

400W, 200V - 440V Surface Mount Transient Voltage Suppressor

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated junction
- Excellent clamping capability
- Fast response time: Typically less than 1.0ps
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



DO-214AC (SMA)

MECHANICAL DATA

Case: DO-214AC (SMA)

Molding compound: UL flammability classification rating 94V-0

Packing code with suffix "G" means Green compound (halogen-free)

Moisture sensitivity level: level 1, per J-STD-020

Terminal: Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 1A whisker test

Polarity: Indicated by cathode band

Weight: 0.06 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation at T _A =25°C, T _p =1ms (Note 1)	P _{PK}	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 (Note 2)	V _F	3.5 / 5.0	V
Operating junction temperature range	T _J	- 55 to +150	°C
Storage temperature range	T _{STG}	- 55 to +150	°C

Note 1: Non-repetitive current pulse per fig. 3 and derated above T_A=25°C per fig. 2

Note 2: V_F<3.5V for V_{WM}≤250V, V_F<5.0V for V_{WM}>250V

Devices for Bipolar Applications

1. For bidirectional use CA suffix
2. Electrical characteristics apply in both directions

ORDERING INFORMATION				
PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
SMAJxxxx (Note 1)	R3	G	SMA	1,800 / 7" Plastic reel
	R2		SMA	7,500 / 13" Paper reel
	M2		SMA	7,500 / 13" Plastic reel

Note 1: "xxxx" defines voltage from 200V (SMAJ200A) to 440V (SMAJ440A)

EXAMPLE				
EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
SMAJ200A R3G	SMAJ200A	R3	G	Green compound

