

400W, 10V - 100V Surface Mount Transient Voltage Suppressor

FEATURES

- AEC-Q101 qualified
- Low profile package
- Photo Glass passivated junction
- Excellent clamping capability
- Moisture sensitivity level: level 1, per J-STD-020
- 400 watts peak pulse power capability with a 10 / 1000 μ s waveform (300W above 78V)
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

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

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: As marked
- Weight: 0.06 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_{WM}	10 - 100	V
V_{BR}	11.7 - 117	V
T_{JMAX}	175	$^{\circ}$ C
Package	DO-214AC (SMA)	
Configuration	Single die	



DO-214AC (SMA)

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^{\circ}$ C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation (Note 1)	P_{PPM}	400	W
Steady state power dissipation	P_D	1	W
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	40	A
Maximum instantaneous forward voltage at 25 A for unidirectional only	V_F	3.5	V
Operating junction temperature range	T_J	-55 to +175	$^{\circ}$ C
Storage temperature range	T_{STG}	-55 to +175	$^{\circ}$ C

Notes:

1. Non-repetitive Current Pulse Per Fig.3 and derated above $T_A=25^{\circ}$ C Per Fig.2. Rating is 300 W for $V_{WM} > 78$ V

Devices for Bi-directional Applications

1. For Bi-directional use CA suffix (e.g. PGSMAJ10CA).
2. Electrical Characteristics Apply in Both Directions

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP.	UNIT
Junction-to-lead thermal resistance per diode	$R_{\theta JL}$	29	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\theta JA}$	120	°C/W
Junction-to-case thermal resistance per diode	$R_{\theta JC}$	31	°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	Marking code	Breakdown voltage $V_{BR@I_T}$ (V) (Note 1)		Test current I_T (mA)	Working stand-off voltage V_{WM} (V)	Maximum reverse leakage current $I_R@V_{WM}$ (μA) (Note 1)	Maximum peak impulse current I_{PPM} (A) $t_p = 10/1000 \mu\text{s}$	Maximum clamping voltage $V_C@I_{PPM}$ (V) $t_p = 10/1000 \mu\text{s}$
		Min.	Max.					
PGSMAJ10A	PAX	11.1	12.30	1	10	5	23.5	17.0
PGSMAJ11A	PAZ	12.2	13.50	1	11	1	22.0	18.2
PGSMAJ12A	PBE	13.3	14.70	1	12	1	20.1	19.9
PGSMAJ13A	PBG	14.4	15.90	1	13	1	18.6	21.5
PGSMAJ14A	PBK	15.6	17.20	1	14	1	17.2	23.2
PGSMAJ15A	PBM	16.7	18.50	1	15	1	16.4	24.4
PGSMAJ16A	PBP	17.8	19.70	1	16	1	15.4	26.0
PGSMAJ17A	PBR	18.9	20.90	1	17	1	14.5	27.6
PGSMAJ18A	PBT	20.0	22.10	1	18	1	13.7	29.2
PGSMAJ20A	PBV	22.2	24.50	1	20	1	12.3	32.4
PGSMAJ22A	PBX	24.4	26.90	1	22	1	11.3	35.5
PGSMAJ24A	PBZ	26.7	29.50	1	24	1	10.3	38.9
PGSMAJ26A	PCE	28.9	31.90	1	26	1	9.5	42.1
PGSMAJ28A	PCG	31.1	34.40	1	28	1	8.8	45.4
PGSMAJ30A	PCK	33.3	36.8	1	30	1	8.3	48.4
PGSMAJ33A	PCM	36.7	40.6	1	33	1	7.5	53.3
PGSMAJ36A	PCP	40.0	44.2	1	36	1	6.9	58.1
PGSMAJ40A	PCR	44.4	49.1	1	40	1	6.2	64.5
PGSMAJ43A	PCT	47.8	52.8	1	43	1	5.8	69.4
PGSMAJ45A	PCV	50.0	55.3	1	45	1	5.5	72.7
PGSMAJ48A	PCX	53.3	58.9	1	48	1	5.2	77.4
PGSMAJ51A	PCZ	56.7	62.7	1	51	1	4.9	82.4
PGSMAJ54A	PRE	60.0	66.3	1	54	1	4.6	87.1
PGSMAJ58A	PRG	64.4	71.2	1	58	1	4.3	93.6
PGSMAJ60A	PRK	66.7	73.7	1	60	1	4.1	96.8
PGSMAJ64A	PRM	71.1	78.6	1	64	1	3.9	103
PGSMAJ70A	PRP	77.8	86	1	70	1	3.5	113
PGSMAJ75A	PRR	83.3	92.1	1	75	1	3.3	121
PGSMAJ78A	PRT	86.7	95.8	1	78	1	3.2	126
PGSMAJ85A	PRV	94.4	104	1	85	1	2.2	137
PGSMAJ90A	PRX	100	111	1	90	1	2.1	146
PGSMAJ100A	PRZ	111	123	1	100	1	1.9	162

