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## SMCJ5.0(C)A - SMCJ170(C)A

#### 1500W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

#### **Features**

- 1500W Peak Pulse Power Dissipation
- 5.0V 170V Standoff Voltages
- 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 (Notes 3 & 4)

#### **Mechanical Data**

- Case: SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Lead-Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208@3
- Polarity Indicator: Cathode Band (Note: Bidirectional devices have no polarity indicator.)
- Weight: 0.21 grams (Approximate)

#### SMC





Top View

**Bottom View** 

#### **Ordering Information** (Note 5)

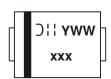
Part Number	Case	Packaging
SMCJXXX(C)A-13-F	SMC	3000/Tape & Reel

<sup>\*</sup>x = Device Voltage, e.g., SMCJ170A-13-F.

Notes

- 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
- 2. See http://www.diodes.com/quality/lead\_free.html 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. Product manufactured with Date Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
- 5. For packaging details, go to our website at http"//www.diodes.com/products/packages.html.

# **Marking Information**





## Maximum Ratings (@T<sub>A</sub> = +25°C unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation	D	1500	W
(Non repetitive current pulse derated above T <sub>A</sub> = +25°C) (Note 6)	P <sub>PK</sub>	1300	VV
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Notes 6, 7, & 8)	I <sub>FSM</sub>	200	Α
Steady State Power Dissipation @ T <sub>L</sub> = +75°C	PM <sub>(AV)</sub>	5.0	W
Instantaneous Forward Voltage @ I <sub>PP</sub> = 100A (Notes 6 & 8)	$V_{F}$	See Note 9	V

## **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Operating Temperature Range	TJ	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +175	°C

Notes:

- 6. Valid provided that terminals are kept at ambient temperature.
- 7. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
- 8. Unidirectional units only. 9.  $V_F = 3.5V$  for SMCJ5.0A through SMCJ90A, and  $V_F = 5.0V$  for SMCJ100A through SMCJ170A.



