

SMAJ5.0(C)A - SMAJ200(C)A

400W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Features

- 400W Peak Pulse Power Dissipation
- Glass Passivated Die Construction
- Unidirectional and Bidirectional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- An Automotive- Compliant Part is Available Under Separate Datasheet (SMAJ5.0(C)AQ-SMAJ200(C)AQ)

Mechanical Data

- Case: SMA
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead-Free Plating (Matte Tin Finish).
 Solderable per MIL-STD-202, Method 208 @3
- Polarity Indicator: Cathode Band (Bi-Directional Devices do not Have a Polarity Indicator)
- Weight: 0.064 grams (Approximate)

SMA





Top View

Bottom View

Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
SMAJXXX(C)A-13-F	Standard	SMA	5000/Tape & Reel

^{*}x = Device Voltage, Example: SMAJ170A-13-F

Notes

- 1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
- 2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



xx = Product Type Marking Code
(See Electrical Characteristics Table)

III = Manufacturers' Code Marking

YWW = Date Code Marking

Y = Last Digit of Year (ex: 9 for 2019)

WW = Week Code (01 to 53)



Maximum Ratings (@T_A = +25°C unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Peak Pulse Power Dissipation	5	400	W	
(Non-Repetitive Current Pulse Derated above $T_A = +2$	25°C) (Note 5)	P _{PK}	400	VV
Peak Forward Surge Current, 8.3ms Single Half Sine	l	40	Δ	
on Rated Load	(Notes 5, 6 and 7)	IFSM	40	Λ
Steady State Power Dissipation @ T _L = +75°C		PM _(AV)	1.0	W
Instantaneous Forward Voltage @ I _{PP} = 35A	(Notes 5, 6, and 7)	V_{F}	3.5	V

Notes:

- 5. Valid provided that terminals are kept at ambient temperature.
- 6. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
- 7. Unidirectional units only.

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C



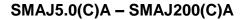
Electrical Characteristics (@TA = +25°C unless otherwise specified.)

