

SA Series

Protection Diodes



Features:

- Plastic package.
- Glass passivated chip junction.
- 500W peak pulse power capability on 10/1000 μ S waveform.
- Excellent clamping capability.
- Repetition rate (duty cycle) : 0.01%.
- Low incremental surge resistance.
- Fast response time : Typically less than 1.0ps from 0 volts to BV for unidirectional and 5.0ns for bidirectional types.
- Typical I_D less than 1 μ A above 10V.
- High temperature soldering guaranteed : 300°C/10seconds/0.375", (9.5mm) lead length/5lbs., (2.3kg) tension.

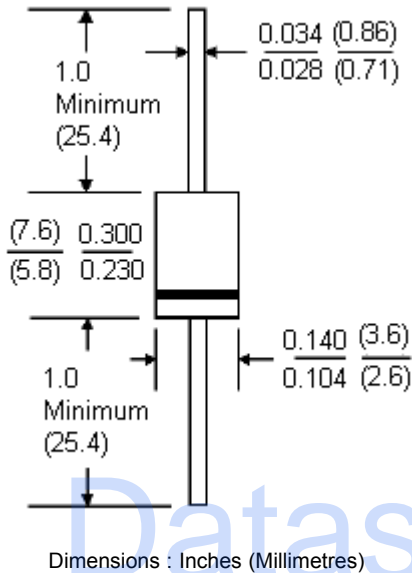
Mechanical Data:

- Case : JEDEC DO-15 moulded plastic over passivated junction.
- Terminals : Plated axial leads, solderable per MIL-STD-750, Method 2026.
- Polarity : Colour band denotes positive end (cathode) except bidirectionals.
- Mounting Position : Any

Devices For Bipolar Applications:

For bidirectionals use C or CA suffix for types. Electrical characteristics apply in both directions.

DO-15



Maximum Ratings and Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

| Rating | Symbol | Value | Unit |
|---|----------------|-------------|-------|
| Peak Pulse Power Dissipation on 10/1000 μ S Waveform (Note 1, Figure 1) | P_{PPM} | Minimum 500 | Watts |
| Steady State Power Dissipation at $T_L = 75^\circ\text{C}$ Lead Lengths 0.375", (9.5mm) (Note 2) | $P_{M(AV)}$ | 1.0 | Watts |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load, Unidirectional only (JEDEC Method) (Note 3) | I_{FSM} | 70 | Amps |
| Operating Junction and Storage Temperature Range | T_j, T_{STG} | -65 to +175 | °C |

Notes:

1. Non-Repetitive Current Pulse, per Figure 3 and Derated above $T_A = 25^\circ\text{C}$ per Figure 2.
2. Mounted on Copper Leaf Area of 1.57in² (40mm²) per Figure 5.
3. 8.3ms Single Half Sine-Wave or Equivalent Square Wave, Duty Cycle = 4 Pulses per Minute Maximum.



