



## Film Capacitors

### Metallized Polypropylene Film Capacitors (MKP)

**Series/Type:** B32656S  
**Date:** August 2004

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**Snubbing (wound)**
**Typical applications**

- IGBT
- Snubbing

**Climatic**

- Max. operating temperature: 100 °C
- Climatic category (IEC 60068-1): 55/100/56

**Construction**

- Dielectric: polypropylene (PP)
- Wound capacitor technology with internal series connection
- Plastic case (UL 94 V-0)
- Epoxy resin sealing (UL 94 V-0)

**Features**

- High pulse strength and high contact reliability
- Very low inductance

**Terminals**

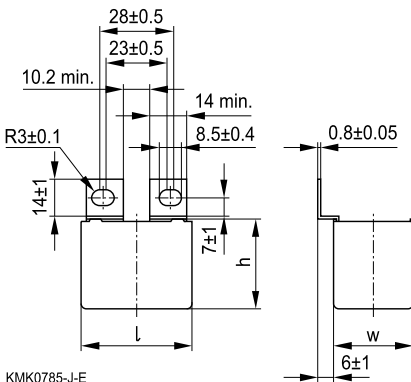
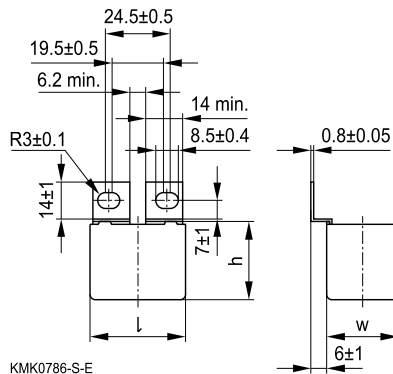
- Strap terminals, tinned copper (max. torque 10 Nm)

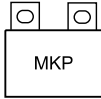
**Marking**

Manufacturer's logo, ordering code, style (MKP)  
 rated capacitance (coded), cap. tolerance (code letter),  
 rated DC voltage, date of manufacture (coded)

**Delivery mode**

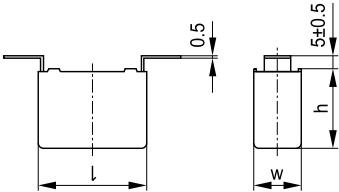
Bulk

**Dimensional drawings**
**T1 (code no. 561)**

**T2 (code no. 562)**


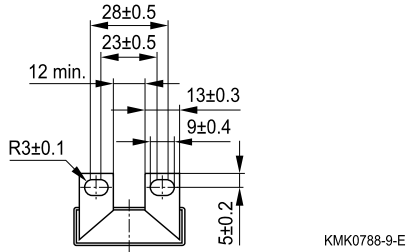
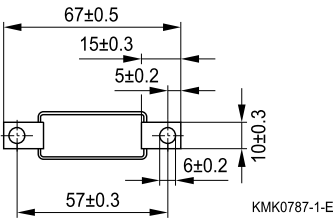
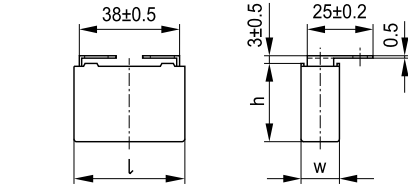


Dimensional drawings (continued)

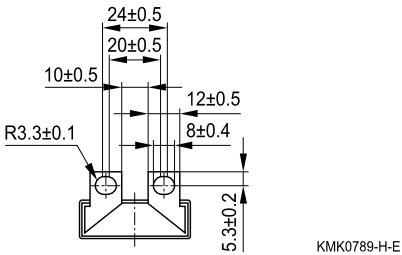
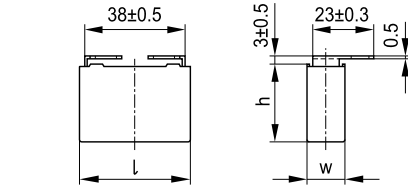
T3 (code no. 563)



T4 (code no. 564)



T5 (code no. 565)



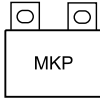


**B32656S**

**Snubbing (wound)**

**Overview of available types**

| Type            | B32656S |      |      |      |      |
|-----------------|---------|------|------|------|------|
| $V_R$ (VDC)     | 850     | 1000 | 1250 | 1600 | 2000 |
| $V_{rms}$ (VAC) | 450     | 480  | 500  | 750  | 800  |
| $C_R$ (nF)      |         |      |      |      |      |
| 47              |         |      |      |      |      |
| 68              |         |      |      |      |      |
| 100             |         |      |      |      |      |
| 120             |         |      |      |      |      |
| 150             |         |      |      |      |      |
| 220             |         |      |      |      |      |
| 270             |         |      |      |      |      |
| 330             |         |      |      |      |      |
| 390             |         |      |      |      |      |
| 470             |         |      |      |      |      |
| 560             |         |      |      |      |      |
| 680             |         |      |      |      |      |
| 820             |         |      |      |      |      |
| 1000            |         |      |      |      |      |
| 1200            |         |      |      |      |      |
| 1500            |         |      |      |      |      |
| 1800            |         |      |      |      |      |
| 2200            |         |      |      |      |      |