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2
2. Mounted on 5 x 5mm copper pads to each terminal
3. Lead temperature at $T_L=75^\circ\text{C}$
4. Measure on 8.3ms single half sine-wave duty cycle=4 pulses per minutes maximum
5. Peak pulse power waveform is 10/1000 μs

ORDERING INFORMATION		
ORDERING CODE (Note 1)	PACKAGE	PACKING
PGSMAJxxxAHE3G	Clip SMA	1,800 / 7" Plastic reel
PGSMAJxxxAHE2G	Clip SMA	7,500 / 13" Plastic reel
PGSMAJxxxA E3G	Clip SMA	1,800 / 7" Plastic reel
PGSMAJxxxA E2G	Clip SMA	7,500 / 13" Plastic reel
PGSMAJxxxCAHE3G	Clip SMA	1,800 / 7" Plastic reel
PGSMAJxxxCAHE2G	Clip SMA	7,500 / 13" Plastic reel
PGSMAJxxxCA E3G	Clip SMA	1,800 / 7" Plastic reel
PGSMAJxxxCA E2G	Clip SMA	7,500 / 13" Plastic reel
PGSMAJxxxA R3G	SMA	1,800 / 7" Plastic reel
PGSMAJxxxAHR3G	SMA	1,800 / 7" Plastic reel
PGSMAJxxxA M2G	SMA	7,500 / 13" Plastic reel
PGSMAJxxxAHM2G	SMA	7,500 / 13" Plastic reel

Note 1:

"xxx" defines voltage from 10V (PGSMAJ10A) to 100V (PGSMAJ100A)

