

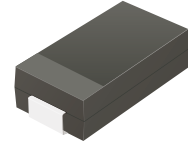
## ASMBJ5.0(C)A-HF Thru. ASMBJ440(C)A-HF

Working Peak Reverse Voltage: 5.0 to 440 Volts

Power Dissipation: 600 Watts

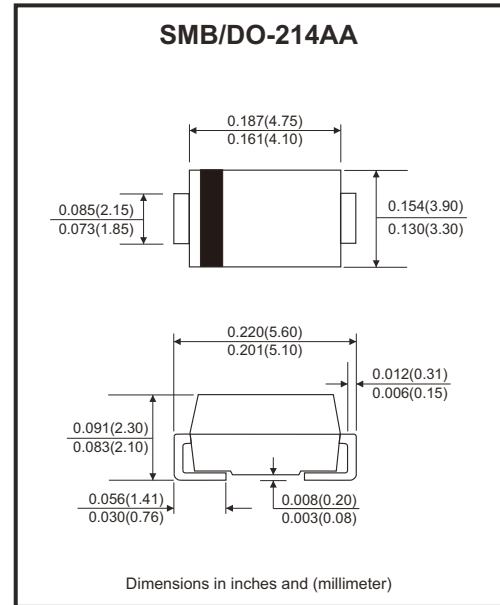
RoHS Device

Halogen Free



### Features

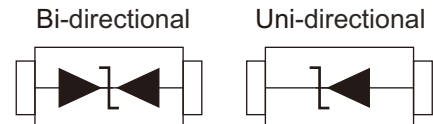
- 600W peak pulse power capability with a 10/1000 $\mu$ s waveform, repetitive rate (duty cycle):0.01%
- For surface mounted applications to optimize board space
- Low incremental surge impedance
- Excellent clamping capability
- Very fast response time
- Uni and Bidirectional unit
- Plastic package has underwriters laboratory flammability 94V-0
- Meet Halogen free and RoHS compliant
- Comply with AEC-Q101



### Mechanical data

- Case: SMB/DO-214AA, molded plastic.
- Terminals: solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes positive end (cathode) except bi-directional models.

### Circuit Diagram



### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.  
Single phase, half wave, 60Hz resistive or inductive load. For capacitive load, derate current by 20%.

| Characteristics   | Symbol                            | Value          | Units |
|---|-----------------------------------|----------------|-------|
| Peak power dissipation on a 10/1000 $\mu$ s waveform (Note 1)                         | P <sub>PP</sub>                   | 600            | W     |
| Peak pulse current on a 10/1000 $\mu$ s waveform (Note 1)                             | I <sub>PP</sub>                   | See Next Table | A     |
| Steady state power dissipation at T <sub>L</sub> =50°C                                | P <sub>D</sub>                    | 5.0            | W     |
| Peak forward surge current, 8.3ms single half sine-wave uni-directional only (Note 2) | I <sub>FSM</sub>                  | 100            | A     |
| Maximum instantaneous forward voltage at 50A for uni-directional only                 | V <sub>F</sub>                    | 3.5/5.0        | V     |
| Operation junction and storage temperature range                                      | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150    | °C    |

- Notes: 1. Non-repetitive current pulse, and derated above T<sub>A</sub>=25°C  
2. Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal  
3. V<sub>F</sub><3.5V for devices of V<sub>BR</sub><200V and V<sub>F</sub><5.0V for devices of V<sub>BR</sub>>201V

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# SMD Transient Voltage Suppressor