## Electrical Characteristics (@T<sub>A</sub> = +25°C unless otherwise specified.)

(Note 10)   V_{FWM} (V)   Min (V)   Max (V)   In(mA)   In (mA)   In (mA)   V <sub>C</sub> (V)   (A)   BB   UNI   SMCJ50(C)A   5.0   6.40   7.07   10   1000   9.2   163.0   BBE   GDE   SMCJ60(C)A   6.0   6.67   7.37   10   1000   10.3   145.6   BDG   GDG   SMCJ65(G)A   6.5   7.22   7.98   10   500   11.2   133.9   BDK   GDK   GDK	Part Number Add C For Bidirectional	Reverse Standoff Voltage	Vol	kdown tage (Note 11)	Test Current	Max. Reverse Leakage @ V <sub>RWM</sub> (Note 12)	Max. Clamping Voltage @ I <sub>pp</sub>	Max. Peak Pulse Current I <sub>pp</sub>	Markin	g Code
SMCJB,O(C)A 6.0 6.67 7.37 10 1000 10.3 145.6 BDG GDG SMCJS,O(C)A 6.5 7.22 7.98 10 500 11.2 133.9 BDK GDK SMCJF,O(C)A 7.0 7.78 8.60 10 200 11.2 133.9 BDK GDK SMCJF,O(C)A 7.5 8.53 9.21 1.0 100 12.9 116.3 BDP GDP GDP SMCJB,S(C)A 8.5 9.44 10.4 10.0 20 11.0 11.9 11.0 10.0 12.9 116.3 BDP GDP GDP SMCJB,S(C)A 8.5 9.44 10.4 10.0 20 11.4 10.1 20 11.4 10.2 BDT GDT SMCJB,S(C)A 8.5 9.44 10.4 10.0 20 11.4 10.2 BDT GDT SMCJB,S(C)A 8.5 BDY GDV SMCJB,O(C)A 9.0 10.00 11.1 10.0 10 15.4 97.4 BDV GDV SMCJB,O(C)A 9.0 10.00 11.1 10.0 10 15.4 97.4 BDV GDV SMCJB,O(C)A 9.0 10.00 11.1 11.0 10 15.4 97.4 BDV GDV SMCJB,O(C)A 8.2 BDX GDX SMCJB,O(C)A 8.2 BDX GDX SMCJB,O(C)A 10.0 11.1 11.0 12.3 10.0 5.0 17.0 88.2 BDX GDX SMCJB,O(C)A 11.0 12.0 13.0 14.7 1.0 5.0 19.9 75.3 BEE GEE SMCJB,O(C)A 11.0 15.0 15.0 16.7 BEE GEG SMCJB,O(C)A 11.0 15.0 15.0 16.7 BEE GEG SMCJB,O(C)A 11.0 15.0 15.0 15.0 16.7 BEE GEG SMCJB,O(C)A 11.0 15.0 15.0 16.7 BEE GEG SMCJB,O(C)A 11.0 15.0 15.0 16.7 BEE GEG SMCJB,O(C)A 11.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0		V <sub>RWM</sub> (V)	Min (V)	Max (V)	I <sub>T</sub> (mA)	I <sub>R</sub> (μA)	V <sub>C</sub> (V)	(A)	ВІ	UNI
SMC_BS_C A	SMCJ5.0(C)A	5.0	6.40	7.07	10	1000	9.2	163.0	BDE	GDE
SMC_BS_C A	SMCJ6.0(C)A	6.0	6.67	7.37	10	1000	10.3	145.6	BDG	GDG
SMCJ7.0(C)A		6.5	7.22	7.98	10	500	11.2	133.9	BDK	GDK
SMCJ15(C)A		7.0	7.78		10	200	12.0		BDM	GDM
SMCJBO(C)A  8.0  8.0  8.89  9.83  1.0  50  13.6  110.3  BDR GDR  SMCJBS(C)A  8.5  9.44  10.4  10.0  10.0  11.1  1.0  10  11.4  104.2  BDT GDT  GDT  SMCJIO(C)A  9.0  10.00  11.1  11.0  10  11.4  104.2  BDT GDT  GDT  SMCJIO(C)A  9.0  10.00  11.1  11.0  10  11.1  10.0  10  1		7.5	8.33	9.21	1.0	100	12.9	116.3	BDP	GDP
SMCJB(G)(A) 8.5 9.44 10.4 1.0 20 114.4 104.2 BDT GDT GDT SMCJB(G)(A) 9.0 10.00 11.11 1.0 10 15.4 97.4 BDV GDV SMCJII(G)(A) 10.0 11.10 12.3 1.0 5.0 17.0 88.2 BDX GDX SMCJII(G)(A) 11.0 12.20 13.5 1.0 5.0 18.2 82.4 BDZ GDZ GDZ SMCJII(G)(A) 12.0 13.00 14.7 1.0 5.0 18.2 82.4 BDZ GDZ GDZ GDZ GDZ GDZ GDZ GDZ GDZ GDZ G	. ,				1.0	50			BDR	
SMCJ30(C)A 9.0 10.00 11.1 1.0 10 15.4 97.4 BDV GDV SMCJ10(C)A 10.0 11.0 12.3 1.0 5.0 17.0 88.2 BDX GDX SMCJ11(C)A 11.0 12.20 13.5 1.0 5.0 17.0 88.2 BDX GDX SMCJ12(C)A 12.0 13.30 14.7 1.0 5.0 18.2 82.4 BDZ GDZ SMCJ12(C)A 12.0 13.30 14.7 1.0 5.0 19.9 75.3 BEE GEE GEE SMCJ31(C)A 13.0 14.40 15.9 1.0 5.0 21.5 69.7 BEG GEG SMCJ14(C)A 14.0 15.60 17.2 1.0 5.0 22.2 64.7 BEK GEK SMCJ14(C)A 14.0 15.60 17.2 1.0 5.0 22.2 64.7 BEK GEK SMCJ14(C)A 15.0 15.0 18.5 1.0 5.0 24.4 61.5 BEM GEM SMCJ16(C)A 15.0 15.0 18.5 1.0 5.0 24.4 61.5 BEM GEM SMCJ16(C)A 16.0 17.80 19.7 1.0 5.0 26.0 57.7 BEP GEP SMCJ17(C)A 17.0 18.90 20.9 1.0 5.0 27.6 53.3 BER GER SMCJ14(C)A 14.0 22.0 22.1 1.0 5.0 22.2 51.4 BET GET SMCJ20(C)A 20.0 22.1 1.0 5.0 22.2 51.4 BET GET SMCJ20(C)A 22.0 22.40 24.5 1.0 5.0 33.5 BEV GEX SMCJ26(C)A 22.0 22.0 24.5 1.0 5.0 33.5 42.2 BEX GEX SMCJ26(C)A 24.0 26.70 29.5 1.0 5.0 33.5 42.2 BEX GEX SMCJ26(C)A 26.0 28.90 31.9 1.0 5.0 33.5 42.2 BEX GEX SMCJ26(C)A 26.0 28.90 31.9 1.0 5.0 42.1 35.6 BEF GFE SMCJ20(C)A 26.0 28.90 31.9 1.0 5.0 42.1 35.6 BEF GFE SMCJ20(C)A 26.0 33.30 36.8 1.0 5.0 44.4 33.0 BFG GFG SMCJ30(C)A 30.0 33.30 36.8 1.0 5.0 44.4 33.0 BFG GFG SMCJ30(C)A 30.0 33.30 36.8 1.0 5.0 44.4 31.0 BFK GFK SMCJ36(C)A 40.0 44.40 49.1 1.0 5.0 50. 38.9 38.6 BEE GFE SMCJ36(C)A 40.0 44.40 49.1 1.0 5.0 50. 38.9 38.6 BFE GFE SMCJ36(C)A 40.0 44.40 49.1 1.0 5.0 50. 58.1 25.8 BFP GFP SMCJ36(C)A 40.0 44.40 49.1 1.0 5.0 50. 58.1 25.8 BFP GFP SMCJ36(C)A 40.0 44.40 49.1 1.0 5.0 50. 58.1 25.8 BFP GFP SMCJ36(C)A 40.0 44.40 49.1 1.0 5.0 50. 50.1 42.1 35.6 BFK GFK SMCJ36(C)A 40.0 66.3 1.0 5.0 50.0 50.1 31.0 BFK GFK SMCJ36(C)A 40.0 66.3 1.0 5.0 50.0 50.1 31.0 BFK GFK SMCJ36(C)A 40.0 66.3 1.0 5.0 50.0 50.0 50.0 50.0 50.0 50.0 5			9.44		1.0				BDT	
SMCJ10(C)A 11.00 11.10 12.20 13.55 1.00 5.00 117.00 118.2 88.2 BDX GDX SMCJ11(C)A 11.00 11.00 11.20 13.55 1.00 5.00 118.2 88.2 BDX GDZ SMCJ13(C)A 11.00 11.00 11.00 11.00 11.00 11.00 5.00 119.90 75.3 BEE GEE SMCJ13(C)A 13.00 114.40 115.90 11.00 5.00 21.15 69.77 BEG GEG SMCJ14(C)A 114.00 115.00 116.70 118.50 11.00 5.00 21.15 69.77 BEG GEG SMCJ14(C)A 114.00 115.00 116.70 118.50 110.00 5.00 22.1 64.77 BEK GEK SMCJ15(C)A 115.00 116.70 118.50 110.00 5.00 224.4 61.55 BEM GEM SMCJ16(C)A 116.00 17.80 119.77 11.00 5.00 224.4 61.55 BEM GEM SMCJ16(C)A 116.00 17.80 119.77 11.00 5.00 224.4 61.55 BEM GEM SMCJ16(C)A 116.00 17.80 119.77 11.00 5.00 224.4 61.55 BEM GEM SMCJ16(C)A 116.00 17.80 119.77 11.00 5.00 226.00 57.77 BEP GEP SMCJ18(C)A 118.00 20.00 22.10 1.00 5.00 227.6 53.3 BER GER SMCJ18(C)A 118.00 20.00 22.10 1.00 5.00 22.20 51.14 BET GET SMCJ22(C)A 22.00 22.20 24.40 27.00 1.00 5.00 33.55 42.2 BEX GEX SMCJ22(C)A 22.00 22										
SMCJ11(C)A	. ,					_				
SMCJ12(C)A   12.0   13.30   14.7   1.0   5.0   19.9   75.3   BEE   GEE   SMCJ13(C)A   13.0   14.40   15.9   1.0   5.0   21.5   69.7   BEG   GEG   SMCJ14(C)A   14.0   15.60   17.2   1.0   5.0   23.2   64.7   BEK   GEK   GEK   SMCJ15(C)A   15.0   16.70   18.5   1.0   5.0   24.4   61.5   BEM   GEM   SMCJ16(C)A   16.0   17.80   19.7   1.0   5.0   24.4   61.5   BEM   GEM   SMCJ16(C)A   16.0   17.80   19.7   1.0   5.0   26.0   57.7   BEF   GEF   GEF   SMCJ17(C)A   17.0   18.90   20.9   1.0   5.0   27.6   53.3   BER   GER   SMCJ18(C)A   18.0   20.00   22.1   1.0   5.0   29.2   51.4   BET   GET   SMCJ18(C)A   20.00   22.1   1.0   5.0   29.2   51.4   BET   GET   GET   SMCJ22(C)A   22.0   24.40   27.0   1.0   5.0   32.4   46.3   BEV   GEV   SMCJ22(C)A   22.0   24.40   27.0   1.0   5.0   35.5   42.2   BEX   GEX   SMCJ28(C)A   22.0   24.40   27.0   1.0   5.0   35.5   42.2   BEX   GEX   SMCJ28(C)A   22.0   24.40   27.0   1.0   5.0   38.9   38.6   BEZ   GEZ   SMCJ28(C)A   26.0   28.90   31.9   1.0   5.0   42.1   35.6   BFE   GFE   GFE   SMCJ28(C)A   28.0   31.10   34.4   1.0   5.0   45.4   33.0   BFG   GFG   SMCJ39(C)A   28.0   31.10   34.4   1.0   5.0   45.4   33.0   BFG   GFG   SMCJ39(C)A   33.0   36.8   1.0   5.0   45.4   33.0   BFG   GFG   SMCJ39(C)A   33.0   36.70   40.6   1.0   5.0   53.3   28.1   BFM   GFM   SMCJ39(C)A   36.0   40.00   44.2   1.0   5.0   58.1   25.8   BFP   GFP   SMCJ49(C)A   45.0   54.0   55.3   1.0   5.0   58.1   25.8   BFP   GFP   SMCJ49(C)A   45.0   54.0   55.3   1.0   5.0   58.1   25.3   BFR   GFR   GFF   SMCJ49(C)A   45.0   56.0   56.7   56									BDZ	GDZ
SMCJ14(C)A							19.9		BEE	GEE
SMCJ14(C)A	· ,									
