

600W, 10V - 30V Surface Mount Transient Voltage Suppressor

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Excellent clamping capability
- Fast response time: typically less than 1.0ps
- 600W peak pulse power capability with a 10/1000 μ s waveform
- Meets ISO 7637-2 (Pulse 1/2a/2b/3a/3b)
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

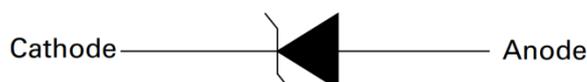
APPLICATIONS

- 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: Indicated by cathode band
- Weight: 0.060g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_{WM}	10 - 30	V
V_{BR}	11.1 - 36.8	V
P_{PPM} $t_p = 10/1000\mu s$ waveform	600	W
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 at $T_A = 25^{\circ}C$, $t_p = 1ms$ (Note 1)	P_{PK}	600	W
Steady state power dissipation	P_D	4	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	50	A
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.5

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

Part number	Marking code	Breakdown voltage $V_{BR}@I_T$ (V)		Test current I_T (mA)	Working stand-off voltage V_{WM} (V)	Maximum reverse leakage current $I_R@V_{WM}$ (μA)	Maximum peak impulse current I_{PPM} (A)	Maximum clamping voltage $V_C@I_{PPM}$ (V)
		Min	Max					
SMA6J10A	6AX	11.1	12.3	1	10	5.0	38.2	15.7
SMA6J11A	6AZ	12.2	13.5	1	11	5.0	34.8	17.2
SMA6J12A	6BE	13.3	14.7	1	12	1.0	31.9	18.8
SMA6J13A	6BG	14.4	15.9	1	13	1.0	29.4	20.4
SMA6J15A	6BM	16.7	18.5	1	15	1.0	25.4	23.6
SMA6J16A	6BP	17.8	19.7	1	16	1.0	23.8	25.2
SMA6J17A	6BR	18.9	20.9	1	17	1.0	22.5	26.7
SMA6J18A	6BT	20	22.1	1	18	1.0	21.2	28.3
SMA6J20A	6BV	22.2	24.5	1	20	1.0	19.1	31.4
SMA6J22A	6BX	24.4	26.9	1	22	1.0	17.4	34.5
SMA6J24A	6BZ	26.7	29.5	1	24	1.0	15.9	37.8
SMA6J26A	6CE	28.9	31.9	1	26	1.0	14.7	40.9
SMA6J28A	6CG	31.1	34.4	1	28	1.0	13.6	44.0
SMA6J30A	6CK	33.3	36.8	1	30	1.0	12.3	48.4

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾	PACKAGE	PACKING
SMA6JxA	DO-214AC (SMA)	7,500 / Tape & Reel

Notes:

1. "x" defines voltage from 10V(SMA6J10A) to 30V(SMA6J30A)