## Electrical Characteristics (at TA=25°C, unless otherwise specified)

| Part No.        | Breakdown voltage<br>VBR @ IT |          |         | Maximum Reverse Leakage<br>@VRWM<br>IR (µA) | Working Peak Reverse Voltage<br>VRWM (V) | Maximum Reverse Surge Current<br>IPP (A) | Maximum Clamping Voltage<br>@IPP<br>Vc (V) | Marking Code |    |
|-----------------|-------------------------------|----------|---------|---|--|--|--|--------------|----|
|                 | Min. (V)                      | Max. (V) | IT (mA) |   |  |  |  | UNI          | BI |
| ASMBJ5.0(C)A-HF | 6.40                          | 7.25     | 10      | 800   | 5.0                                      | 65.2                                     | 9.2  | KE           | AE |
| ASMBJ6.0(C)A-HF | 6.67                          | 7.37     | 10      | 800   | 6.0                                      | 58.3                                     | 10.3                                       | KG           | AG |
| ASMBJ6.5(C)A-HF | 7.22                          | 7.98     | 10      | 500   | 6.5                                      | 53.6                                     | 11.2                                       | KK           | AK |
| ASMBJ7.0(C)A-HF | 7.78                          | 8.60     | 10      | 200   | 7.0                                      | 50.0                                     | 12.0                                       | KM           | AM |
| ASMBJ7.5(C)A-HF | 8.33                          | 9.21     | 1       | 100   | 7.5                                      | 46.5                                     | 12.9                                       | KP           | AP |
| ASMBJ8.0(C)A-HF | 8.89                          | 9.83     | 1       | 50  | 8.0                                      | 44.1                                     | 13.6                                       | KR           | AR |
| ASMBJ8.5(C)A-HF | 9.44                          | 10.40    | 1       | 10  | 8.5                                      | 41.7                                     | 14.4                                       | KT           | AT |
| ASMBJ9.0(C)A-HF | 10.00                         | 11.10    | 1       | 5   | 9.0                                      | 39.0                                     | 15.4                                       | KV           | AV |
| ASMBJ10(C)A-HF  | 11.10                         | 12.30    | 1       | 5   | 10.0                                     | 35.3                                     | 17.0                                       | KX           | AX |
| ASMBJ11(C)A-HF  | 12.20                         | 13.50    | 1       | 5   | 11.0                                     | 33.0                                     | 18.2                                       | KZ           | AZ |
| ASMBJ12(C)A-HF  | 13.30                         | 14.70    | 1       | 5   | 12.0                                     | 30.2                                     | 19.9                                       | LE           | BE |
| ASMBJ13(C)A-HF  | 14.40                         | 15.90    | 1       | 5   | 13.0                                     | 27.9                                     | 21.5                                       | LG           | BG |
| ASMBJ14(C)A-HF  | 15.60                         | 17.20    | 1       | 5   | 14.0                                     | 25.9                                     | 23.2                                       | LK           | BK |
| ASMBJ15(C)A-HF  | 16.70                         | 18.50    | 1       | 5   | 15.0                                     | 24.6                                     | 24.4                                       | LM           | BM |
| ASMBJ16(C)A-HF  | 17.80                         | 19.70    | 1       | 5   | 16.0                                     | 23.1                                     | 26.0                                       | LP           | BP |
| ASMBJ17(C)A-HF  | 18.90                         | 20.90    | 1       | 5   | 17.0                                     | 21.7                                     | 27.6                                       | LR           | BR |
| ASMBJ18(C)A-HF  | 20.00                         | 22.10    | 1       | 5   | 18.0                                     | 20.5                                     | 29.2                                       | LT           | BT |
| ASMBJ20(C)A-HF  | 22.20                         | 24.50    | 1       | 5   | 20.0                                     | 18.5                                     | 32.4                                       | LV           | BV |
| ASMBJ22(C)A-HF  | 24.40                         | 26.90    | 1       | 5   | 22.0                                     | 16.9                                     | 35.5                                       | LX           | BX |
| ASMBJ24(C)A-HF  | 26.70                         | 29.50    | 1       | 5   | 24.0                                     | 15.4                                     | 38.9                                       | LZ           | BZ |
| ASMBJ26(C)A-HF  | 28.90                         | 31.90    | 1       | 5   | 26.0                                     | 14.3                                     | 42.1                                       | ME           | CE |
| ASMBJ28(C)A-HF  | 31.10                         | 34.40    | 1       | 5   | 28.0                                     | 13.2                                     | 45.4                                       | MG           | CG |
| ASMBJ30(C)A-HF  | 33.30                         | 36.80    | 1       | 5   | 30.0                                     | 12.4                                     | 48.4                                       | MK           | CK |
| ASMBJ33(C)A-HF  | 36.70                         | 40.60    | 1       | 5   | 33.0                                     | 11.3                                     | 53.3                                       | MM           | CM |
| ASMBJ36(C)A-HF  | 40.00                         | 44.20    | 1       | 5   | 36.0                                     | 10.3                                     | 58.1                                       | MP           | CP |
| ASMBJ40(C)A-HF  | 44.40                         | 49.10    | 1       | 5   | 40.0                                     | 9.3                                      | 64.5                                       | MR           | CR |
| ASMBJ43(C)A-HF  | 47.80                         | 52.80    | 1       | 5   | 43.0                                     | 8.6                                      | 69.4                                       | MT           | CT |
| ASMBJ45(C)A-HF  | 50.00                         | 55.30    | 1       | 5   | 45.0                                     | 8.3                                      | 72.7                                       | MV           | CV |
| ASMBJ48(C)A-HF  | 53.30                         | 58.90    | 1       | 5   | 48.0                                     | 7.8                                      | 77.4                                       | MX           | CX |
| ASMBJ51(C)A-HF  | 56.70                         | 62.70    | 1       | 5   | 51.0                                     | 7.3                                      | 82.4                                       | MZ           | CZ |
| ASMBJ54(C)A-HF  | 60.00                         | 66.30    | 1       | 5   | 54.0                                     | 6.9                                      | 87.1                                       | NE           | DE |
| ASMBJ58(C)A-HF  | 64.40                         | 71.20    | 1       | 5   | 58.0                                     | 6.4                                      | 93.6                                       | NG           | DG |
| ASMBJ60(C)A-HF  | 66.70                         | 73.70    | 1       | 5   | 60.0                                     | 6.2                                      | 96.8                                       | NK           | DK |
| ASMBJ64(C)A-HF  | 71.10                         | 78.60    | 1       | 5   | 64.0                                     | 5.8                                      | 103.0                                      | NM           | DM |
| ASMBJ70(C)A-HF  | 77.80                         | 86.00    | 1       | 5   | 70.0                                     | 5.3                                      | 113.0                                      | NP           | DP |
| ASMBJ75(C)A-HF  | 83.30                         | 92.10    | 1       | 5   | 75.0                                     | 5.0                                      | 121.0                                      | NR           | DR |
| ASMBJ78(C)A-HF  | 86.70                         | 95.80    | 1       | 5   | 78.0                                     | 4.8                                      | 126.0                                      | NT           | DT |
| ASMBJ85(C)A-HF  | 94.40                         | 104.00   | 1       | 5   | 85.0                                     | 4.4                                      | 137.0                                      | NV           | DV |
| ASMBJ90(C)A-HF  | 100.00                        | 111.00   | 1       | 5   | 90.0                                     | 4.1                                      | 146.0                                      | NX           | DX |
| ASMBJ100(C)A-HF | 111.00                        | 123.00   | 1       | 5   | 100.0                                    | 3.7                                      | 162.0                                      | NZ           | DZ |