SMCJ15(C)A										
SMCJ16(C)A										
SMCJ17(C)A										
SMCJ18(C)A										
SMCJ20(C)A         20.0         22.20         24.5         1.0         5.0         32.4         46.3         BEV         GEV           SMCJ22(C)A         22.0         24.40         27.0         1.0         5.0         35.5         42.2         BEX         GEX           SMCJ26(C)A         24.0         26.70         29.5         1.0         5.0         38.9         38.6         BEZ         GEZ           SMCJ26(C)A         26.0         28.90         31.9         1.0         5.0         42.1         35.6         BFE         GFE           SMCJ30(C)A         28.0         31.10         34.4         1.0         5.0         45.4         33.0         BFG         GFG           SMCJ30(C)A         33.0         36.70         40.6         1.0         5.0         48.4         31.0         BFM         GFK           SMCJ36(C)A         36.0         40.00         44.2         1.0         5.0         58.1         25.8         BFP         GFP           SMCJ43(C)A         34.0         47.80         52.8         1.0         5.0         64.5         23.2         BFR         GFP           SMCJ45(C)A         45.0         50.00         55.3										
SMCJ22(C)A         22.0         24.40         27.0         1.0         5.0         35.5         42.2         BEX         GEX           SMCJ24(C)A         24.0         26.70         29.5         1.0         5.0         38.9         38.6         BEZ         GEZ           SMCJ26(C)A         26.0         28.90         31.9         1.0         5.0         42.1         35.6         BFE         GFE           SMCJ36(C)A         28.0         31.10         34.4         1.0         5.0         45.4         33.0         BFG         GFG           SMCJ33(C)A         30.0         33.30         36.8         1.0         5.0         48.4         31.0         BFK         GFK           SMCJ33(C)A         33.0         36.7         40.6         1.0         5.0         53.3         28.1         BFM         GFK           SMCJ40(C)A         36.0         40.00         44.2         1.0         5.0         58.1         25.8         BFP         GFP           SMCJ45(C)A         45.0         50.0         52.8         1.0         5.0         64.5         23.2         BFR         GFR           SMCJ45(C)A         48.0         53.30         58.9										
SMCJ24(C)A         24.0         26.70         29.5         1.0         5.0         38.9         38.6         BEZ         GEZ           SMCJ26(C)A         26.0         28.90         31.9         1.0         5.0         42.1         35.6         BFE         GFE           SMCJ28(C)A         28.0         31.10         34.4         1.0         5.0         45.4         33.0         BFG         GFG           SMCJ30(C)A         30.0         33.30         36.8         1.0         5.0         48.4         31.0         BFK         GFK           SMCJ33(C)A         33.0         36.70         40.6         1.0         5.0         53.3         28.1         BFM         GFM           SMCJ36(C)A         36.0         40.00         44.2         1.0         5.0         58.1         25.8         BFP         GFP           SMCJ43(C)A         43.0         47.80         52.8         1.0         5.0         64.5         23.2         BFR         GFT           SMCJ45(C)A         45.0         50.0         55.3         1.0         5.0         72.7         20.6         BFV         GFY           SMCJ45(C)A         48.0         53.30         58.9										
SMCJ26(C)A         26.0         28.90         31.9         1.0         5.0         42.1         35.6         BFE         GFE           SMCJ28(C)A         28.0         31.10         34.4         1.0         5.0         45.4         33.0         BFG         GFG           SMCJ30(C)A         30.0         33.30         36.8         1.0         5.0         48.4         31.0         BFK         GFK           SMCJ36(C)A         33.0         36.70         40.6         1.0         5.0         53.3         28.1         BFM         GFK           SMCJ36(C)A         36.0         40.00         44.2         1.0         5.0         58.1         25.8         BFP         GFP           SMCJ49(C)A         43.0         47.80         49.1         1.0         5.0         64.5         23.2         BFR         GFP           SMCJ45(C)A         43.0         47.80         52.8         1.0         5.0         64.5         23.2         BFR         GFF           SMCJ45(C)A         48.0         53.30         58.9         1.0         5.0         77.7         20.6         BFV         GFY           SMCJ54(C)A         48.0         53.30         58.9										
SMCJ28(C)A         28.0         31.10         34.4         1.0         5.0         45.4         33.0         BFG         GFG           SMCJ30(C)A         30.0         33.30         36.8         1.0         5.0         48.4         31.0         BFK         GFK           SMCJ33(C)A         33.0         36.70         40.6         1.0         5.0         53.3         28.1         BFM         GFM           SMCJ36(C)A         36.0         40.00         44.2         1.0         5.0         58.1         25.8         BFP         GFP           SMCJ40(C)A         40.0         44.40         49.1         1.0         5.0         64.5         23.2         BFR         GFR           SMCJ43(C)A         43.0         47.80         52.8         1.0         5.0         69.4         21.6         BFT         GFT           SMCJ45(C)A         45.0         50.00         55.3         1.0         5.0         72.7         20.6         BFV         GFV           SMCJ48(C)A         48.0         53.30         58.9         1.0         5.0         77.4         19.4         BFX         GFX           SMCJ54(C)A         48.0         55.30         56.70										
SMCJ30(C)A         30.0         33.30         36.8         1.0         5.0         48.4         31.0         BFK         GFK           SMCJ33(C)A         33.0         36.70         40.6         1.0         5.0         53.3         28.1         BFM         GFM           SMCJ36(C)A         36.0         40.00         44.2         1.0         5.0         58.1         25.8         BFP         GFP           SMCJ43(C)A         40.0         44.40         49.1         1.0         5.0         64.5         23.2         BFR         GFR           SMCJ43(C)A         43.0         47.80         52.8         1.0         5.0         64.5         23.2         BFR         GFR           SMCJ45(C)A         45.0         50.00         55.3         1.0         5.0         72.7         20.6         BFV         GFV           SMCJ45(C)A         48.0         53.30         58.9         1.0         5.0         77.4         19.4         BFX         GFX           SMCJ51(C)A         51.0         56.70         62.7         1.0         5.0         87.1         17.2         BGE         GGE           SMCJ58(C)A         58.0         64.40         71.2										