**Electrical specifications, ordering codes and packing units**

| $V_R$ | $V_{rms}$<br>$f \leq 1 \text{ kHz}$<br>VDC | $C_R$<br>nF | Max. dimensions<br>$w \times h \times l$<br>mm | $I_{rms}$<br>100 kHz<br>A | ESR<br>100 kHz<br>m $\Omega$ | Ordering code<br>(composition see<br>below) | Ter-<br>minal | pcs./<br>unit |
|-------|--|-------------|--|---------------------------|------------------------------|---|---------------|---------------|
| 850   | 450  | 220         | 12.0 × 22.5 × 42.0                             | 5                         | 10.0                         | B32656S8224+563                             | T3            | 56            |
|       |  | 220         | 12.0 × 22.5 × 42.0                             | 5                         | 10.0                         | B32656S8224+564                             | T4            | 96            |
|       |  | 270         | 12.0 × 22.5 × 42.0                             | 6                         | 9.0                          | B32656S8274+563                             | T3            | 56            |
|       |  | 270         | 12.0 × 22.5 × 42.0                             | 6                         | 9.0                          | B32656S8274+564                             | T4            | 96            |
|       |  | 330         | 12.0 × 22.5 × 42.0                             | 6                         | 9.0                          | B32656S8334+563                             | T3            | 56            |
|       |  | 330         | 12.0 × 22.5 × 42.0                             | 6                         | 9.0                          | B32656S8334+564                             | T4            | 96            |
|       |  | 390         | 12.0 × 22.5 × 42.0                             | 7                         | 8.0                          | B32656S8394+563                             | T3            | 56            |
|       |  | 390         | 12.0 × 22.5 × 42.0                             | 7                         | 8.0                          | B32656S8394+564                             | T4            | 96            |
|       |  | 470         | 12.0 × 22.5 × 42.0                             | 8                         | 8.0                          | B32656S8474+563                             | T3            | 56            |
|       |  | 470         | 12.0 × 22.5 × 42.0                             | 8                         | 8.0                          | B32656S8474+564                             | T4            | 96            |
|       |  | 560         | 14.0 × 25.0 × 42.0                             | 8                         | 7.0                          | B32656S8564+563                             | T3            | 48            |
|       |  | 560         | 14.0 × 25.0 × 42.0                             | 8                         | 7.0                          | B32656S8564+564                             | T4            | 72            |
|       |  | 560         | 14.0 × 25.0 × 42.0                             | 8                         | 7.0                          | B32656S8564+565                             | T5            | 72            |
|       |  | 680         | 16.0 × 28.5 × 42.0                             | 9                         | 6.0                          | B32656S8684+563                             | T3            | 40            |
|       |  | 680         | 16.0 × 28.5 × 42.0                             | 9                         | 6.0                          | B32656S8684+564                             | T4            | 48            |
|       |  | 680         | 16.0 × 28.5 × 42.0                             | 9                         | 6.0                          | B32656S8684+565                             | T5            | 48            |
|       |  | 820         | 16.0 × 28.5 × 42.0                             | 10                        | 6.0                          | B32656S8824+563                             | T3            | 40            |
|       |  | 820         | 16.0 × 28.5 × 42.0                             | 10                        | 6.0                          | B32656S8824+564                             | T4            | 48            |
|       |  | 820         | 16.0 × 28.5 × 42.0                             | 10                        | 6.0                          | B32656S8824+565                             | T5            | 48            |
|       |  | 1000        | 18.0 × 32.5 × 42.0                             | 11                        | 6.0                          | B32656S8105+563                             | T3            | 36            |
|       |  | 1000        | 18.0 × 32.5 × 42.0                             | 11                        | 6.0                          | B32656S8105+564                             | T4            | 32            |
|       |  | 1000        | 18.0 × 32.5 × 42.0                             | 11                        | 6.0                          | B32656S8105+565                             | T5            | 32            |
|       |  | 1200        | 18.0 × 32.5 × 42.0                             | 11                        | 5.0                          | B32656S8125+563                             | T3            | 36            |
|       |  | 1200        | 18.0 × 32.5 × 42.0                             | 11                        | 5.0                          | B32656S8125+564                             | T4            | 32            |
|       |  | 1200        | 18.0 × 32.5 × 42.0                             | 11                        | 5.0                          | B32656S8125+565                             | T5            | 32            |
|       |  | 1500        | 31.0 × 26.5 × 43.6                             | 13                        | 5.0                          | B32656S8155+561                             | T1            | 32            |
|       |  | 1500        | 31.0 × 26.5 × 43.6                             | 13                        | 5.0                          | B32656S8155+562                             | T2            | 32            |
|       |  | 1500        | 31.0 × 26.5 × 43.6                             | 13                        | 5.0                          | B32656S8155+563                             | T3            | 18            |
|       |  | 1800        | 28.0 × 37.0 × 42.0                             | 15                        | 4.5                          | B32656S8185+561                             | T1            | 27            |
|       |  | 1800        | 28.0 × 37.0 × 42.0                             | 15                        | 4.5                          | B32656S8185+562                             | T2            | 27            |
|       |  | 1800        | 28.0 × 37.0 × 42.0                             | 15                        | 4.5                          | B32656S8185+563                             | T3            | 18            |

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%


**B32656S**
**Snubbing (wound)**
**Electrical specifications, ordering codes and packing units**

| $V_R$ | $V_{rms}$<br>$f \leq 1\text{kHz}$ | $C_R$ | Max. dimensions<br>$w \times h \times l$<br>mm | $I_{rms}$<br>100 kHz<br>A | ESR<br>100 kHz<br>$m\Omega$ | Ordering code<br>(composition see<br>below) | Ter-<br>minal | pcs./<br>unit |
|-------|-----------------------------------|-------|--|---------------------------|-----------------------------|---|---------------|---------------|
| VDC   | VAC                               | nF    |  |                           |                             |   |               |               |
| 850   | 450                               | 2200  | 30.0 × 45.0 × 42.0                             | 17                        | 3.5                         | B32656S8225+561                             | T1            | 12            |
|       |                                   | 2200  | 30.0 × 45.0 × 42.0                             | 17                        | 3.5                         | B32656S8225+562                             | T2            | 12            |
|       |                                   | 2200  | 30.0 × 45.0 × 42.0                             | 17                        | 3.5                         | B32656S8225+563                             | T3            | 18            |

Further E series and intermediate capacitance values on request.

