

AXIAL TERMINALS

LOW MOUNTING HEIGHT

HIGH CV PRODUCT

LONG LIFE 3000 H @ 105 °C

### ■ FEATURES

- All contacts welded
- High ripple current
- Welded axial leads
- High reliability

### ■ APPLICATIONS

- HiFi
- Industrial
- Telecommunications

RoHS compliant  
REACH compliant

### ■ GENERAL SPECIFICATIONS

| Items                                       | Characteristics   |
|---|---|
| Rated capacitance range $C_R$               | 10... 82.000 $\mu\text{F}$  |
| Capacitance tolerance                       | $\pm 20\%$  |
| Rated voltage range $U$                     | 16 ... 450 V  |
| Surge voltage $U_S$                         | $U_R \leq 315 \text{ V}: U_S = 1,15 U_R$ ; $U_R > 315 \text{ V}: U_S = 1,10 U_R$  |
| Max. reverse voltage                        | 2 V   |
| Category temperature range                  | - 40°C ... + 105 °C   |
| Leakage current $I_L$ after 5 min @ $U_R$   | $\leq 0,008 * C_R [\mu\text{F}] * U_R [\text{V}] + 6 \mu\text{A} [\mu\text{A}]$   |
| Useful life 3000 h @ 105 °C ; $U_R$ ; $I_R$ | Requirements<br>$\Delta C/C \leq 30\%$ of initial value ; ESR $\leq 300\%$ of specified ;<br>limit $I_L \leq$ specified limit |
| Endurance test 2000 h @ 105 °C , $U_R$      | Requirements<br>$\Delta C/C \leq 20\%$ of initial value ; ESR $\leq 130\%$ of specified ;<br>limit $I_L \leq$ specified limit |
| Climatic category IEC 60068                 | 40/105/56   |
| Voltage proof of the external insulation    | $D \leq 25 \text{ mm}: \geq 1000 \text{ V AC}$ ; $D > 25 \text{ mm}: \geq 2500 \text{ V AC}$                                  |
| Sectional specification                     | IEC 60384-4   |
| $\emptyset$ leads                           | Up to 25 mm $\emptyset$ : 0,8 mm ; more than 25 mm $\emptyset$ : 1,0 mm   |

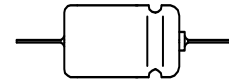
Different voltages and capacitance combinations are available on request. Also in small lots.

