

5W, 11V - 51V Surface Mount Silicon Zener Diode

FEATURES

- Photo Glass passivated junction
- Ideal for automated placement
- Low inductance
- Moisture sensitivity level: level 1, per J-STD-020
- AEC-Q101 qualified available: ordering code with suffix "H"
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS

PARAMETER	VALUE	UNIT
V_Z	11 - 51	V
P_D	5.0	W
$T_{J\ MAX}$	175	°C
Package	DO-214AB (SMC)	
Configuration	Single die	

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter



MECHANICAL DATA

- Case: DO-214AB (SMC)
- Molding compound meets UL 94 V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Weight: 0.21 g (approximately)



DO-214AB (SMC)

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

PARAMETER	SYMBOL	VALUE	UNIT
DC power dissipation at $T_L = 75^\circ\text{C}$, measure at zero lead length (Note 1) derate above 75°C	P_D	5	W
Junction temperature	T_J	-55 to +175	°C
Storage temperature	T_{STG}	-55 to +175	°C

Note:

1. Mounted on Cu-Pad size 16mm x 16mm on PCB

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	20	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	55	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	22	°C/W

Thermal Performance Note: Units mounted on PCB (16mm x 16mm Cu pad test board)

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

Device (Note 1)	Device Marking Code	Nominal Zener Voltage			Test current	Zener Impedance			Leakage Current		Maximum DC Zener Current
		V _Z @ I _{ZT}			I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _R @ V _R		I _{ZM}	
		V			mA	Ω	Ω	mA	μA	V	mA
		Min.	Nom.	Max.							
1PGSMC5348	P348B	10.45	11	11.55	125	3	125	1	5	8.4	430
1PGSMC5349	P349B	11.40	12	12.60	100	3	150	1	2	9.1	395
1PGSMC5350	P350B	12.35	13	13.65	100	3	150	1	1	9.9	365
1PGSMC5351	P351B	13.30	14	14.70	100	3	150	1	1	10.6	345
1PGSMC5352	P352B	14.25	15	15.75	75	3	150	1	1	11.5	315
1PGSMC5353	P353B	15.20	16	16.80	75	3	150	1	1	12.2	295
1PGSMC5354	P354B	16.15	17	17.85	70	3	150	1	0.5	12.9	280
1PGSMC5355	P355B	17.10	18	18.90	65	3	150	1	0.5	13.7	264
1PGSMC5356	P356B	18.05	19	19.95	65	3	150	1	0.5	14.4	250
1PGSMC5357	P357B	19.00	20	21.00	65	3	150	1	0.5	15.2	237
1PGSMC5358	P358B	20.90	22	23.10	50	4	150	1	0.5	16.7	216
1PGSMC5359	P359B	22.80	24	25.20	50	4	180	1	0.5	18.2	198
1PGSMC5360	P360B	23.75	25	26.25	50	4	180	1	0.5	19.0	190
1PGSMC5361	P361B	25.65	27	28.35	50	5	180	1	0.5	20.6	176
1PGSMC5362	P362B	26.60	28	29.40	50	6	180	1	0.5	21.2	170
1PGSMC5363	P363B	28.50	30	31.50	40	8	180	1	0.5	22.8	158
1PGSMC5364	P364B	31.35	33	34.65	40	10	180	1	0.5	25.1	144
1PGSMC5365	P365B	34.20	36	37.80	30	11	200	1	0.5	27.4	132
1PGSMC5366	P366B	37.05	39	40.95	30	14	200	1	0.5	29.7	122
1PGSMC5367	P367B	40.85	43	45.15	30	20	200	1	0.5	32.7	110
1PGSMC5368	P368B	44.65	47	49.35	25	25	200	1	0.5	35.8	100
1PGSMC5369	P369B	48.45	51	53.55	25	27	200	1	0.5	38.8	93

Notes:

1. Tolerance and type number designation the type numbers listed indicate a tolerance of 5%

ORDERING INFORMATION

ORDERING CODE (Note 1, 2)	PACKAGE	PACKING	STATUS
1PGSMC53xxHR7G	SMC	850 / 7" Plastic reel	NRND
1PGSMC53xxHR6G	SMC	3,000 / 13" Paper reel	NRND
1PGSMC53xxHM6G	SMC	3,000 / 13" Plastic reel	NRND
1PGSMC53xx R7G	SMC	850 / 7" Plastic reel	NRND
1PGSMC53xx R6G	SMC	3,000 / 13" Paper reel	NRND
1PGSMC53xx M6G	SMC	3,000 / 13" Plastic reel	NRND
1PGSMC53xxHV7G	Matrix SMC	850 / 7" Plastic reel	Active
1PGSMC53xxHV6G	Matrix SMC	3,000 / 13" Plastic reel	Active
1PGSMC53xx V7G	Matrix SMC	850 / 7" Plastic reel	Active
1PGSMC53xx V6G	Matrix SMC	3,000 / 13" Plastic reel	Active

Note:

1. "xx" defines voltage from 11V (1PGSMC5348) to 51V (1PGSMC5369)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Steady State Power Derating

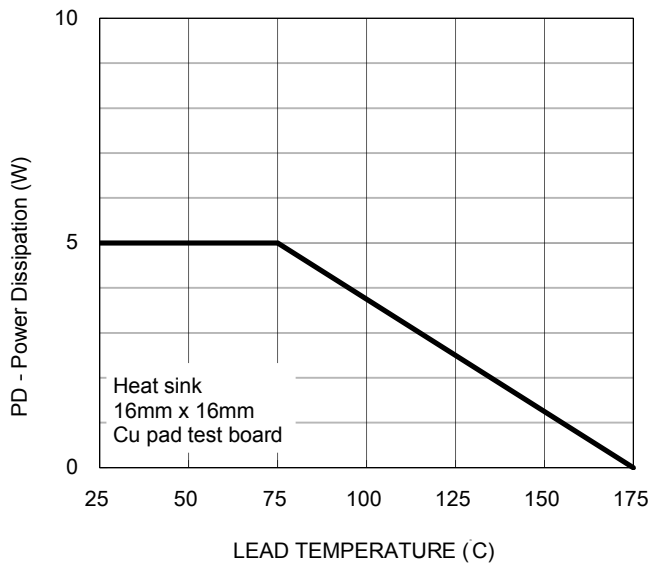


Fig.2 Typical Junction Capacitance

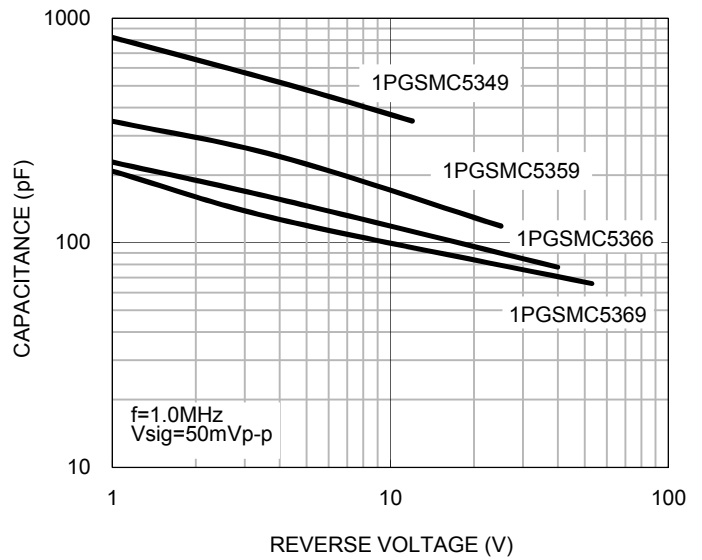
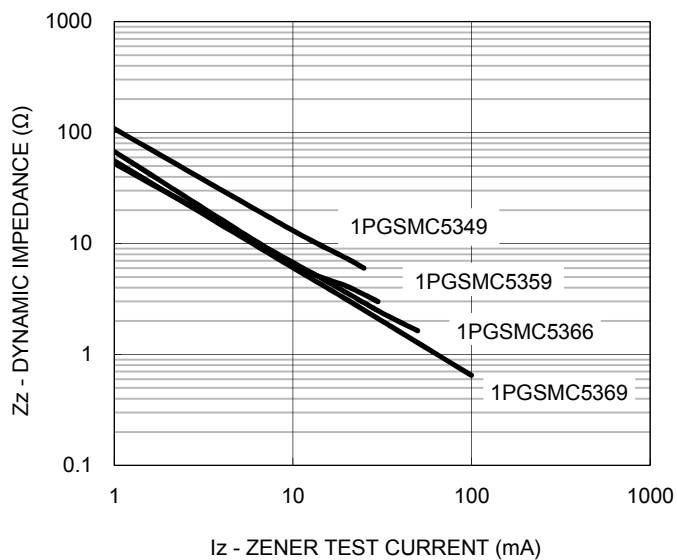
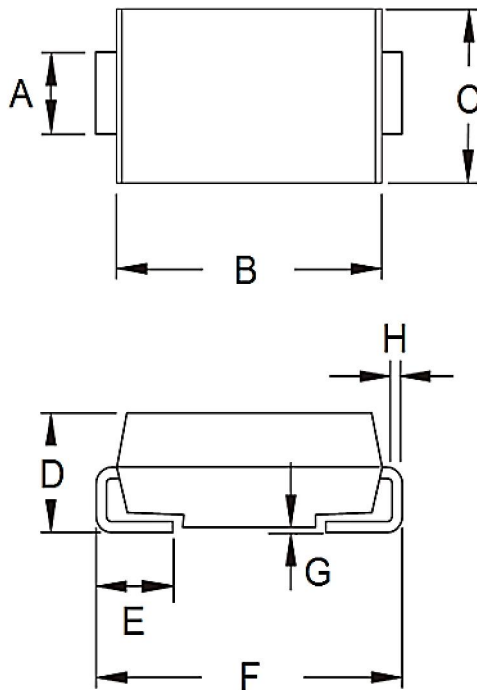


Fig.3 Typical Zener Impedance

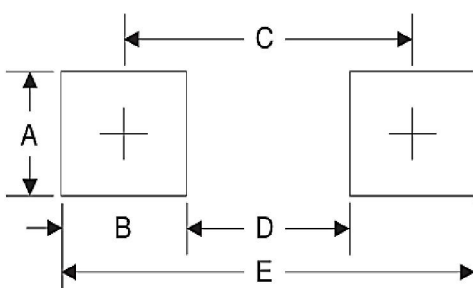


PACKAGE OUTLINE DIMENSIONS

DO-214AB (SMC)


DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.90	3.20	0.114	0.126
B	6.60	7.11	0.260	0.280
C	5.59	6.22	0.220	0.245
D	2.00	2.62	0.079	0.103
E	1.00	1.60	0.039	0.063
F	7.75	8.13	0.305	0.320
G	0.10	0.20	0.004	0.008
H	0.15	0.31	0.006	0.012

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	3.30	0.130
B	2.50	0.098
C	6.80	0.268
D	4.40	0.173
E	9.40	0.370

MARKING DIAGRAM



SMC



Matrix SMC

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

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Taiwan Semiconductor:

<u>1PGSMC5352 V7G</u>	<u>1PGSMC5351HV6G</u>	<u>1PGSMC5359 V6G</u>	<u>1PGSMC5355 V6G</u>	<u>1PGSMC5350HV6G</u>
<u>1PGSMC5364 V7G</u>	<u>1PGSMC5365 V6G</u>	<u>1PGSMC5352 V6G</u>	<u>1PGSMC5360HV6G</u>	<u>1PGSMC5356 V7G</u>
<u>1PGSMC5364HV7G</u>	<u>1PGSMC5348 V7G</u>	<u>1PGSMC5369 V7G</u>	<u>1PGSMC5357HV7G</u>	<u>1PGSMC5362HV7G</u>
<u>1PGSMC5360 V7G</u>	<u>1PGSMC5369HV7G</u>	<u>1PGSMC5354 V6G</u>	<u>1PGSMC5353 V7G</u>	<u>1PGSMC5363 V6G</u>
<u>1PGSMC5359 V7G</u>	<u>1PGSMC5358 V7G</u>	<u>1PGSMC5365HV6G</u>	<u>1PGSMC5367HV7G</u>	<u>1PGSMC5361 V6G</u>
<u>1PGSMC5355 V7G</u>	<u>1PGSMC5358HV6G</u>	<u>1PGSMC5353HV6G</u>	<u>1PGSMC5354 V7G</u>	<u>1PGSMC5350 V6G</u>
<u>1PGSMC5349HV7G</u>	<u>1PGSMC5363 V7G</u>	<u>1PGSMC5349 V6G</u>	<u>1PGSMC5368HV6G</u>	<u>1PGSMC5367 V6G</u>
<u>1PGSMC5351 V7G</u>	<u>1PGSMC5354HV7G</u>	<u>1PGSMC5360 V6G</u>	<u>1PGSMC5362 V6G</u>	<u>1PGSMC5369 V6G</u>
<u>1PGSMC5364 V6G</u>	<u>1PGSMC5357 V6G</u>	<u>1PGSMC5348HV6G</u>	<u>1PGSMC5363HV6G</u>	<u>1PGSMC5354HV6G</u>
<u>1PGSMC5366 V6G</u>	<u>1PGSMC5364HV6G</u>	<u>1PGSMC5356 V6G</u>	<u>1PGSMC5359HV7G</u>	<u>1PGSMC5352HV7G</u>
<u>1PGSMC5368 V7G</u>	<u>1PGSMC5349 V7G</u>	<u>1PGSMC5349HV6G</u>	<u>1PGSMC5350 V7G</u>	<u>1PGSMC5365HV7G</u>
<u>1PGSMC5359HV6G</u>	<u>1PGSMC5362HV6G</u>	<u>1PGSMC5355HV6G</u>	<u>1PGSMC5350HV7G</u>	<u>1PGSMC5361 V7G</u>
<u>1PGSMC5361HV6G</u>	<u>1PGSMC5367 V7G</u>	<u>1PGSMC5355HV7G</u>	<u>1PGSMC5360HV7G</u>	<u>1PGSMC5365 V7G</u>
<u>1PGSMC5366 V7G</u>	<u>1PGSMC5361HV7G</u>	<u>1PGSMC5351 V6G</u>	<u>1PGSMC5362 V7G</u>	<u>1PGSMC5356HV7G</u>
<u>1PGSMC5367HV6G</u>	<u>1PGSMC5366HV7G</u>	<u>1PGSMC5366HV6G</u>	<u>1PGSMC5357HV6G</u>	<u>1PGSMC5348HV7G</u>
<u>1PGSMC5357 V7G</u>	<u>1PGSMC5358 V6G</u>	<u>1PGSMC5368 V6G</u>	<u>1PGSMC5369HV6G</u>	<u>1PGSMC5358HV7G</u>
<u>1PGSMC5368HV7G</u>	<u>1PGSMC5353HV7G</u>	<u>1PGSMC5351HV7G</u>	<u>1PGSMC5352HV6G</u>	<u>1PGSMC5363HV7G</u>
<u>1PGSMC5356HV6G</u>	<u>1PGSMC5353 V6G</u>			