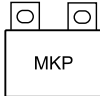
**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%


**Electrical specifications, ordering codes and packing units**

| $V_R$ | $V_{rms}$<br>$f \leq 1 \text{ kHz}$ | $C_R$ | Max. dimensions<br>$w \times h \times l$<br>mm | $I_{rms}$<br>100 kHz<br>A | ESR<br>100 kHz<br>$m\Omega$ | Ordering code<br>(composition see<br>below) | Ter-<br>minal | pcs./<br>unit |
|-------|-------------------------------------|-------|--|---------------------------|-----------------------------|---|---------------|---------------|
| VDC   | VAC                                 | nF    |  |                           |                             |   |               |               |
| 1000  | 480                                 | 220   | 12.0 × 22.5 × 42.0                             | 6                         | 10.0                        | B32656S0224+563                             | T3            | 56            |
|       |                                     | 220   | 12.0 × 22.5 × 42.0                             | 6                         | 10.0                        | B32656S0224+564                             | T4            | 96            |
|       |                                     | 270   | 12.0 × 22.5 × 42.0                             | 7                         | 9.0                         | B32656S0274+563                             | T3            | 56            |
|       |                                     | 270   | 12.0 × 22.5 × 42.0                             | 7                         | 9.0                         | B32656S0274+564                             | T4            | 96            |
|       |                                     | 330   | 14.0 × 25.0 × 42.0                             | 7                         | 9.0                         | B32656S0334+563                             | T3            | 48            |
|       |                                     | 330   | 14.0 × 25.0 × 42.0                             | 7                         | 9.0                         | B32656S0334+564                             | T4            | 72            |
|       |                                     | 330   | 14.0 × 25.0 × 42.0                             | 7                         | 9.0                         | B32656S0334+565                             | T5            | 72            |
|       |                                     | 390   | 14.0 × 25.0 × 42.0                             | 8                         | 8.0                         | B32656S0394+563                             | T3            | 48            |
|       |                                     | 390   | 14.0 × 25.0 × 42.0                             | 8                         | 8.0                         | B32656S0394+564                             | T4            | 72            |
|       |                                     | 390   | 14.0 × 25.0 × 42.0                             | 8                         | 8.0                         | B32656S0394+565                             | T5            | 72            |
|       |                                     | 470   | 14.0 × 25.0 × 42.0                             | 9                         | 8.0                         | B32656S0474+563                             | T3            | 40            |
|       |                                     | 470   | 14.0 × 25.0 × 42.0                             | 9                         | 8.0                         | B32656S0474+564                             | T4            | 48            |
|       |                                     | 470   | 14.0 × 25.0 × 42.0                             | 9                         | 8.0                         | B32656S0474+565                             | T5            | 48            |
|       |                                     | 560   | 16.0 × 28.5 × 42.0                             | 9                         | 7.0                         | B32656S0564+563                             | T3            | 40            |
|       |                                     | 560   | 16.0 × 28.5 × 42.0                             | 9                         | 7.0                         | B32656S0564+564                             | T4            | 48            |
|       |                                     | 560   | 16.0 × 28.5 × 42.0                             | 9                         | 7.0                         | B32656S0564+565                             | T5            | 48            |
|       |                                     | 680   | 16.0 × 28.5 × 42.0                             | 10                        | 6.0                         | B32656S0684+563                             | T3            | 36            |
|       |                                     | 680   | 16.0 × 28.5 × 42.0                             | 10                        | 6.0                         | B32656S0684+564                             | T4            | 32            |
|       |                                     | 680   | 16.0 × 28.5 × 42.0                             | 10                        | 6.0                         | B32656S0684+565                             | T5            | 32            |
|       |                                     | 820   | 18.0 × 32.5 × 42.0                             | 11                        | 6.0                         | B32656S0824+563                             | T3            | 36            |
|       |                                     | 820   | 18.0 × 32.5 × 42.0                             | 11                        | 6.0                         | B32656S0824+564                             | T4            | 32            |
|       |                                     | 820   | 18.0 × 32.5 × 42.0                             | 11                        | 6.0                         | B32656S0824+565                             | T5            | 32            |
|       |                                     | 1000  | 20.0 × 39.5 × 42.0                             | 12                        | 6.0                         | B32656S0105+561                             | T1            | 24            |
|       |                                     | 1000  | 20.0 × 39.5 × 42.0                             | 12                        | 6.0                         | B32656S0105+562                             | T2            | 24            |
|       |                                     | 1000  | 20.0 × 39.5 × 42.0                             | 12                        | 6.0                         | B32656S0105+563                             | T3            | 26            |
|       |                                     | 1000  | 20.0 × 39.5 × 42.0                             | 12                        | 6.0                         | B32656S0105+564                             | T4            | 24            |
|       |                                     | 1000  | 20.0 × 39.5 × 42.0                             | 12                        | 6.0                         | B32656S0105+565                             | T5            | 24            |
|       |                                     | 1200  | 20.0 × 39.5 × 42.0                             | 13                        | 5.0                         | B32656S0125+561                             | T1            | 24            |
|       |                                     | 1200  | 20.0 × 39.5 × 42.0                             | 13                        | 5.0                         | B32656S0125+562                             | T2            | 24            |
|       |                                     | 1200  | 20.0 × 39.5 × 42.0                             | 13                        | 5.0                         | B32656S0125+563                             | T3            | 26            |
|       |                                     | 1200  | 20.0 × 39.5 × 42.0                             | 13                        | 5.0                         | B32656S0125+564                             | T4            | 24            |

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%


**B32656S**
**Snubbing (wound)**
**Electrical specifications, ordering codes and packing units**

| $V_R$ | $V_{rms}$<br>$f \leq 1\text{kHz}$<br>VAC | $C_R$<br>nF | Max. dimensions<br>$w \times h \times l$<br>mm | $I_{rms}$<br>100 kHz<br>A | ESR<br>100 kHz<br>m $\Omega$ | Ordering code<br>(composition see<br>below) | Ter-<br>minal | pcs./<br>unit |
|-------|--|-------------|--|---------------------------|------------------------------|---|---------------|---------------|
| 1000  | 480                                      | 1200        | 20.0 × 39.5 × 42.0                             | 13                        | 5.0                          | B32656S0125+565                             | T5            | 24            |
|       |  | 1500        | 30.0 × 45.0 × 42.0                             | 15                        | 5.0                          | B32656S0155+561                             | T1            | 12            |
|       |  | 1500        | 30.0 × 45.0 × 42.0                             | 15                        | 5.0                          | B32656S0155+562                             | T2            | 12            |
|       |  | 1500        | 30.0 × 45.0 × 42.0                             | 15                        | 5.0                          | B32656S0155+563                             | T3            | 18            |
|       |  | 1800        | 30.0 × 45.0 × 42.0                             | 16                        | 4.5                          | B32656S0185+561                             | T1            | 12            |
|       |  | 1800        | 30.0 × 45.0 × 42.0                             | 16                        | 4.5                          | B32656S0185+562                             | T2            | 12            |
|       |  | 1800        | 30.0 × 45.0 × 42.0                             | 16                        | 4.5                          | B32656S0185+563                             | T3            | 18            |