Not Recommended

CHARACTERISTICS CURVES

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

Fig.1 Peak Pulse Power Rating Curve

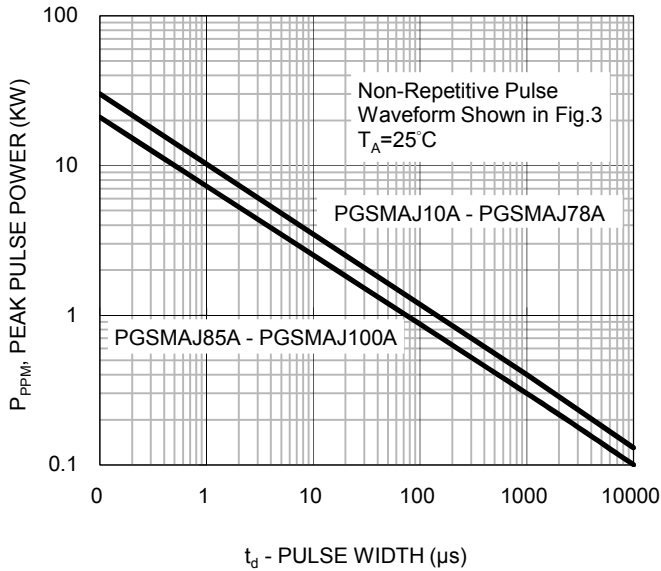


Fig.2 Pulse Derating Curve

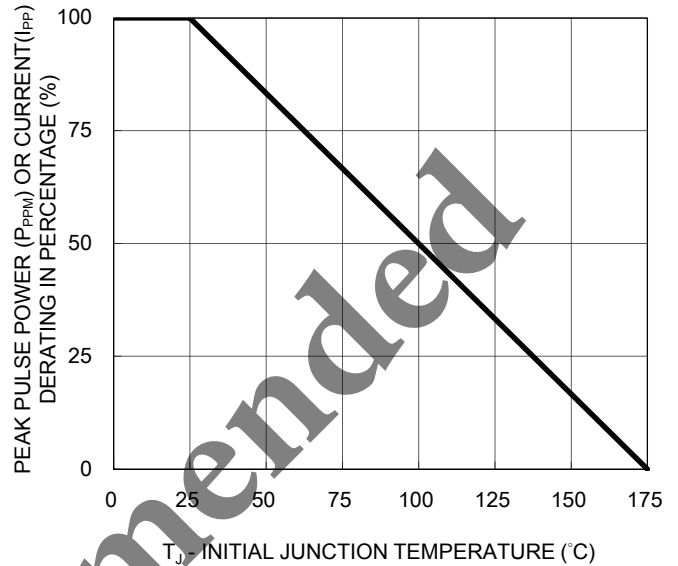


Fig.3 Clamping Power Pulse Waveform

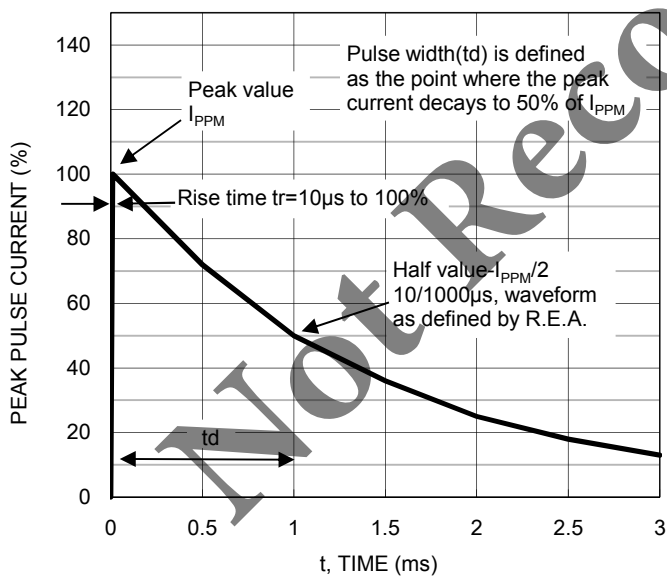
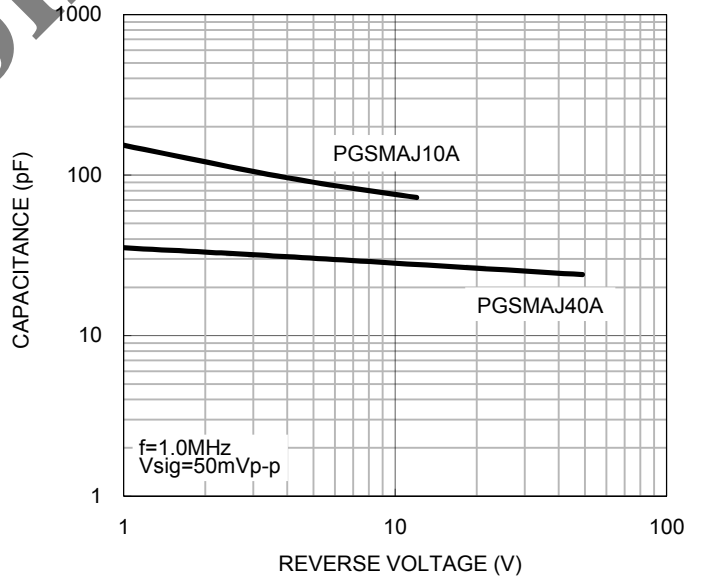
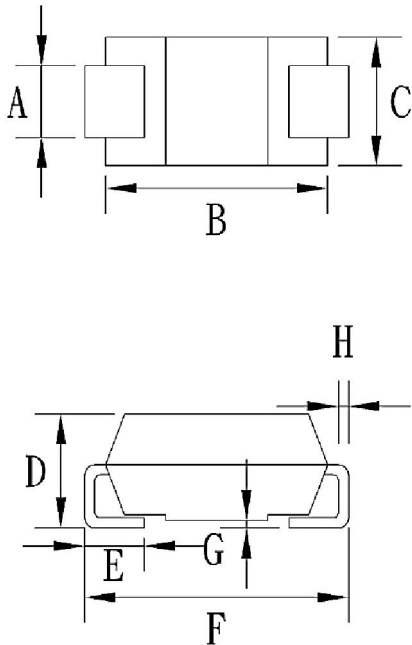


Fig.4 Typical Junction Capacitance



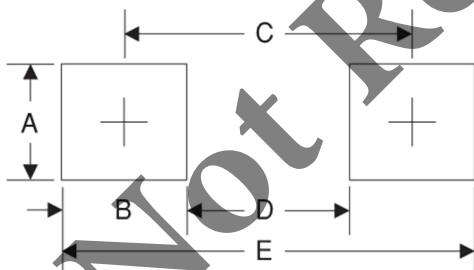
PACKAGE OUTLINE DIMENSIONS

DO-214AC (SMA)



DIM	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.27	1.58	0.050	0.062
B	4.06	4.60	0.160	0.181
C	2.29	2.83	0.090	0.111
D	1.99	2.50	0.078	0.098
E	0.90	1.41	0.035	0.056
F	4.95	5.33	0.195	0.210
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	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

Not Recommended

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.

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.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:

Click to view products by [Taiwan Semiconductor](#) manufacturer:

Other Similar products are found below :

[60KS200C](#) [D12V0H1U2WS-7](#) [D18V0L1B2LP-7B](#) [82356050220](#) [D5V0M5U6V-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#) [P6KE39CA-TP](#)
[P6KE8.2A](#) [SA110CA](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#) [SMBJ8.0A](#) [SMLJ30CA-TP](#) [ESD101-B1-02ELS E6327](#) [ESD112-B1-02EL E6327](#)
[ESD119B1W01005E6327XTSA1](#) [ESD5V0L1B02VH6327XTSA1](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-HF](#) [3.0SMCJ33CA-F](#)
[3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [DESD5V0U1BL-7B](#) [DRTR5V0U4SL-7](#) [SCM1293A-04SO](#)
[ESD200-B1-CSP0201 E6327](#) [ESD203-B1-02EL E6327](#) [SM12-7](#) [SMF8.0A-TP](#) [SMLJ45CA-TP](#) [CEN955 W/DATA](#) [82350120560](#)
[82356240030](#) [VESD12A1A-HD1-GS08](#) [CPDUR5V0R-HF](#) [CPDUR24V-HF](#) [CPDQC5V0U-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#)
[D1213A-01LP4-7B](#) [D1213A-02WL-7](#) [ESDLIN1524BJ-HQ](#) [5KP100A](#) [5KP15A](#)