SMCJ33(C)A         33.0         36.70         40.6         1.0         5.0         53.3         28.1         BFM         GFM           SMCJ36(C)A         36.0         40.00         44.2         1.0         5.0         58.1         25.8         BFP         GFP           SMCJ43(C)A         43.0         47.80         52.8         1.0         5.0         64.5         23.2         BFR         GFR           SMCJ43(C)A         43.0         47.80         52.8         1.0         5.0         69.4         21.6         BFT         GFT           SMCJ45(C)A         43.0         50.00         55.3         1.0         5.0         72.7         20.6         BFV         GFV           SMCJ48(C)A         48.0         53.30         58.9         1.0         5.0         77.4         19.4         BFX         GFX           SMCJ51(C)A         51.0         56.70         62.7         1.0         5.0         87.1         17.2         BGE         GGE           SMCJ58(C)A         58.0         64.40         71.2         1.0         5.0         93.6         16.0         BGG         GGG           SMCJ64(C)A         64.0         71.10         78.6										
SMCJ36(C)A         36.0         40.00         44.2         1.0         5.0         58.1         25.8         BFP         GFP           SMCJ40(C)A         40.0         44.40         49.1         1.0         5.0         64.5         23.2         BFR         GFR           SMCJ43(C)A         43.0         47.80         52.8         1.0         5.0         69.4         21.6         BFT         GFT           SMCJ45(C)A         45.0         50.00         55.3         1.0         5.0         72.7         20.6         BFV         GFV           SMCJ48(C)A         48.0         53.30         58.9         1.0         5.0         77.4         19.4         BFX         GFX           SMCJ51(C)A         51.0         56.70         62.7         1.0         5.0         87.1         17.2         BGE         GGE           SMCJ54(C)A         54.0         60.00         66.3         1.0         5.0         87.1         17.2         BGE         GGE           SMCJ58(C)A         58.0         64.40         71.2         1.0         5.0         93.6         16.0         BGG         GGG           SMCJ60(C)A         60.0         66.70         73.7										
SMCJ40(C)A         40.0         44.40         49.1         1.0         5.0         64.5         23.2         BFR         GFR           SMCJ43(C)A         43.0         47.80         52.8         1.0         5.0         69.4         21.6         BFT         GFT           SMCJ45(C)A         45.0         50.00         55.3         1.0         5.0         72.7         20.6         BFV         GFV           SMCJ48(C)A         48.0         53.30         58.9         1.0         5.0         77.4         19.4         BFX         GFX           SMCJ51(C)A         51.0         56.70         62.7         1.0         5.0         82.4         18.2         BFZ         GFZ           SMCJ54(C)A         54.0         60.00         66.3         1.0         5.0         87.1         17.2         BGE         GGE           SMCJ58(C)A         58.0         64.40         71.2         1.0         5.0         93.6         16.0         BGG         GG           SMCJ60(C)A         60.0         66.70         73.7         1.0         5.0         96.8         15.5         BGK         GK           SMCJ60(C)A         64.0         71.10         78.6										
SMCJ43(C)A         43.0         47.80         52.8         1.0         5.0         69.4         21.6         BFT         GFT           SMCJ45(C)A         45.0         50.00         55.3         1.0         5.0         72.7         20.6         BFV         GFV           SMCJ48(C)A         48.0         53.30         58.9         1.0         5.0         77.4         19.4         BFX         GFX           SMCJ51(C)A         51.0         56.70         62.7         1.0         5.0         82.4         18.2         BFZ         GFZ           SMCJ54(C)A         54.0         60.00         66.3         1.0         5.0         87.1         17.2         BGE         GGE           SMCJ58(C)A         58.0         64.40         71.2         1.0         5.0         93.6         16.0         BGG         GG           SMCJ60(C)A         60.0         66.70         73.7         1.0         5.0         96.8         15.5         BGK         GK           SMCJ64(C)A         64.0         71.10         78.6         1.0         5.0         103.0         14.6         BGM         GGM           SMCJ76(C)A         75.0         83.30         92.1										
SMCJ45(C)A         45.0         50.00         55.3         1.0         5.0         72.7         20.6         BFV         GFV           SMCJ48(C)A         48.0         53.30         58.9         1.0         5.0         77.4         19.4         BFX         GFX           SMCJ51(C)A         51.0         56.70         62.7         1.0         5.0         82.4         18.2         BFZ         GFZ           SMCJ54(C)A         54.0         60.00         66.3         1.0         5.0         87.1         17.2         BGE         GGE           SMCJ58(C)A         58.0         64.40         71.2         1.0         5.0         93.6         16.0         BGG         GG           SMCJ60(C)A         60.0         66.70         73.7         1.0         5.0         96.8         15.5         BGK         GGK           SMCJ64(C)A         64.0         71.10         78.6         1.0         5.0         103.0         14.6         BGM         GGK           SMCJ70(C)A         70.0         77.80         86.0         1.0         5.0         113.0         13.3         BGP         GGP           SMCJ75(C)A         75.0         83.30         92.1										
SMCJ48(C)A         48.0         53.30         58.9         1.0         5.0         77.4         19.4         BFX         GFX           SMCJ51(C)A         51.0         56.70         62.7         1.0         5.0         82.4         18.2         BFZ         GFZ           SMCJ54(C)A         54.0         60.00         66.3         1.0         5.0         87.1         17.2         BGE         GGE           SMCJ58(C)A         58.0         64.40         71.2         1.0         5.0         93.6         16.0         BGG         GGG           SMCJ60(C)A         60.0         66.70         73.7         1.0         5.0         96.8         15.5         BGK         GGK           SMCJ64(C)A         64.0         71.10         78.6         1.0         5.0         103.0         14.6         BGM         GGM           SMCJ70(C)A         70.0         77.80         86.0         1.0         5.0         113.0         13.3         BGP         GGP           SMCJ75(C)A         75.0         83.30         92.1         1.0         5.0         121.0         12.4         BGR         GGR           SMCJ78(C)A         78.0         86.70         95.8										