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

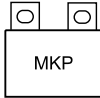
+ = Capacitance tolerance code:

M =  $\pm 20\%$

K =  $\pm 10\%$

J =  $\pm 5\%$




**Electrical specifications, ordering codes and packing units**

| $V_R$ | $V_{rms}$<br>$f \leq 1\text{kHz}$ | $C_R$ | Max. dimensions<br>$w \times h \times l$<br>mm | $I_{rms}$<br>100 kHz<br>A | ESR<br>100 kHz<br>m $\Omega$ | Ordering code<br>(composition see<br>below) | Ter-<br>minal | pcs./<br>unit |
|-------|-----------------------------------|-------|--|---------------------------|------------------------------|---|---------------|---------------|
| VDC   | VAC                               | nF    |  |                           |                              |   |               |               |
| 1250  | 500                               | 120   | 12.0 × 22.5 × 42.0                             | 5                         | 15.0                         | B32656S7124+563                             | T3            | 56            |
|       |                                   | 120   | 12.0 × 22.5 × 42.0                             | 5                         | 15.0                         | B32656S7124+564                             | T4            | 96            |
|       |                                   | 150   | 12.0 × 22.5 × 42.0                             | 6                         | 15.0                         | B32656S7154+563                             | T3            | 56            |
|       |                                   | 150   | 12.0 × 22.5 × 42.0                             | 6                         | 15.0                         | B32656S7154+564                             | T4            | 96            |
|       |                                   | 220   | 14.0 × 25.0 × 42.0                             | 8                         | 10.0                         | B32656S7224+563                             | T3            | 48            |
|       |                                   | 220   | 14.0 × 25.0 × 42.0                             | 8                         | 10.0                         | B32656S7224+564                             | T4            | 72            |
|       |                                   | 220   | 14.0 × 25.0 × 42.0                             | 8                         | 10.0                         | B32656S7224+565                             | T5            | 72            |
|       |                                   | 270   | 14.0 × 25.0 × 42.0                             | 8                         | 9.0                          | B32656S7274+563                             | T3            | 48            |
|       |                                   | 270   | 14.0 × 25.0 × 42.0                             | 8                         | 9.0                          | B32656S7274+564                             | T4            | 72            |
|       |                                   | 270   | 14.0 × 25.0 × 42.0                             | 8                         | 9.0                          | B32656S7274+565                             | T5            | 72            |
|       |                                   | 330   | 16.0 × 28.5 × 42.0                             | 8                         | 9.0                          | B32656S7334+563                             | T3            | 40            |
|       |                                   | 330   | 16.0 × 28.5 × 42.0                             | 8                         | 9.0                          | B32656S7334+564                             | T4            | 48            |
|       |                                   | 330   | 16.0 × 28.5 × 42.0                             | 8                         | 9.0                          | B32656S7334+565                             | T5            | 48            |
|       |                                   | 390   | 18.0 × 32.5 × 42.0                             | 9                         | 8.0                          | B32656S7394+563                             | T3            | 36            |
|       |                                   | 390   | 18.0 × 32.5 × 42.0                             | 9                         | 8.0                          | B32656S7394+564                             | T4            | 32            |
|       |                                   | 390   | 18.0 × 32.5 × 42.0                             | 9                         | 8.0                          | B32656S7394+565                             | T5            | 32            |
|       |                                   | 470   | 18.0 × 32.5 × 42.0                             | 9                         | 8.0                          | B32656S7474+563                             | T3            | 36            |
|       |                                   | 470   | 18.0 × 32.5 × 42.0                             | 9                         | 8.0                          | B32656S7474+564                             | T4            | 32            |
|       |                                   | 470   | 18.0 × 32.5 × 42.0                             | 9                         | 8.0                          | B32656S7474+565                             | T5            | 32            |
|       |                                   | 560   | 20.0 × 39.5 × 42.0                             | 10                        | 7.0                          | B32656S7564+561                             | T1            | 24            |
|       |                                   | 560   | 20.0 × 39.5 × 42.0                             | 10                        | 7.0                          | B32656S7564+562                             | T2            | 24            |
|       |                                   | 560   | 20.0 × 39.5 × 42.0                             | 10                        | 7.0                          | B32656S7564+563                             | T3            | 26            |
|       |                                   | 560   | 20.0 × 39.5 × 42.0                             | 10                        | 7.0                          | B32656S7564+564                             | T4            | 24            |
|       |                                   | 560   | 20.0 × 39.5 × 42.0                             | 10                        | 7.0                          | B32656S7564+565                             | T5            | 24            |
|       |                                   | 680   | 20.0 × 39.5 × 42.0                             | 10                        | 6.0                          | B32656S7684+561                             | T1            | 24            |
|       |                                   | 680   | 20.0 × 39.5 × 42.0                             | 10                        | 6.0                          | B32656S7684+562                             | T2            | 24            |
|       |                                   | 680   | 20.0 × 39.5 × 42.0                             | 10                        | 6.0                          | B32656S7684+563                             | T3            | 26            |
|       |                                   | 680   | 20.0 × 39.5 × 42.0                             | 10                        | 6.0                          | B32656S7684+564                             | T4            | 24            |
|       |                                   | 680   | 20.0 × 39.5 × 42.0                             | 10                        | 6.0                          | B32656S7684+565                             | T5            | 24            |
|       |                                   | 820   | 28.0 × 37.0 × 42.0                             | 11                        | 6.0                          | B32656S7824+561                             | T1            | 27            |
|       |                                   | 820   | 28.0 × 37.0 × 42.0                             | 11                        | 6.0                          | B32656S7824+562                             | T2            | 27            |