Stand: 05/2015

## ELECTRICAL DATA AND ORDERING CODE FOR SERIES AH

| Rated voltage<br>$U_R$<br>[V] | Rated cap.<br>$C_R$<br>[ $\mu$ F] | Case size<br>D x L<br>[mm] | Typ. ESR<br>100 Hz,<br>20°C<br>[m $\Omega$ ] | Ripple current<br>IR~<br>100 Hz,<br>105°C [A] | Order code<br>AH... |
|-------------------------------|-----------------------------------|----------------------------|--|---|---------------------|
| 16                            | 2200                              | 10x30                      | 203  | 0,6   | 22201610030         |
|                               | 3300                              | 12x30                      | 135  | 0,8   | 33201612030         |
|                               | 4700                              | 14x30                      | 95   | 1,0   | 47201614030         |
|                               | 4700                              | 14x37                      | 95   | 1,1   | 47201614037         |
|                               | 5600                              | 16x30                      | 80   | 1,2   | 56201616030         |
|                               | 8200                              | 16x39                      | 54   | 1,7   | 82201616039         |
|                               | 8200                              | 18x30                      | 54   | 1,6   | 82201618030         |
|                               | 10000                             | 18x39                      | 45   | 2,0   | 10301618039         |
|                               | 12000                             | 21x36                      | 37   | 2,3   | 12301621036         |
|                               | 18000                             | 25x38                      | 25   | 3,1   | 18301625038         |
|                               | 33000                             | 25x49                      | 14   | 4,6   | 33301625049         |
|                               | 47000                             | 30x50                      | 9  | 6,0   | 47301630050         |
|                               | 56000                             | 35x50                      | 8  | 7,2   | 56301635050         |
|                               | 82000                             | 35x66                      | 6  | 9,6   | 82301635066         |
| 25                            | 1200                              | 10x30                      | 372  | 0,4   | 12202510030         |
|                               | 1800                              | 12x30                      | 248  | 0,6   | 18202512030         |
|                               | 2700                              | 14x30                      | 165  | 0,8   | 27202514030         |
|                               | 3300                              | 14x37                      | 135  | 0,9   | 33202514037         |
|                               | 3300                              | 16x30                      | 135  | 0,9   | 33202516030         |
|                               | 4700                              | 16x39                      | 95   | 1,3   | 47202516039         |
|                               | 4700                              | 18x30                      | 95   | 1,2   | 47202518030         |
|                               | 5600                              | 18x39                      | 80   | 1,5   | 56202518039         |
|                               | 6800                              | 21x36                      | 66   | 1,7   | 68202521036         |
|                               | 10000                             | 25x38                      | 45   | 2,3   | 10302525038         |
|                               | 18000                             | 25x49                      | 25   | 3,4   | 18302525049         |
|                               | 27000                             | 30x50                      | 17   | 4,6   | 27302530050         |
|                               | 33000                             | 35x50                      | 14   | 5,5   | 33302535050         |
|                               | 47000                             | 35x66                      | 10   | 7,2   | 47302535066         |
| 40                            | 560                               | 10x30                      | 682  | 0,3   | 56104010030         |
|                               | 1000                              | 12x30                      | 382  | 0,5   | 10204012030         |
|                               | 1500                              | 14x30                      | 255  | 0,6   | 15204014030         |
|                               | 1800                              | 14x37                      | 212  | 0,8   | 18204014037         |
|                               | 1800                              | 16x30                      | 212  | 0,8   | 18204016030         |
|                               | 2200                              | 16x39                      | 174  | 0,9   | 22204016039         |
|                               | 2200                              | 18x30                      | 174  | 0,9   | 22204018030         |
|                               | 3300                              | 18x39                      | 116  | 1,2   | 33204018039         |
|                               | 3900                              | 21x36                      | 98   | 1,4   | 39204021036         |
|                               | 5600                              | 25x38                      | 68   | 1,9   | 56204025038         |
|                               | 10000                             | 25x49                      | 38   | 2,7   | 10304025049         |
|                               | 15000                             | 30x50                      | 25   | 3,7   | 15304030050         |
|                               | 22000                             | 35x50                      | 17   | 4,9   | 22304035050         |
|                               | 27000                             | 35x66                      | 14   | 6,0   | 27304035066         |
| 63                            | 330                               | 10x30                      | 869  | 0,3   | 33106310030         |
|                               | 470                               | 12x30                      | 610  | 0,4   | 47106312030         |
|                               | 680                               | 14x30                      | 422  | 0,5   | 68106314030         |
|                               | 820                               | 14x37                      | 350  | 0,6   | 82106314037         |