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

FIG. 1 PEAK PULSE POWER RATING CURVE

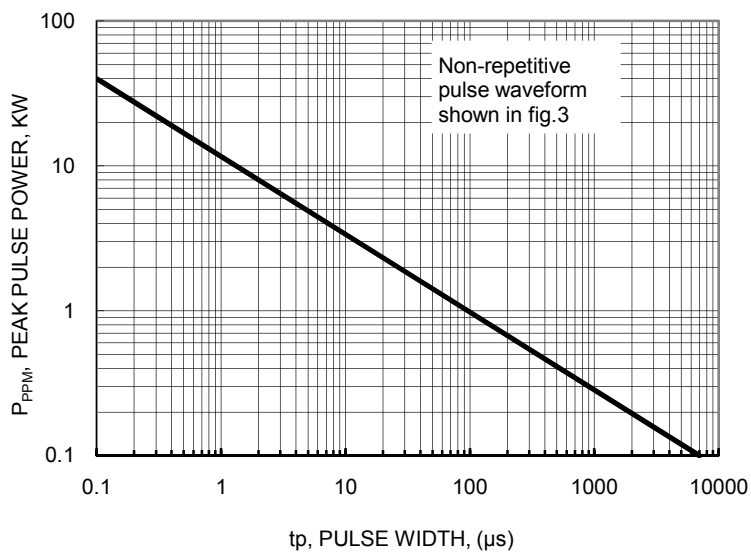


FIG.2 PULSE DERATING CURVE

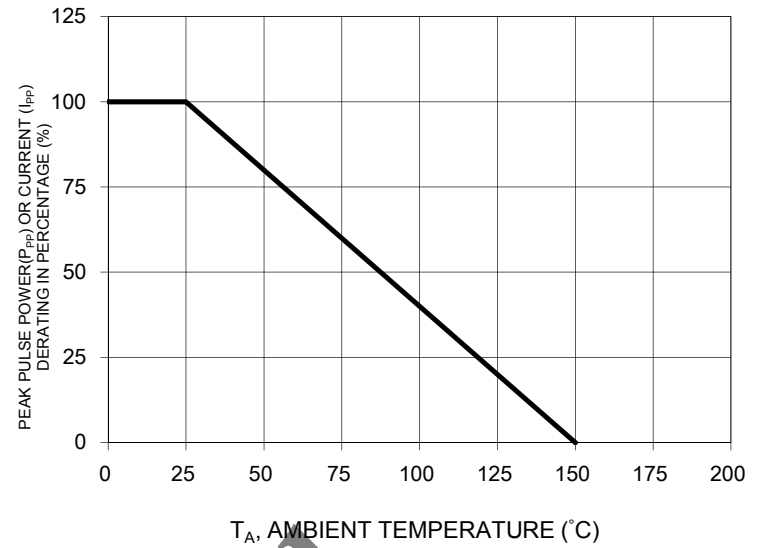


FIG. 3 CLAMPING POWER PULSE WAVEFORM

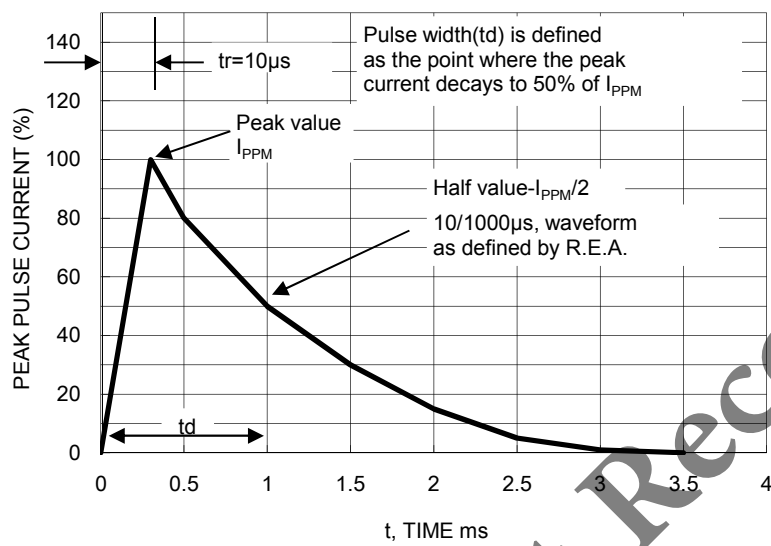


FIG. 4 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

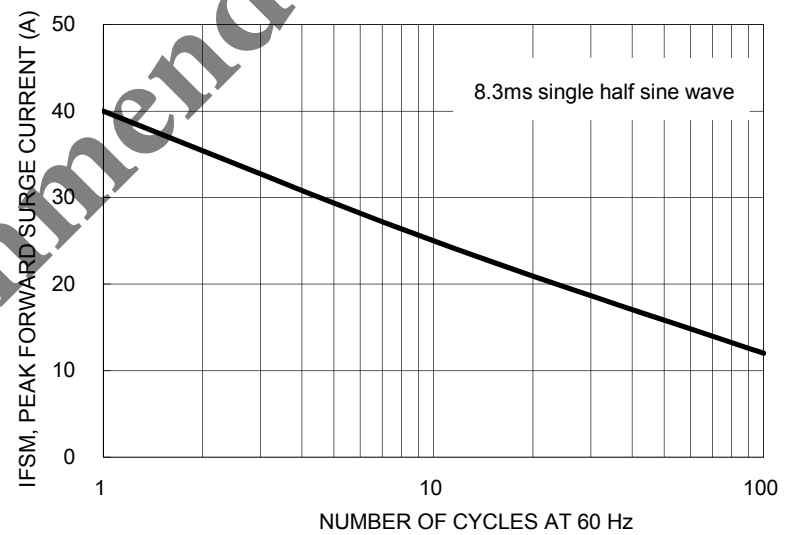
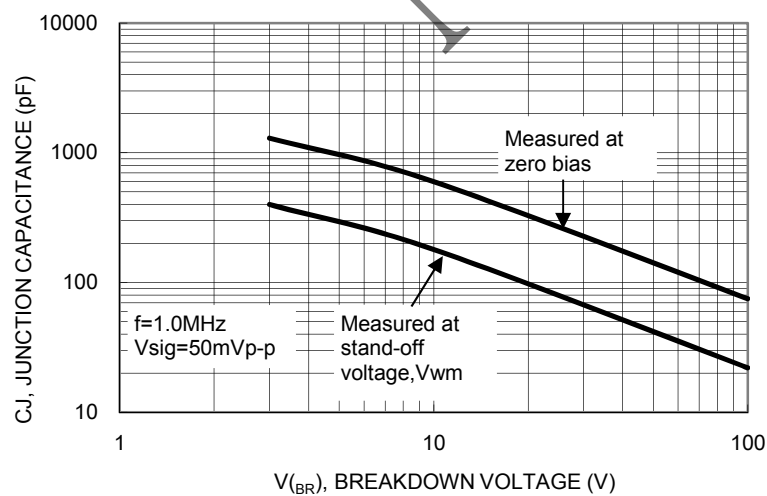


