (SMA)	7,500 / Tape & Reel

Notes:

1. "x" defines voltage from 10V(1PGSMA4740H) to 200V(1PGSMA200ZH)

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Steady State Power Derating

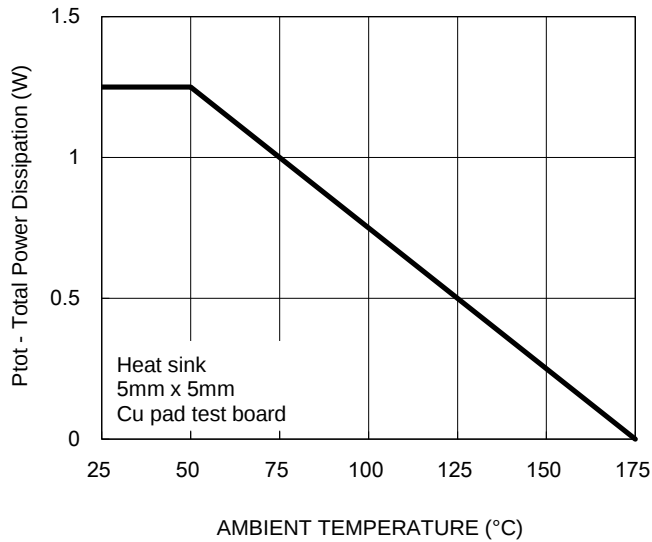


Fig.2 Typical Junction Capacitance

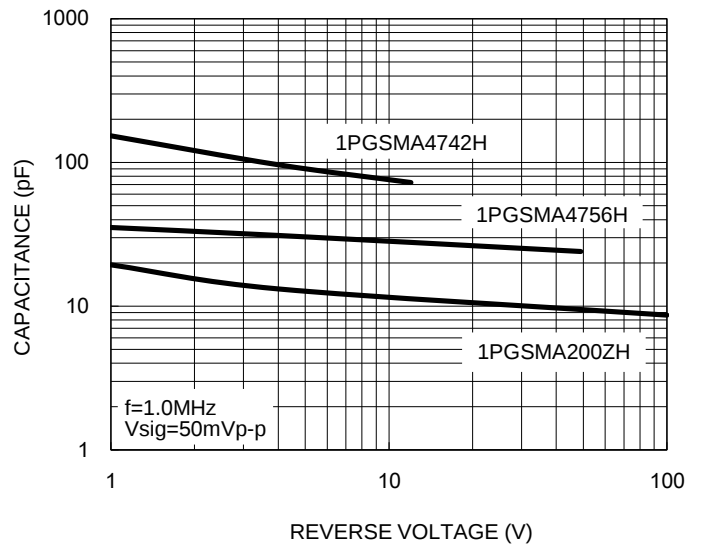
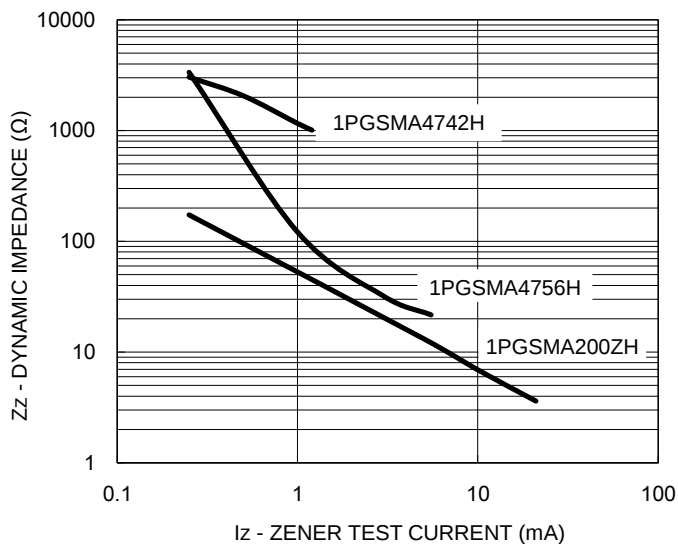
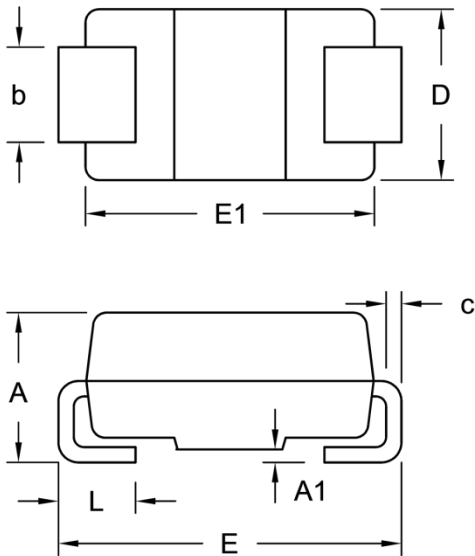