| Rated voltage<br>$U_R$<br>[V] | Rated cap.<br>$C_R$<br>[ $\mu$ F] | Case size<br>D x L<br>[mm] | Typ. ESR<br>100 Hz,<br>20°C<br>[m $\Omega$ ] | Ripple current<br>IR~<br>100 Hz,<br>105°C [A] | Order code<br>AH... |             |
|-------------------------------|-----------------------------------|----------------------------|--|---|---------------------|-------------|
| 63                            | 1000                              | 16x30                      | 287  | 0,6   | 10206316030         |             |
|                               | 1200                              | 16x39                      | 239  | 0,8   | 12206316039         |             |
|                               | 1200                              | 18x30                      | 239  | 0,8   | 12206318030         |             |
|                               | 1500                              | 18x39                      | 191  | 0,9   | 15206318039         |             |
|                               | 2200                              | 21x36                      | 130  | 1,2   | 22206321036         |             |
|                               | 3300                              | 25x38                      | 87   | 1,6   | 33206325038         |             |
|                               | 5600                              | 25x49                      | 51   | 2,4   | 56206325049         |             |
|                               | 8200                              | 30x50                      | 35   | 3,1   | 82206330050         |             |
|                               | 10000                             | 30x50                      | 29   | 3,6   | 10306330050         |             |
|                               | 12000                             | 35x50                      | 24   | 4,2   | 12306335050         |             |
|                               | 15000                             | 35x66                      | 19   | 5,2   | 15306335066         |             |
|                               | 220                               | 10x30                      | 1448   | 0,2   | 22108010030         |             |
|                               | 330                               | 12x30                      | 965  | 0,3   | 33108012030         |             |
|                               | 470                               | 14x30                      | 678  | 0,4   | 47108014030         |             |
| 80                            | 680                               | 14x37                      | 468  | 0,5   | 68108014037         |             |
|                               | 680                               | 16x30                      | 468  | 0,5   | 68108016030         |             |
|                               | 1000                              | 16x39                      | 318  | 0,7   | 10208016039         |             |
|                               | 1000                              | 18x30                      | 318  | 0,7   | 10208018030         |             |
|                               | 1200                              | 18x39                      | 265  | 0,8   | 12208018039         |             |
|                               | 1500                              | 21x36                      | 212  | 1,0   | 15208021036         |             |
|                               | 2200                              | 25x38                      | 145  | 1,3   | 22208025038         |             |
|                               | 3900                              | 25x49                      | 82   | 1,9   | 39208025049         |             |
|                               | 5600                              | 30x50                      | 57   | 2,5   | 56208030050         |             |
|                               | 8200                              | 35x50                      | 39   | 3,3   | 82208035050         |             |
|                               | 12000                             | 35x66                      | 27   | 4,4   | 12308035066         |             |
|                               | 150                               | 10x30                      | 1062   | 0,3   | 15110010030         |             |
|                               | 220                               | 12x30                      | 724  | 0,4   | 22110012030         |             |
|                               | 330                               | 14x30                      | 483  | 0,5   | 33110014030         |             |
| 100                           | 390                               | 14x37                      | 408  | 0,5   | 39110014037         |             |
|                               | 470                               | 16x30                      | 339  | 0,6   | 47110016030         |             |
|                               | 560                               | 16x39                      | 284  | 0,7   | 56110016039         |             |
|                               | 560                               | 18x30                      | 284  | 0,7   | 56110018030         |             |
|                               | 680                               | 18x39                      | 234  | 0,9   | 68110018039         |             |
|                               | 1000                              | 21x36                      | 159  | 1,1   | 10210021036         |             |
|                               | 1500                              | 25x38                      | 106  | 1,5   | 15210025038         |             |
|                               | 2200                              | 25x49                      | 72   | 2,0   | 22210025049         |             |
|                               | 3300                              | 30x50                      | 48   | 2,7   | 33210030050         |             |
|                               | 4700                              | 35x50                      | 34   | 3,5   | 47210035050         |             |
|                               | 6800                              | 35x66                      | 23   | 4,7   | 68210035066         |             |
|                               | 160                               | 56                         | 10x30  | 1990  | 0,2                 | 56016010030 |
|                               |                                   | 100                        | 12x30  | 1115  | 0,3                 | 10116012030 |
|                               |                                   | 120                        | 14x30  | 929   | 0,3                 | 12116014030 |
| 150                           |                                   | 14x37                      | 743  | 0,4   | 15116014037         |             |
| 150                           |                                   | 16x30                      | 743  | 0,4   | 15116016030         |             |
| 220                           |                                   | 16x39                      | 507  | 0,5   | 22116016039         |             |
| 220                           |                                   | 18x30                      | 507  | 0,5   | 22116018030         |             |



| Rated voltage<br>$U_R$<br>[V] | Rated cap.<br>$C_R$<br>[μF] | Case size<br>D x L<br>[mm] | Typ. ESR<br>100 Hz,<br>20°C<br>[mΩ] | Ripple current<br>IR~<br>100 Hz,<br>105°C [A] | Order code<br>AH... |
|-------------------------------|-----------------------------|----------------------------|-------------------------------------|---|---------------------|
| 160                           | 270                         | 18x39                      | 413                                 | 0,6   | 27116018039         |
|                               | 330                         | 21x36                      | 338                                 | 0,8   | 33116021036         |
|                               | 560                         | 25x38                      | 199                                 | 1,1   | 56116025038         |
|                               | 1000                        | 25x49                      | 111                                 | 1,6   | 10216025049         |
|                               | 1500                        | 30x50                      | 74                                  | 2,1   | 15216030050         |
|                               | 1800                        | 35x50                      | 62                                  | 2,6   | 18216035050         |
|                               | 2700                        | 35x66                      | 41                                  | 3,5   | 27216035066         |
| 250                           | 33                          | 10x30                      | 2895                                | 0,2   | 33025010030         |
|                               | 56                          | 12x30                      | 1706                                | 0,2   | 56025012030         |
|                               | 82                          | 14x30                      | 1165                                | 0,3   | 82025014030         |
|                               | 100                         | 14x37                      | 955                                 | 0,4   | 10125014037         |
|                               | 100                         | 16x30                      | 955                                 | 0,4   | 10125016030         |
|                               | 150                         | 16x39                      | 637                                 | 0,5   | 15125016039         |
|                               | 150                         | 18x30                      | 637                                 | 0,5   | 15125018030         |
|                               | 180                         | 18x39                      | 531                                 | 0,6   | 18125018039         |
|                               | 220                         | 21x36                      | 434                                 | 0,7   | 22125021036         |
|                               | 390                         | 25x38                      | 245                                 | 1,0   | 39125025038         |
|                               | 680                         | 25x49                      | 141                                 | 1,4   | 68125025049         |
|                               | 820                         | 30x50                      | 117                                 | 1,7   | 82125030050         |
|                               | 1200                        | 35x50                      | 80                                  | 2,3   | 12225035050         |
|                               | 1800                        | 35x66                      | 53                                  | 3,1   | 18225035066         |
| 350                           | 22                          | 10x30                      | 4343                                | 0,1   | 22035010030         |
|                               | 33                          | 12x30                      | 2895                                | 0,2   | 33035012030         |
|                               | 47                          | 14x30                      | 2033                                | 0,2   | 47035014030         |
|                               | 56                          | 14x37                      | 1706                                | 0,3   | 56035014037         |
|                               | 56                          | 16x30                      | 1706                                | 0,3   | 56035016030         |
|                               | 68                          | 16x39                      | 1405                                | 0,3   | 68035016039         |
|                               | 68                          | 18x30                      | 1405                                | 0,3   | 68035018030         |
|                               | 100                         | 18x39                      | 955                                 | 0,4   | 10135018039         |
|                               | 120                         | 21x36                      | 796                                 | 0,5   | 12135021036         |
|                               | 120                         | 21x36                      | 796                                 | 0,5   | 12135021036         |
|                               | 220                         | 25x38                      | 434                                 | 0,7   | 22135025038         |