SMCJ51(C)A         51.0         56.70         62.7         1.0         5.0         82.4         18.2         BFZ         GFZ           SMCJ54(C)A         54.0         60.00         66.3         1.0         5.0         87.1         17.2         BGE         GGE           SMCJ58(C)A         58.0         64.40         71.2         1.0         5.0         93.6         16.0         BGG         GGG           SMCJ60(C)A         60.0         66.70         73.7         1.0         5.0         96.8         15.5         BGK         GGK           SMCJ64(C)A         64.0         71.10         78.6         1.0         5.0         103.0         14.6         BGM         GGM           SMCJ70(C)A         70.0         77.80         86.0         1.0         5.0         113.0         13.3         BGP         GGP           SMCJ75(C)A         75.0         83.30         92.1         1.0         5.0         121.0         12.4         BGR         GGR           SMCJ78(C)A         78.0         86.70         95.8         1.0         5.0         126.0         11.4         BGT         GGT           SMCJ85(C)A         85.0         94.40         104										
SMCJ54(C)A         54.0         60.00         66.3         1.0         5.0         87.1         17.2         BGE         GGE           SMCJ58(C)A         58.0         64.40         71.2         1.0         5.0         93.6         16.0         BGG         GGG           SMCJ60(C)A         60.0         66.70         73.7         1.0         5.0         96.8         15.5         BGK         GGK           SMCJ64(C)A         64.0         71.10         78.6         1.0         5.0         103.0         14.6         BGM         GGK           SMCJ70(C)A         70.0         77.80         86.0         1.0         5.0         113.0         13.3         BGP         GGP           SMCJ75(C)A         75.0         83.30         92.1         1.0         5.0         121.0         12.4         BGR         GGR           SMCJ78(C)A         78.0         86.70         95.8         1.0         5.0         126.0         11.4         BGT         GGT           SMCJ85(C)A         85.0         94.40         104         1.0         5.0         137.0         10.4         BGV         GGV           SMCJ90(C)A         90.0         100.00         111	· ,									
SMCJ58(C)A         58.0         64.40         71.2         1.0         5.0         93.6         16.0         BGG         GGG           SMCJ60(C)A         60.0         66.70         73.7         1.0         5.0         96.8         15.5         BGK         GGK           SMCJ64(C)A         64.0         71.10         78.6         1.0         5.0         103.0         14.6         BGM         GGM           SMCJ70(C)A         70.0         77.80         86.0         1.0         5.0         113.0         13.3         BGP         GGP           SMCJ75(C)A         75.0         83.30         92.1         1.0         5.0         121.0         12.4         BGR         GGR           SMCJ78(C)A         78.0         86.70         95.8         1.0         5.0         126.0         11.4         BGT         GGT           SMCJ85(C)A         85.0         94.40         104         1.0         5.0         137.0         10.4         BGV         GGV           SMCJ90(C)A         90.0         100.00         111         1.0         5.0         146.0         10.3         BGX         GGX           SMCJ100(C)A         100.0         123         1.0	. ,									
SMCJ60(C)A         60.0         66.70         73.7         1.0         5.0         96.8         15.5         BGK         GGK           SMCJ64(C)A         64.0         71.10         78.6         1.0         5.0         103.0         14.6         BGM         GGM           SMCJ70(C)A         70.0         77.80         86.0         1.0         5.0         113.0         13.3         BGP         GGP           SMCJ75(C)A         75.0         83.30         92.1         1.0         5.0         121.0         12.4         BGR         GGR           SMCJ78(C)A         78.0         86.70         95.8         1.0         5.0         126.0         11.4         BGT         GGT           SMCJ85(C)A         85.0         94.40         104         1.0         5.0         137.0         10.4         BGV         GGV           SMCJ90(C)A         90.0         100.00         111         1.0         5.0         146.0         10.3         BGX         GGX           SMCJ100(C)A         100.0         111.00         123         1.0         5.0         162.0         9.3         BGZ         GGZ           SMCJ10(C)A         120.0         133.00         147 </td <td></td>										
SMCJ64(C)A         64.0         71.10         78.6         1.0         5.0         103.0         14.6         BGM         GGM           SMCJ70(C)A         70.0         77.80         86.0         1.0         5.0         113.0         13.3         BGP         GGP           SMCJ75(C)A         75.0         83.30         92.1         1.0         5.0         121.0         12.4         BGR         GGR           SMCJ78(C)A         78.0         86.70         95.8         1.0         5.0         126.0         11.4         BGT         GGT           SMCJ85(C)A         85.0         94.40         104         1.0         5.0         137.0         10.4         BGV         GGV           SMCJ90(C)A         90.0         100.00         111         1.0         5.0         146.0         10.3         BGX         GGX           SMCJ100(C)A         100.0         111.00         123         1.0         5.0         162.0         9.3         BGZ         GGZ           SMCJ110(C)A         110.0         122.00         135         1.0         5.0         177.0         8.4         BHE         GHE           SMCJ130(C)A         130.0         144.00         15										
SMCJ70(C)A         70.0         77.80         86.0         1.0         5.0         113.0         13.3         BGP         GGP           SMCJ75(C)A         75.0         83.30         92.1         1.0         5.0         121.0         12.4         BGR         GGR           SMCJ78(C)A         78.0         86.70         95.8         1.0         5.0         126.0         11.4         BGT         GGT           SMCJ85(C)A         85.0         94.40         104         1.0         5.0         137.0         10.4         BGV         GGV           SMCJ90(C)A         90.0         100.00         111         1.0         5.0         146.0         10.3         BGX         GGX           SMCJ100(C)A         100.0         111.00         123         1.0         5.0         162.0         9.3         BGZ         GGZ           SMCJ110(C)A         110.0         122.00         135         1.0         5.0         177.0         8.4         BHE         GHE           SMCJ120(C)A         120.0         133.00         147         1.0         5.0         193.0         7.9         BHG         GHG           SMCJ150(C)A         150.0         167.00         1										