SA Series

Protection Diodes



Ratings and Characteristic Curves

Figure 1 Peak Pulse Power Rating Curve

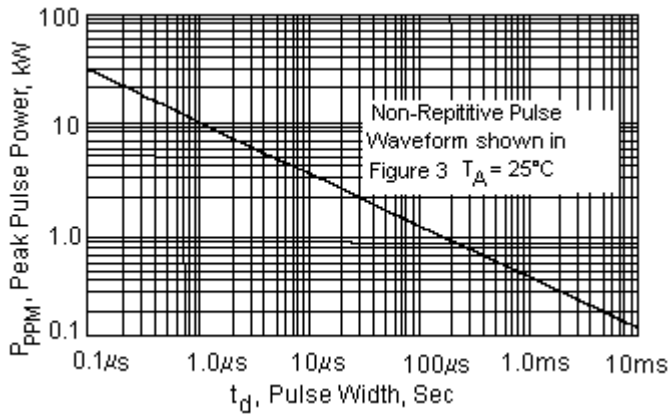


Figure 2 Pulse Derating Curve

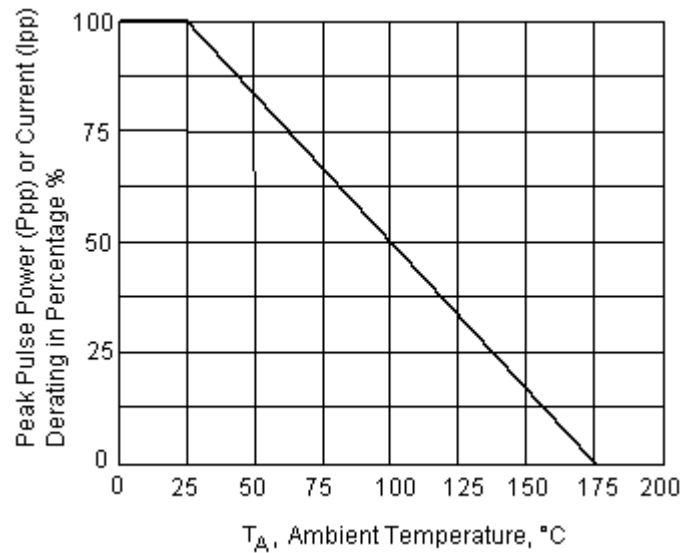


Figure 3 Pulse Waveform

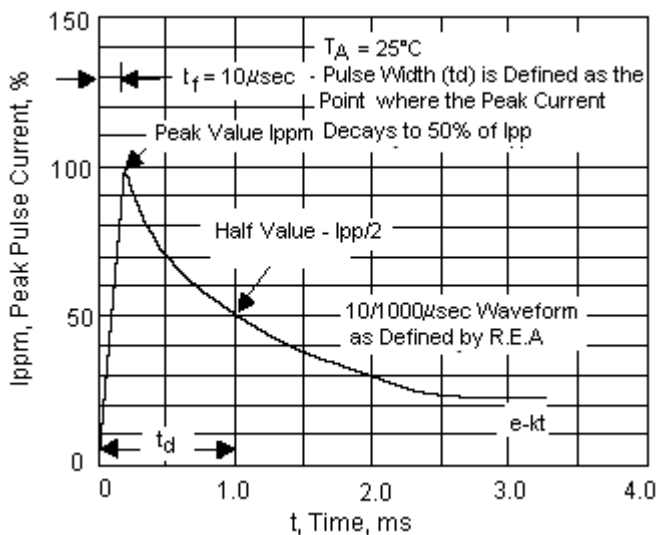
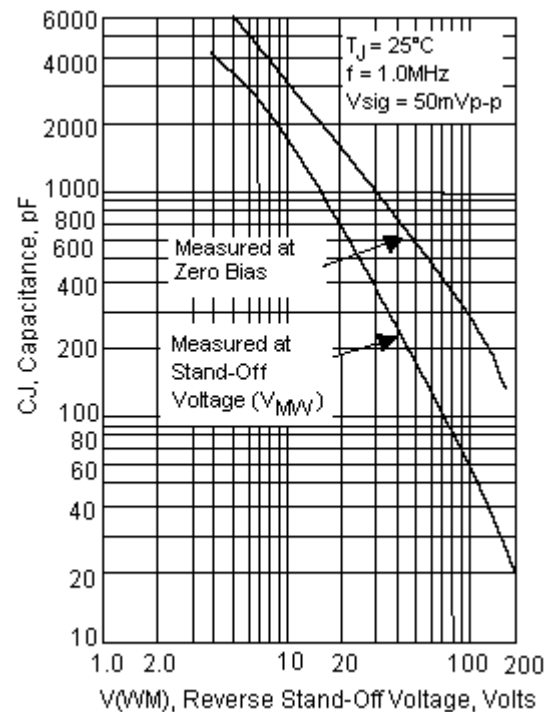