CHARACTERISTICS CURVES

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

Fig.1 Peak Pulse Power Rating Curve

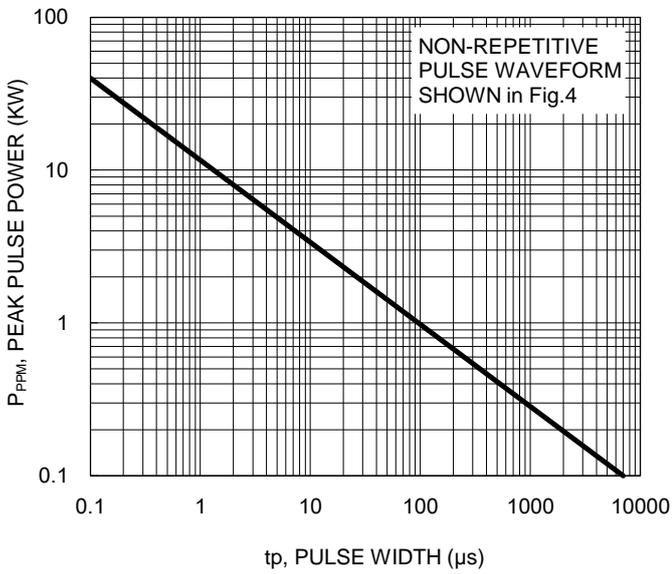


Fig.2 Pulse Derating Curve

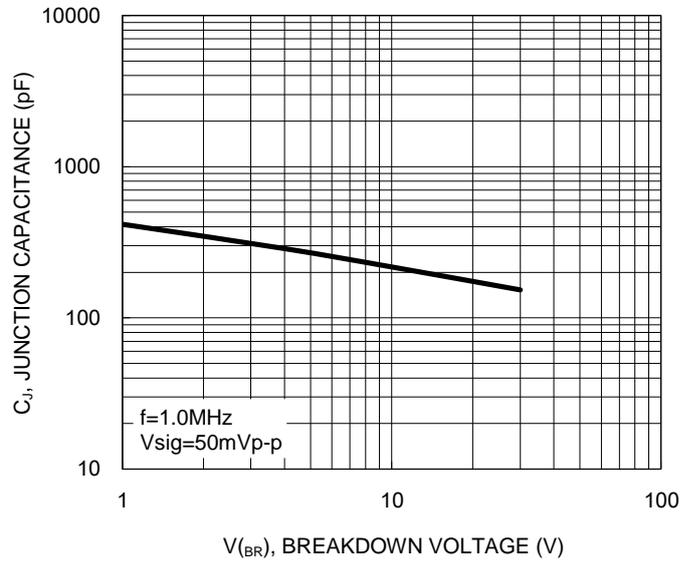
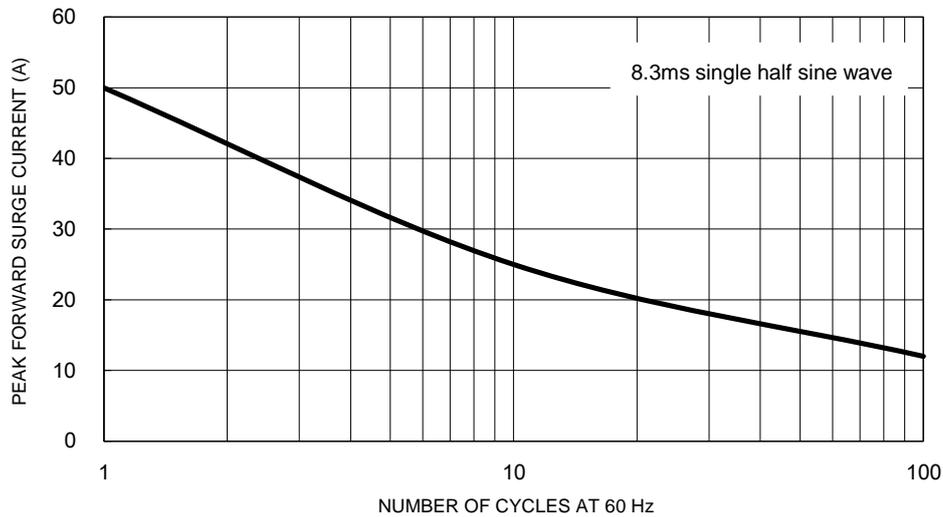


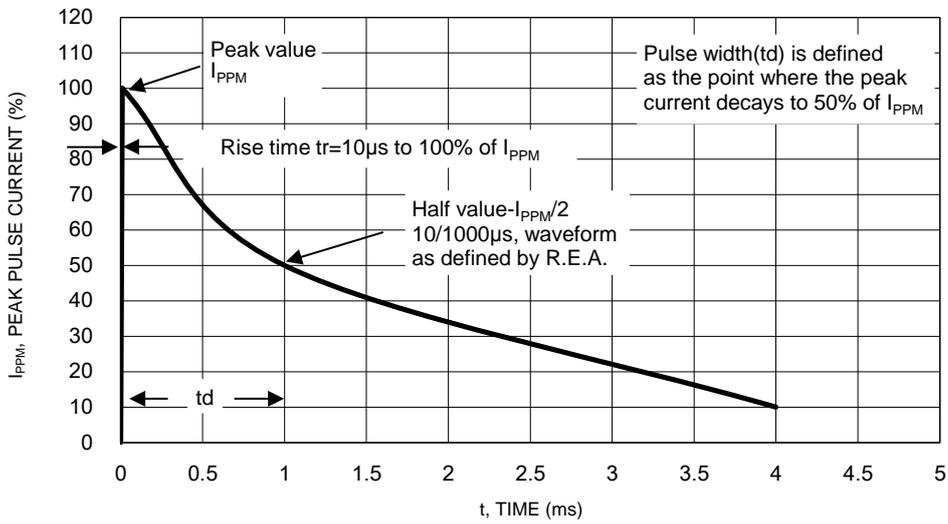
Fig.3 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

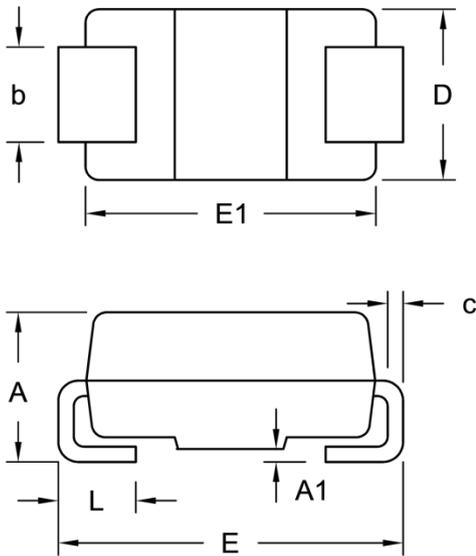
($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.4 Clamping Power Pulse Waveform



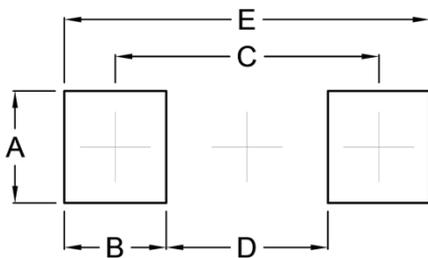
PACKAGE OUTLINE DIMENSIONS

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.