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# SMD Transient Voltage Suppressor

## Electrical Characteristics (at TA=25°C, unless otherwise specified)

| Part No.        | Breakdown voltage<br>VBR @ IT |             |            | Maximum<br>Reverse<br>Leakage<br>@VRWM<br>IR (µA) | Working<br>Peak<br>Reverse<br>Voltage<br>VRWM (V) | Maximum<br>Reverse<br>Surge<br>Current<br>IPP (A) | Maximum<br>Clamping<br>Voltage<br>@IPP<br>Vc (V) | Marking<br>Code |    |
|-----------------|-------------------------------|-------------|------------|---|---|---|--|-----------------|----|
|                 | Min.<br>(V)                   | Max.<br>(V) | IT<br>(mA) |   |   |   |  | UNI             | BI |
| ASMBJ110(C)A-HF | 122.0                         | 135.0       | 1          | 5   | 110.0   | 3.4   | 177.0  | PE              | EE |
| ASMBJ120(C)A-HF | 133.0                         | 147.0       | 1          | 5   | 120.0   | 3.1   | 193.0  | PG              | EG |
| ASMBJ130(C)A-HF | 144.0                         | 159.0       | 1          | 5   | 130.0   | 2.9   | 209.0  | PK              | EK |
| ASMBJ150(C)A-HF | 167.0                         | 185.0       | 1          | 5   | 150.0   | 2.5   | 243.0  | PM              | EM |
| ASMBJ160(C)A-HF | 178.0                         | 197.0       | 1          | 5   | 160.0   | 2.3   | 259.0  | PP              | EP |
| ASMBJ170(C)A-HF | 189.0                         | 209.0       | 1          | 5   | 170.0   | 2.2   | 275.0  | PR              | ER |
| ASMBJ180(C)A-HF | 200.0                         | 220.0       | 1          | 5   | 180.0   | 2.1   | 291.6  | PT              | ET |
| ASMBJ190(C)A-HF | 211.0                         | 232.0       | 1          | 5   | 190.0   | 1.9   | 307.8  | PA              | EC |
| ASMBJ200(C)A-HF | 224.0                         | 247.0       | 1          | 5   | 200.0   | 1.8   | 324.0  | PV              | EV |
| ASMBJ220(C)A-HF | 246.0                         | 272.0       | 1          | 5   | 220.0   | 1.7   | 356.0  | PX              | EX |
| ASMBJ250(C)A-HF | 279.0                         | 309.0       | 1          | 5   | 250.0   | 1.5   | 405.0  | PZ              | EZ |
| ASMBJ300(C)A-HF | 335.0                         | 371.0       | 1          | 5   | 300.0   | 1.2   | 486.0  | QE              | FE |
| ASMBJ350(C)A-HF | 391.0                         | 432.0       | 1          | 5   | 350.0   | 1.0   | 567.0  | QG              | FG |
| ASMBJ400(C)A-HF | 447.0                         | 494.0       | 1          | 5   | 400.0   | 0.9   | 648.0  | QK              | FK |
| ASMBJ440(C)A-HF | 492.0                         | 543.0       | 1          | 5   | 440.0   | 0.8   | 713.0  | QM              | FM |

Notes: 1. For Bi-directional type having VRWM of 10V and less, the IR Limit is double.  
2. For Bi-directional devices, use suffix CA.