Figure 4 Typical junction Capacitance Uni-Directional



SA Series

Protection Diodes



Figure 5 Steady State Derating Curve

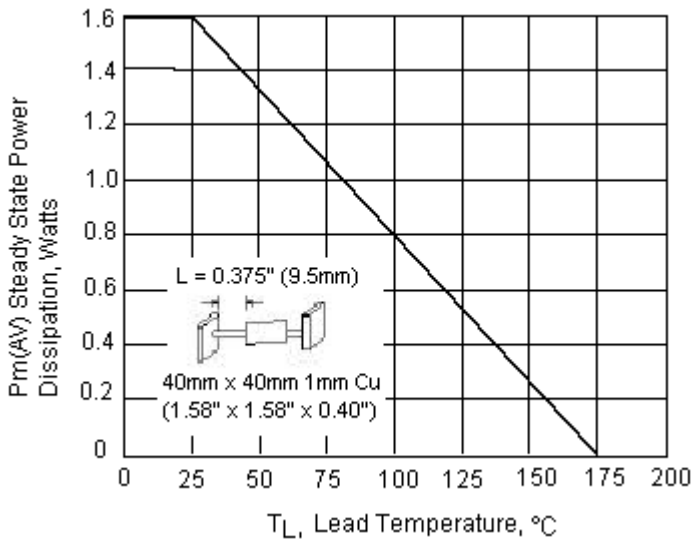
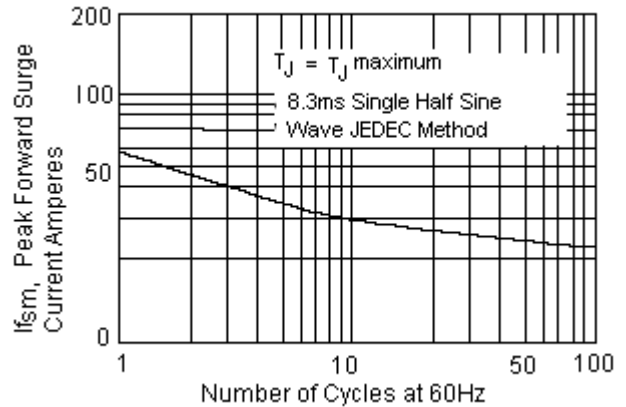


Figure 6 Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only



Specification Table

| Type | Reverse Stand-Off Voltage V_{RWM} (V) | Breakdown Voltage V_{BR} (V) Minimum at I_T | Breakdown Voltage V_{BR} (V) Maximum at I_T | Test Current I_T (mA) | Maximum Clamping Voltage at I_{PP} V_C (V) | Peak Pulse Current I_{PP} (A) | Reverse Leakage at V_{RWM} I_R (μ A) | Part Number |
|-----------------|---|--|--|-------------------------|--|---------------------------------|---|-------------|
| Uni-Directional | 5.00 | 6.4 | 7.25 | 10 | 9.2 | 54.3 | 600 | SA5.0A |
| | 12.00 | 13.3 | 15.3 | 1 | 19.9 | 25.1 | 3 | SA12A |
| | 16.00 | 16.7 | 19.2 | 1 | 24.4 | 20.6 | 3 | SA15A |
| | 24.00 | 26.7 | 30.7 | 1 | 38.9 | 12.8 | 3 | SA24A |
| | 30.00 | 33.3 | 38.3 | 1 | 48.4 | 10.3 | 3 | SA30A |
| Bi-Directional | 5.00 | 6.4 | 7.25 | 10 | 9.2 | 54.3 | 1200 | SA5.0CA |
| | 12.00 | 13.3 | 15.3 | 1 | 19.9 | 25.1 | 3 | SA12CA |
| | 16.00 | 16.7 | 19.2 | 1 | 24.4 | 20.6 | 3 | SA15CA |
| | 24.00 | 26.7 | 30.7 | 1 | 38.9 | 12.8 | 3 | SA24CA |
| | 30.00 | 33.3 | 38.3 | 1 | 48.4 | 10.3 | 3 | SA30CA |

