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

FEATURES

- Photo Glass passivated junction
- Low profile package
- Ideal for automated placement
- Built-in strain relief
- Low inductance
- 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
Test current I_{ZT}	25 - 125	mA
P_{tot}	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
- Part no. with suffix "H" means AEC-Q101 qualified
- Packing code with suffix "G" means green compound (halogen-free)
- Moisture sensitivity level: level 1, per J-STD-020
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.1 g (approximately)

DO-214AB (SMC)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
DC power dissipation at T_L=75°C, measure at zero lead length (Note 1) derate above 75°C	P_{tot}	5.0	Watts
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**	**LIMIT**	**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 recommended PCB (16mm x 16mm Cu pad test board)

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

Device (Note 1)	Device Marking Code	Nominal Zener Voltage			Test current	Zener Impedance (Note 3)			Leakage Current		Maximum DC Zener Current
		V_z@I_z			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK}@I_{ZK}		I_R@V_R		I_{ZM}
		V			mA	Ω	Ω	mA	μA	V	mA(DC)
		Min.	Nom (Note 2)	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	100	1	2	9.1	395
1PGSMC5350	P350B	12.35	13	13.65	100	3	100	1	1	9.9	365
1PGSMC5351	P351B	13.30	14	14.70	100	3	75	1	1	10.6	345
1PGSMC5352	P352B	14.25	15	15.75	75	3	75	1	1	11.5	315
1PGSMC5353	P353B	15.20	16	16.80	75	3	75	1	1	12.2	295
1PGSMC5354	P354B	16.15	17	17.85	70	3	75	1	0.5	12.9	280
1PGSMC5355	P355B	17.10	18	18.90	65	3	75	1	0.5	13.7	264
1PGSMC5356	P356B	18.05	19	19.95	65	3	75	1	0.5	14.4	250
1PGSMC5357	P357B	19.00	20	21.00	65	3	75	1	0.5	15.2	237
1PGSMC5358	P358B	20.90	22	23.10	50	4	75	1	0.5	16.7	216
1PGSMC5359	P359B	22.80	24	25.20	50	4	100	1	0.5	18.2	198
1PGSMC5360	P360B	23.75	25	26.25	50	4	110	1	0.5	19.0	190
1PGSMC5361	P361B	25.65	27	28.35	50	5	120	1	0.5	20.6	176
1PGSMC5362	P362B	26.60	28	29.40	50	6	130	1	0.5	21.2	170
1PGSMC5363	P363B	28.50	30	31.50	40	8	140	1	0.5	22.8	158
1PGSMC5364	P364B	31.35	33	34.65	40	10	150	1	0.5	25.1	144
1PGSMC5365	P365B	34.20	36	37.80	30	11	160	1	0.5	27.4	132
1PGSMC5366	P366B	37.05	39	40.95	30	14	170	1	0.5	29.7	122
1PGSMC5367	P367B	40.85	43	45.15	30	20	190	1	0.5	32.7	110
1PGSMC5368	P368B	44.65	47	49.35	25	25	210	1	0.5	35.8	100
1PGSMC5369	P369B	48.45	51	53.55	25	27	230	1	0.5	38.8	93

Notes:

1. Tolerance and type number designation the type numbers listed indicate a tolerance of 5%
2. Zener voltage (V_z) measurement
   Nominal Zener voltage is measured with the device junction in thermal equilibrium with ambient temperature 25°C
3. Zener impedance (Z_z) derivation : Z_{ZT} and Z_{ZK} are measured by dividing the AC voltage drop across the device by the AC current applied.
   The specified limits are for I_z(AC) = 0.1 I_z(DC) with the AC frequency = 60 Hz

ORDERING INFORMATION

PART NO.	PARTNO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
1PGSMCxxxx (Note 1, 2)	H	R7	G	SMC	850 / 7" Plastic reel
		R6		SMC	3,000 / 13" Paper reel
		M6		SMC	3,000 / 13" Plastic reel

Note :

1. "xxxx" defines voltage from 11V (1PGSMC5348) to 51V (1PGSMC5369)
2. Whole series with green compound (halogen-free)

EXAMPLE

EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
1PGSMC5348HR6G	1PGSMC5348	H	R6	G	AEC-Q101 qualified Green compound