	Part Number Add C For	Reverse Standoff	Break Volt		Test	Max. Reverse Leakage @ V _{RWM}	Max. Clamping	Max. Peak Pulse Current	Markin	a Code
Note S				-	Current		Voltage @ I _{PP}		Wai Kili	g code
SMALBOQIQA 6.0 6.40 7.25 10 800 9.2 43.5 TE HE SMALBOQIQA 6.0 6.67 7.37 10 800 10.3 38.8 TG HG SMALBOGIQA 6.5 7.22 7.98 10 500 11.2 36.7 TK HK SMALPOQIQA 7.0 7.78 8.60 10 200 12.0 33.3 TM HM SMALPOQIQA 8.5 8.39 9.21 1.0 100 12.9 31.0 TP HP SMALBOQIQA 8.0 8.89 9.83 1.0 50 13.6 29.4 TR HR SMALPOQIQA 8.5 9.44 10.4 1.0 10 14.4 27.7 TT HT SMALPOQIQA 8.5 9.44 10.4 1.0 10 14.4 27.7 TT HT SMALPOQIQA 9.0 10.0 11.1 1.0 5.0 15.4 26.0 TV HV SMALPOQIQA 10 11.1 1.2 1.0 5.0 15.4 26.0 TV HV SMALPOQIQA 10 11.1 12.3 1.0 5.0 18.2 22.0 TZ HZ SMALPOQIQA 11 12.2 13.5 1.0 5.0 18.2 22.0 TZ HZ SMALPOQIQA 13 14.4 15.9 1.0 5.0 19.9 20.1 UE IE SMALPOQIQA 13 14.4 15.6 17.2 1.0 5.0 22.5 18.6 UG IG SMALPOQIQA 15 16.7 18.5 1.0 5.0 22.5 17.2 UK IK SMALPOQIQA 15 16.7 18.5 1.0 5.0 22.5 17.2 UK IK SMALPOQIQA 16 17.8 15.7 1.0 5.0 28.0 15.3 UP IP SMALPOQIQA 18 20.0 22.1 1.0 5.0 22.5 13.5 UP IP SMALPOQIQA 18 20.0 22.1 1.0 5.0 22.4 16.4 UM IM SMALPOQIQA 18 20.0 22.1 1.0 5.0 32.4 12.3 UV IV XMALPOQIQA 28 28.9 31.9 1.0 5.0 32.4 12.3 UV IV XMALPOQIQA 28 28.9 31.9 1.0 5.0 32.4 12.3 UV IV XMALPOQIQA 28 28.9 31.9 1.0 5.0 32.4 12.3 UV IV XMALPOQIQA 29 22.2 24.4 26.7 29.5 1.0 5.0 32.4 12.3 UV IV XMALPOQIQA 29 22.2 24.5 1.0 5.0 32.4 12.3 UV IV XMALPOQIQA 29 22.2 24.5 1.0 5.0 32.4 12.3 UV IV XMALPOQIQA 29 22.2 24.5 1.0 5.0 38.9 10.3 UZ UZ UZ UZ UZ UZ UZ U	II .				I _T (mA)		V _C (V)		BI-	UNI-
SMAJBS(C)A 6.5 7.22 7.99 10 500 11.2 35.7 TK HK	SMAJ5.0(C)A		6.40	7.25	10				TE	HE
SMAJBS(C)A 6.5 7.22 7.99 10 500 11.2 35.7 TK HK		6.0	6.67	7.37	10	800	10.3	38.8	TG	HG
SMAJTOCIQA 7.0 7.78 8.60 10 200 12.0 33.3 TM HM SMAJTOCIQA 7.5 8.38 9.21 1.0 100 12.9 31.0 TM HM SMAJB.GIQA 8.0 8.89 9.83 1.0 50 13.6 29.4 TR HR RSMAJB.GIQA 8.0 8.89 9.83 1.0 50 13.6 29.4 TR HR RSMAJB.GIQA 8.0 8.5 9.44 10.4 1.0 10 14.4 27.7 TT HT SMAJD.GIQA 9.0 10.0 11.1 1.0 5.0 15.4 26.0 TV HV SMAJDICIQA 9.0 10.0 11.1 1.2 1.0 5.0 17.0 23.5 TX HX SMAJTICIQA 11 12.2 13.5 1.0 5.0 17.0 23.5 TX HX SMAJTICIQA 11 12.2 13.5 1.0 5.0 19.9 20.1 UE IE SMAJTICIQA 12 13.3 14.7 1.0 5.0 19.9 20.1 UE IE SMAJTICIQA 13 14.4 15.9 1.0 5.0 21.5 18.6 UG IG SMAJTICIQA 14 15.6 17.2 1.0 5.0 21.5 18.6 UG IG SMAJTICIQA 14 15.6 17.2 1.0 5.0 24.4 16.4 UM IM SMAJTICIQA 15 16.7 18.5 1.0 5.0 24.4 16.4 UM IM SMAJTICIQA 17 18.9 20.9 1.0 5.0 27.6 14.5 UR IR SMAJTICIQA 17 18.9 20.9 1.0 5.0 27.6 14.5 UR IR SMAJZICIQA 22 24.4 26.9 1.0 5.0 29.2 13.7 UT IT SMAJZICIQA 22 24.4 26.9 1.0 5.0 35.5 11.2 UX IX SMAJZICIQA 22 24.4 26.9 1.0 5.0 35.5 11.2 UX IX SMAJZICIQA 22 24.4 26.9 1.0 5.0 35.5 11.2 UX IX SMAJZICIQA 22 24.4 26.9 1.0 5.0 35.5 11.2 UX IX SMAJZICIQA 22 24.4 26.9 1.0 5.0 35.5 11.2 UX IX SMAJZICIQA 22 24.4 26.9 1.0 5.0 35.5 11.2 UX IX SMAJZICIQA 23 33.3 36.7 40.6 1.0 5.0 42.1 9.5 43.4 8.8 VG JG SMAJZICIQA 30 33.3 36.7 40.6 1.0 5.0 53.3 7.5 VM JM SMAJZICIQA 43 47.8 52.8 1.0 5.0 64.5 6.2 VR JR SMAJZICIQA 43 47.8 52.8 1.0 5.0 64.5 6.2 VR JR SMAJZICIQA 43 47.8 52.8 1.0 5.0 64.5 6.2 VR JR SMAJZICIQA 43 47.8 52.8 1.0 5.0 64.5 6.2 VR JR SMAJZICIQA 43 47.8 52.8 1.	SMAJ6.5(C)A	6.5	7.22	7.98	10	500	11.2	35.7	TK	HK
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SMAJ10(C)A	SMAJ9.0(C)A	9.0	10.0	11.1	1.0	5.0	15.4	26.0	TV	HV
SMAJ11(C)A	SMAJ10(C)A	10	11.1	12.3		5.0		23.5	TX	HX
SMAJ12(C)A	` '	11	12.2	13.5		5.0	18.2		TZ	HZ
SMAJ13(C)A	, ,	12	13.3	14.7		5.0	19.9	20.1	UE	ΙE
SMAJ14(C)A				15.9		5.0		18.6		
SMAJ15(C)A			15.6		1.0	5.0	23.2	17.2		
SMAJ16(C)A	` ′									
SMAJ17(C)A									UP	
SMAJ18(C)A	` '								UR	
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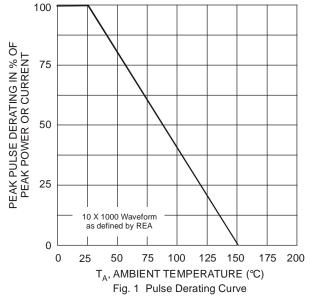
Notes:

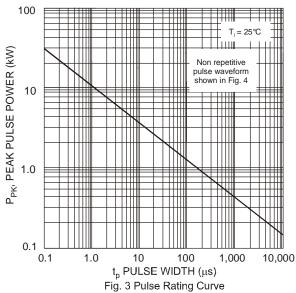
^{8.} Suffix C denotes Bi-directional device.

V_{BR} measured with I_T current pulse = 10ms to 15ms.
 For Bidirectional devices having V_{RWM} of 10V and under, the I_R is doubled.









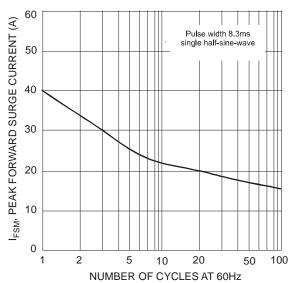
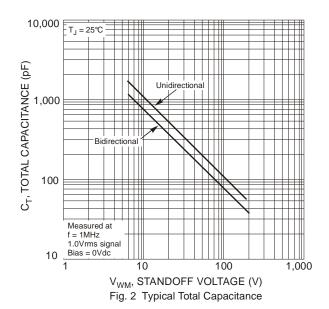
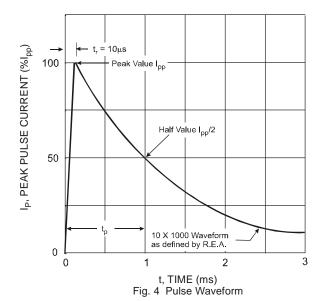


Fig. 5 Maximum Non-Repetitive Surge Current





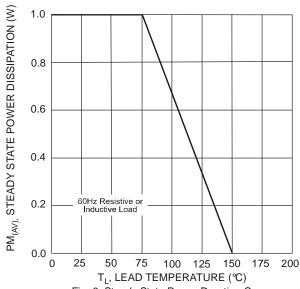
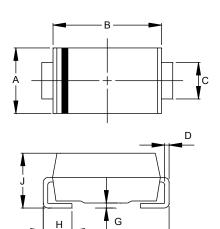


Fig. 6 Steady State Power Derating Curve



Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.



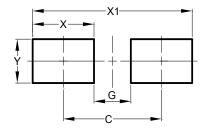
5	ľ	۷	1	1	μ

SMA				
Dim	Min	Max		
Α	2.29	2.92		
В	4.00	4.60		
С	1.27	1.63		
D	0.15	0.31		
E	4.80	5.59		
G	0.05	0.20		
Н	0.76	1.52		
J	1.96	2.40		
All Dimensions in mm				

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SMA



Dimensions	Value (in mm)
С	4.00
G	1.50
Х	2.50
X1	6.50
Y	1.70



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