FIG. 5 TYPICAL JUNCTION CAPACITANCE



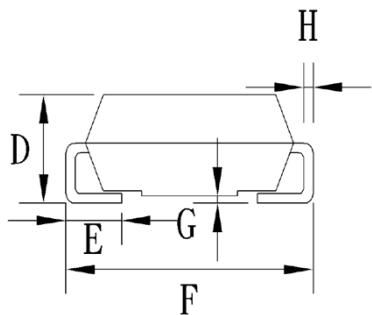
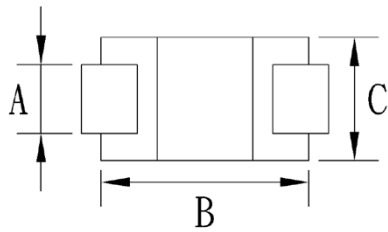
Device		Device Marking Code		Working Peak Reverse Voltage V_{WM} (V)	Breakdown Voltage V_{BR} (V) at I_T		Test Current I_T (mA)	Maximum Clamping Voltage at I_{PPM} V_c (V)	Maximum Peak Pulse Surge Current I_{PPM} (A)	Maximum Reverse Leakage @ V_{WM} I_R (μA)
UNI	BI	UNI	BI		Min	Max				
SMAJ200A	SMAJ200CA	SV	SVC	200	224	247	1	324	1.2	1
SMAJ220A	SMAJ220CA	SX	SXC	220	246	272	1	356	1.1	1
SMAJ250A	SMAJ250CA	SZ	SZC	250	279	309	1	405	1.0	1
SMAJ300A	SMAJ300CA	TE	TEC	300	335	371	1	486	0.8	1
SMAJ350A	SMAJ350CA	TG	TGC	350	391	432	1	567	0.7	1
SMAJ400A	SMAJ400CA	TK	TKC	400	447	494	1	648	0.6	1
SMAJ440A	SMAJ440CA	TM	TMC	440	492	543	1	713	0.6	1

- Notes:
1. Non-repetitive current pulse, per fig. 3 and derated above $T_A=25^{\circ}\text{C}$ per fig. 2
 2. Measure on 8.3ms single half sine-wave duty cycle=4 pulses per minutes maximum
 3. Peak pulse power waveform is 10/1000 μs

Not Recommended

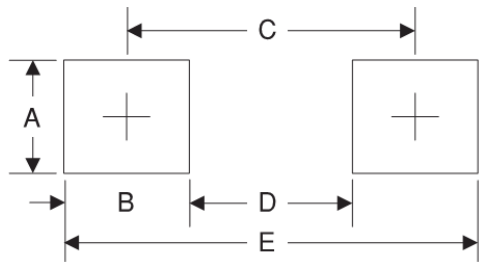
PACKAGE OUTLINE DIMENSIONS

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 = Device Marking Code
G = Green Compound
YW = Date Code
F = Factory Code

Note: Cathode band for uni-directional products only

Not Recommended

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