SMCJ75(C)A         75.0         83.30         92.1         1.0         5.0         121.0         12.4         BGR         GGR           SMCJ78(C)A         78.0         86.70         95.8         1.0         5.0         126.0         11.4         BGT         GGT           SMCJ85(C)A         85.0         94.40         104         1.0         5.0         137.0         10.4         BGV         GGV           SMCJ90(C)A         90.0         100.00         111         1.0         5.0         146.0         10.3         BGX         GGX           SMCJ100(C)A         100.0         111.00         123         1.0         5.0         162.0         9.3         BGZ         GGZ           SMCJ110(C)A         110.0         122.00         135         1.0         5.0         177.0         8.4         BHE         GHE           SMCJ120(C)A         120.0         133.00         147         1.0         5.0         193.0         7.9         BHG         GHG           SMCJ130(C)A         130.0         144.00         159         1.0         5.0         209.0         7.2         BHK         GHK           SMCJ150(C)A         150.0         167.00	` '									
SMCJ78(C)A         78.0         86.70         95.8         1.0         5.0         126.0         11.4         BGT         GGT           SMCJ85(C)A         85.0         94.40         104         1.0         5.0         137.0         10.4         BGV         GGV           SMCJ90(C)A         90.0         100.00         111         1.0         5.0         146.0         10.3         BGX         GGX           SMCJ100(C)A         100.0         111.00         123         1.0         5.0         162.0         9.3         BGZ         GGZ           SMCJ110(C)A         110.0         122.00         135         1.0         5.0         177.0         8.4         BHE         GHE           SMCJ120(C)A         120.0         133.00         147         1.0         5.0         193.0         7.9         BHG         GHG           SMCJ130(C)A         130.0         144.00         159         1.0         5.0         209.0         7.2         BHK         GHK           SMCJ150(C)A         150.0         167.00         185         1.0         5.0         243.0         6.2         BHM         GHP           SMCJ160(C)A         160.0         178.00 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>										
SMCJ85(C)A         85.0         94.40         104         1.0         5.0         137.0         10.4         BGV         GGV           SMCJ90(C)A         90.0         100.00         111         1.0         5.0         146.0         10.3         BGX         GGX           SMCJ100(C)A         100.0         111.00         123         1.0         5.0         162.0         9.3         BGZ         GGZ           SMCJ110(C)A         110.0         122.00         135         1.0         5.0         177.0         8.4         BHE         GHE           SMCJ120(C)A         120.0         133.00         147         1.0         5.0         193.0         7.9         BHG         GHG           SMCJ130(C)A         130.0         144.00         159         1.0         5.0         209.0         7.2         BHK         GHK           SMCJ150(C)A         150.0         167.00         185         1.0         5.0         243.0         6.2         BHM         GHP           SMCJ160(C)A         160.0         178.00         197         1.0         5.0         259.0         5.8         BHP         GHP										
SMCJ90(C)A         90.0         100.00         111         1.0         5.0         146.0         10.3         BGX         GGX           SMCJ100(C)A         100.0         111.00         123         1.0         5.0         162.0         9.3         BGZ         GGZ           SMCJ110(C)A         110.0         122.00         135         1.0         5.0         177.0         8.4         BHE         GHE           SMCJ120(C)A         120.0         133.00         147         1.0         5.0         193.0         7.9         BHG         GHG           SMCJ130(C)A         130.0         144.00         159         1.0         5.0         209.0         7.2         BHK         GHK           SMCJ150(C)A         150.0         167.00         185         1.0         5.0         243.0         6.2         BHM         GHM           SMCJ160(C)A         160.0         178.00         197         1.0         5.0         259.0         5.8         BHP         GHP	` '									
SMCJ100(C)A         100.0         111.00         123         1.0         5.0         162.0         9.3         BGZ         GGZ           SMCJ110(C)A         110.0         122.00         135         1.0         5.0         177.0         8.4         BHE         GHE           SMCJ120(C)A         120.0         133.00         147         1.0         5.0         193.0         7.9         BHG         GHG           SMCJ130(C)A         130.0         144.00         159         1.0         5.0         209.0         7.2         BHK         GHK           SMCJ150(C)A         150.0         167.00         185         1.0         5.0         243.0         6.2         BHM         GHM           SMCJ160(C)A         160.0         178.00         197         1.0         5.0         259.0         5.8         BHP         GHP										
SMCJ110(C)A         110.0         122.00         135         1.0         5.0         177.0         8.4         BHE         GHE           SMCJ120(C)A         120.0         133.00         147         1.0         5.0         193.0         7.9         BHG         GHG           SMCJ130(C)A         130.0         144.00         159         1.0         5.0         209.0         7.2         BHK         GHK           SMCJ150(C)A         150.0         167.00         185         1.0         5.0         243.0         6.2         BHM         GHM           SMCJ160(C)A         160.0         178.00         197         1.0         5.0         259.0         5.8         BHP         GHP	. ,									
SMCJ120(C)A         120.0         133.00         147         1.0         5.0         193.0         7.9         BHG         GHG           SMCJ130(C)A         130.0         144.00         159         1.0         5.0         209.0         7.2         BHK         GHK           SMCJ150(C)A         150.0         167.00         185         1.0         5.0         243.0         6.2         BHM         GHM           SMCJ160(C)A         160.0         178.00         197         1.0         5.0         259.0         5.8         BHP         GHP										
SMCJ130(C)A         130.0         144.00         159         1.0         5.0         209.0         7.2         BHK         GHK           SMCJ150(C)A         150.0         167.00         185         1.0         5.0         243.0         6.2         BHM         GHM           SMCJ160(C)A         160.0         178.00         197         1.0         5.0         259.0         5.8         BHP         GHP	· /									
SMCJ150(C)A         150.0         167.00         185         1.0         5.0         243.0         6.2         BHM         GHM           SMCJ160(C)A         160.0         178.00         197         1.0         5.0         259.0         5.8         BHP         GHP										
SMCJ160(C)A 160.0 178.00 197 1.0 5.0 259.0 5.8 BHP GHP	` '									
	. ,									
(SMI 1770) 1 1700   18000   200   10   50   2760   66   000   200	SMCJ170(C)A	170.0	189.00	209	1.0	5.0	275.0	5.5	BHR	GHR