## Rating and Characteristic Curves (ASMBJ5.0(C)A-HF Thru. ASMBJ440(C)A-HF)

Fig.1 - Pulse Derating Curve

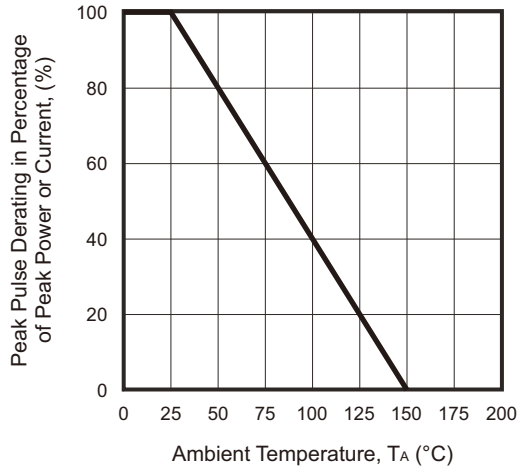


Fig.2 - Maximum Non-Repetitive Surge Current

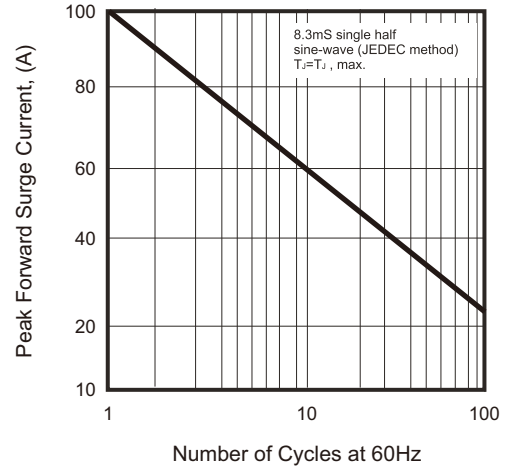