Fig.3 Typical Zener Impedance

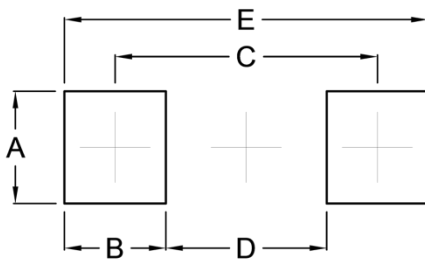


PACKAGE OUTLINE DIMENSIONS

DO-214AC (SMA)


DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.99	2.50	0.078	0.098
A1	0.10	0.20	0.004	0.008
b	1.27	1.58	0.050	0.062
c	0.15	0.31	0.006	0.012
D	2.29	2.83	0.090	0.111
E	4.95	5.33	0.195	0.210
E1	4.06	4.60	0.160	0.181
L	0.90	1.41	0.035	0.056

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.68	0.066
B	1.52	0.060
C	3.93	0.155
D	2.41	0.095
E	5.45	0.215

MARKING DIAGRAM



P/N = Marking Code
G = Green Compound
YW = Date Code
F = Factory Code

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Taiwan Semiconductor:

[1PGSMA4749HR3G](#) [1PGSMA4761HR3G](#) [1PGSMA150ZHR3G](#) [1PGSMA4748HR3G](#) [1PGSMA4741HR3G](#)
[1PGSMA4760HR3G](#) [1PGSMA4757HR3G](#) [1PGSMA4763HR3G](#) [1PGSMA4742HR3G](#) [1PGSMA4756HR3G](#)
[1PGSMA4751HR3G](#) [1PGSMA4746HR3G](#) [1PGSMA4755HR3G](#) [1PGSMA200ZHR3G](#) [1PGSMA4750HR3G](#)
[1PGSMA160ZHR3G](#) [1PGSMA4745HR3G](#) [1PGSMA4754HR3G](#) [1PGSMA4753HR3G](#) [1PGSMA180ZHR3G](#)
[1PGSMA4747HR3G](#) [1PGSMA4752HR3G](#) [1PGSMA4744HR3G](#) [1PGSMA4762HR3G](#) [1PGSMA4740HR3G](#)
[1PGSMA4764HR3G](#) [1PGSMA110ZH](#) [1PGSMA120ZH](#) [1PGSMA130ZH](#) [1PGSMA150ZH](#) [1PGSMA160ZH](#)
[1PGSMA180ZH](#) [1PGSMA200ZH](#) [1PGSMA4740H](#) [1PGSMA4741H](#) [1PGSMA4742H](#) [1PGSMA4743H](#) [1PGSMA4744H](#)
[1PGSMA4745H](#) [1PGSMA4746H](#) [1PGSMA4747H](#) [1PGSMA4748H](#) [1PGSMA4749H](#) [1PGSMA4750H](#)
[1PGSMA4751H](#) [1PGSMA4752H](#) [1PGSMA4753H](#) [1PGSMA4754H](#) [1PGSMA4755H](#) [1PGSMA4756H](#) [1PGSMA4757H](#)
[1PGSMA4758H](#) [1PGSMA4759H](#) [1PGSMA4760H](#) [1PGSMA4761H](#) [1PGSMA4762H](#) [1PGSMA4763H](#)
[1PGSMA4764H](#)