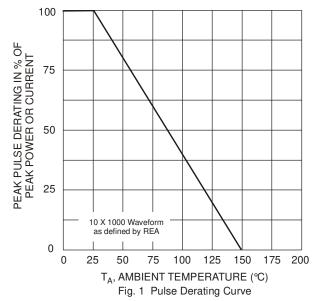
Notes:

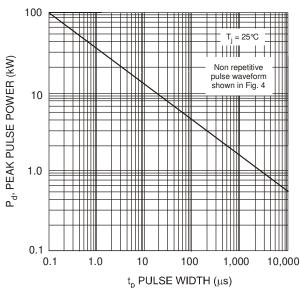
<sup>10.</sup> Suffix C denotes bidirectional device.

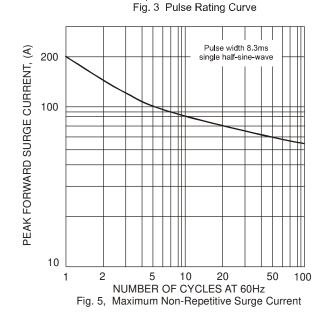
<sup>11.</sup>  $V_{BR}$  measured with  $I_T$  current pulse = 10  $\sim$  15 ms. 12. For bidirectional devices having  $V_{RWM}$  of 10V and under, the  $I_R$  is doubled.