SA Series

Protection Diodes



Notes:

International Sales Offices:



AUSTRALIA – Farnell InOne
Tel No: ++ 61 2 9645 8888
Fax No: ++ 61 2 9644 7898



FINLAND – Farnell InOne
Tel No: ++ 358 9 560 7780
Fax No: ++ 358 9 345 5411



NETHERLANDS – Farnell InOne
Tel No: ++ 31 30 241 7373
Fax No: ++ 31 30 241 7333



SWITZERLAND – Farnell InOne
Tel No: ++ 41 1 204 64 64
Fax No: ++ 41 1 204 64 54



AUSTRIA – Farnell InOne
Tel No: ++ 43 662 2180 680
Fax No: ++ 43 662 2180 670



FRANCE – Farnell InOne
Tel No: ++ 33 474 68 99 99
Fax No: ++ 33 474 68 99 90



NEW ZEALAND – Farnell InOne
Tel No: ++ 64 9 357 0646
Fax No: ++ 64 9 357 0656



UK – Farnell InOne
Tel No: ++ 44 8701 200 200
Fax No: ++ 44 8701 200 201



BELGIUM – Farnell InOne
Tel No: ++ 32 3 475 2810
Fax No: ++ 32 3 227 3648



GERMANY – Farnell InOne
Tel No: ++ 49 89 61 39 39 39
Fax No: ++ 49 89 613 59 01



NORWAY – Farnell InOne
Tel No: ++ 45 44 53 66 66
Fax No: ++ 45 44 53 66 02



UK – BuckHickman InOne
++ 44 8450 510 150
++ 44 8450 510 130



BRAZIL – Farnell-Newark InOne
Tel No: ++ 55 11 4066 9400
Fax No: ++ 55 11 4066 9410



HONG KONG – Farnell-Newark InOne
Tel No: ++ 852 2268 9888
Fax No: ++ 852 2268 9899



PORTUGAL – Farnell InOne
Tel No: ++ 34 93 475 8804
Fax No: ++ 34 93 474 5288



UK – CPC
++ 44 8701 202 530
++ 44 8701 202 531



CHINA – Farnell-Newark InOne
Tel No: ++86 10 6238 5152
Fax No: ++86 10 6238 5022



IRELAND – Farnell InOne
Tel No: ++ 353 1 830 9277
Fax No: ++ 353 1 830 9016



SINGAPORE – Farnell-Newark InOne
Tel No: ++ 65 6788 0200
Fax No: ++ 65 6788 0300



EXPORT – Farnell InOne
Tel No: ++ 44 8701 200 208
Fax No: ++ 44 8701 200 209

For enquiries from all other markets



DENMARK – Farnell InOne
Tel No: ++ 45 44 53 66 44
Fax No: ++ 45 44 53 66 06



ITALY – Farnell InOne
Tel No: ++ 39 02 93 995 200
Fax No: ++ 39 02 93 995 300



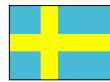
SPAIN – Farnell InOne
Tel No: ++ 34 93 475 8805
Fax No: ++ 34 93 474 5107



ESTONIA – Farnell InOne
Tel No: ++ 358 9 560 7780
Fax No: ++ 358 9 345 5411



MALAYSIA – Farnell-Newark InOne
Tel No: ++ 60 3 7873 8000
Fax No: ++ 60 3 7873 7000



SWEDEN – Farnell InOne
Tel No: ++ 46 8 730 50 00
Fax No: ++ 46 8 83 52 62

<http://www.farnellinone.com>

<http://www.buckhickmaninone.com>

<http://www.cpc.co.uk>

Disclaimer This data sheet and its contents (the "Information") belong to the Premier Farnell Group (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell plc 2004.