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Steady State Power Durating

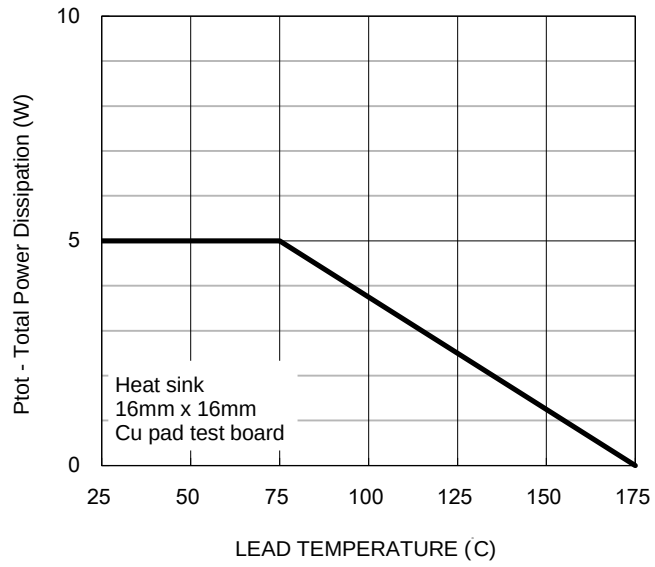


Fig.2 Typical Junction Capacitance

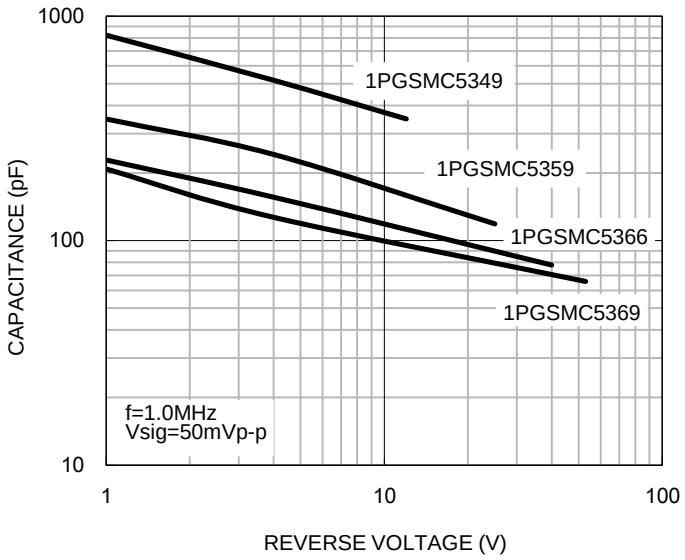
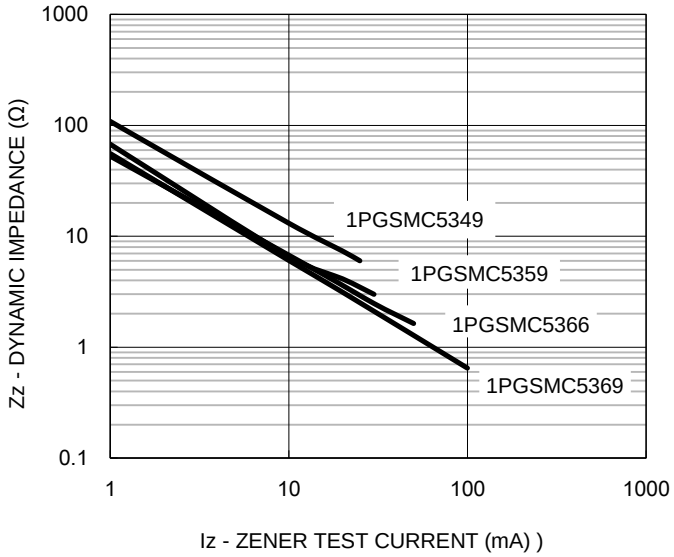
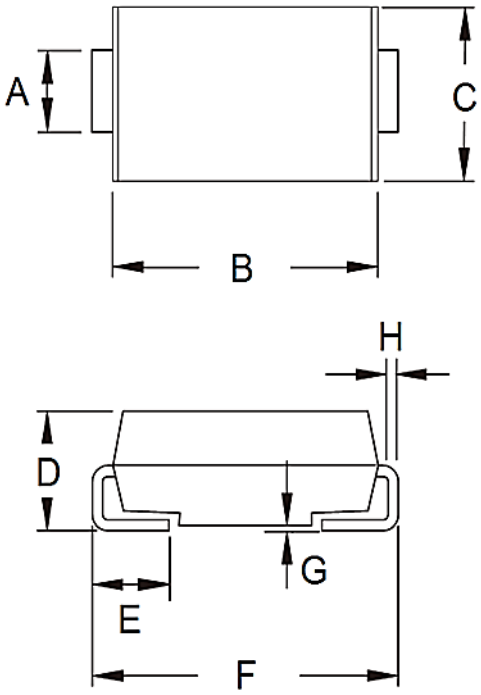


Fig.3 Typical Zener Impendance



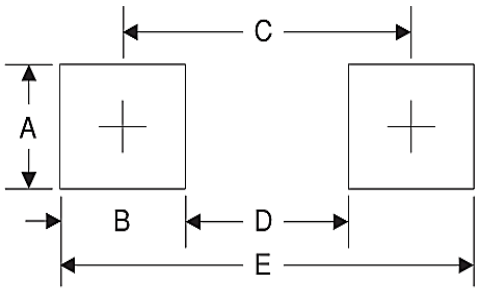
PACKAGE OUTLINE DIMENSIONS

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

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

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