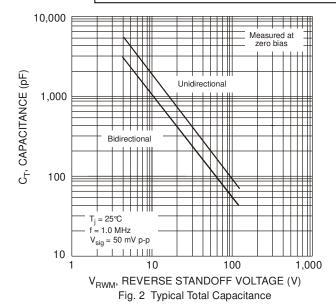


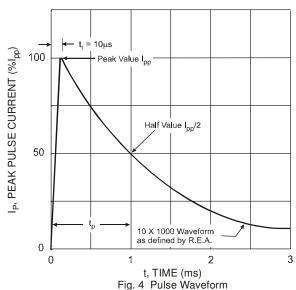
# SMCJ5.0(C)A - SMCJ170(C)A











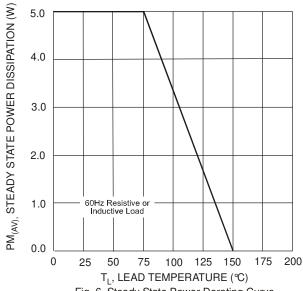
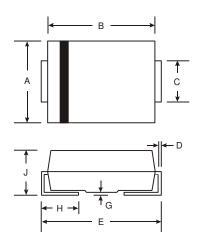


Fig. 6 Steady State Power Derating Curve



# **Package Outline Dimensions**

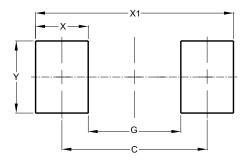
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



SMC					
Dim	Min	Max			
Α	5.59	6.22			
В	6.60	7.11			
С	2.75	3.18			
D	0.15	0.31			
Е	7.75	8.13			
G	0.10	0.20			
Н	0.76	1.52			
J	2.00	2.50			
All Dim	All Dimensions in mm				

## **Suggested Pad Layout**

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value		
Dillielisions	(in mm)		
С	6.90		
G	4.40		
Х	2.50		
X1	9.40		
Υ	3.30		



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