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%


**B32656S**
**Snubbing (wound)**
**Electrical specifications, ordering codes and packing units**

| $V_R$ | $V_{rms}$<br>$f \leq 1\text{kHz}$<br>VDC<br>VAC | $C_R$<br>nF | Max. dimensions<br>$w \times h \times l$<br>mm | $I_{rms}$<br>100 kHz<br>A | ESR<br>100 kHz<br>$m\Omega$ | Ordering code<br>(composition see<br>below) | Ter-<br>minal | pcs./<br>unit |
|-------|---|-------------|--|---------------------------|-----------------------------|---|---------------|---------------|
| 1250  | 500   | 820         | 28.0 × 37.0 × 42.0                             | 11                        | 6.0                         | B32656S7824+563                             | T3            | 18            |
|       |   | 1000        | 28.0 × 37.0 × 42.0                             | 13                        | 6.0                         | B32656S7105+561                             | T1            | 27            |
|       |   | 1000        | 28.0 × 37.0 × 42.0                             | 13                        | 6.0                         | B32656S7105+562                             | T2            | 27            |
|       |   | 1000        | 28.0 × 37.0 × 42.0                             | 13                        | 6.0                         | B32656S7105+563                             | T3            | 18            |
|       |   | 1200        | 30.0 × 45.0 × 42.0                             | 14                        | 5.0                         | B32656S7125+561                             | T1            | 12            |
|       |   | 1200        | 30.0 × 45.0 × 42.0                             | 14                        | 5.0                         | B32656S7125+562                             | T2            | 12            |
|       |   | 1200        | 30.0 × 45.0 × 42.0                             | 14                        | 5.0                         | B32656S7125+563                             | T3            | 18            |

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%


**Electrical specifications, ordering codes and packing units**

| $V_R$ | $V_{rms}$<br>$f \leq 1 \text{ kHz}$ | $C_R$ | Max. dimensions<br>$w \times h \times l$<br>mm | $I_{rms}$<br>100 kHz<br>A | ESR<br>100 kHz<br>$m\Omega$ | Ordering code<br>(composition see<br>below) | Ter-<br>minal | pcs./<br>unit |
|-------|-------------------------------------|-------|--|---------------------------|-----------------------------|---|---------------|---------------|
| VDC   | VAC                                 | nF    |  |                           |                             |   |               |               |
| 1600  | 750                                 | 68    | 12.0 × 22.5 × 42.0                             | 5                         | 25.0                        | B32656S1683+563                             | T3            | 56            |
|       |                                     | 68    | 12.0 × 22.5 × 42.0                             | 5                         | 25.0                        | B32656S1683+564                             | T4            | 96            |
|       |                                     | 100   | 12.0 × 22.5 × 42.0                             | 6                         | 20.0                        | B32656S1104+563                             | T3            | 56            |
|       |                                     | 100   | 12.0 × 22.5 × 42.0                             | 6                         | 20.0                        | B32656S1104+564                             | T4            | 96            |
|       |                                     | 120   | 14.0 × 25.0 × 42.0                             | 6                         | 15.0                        | B32656S1124+563                             | T3            | 48            |
|       |                                     | 120   | 14.0 × 25.0 × 42.0                             | 6                         | 15.0                        | B32656S1124+564                             | T4            | 72            |
|       |                                     | 120   | 14.0 × 25.0 × 42.0                             | 6                         | 15.0                        | B32656S1124+565                             | T5            | 72            |
|       |                                     | 150   | 14.0 × 25.0 × 42.0                             | 7                         | 15.0                        | B32656S1154+563                             | T3            | 48            |
|       |                                     | 150   | 14.0 × 25.0 × 42.0                             | 7                         | 15.0                        | B32656S1154+564                             | T4            | 72            |
|       |                                     | 150   | 14.0 × 25.0 × 42.0                             | 7                         | 15.0                        | B32656S1154+565                             | T5            | 72            |
|       |                                     | 220   | 16.0 × 28.5 × 42.0                             | 9                         | 10.0                        | B32656S1224+563                             | T3            | 40            |
|       |                                     | 220   | 16.0 × 28.5 × 42.0                             | 9                         | 10.0                        | B32656S1224+564                             | T4            | 48            |
|       |                                     | 220   | 16.0 × 28.5 × 42.0                             | 9                         | 10.0                        | B32656S1224+565                             | T5            | 48            |
|       |                                     | 270   | 18.0 × 32.5 × 42.0                             | 10                        | 9.0                         | B32656S1274+563                             | T3            | 36            |
|       |                                     | 270   | 18.0 × 32.5 × 42.0                             | 10                        | 9.0                         | B32656S1274+564                             | T4            | 32            |
|       |                                     | 270   | 18.0 × 32.5 × 42.0                             | 10                        | 9.0                         | B32656S1274+565                             | T5            | 32            |
|       |                                     | 330   | 20.0 × 39.5 × 42.0                             | 10                        | 9.0                         | B32656S1334+561                             | T1            | 24            |
|       |                                     | 330   | 20.0 × 39.5 × 42.0                             | 10                        | 9.0                         | B32656S1334+562                             | T2            | 24            |
|       |                                     | 330   | 20.0 × 39.5 × 42.0                             | 10                        | 9.0                         | B32656S1334+563                             | T3            | 26            |
|       |                                     | 330   | 20.0 × 39.5 × 42.0                             | 10                        | 9.0                         | B32656S1334+564                             | T4            | 24            |
|       |                                     | 330   | 20.0 × 39.5 × 42.0                             | 10                        | 9.0                         | B32656S1334+565                             | T5            | 24            |
|       |                                     | 390   | 28.0 × 37.0 × 42.0                             | 11                        | 8.0                         | B32656S1394+561                             | T1            | 27            |
|       |                                     | 390   | 28.0 × 37.0 × 42.0                             | 11                        | 8.0                         | B32656S1394+562                             | T2            | 27            |
|       |                                     | 390   | 28.0 × 37.0 × 42.0                             | 11                        | 8.0                         | B32656S1394+563                             | T3            | 18            |
|       |                                     | 470   | 28.0 × 37.0 × 42.0                             | 12                        | 8.0                         | B32656S1474+561                             | T1            | 27            |
|       |                                     | 470   | 28.0 × 37.0 × 42.0                             | 12                        | 8.0                         | B32656S1474+562                             | T2            | 27            |
|       |                                     | 470   | 28.0 × 37.0 × 42.0                             | 12                        | 8.0                         | B32656S1474+563                             | T3            | 18            |
|       |                                     | 560   | 30.0 × 45.0 × 42.0                             | 13                        | 7.0                         | B32656S1564+561                             | T1            | 12            |
|       |                                     | 560   | 30.0 × 45.0 × 42.0                             | 13                        | 7.0                         | B32656S1564+562                             | T2            | 12            |
|       |                                     | 560   | 30.0 × 45.0 × 42.0                             | 13                        | 7.0                         | B32656S1564+563                             | T3            | 18            |
|       |                                     | 680   | 30.0 × 45.0 × 42.0                             | 14                        | 6.0                         | B32656S1684K561                             | T1            | 12            |