Fig.3 - Steady State Power Derating Curve

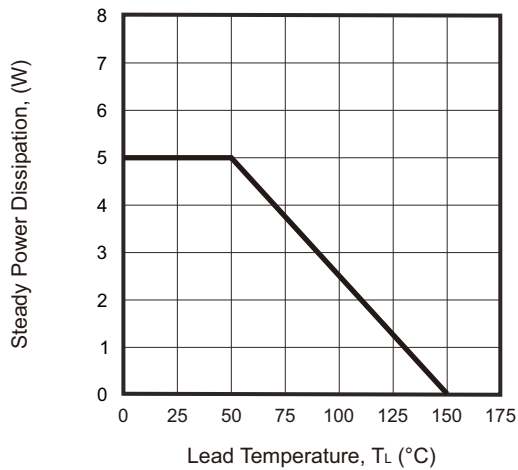


Fig.4 - Peak Pulse Power Rating Curve

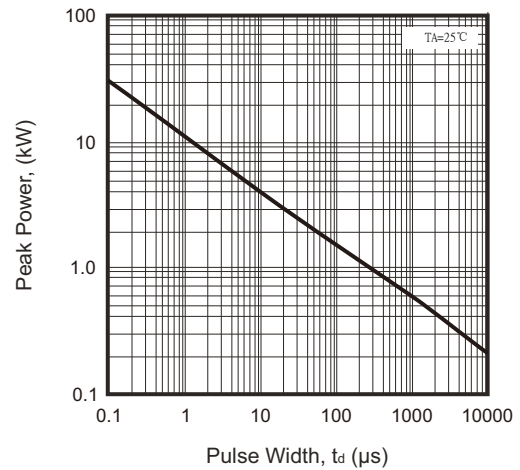
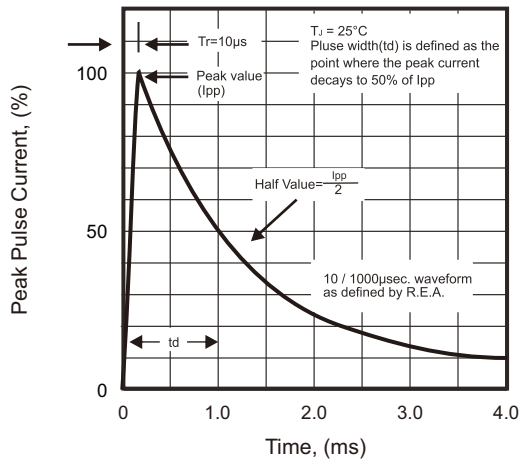
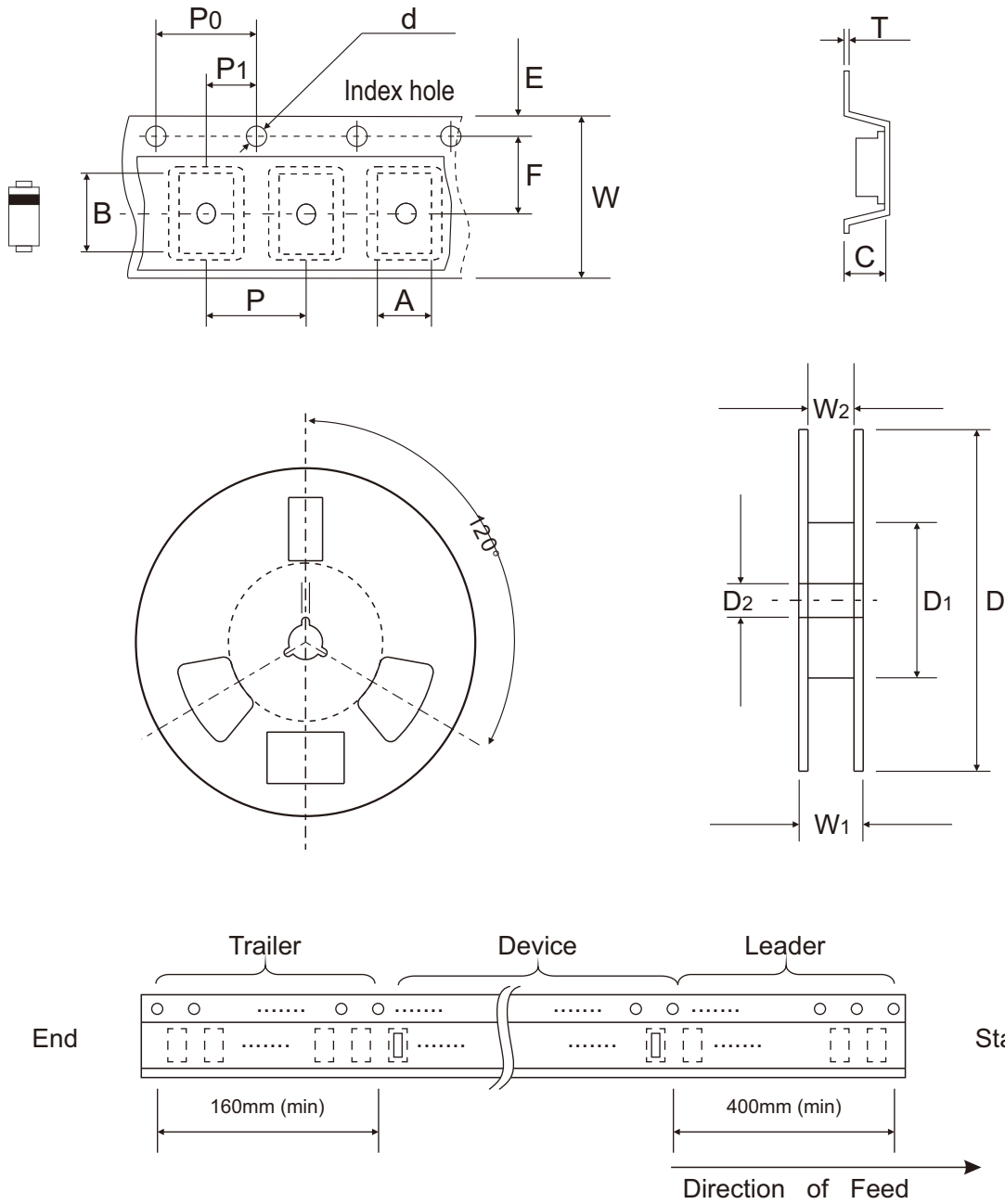