| Rated voltage<br>$U_R$<br>[V] | Rated cap.<br>$C_R$<br>[μF] | Case size<br>D x L<br>[mm] | Typ. ESR<br>100 Hz,<br>20°C<br>[mΩ] | Ripple current<br>IR~<br>100 Hz,<br>105°C [A] | Order code<br>AH... |
|-------------------------------|-----------------------------|----------------------------|-------------------------------------|---|---------------------|
| 350                           | 330                         | 25x49                      | 290                                 | 1,0   | 33135025049         |
|                               | 470                         | 30x50                      | 203                                 | 1,3   | 47135030050         |
|                               | 680                         | 35x50                      | 141                                 | 1,7   | 68135035050         |
|                               | 820                         | 35x66                      | 117                                 | 2,1   | 82135035066         |
| 400                           | 18                          | 10x30                      | 7077                                | 0,1   | 18040010030         |
|                               | 27                          | 12x30                      | 4718                                | 0,1   | 27040012030         |
|                               | 39                          | 14x30                      | 3266                                | 0,2   | 39040014030         |
|                               | 47                          | 14x37                      | 2710                                | 0,2   | 47040014037         |
|                               | 47                          | 16x30                      | 2710                                | 0,2   | 47040016030         |
|                               | 56                          | 16x39                      | 2275                                | 0,3   | 56040016039         |
|                               | 56                          | 18x30                      | 2275                                | 0,2   | 56040018030         |
|                               | 68                          | 18x39                      | 1873                                | 0,3   | 68040018039         |
|                               | 100                         | 21x36                      | 1274                                | 0,4   | 10140021036         |
|                               | 150                         | 25x38                      | 849                                 | 0,5   | 15140025038         |
|                               | 220                         | 25x49                      | 579                                 | 0,7   | 22140025049         |
|                               | 330                         | 30x50                      | 386                                 | 0,9   | 33140030050         |
|                               | 470                         | 35x50                      | 271                                 | 1,2   | 47140035050         |
|                               | 680                         | 35x66                      | 187                                 | 1,7   | 68140035066         |
| 450                           | 10                          | 10x30                      | 11146                               | 0,1   | 10045010030         |
|                               | 15                          | 12x30                      | 7431                                | 0,1   | 15045012030         |
|                               | 22                          | 14x30                      | 5067                                | 0,1   | 22045014030         |
|                               | 33                          | 14x37                      | 3378                                | 0,2   | 33045014037         |
|                               | 39                          | 16x30                      | 2858                                | 0,2   | 39045016030         |
|                               | 47                          | 16x39                      | 2372                                | 0,3   | 47045016039         |
|                               | 47                          | 18x30                      | 2372                                | 0,2   | 47045018030         |
|                               | 56                          | 18x39                      | 1990                                | 0,3   | 56045018039         |
|                               | 100                         | 21x36                      | 1115                                | 0,4   | 10145021036         |
|                               | 150                         | 25x38                      | 743                                 | 0,6   | 15145025038         |
|                               | 220                         | 25x49                      | 507                                 | 0,8   | 22145025049         |
|                               | 330                         | 30x50                      | 338                                 | 1,0   | 33145030050         |
|                               | 470                         | 35x50                      | 237                                 | 1,3   | 47145035050         |
|                               | 560                         | 35x66                      | 199                                 | 1,6   | 56145035066         |

■ USEFUL LIFE AS A FUNCTION OF AMBIENT TEMPERATURE AND ACTUAL RIPPLE CURRENT