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%


**B32656S**
**Snubbing (wound)**
**Electrical specifications, ordering codes and packing units**

| $V_R$ | $V_{rms}$<br>$f \leq 1\text{kHz}$ | $C_R$ | Max. dimensions<br>$w \times h \times l$<br>mm | $I_{rms}$<br>100 kHz<br>A | ESR<br>100 kHz<br>$m\Omega$ | Ordering code<br>(composition see<br>below) | Ter-<br>minal | pcs./<br>unit |
|-------|-----------------------------------|-------|--|---------------------------|-----------------------------|---|---------------|---------------|
| VDC   | VAC                               | nF    |  |                           |                             |   |               |               |
| 1600  | 750                               | 680   | 30.0 × 45.0 × 42.0                             | 14                        | 6.0                         | B32656S1684K562                             | T2            | 12            |
|       |                                   | 680   | 30.0 × 45.0 × 42.0                             | 14                        | 6.0                         | B32656S1684K563                             | T3            | 18            |

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%


**Electrical specifications, ordering codes and packing units**

| $V_R$ | $V_{rms}$<br>$f \leq 1\text{kHz}$ | $C_R$ | Max. dimensions<br>$w \times h \times l$<br>mm | $I_{rms}$<br>100 kHz<br>A | ESR<br>100 kHz<br>m $\Omega$ | Ordering code<br>(composition see<br>below) | Ter-<br>minal | pcs./<br>unit |
|-------|-----------------------------------|-------|--|---------------------------|------------------------------|---|---------------|---------------|
| VDC   | VAC                               | nF    |  |                           |                              |   |               |               |
| 2000  | 800                               | 47    | 12.0 × 22.5 × 42.0                             | 5                         | 35.0                         | B32656S2473+563                             | T3            | 56            |
|       |                                   | 47    | 12.0 × 22.5 × 42.0                             | 5                         | 35.0                         | B32656S2473+564                             | T4            | 96            |
|       |                                   | 68    | 14.0 × 25.0 × 42.0                             | 6                         | 25.0                         | B32656S2683+563                             | T3            | 48            |
|       |                                   | 68    | 14.0 × 25.0 × 42.0                             | 6                         | 25.0                         | B32656S2683+564                             | T4            | 72            |
|       |                                   | 68    | 14.0 × 25.0 × 42.0                             | 6                         | 25.0                         | B32656S2683+565                             | T5            | 72            |
|       |                                   | 100   | 14.0 × 25.0 × 42.0                             | 7                         | 20.0                         | B32656S2104+563                             | T3            | 48            |
|       |                                   | 100   | 14.0 × 25.0 × 42.0                             | 7                         | 20.0                         | B32656S2104+564                             | T4            | 72            |
|       |                                   | 100   | 14.0 × 25.0 × 42.0                             | 7                         | 20.0                         | B32656S2104+565                             | T5            | 72            |
|       |                                   | 120   | 16.0 × 28.5 × 42.0                             | 7                         | 15.0                         | B32656S2124+563                             | T3            | 40            |
|       |                                   | 120   | 16.0 × 28.5 × 42.0                             | 7                         | 15.0                         | B32656S2124+564                             | T4            | 48            |
|       |                                   | 120   | 16.0 × 28.5 × 42.0                             | 7                         | 15.0                         | B32656S2124+565                             | T5            | 48            |
|       |                                   | 150   | 18.0 × 32.5 × 42.0                             | 8                         | 15.0                         | B32656S2154+563                             | T3            | 40            |
|       |                                   | 150   | 18.0 × 32.5 × 42.0                             | 8                         | 15.0                         | B32656S2154+564                             | T4            | 48            |
|       |                                   | 150   | 18.0 × 32.5 × 42.0                             | 8                         | 15.0                         | B32656S2154+565                             | T5            | 48            |
|       |                                   | 220   | 20.0 × 39.5 × 42.0                             | 10                        | 10.0                         | B32656S2224+561                             | T1            | 24            |
|       |                                   | 220   | 20.0 × 39.5 × 42.0                             | 10                        | 10.0                         | B32656S2224+562                             | T2            | 24            |
|       |                                   | 220   | 20.0 × 39.5 × 42.0                             | 10                        | 10.0                         | B32656S2224+563                             | T3            | 26            |
|       |                                   | 220   | 20.0 × 39.5 × 42.0                             | 10                        | 10.0                         | B32656S2224+564                             | T4            | 24            |
|       |                                   | 220   | 20.0 × 39.5 × 42.0                             | 10                        | 10.0                         | B32656S2224+565                             | T5            | 24            |
|       |                                   | 270   | 28.0 × 37.0 × 42.0                             | 11                        | 9.0                          | B32656S2274+561                             | T1            | 27            |
|       |                                   | 270   | 28.0 × 37.0 × 42.0                             | 11                        | 9.0                          | B32656S2274+562                             | T2            | 27            |
|       |                                   | 270   | 28.0 × 37.0 × 42.0                             | 11                        | 9.0                          | B32656S2274+563                             | T3            | 18            |
|       |                                   | 330   | 28.0 × 37.0 × 42.0                             | 12                        | 9.0                          | B32656S2334+561                             | T1            | 27            |
|       |                                   | 330   | 28.0 × 37.0 × 42.0                             | 12                        | 9.0                          | B32656S2334+562                             | T2            | 27            |
|       |                                   | 330   | 28.0 × 37.0 × 42.0                             | 12                        | 9.0                          | B32656S2334+563                             | T3            | 18            |
|       |                                   | 390   | 30.0 × 45.0 × 42.0                             | 13                        | 8.0                          | B32656S2394+561                             | T1            | 12            |
|       |                                   | 390   | 30.0 × 45.0 × 42.0                             | 13                        | 8.0                          | B32656S2394+562                             | T2            | 12            |
|       |                                   | 390   | 30.0 × 45.0 × 42.0                             | 13                        | 8.0                          | B32656S2394+563                             | T3            | 18            |
|       |                                   | 470   | 30.0 × 45.0 × 42.0                             | 15                        | 8.0                          | B32656S2474+561                             | T1            | 12            |
|       |                                   | 470   | 30.0 × 45.0 × 42.0                             | 15                        | 8.0                          | B32656S2474+562                             | T2            | 12            |
|       |                                   | 470   | 30.0 × 45.0 × 42.0                             | 15                        | 8.0                          | B32656S2474+563                             | T3            | 18            |