Fig.5 - Pulse Waveform



## Reel Taping Specification



| DO-214AA<br>(SMB) | SYMBOL | A                 | B                 | C           | d                 | D      | D1          | D2                |
|-------------------|--------|-------------------|-------------------|-------------|-------------------|--------|-------------|-------------------|
|                   | (mm)   | $3.67 \pm 0.10$   | $5.69 \pm 0.10$   | 4.50 (max)  | $1.55 \pm 0.10$   | 330.00 | 50.00 (min) | $13.00 \pm 0.20$  |
|                   | (inch) | $0.144 \pm 0.004$ | $0.224 \pm 0.004$ | 0.177 (max) | $0.061 \pm 0.004$ | 13.000 | 1.969 (min) | $0.512 \pm 0.008$ |

| DO-214AA<br>(SMB) | SYMBOL | E                 | F                 | P                 | P0                | P1                | W                 | W1          |
|-------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------|
|                   | (mm)   | $1.75 \pm 0.10$   | $5.50 \pm 0.05$   | $8.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.05$   | $12.00 \pm 0.30$  | 18.40 (max) |
|                   | (inch) | $0.069 \pm 0.004$ | $0.217 \pm 0.002$ | $0.315 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.002$ | $0.472 \pm 0.012$ | 0.724 (max) |

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