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%


**B32656S**
**Snubbing (wound)**
**Technical data**

|  |   |  |  |                 |
|--|---|--|--|-----------------|
| Operating temperature range  | Max. operating temperature $T_{op,max}$   |  | +100 °C  |                 |
|  | Upper category temperature $T_{max}$  |  | +100 °C  |                 |
|  | Lower category temperature $T_{min}$  |  | -55 °C   |                 |
|  | Rated temperature $T_R$   |  | +85 °C   |                 |
| Dissipation factor $\tan \delta$ (in $10^{-3}$ )<br>at 20 °C<br>(upper limit values)   | at  | $C_R \leq 0.1 \mu F$   | $0.1 \mu F < C_R \leq 1 \mu F$   | $C_R > 1 \mu F$ |
|  | 1 kHz   | —  | 0.5  | 0.5             |
|  | 10 kHz  | —  | 0.8  | 1.5             |
|  | 100 kHz   | 5.0  | —  | —               |
| Insulation resistance $R_{ins}$<br>or time constant $\tau = C_R \cdot R_{ins}$<br>at 20 °C, rel. humidity $\leq 65\%$<br>(minimum as-delivered values) | $C_R \leq 0.33 \mu F$   |  | $C_R > 0.33 \mu F$   |                 |
|  | 100 G $\Omega$  |  | 30000 s  |                 |
| DC test voltage  | $1.6 \cdot V_R, 2 s$  |  |  |                 |
| Category voltage $V_C$<br>(continuous operation with $V_{DC}$<br>or $V_{AC}$ at $f \leq 1 kHz$ )   | $T_A$ (°C)  | DC voltage derating  | AC voltage derating  |                 |
|  | $T_A \leq 85$<br>$85 < T_A \leq 100$  | $V_C = V_R$<br>$V_C = V_R \cdot (165 - T_A)/80$                          | $V_{C,rms} = V_{rms}$<br>$V_{C,rms} = V_{rms} \cdot (165 - T_A)/80$                |                 |
| Operating voltage $V_{op}$ for<br>short operating periods<br>( $V_{DC}$ or $V_{AC}$ at $f \leq 1 kHz$ )  | $T_A$ (°C)  | DC voltage (max. hours)  | AC voltage (max. hours)  |                 |
|  | $T_A \leq 85$<br>$85 < T_A \leq 100$  | $V_{op} = 1.25 \cdot V_C$ (2000 h)<br>$V_{op} = 1.25 \cdot V_C$ (1000 h) | $V_{op} = 1.0 \cdot V_{C,rms}$ (2000 h)<br>$V_{op} = 1.0 \cdot V_{C,rms}$ (1000 h) |                 |
| Damp heat test<br>Limit values after damp<br>heat test   | 56 days/40 °C/93% relative humidity   |  |  |                 |
|  | Capacitance change $ \Delta C/C $   |  | $\leq 3\%$   |                 |
|  | Dissipation factor change $\Delta \tan \delta$  |  | $\leq 0.5 \cdot 10^{-3}$ (at 1 kHz)<br>$\leq 1.0 \cdot 10^{-3}$ (at 10 kHz)        |                 |
|  | Insulation resistance $R_{ins}$<br>or time constant $\tau = C_R \cdot R_{ins}$  |  | $\geq 50\%$ of minimum<br>as-delivered values                                      |                 |
| Reliability:<br>Failure rate $\lambda$<br>Service life $t_{SL}$  | 1 fit ( $\leq 1 \cdot 10^{-9}/h$ ) at $0.5 \cdot V_R, 40$ °C<br>200 000 h at $1.0 \cdot V_R, 40$ °C<br>For conversion to other operating conditions and temperatures,<br>refer to chapter "Quality assurance", page . |  |  |                 |
| Failure criteria:<br>Total failure<br>Failure due to variation<br>of parameters  | Short circuit or open circuit   |  |  |                 |
|  | Capacitance change $ \Delta C/C $   |  | $> 10\%$   |                 |
|  | Dissipation factor $\tan \delta$  |  | $> 4 \cdot$ upper limit value  |                 |
|  | Insulation resistance $R_{ins}$<br>or time constant $\tau = C_R \cdot R_{ins}$  |  | $< 1500 M\Omega$ ( $C_R \leq 0.33 \mu F$ )<br>$< 500 s$ ( $C_R > 0.33 \mu F$ )     |                 |



**Pulse handling capability**

"dV/dt" represents the maximum permissible voltage change per unit of time for non-sinusoidal voltages, expressed in V/μs.

"k<sub>0</sub>" represents the maximum permissible pulse characteristic of the waveform applied to the capacitor, expressed in V<sup>2</sup>/μs.

*Note:*

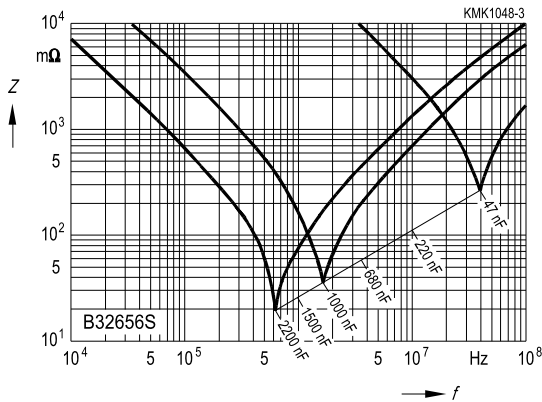
*The values of dV/dt and k<sub>0</sub> provided below must not be exceeded in order to avoid damaging the capacitor.*

**dV/dt and k<sub>0</sub> values**

| V <sub>R</sub> (VDC) | V <sub>rms</sub> (VAC) | dV/dt in V/μs | k <sub>0</sub> in V <sup>2</sup> /μs |
|----------------------|------------------------|---------------|--------------------------------------|
| 850                  | 450                    | 400           | 680 000                              |
| 1000                 | 480                    | 450           | 900 000                              |
| 1250                 | 500                    | 500           | 1 250 000                            |
| 1600                 | 750                    | 600           | 1 920 000                            |
| 2000                 | 800                    | 700           | 2 800 000                            |

**Impedance Z versus frequency f**

(typical values)





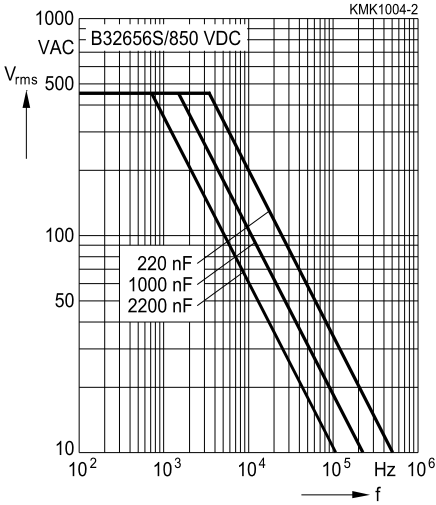
### B32656S

### Snubbing (wound)

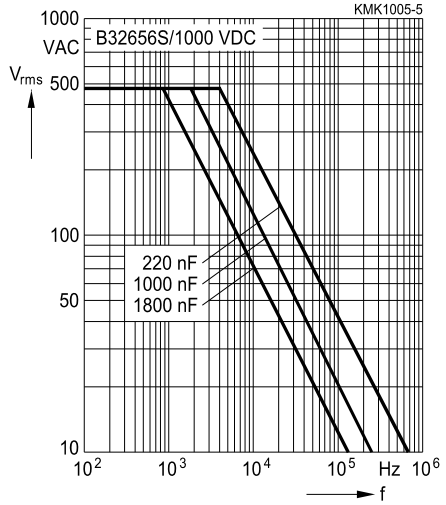
#### Permissible AC voltage $V_{rms}$ versus frequency $f$ (for sinusoidal waveforms, $T_A \leq 90^\circ C$ )

For  $T_A > 90^\circ C$ , please refer to "General technical information", section 3.2.3.

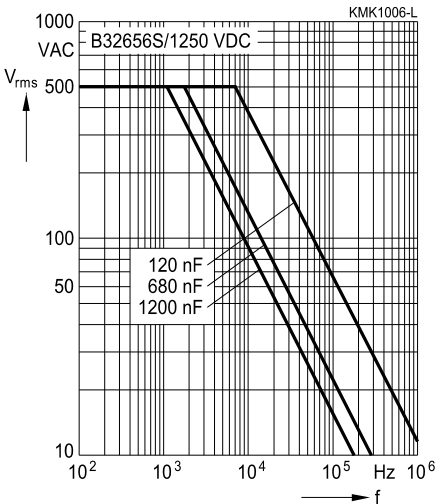
850 VDC/450 VAC



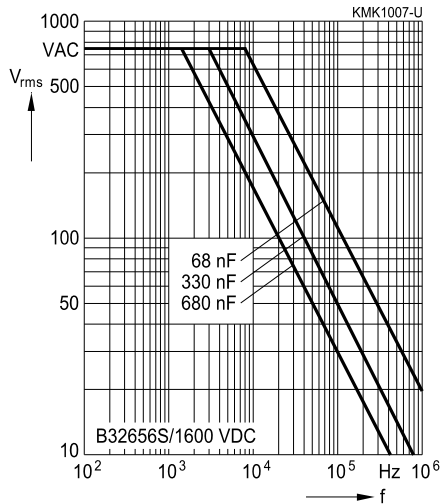
1000 VDC/480 VAC



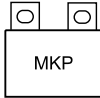
1250 VDC/500 VAC



1600 VDC/750 VAC







**Permissible AC voltage  $V_{rms}$  versus frequency  $f$  (for sinusoidal waveforms,  $T_A \leq 90^\circ\text{C}$ )**

For  $T_A > 90^\circ\text{C}$ , please refer to "General technical information", section 3.2.3.

2000 VDC/800 VAC

