# SMG Series

- Downsized from SME series
- Endurance : 2,000 hours at 85℃
- Solvent-proof type except 315 to 450Vdc
  (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

SMQ
↑ Downsized
**SMG**
↑ Downsized
SME

## ◆SPECIFICATIONS

| Items | Characteristics |
|---|---|
| **Category Temperature Range** | −40 to +85℃(6.3 to 400Vdc)　−25 to +85℃(450Vdc) |
| **Rated Voltage Range** | 6.3 to 450Vdc |
| **Capacitance Tolerance** | ±20% (M) (at 20℃, 120Hz) |
| **Leakage Current** | 6.3 to 100Vdc: ≦ϕ18: I=0.03CV or 4μA, whichever is greater. ≧ϕ20: I=0.03CV (at 20℃ after 3 minutes)<br>160 to 450Vdc: CV≦1,000: After 1minute I=0.1CV+40 max., After 5minutes I=0.03CV+15 max.; CV>1,000: After 1minute I=0.04CV+100 max., After 5minutes I=0.02CV+25 max. (at 20℃)<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) |
| **Dissipation Factor (tanδ)** | Rated voltage (Vdc): 6.3V, 10V, 16V, 25V, 35V, 50V, 63V, 100V, 160 to 250V, 315 to 400V, 450V<br>tanδ (Max.) ≦ϕ18: 0.34, 0.24, 0.20, 0.16, 0.14, 0.12, 0.09, 0.08, 0.20, 0.24, 0.24<br>tanδ (Max.) ≧ϕ20: 0.28, 0.24, 0.20, 0.16, 0.14, 0.12, 0.09, 0.08, 0.15, 0.15, 0.20<br>When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz) |
| **Low Temperature Characteristics (Max. Impedance Ratio)** | Rated voltage (Vdc): 6.3V, 10V, 16V, 25V, 35V, 50V, 63V, 100V, 160 to 250V, 315 to 400V, 450V<br>Z(−25℃)/Z(+20℃) ≦ϕ18: 5, 4, 3, 2, 2, 2, 2, 2, 3, 6, 6<br>Z(−25℃)/Z(+20℃) ≧ϕ20: 5, 4, 3, 2, 2, 2, 2, 2, 4, 6, 6<br>Z(−40℃)/Z(+20℃) ≦ϕ18: 12, 10, 8, 5, 4, 3, 3, 3, 4, 6, — (at 120Hz) |
| **Endurance** | The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 2,000 hours at 85℃.<br>Capacitance change: ≦±20% of the initial value<br>D.F. (tanδ): ≦200% of the initial specified value<br>Leakage current: ≦The initial specified value |
| **Shelf Life** | The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 85℃ without voltage applied.<br>Rated voltage: 6.3 to 100Vdc / 160 to 450Vdc<br>Capacitance change: ≦±20% of the initial value / ≦±20% of the initial value<br>D.F. (tanδ): ≦200% of the initial specified value / ≦200% of the initial specified value<br>Leakage current: ≦The initial specified value / ≦500% of the initial specified value |

## ◆DIMENSIONS [mm]

- Terminal Code : E

| ϕD | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 18 | 20 | 22 | 25.4 |
|---|---|---|---|---|---|---|---|---|---|---|
| ϕd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.8 | 0.8 | 1.0 | 1.0 | 1.0 |
| F | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 | 10.0 | 10.0 | 12.5 |
| ϕD' | ϕD+0.5max. | | | | | | | ϕD+0.5max. | | |
| L' | L+1.5max. | | | | | | | L+2.0max. | | |

## ◆PART NUMBERING SYSTEM

Please refer to "A guide to global code (radial lead type)"

# SMG Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mArms/ 85℃,120Hz) | Part No. |
|---|---|---|---|---|---|
| 6.3 | 33 | 5×11 | 0.34 | 77 | ESMG6R3E□□330ME11D |
| | 47 | 5×11 | 0.34 | 92 | ESMG6R3E□□470ME11D |
| | 100 | 5×11 | 0.34 | 134 | ESMG6R3E□□101ME11D |
| | 220 | 5×11 | 0.34 | 200 | ESMG6R3E□□221ME11D |
| | 330 | 6.3×11 | 0.34 | 270 | ESMG6R3E□□331MF11D |
| | 470 | 6.3×11 | 0.34 | 320 | ESMG6R3E□□471MF11D |
| | 1,000 | 8×11.5 | 0.34 | 540 | ESMG6R3E□□102MHB5D |
| | 2,200 | 10×20 | 0.36 | 1,000 | ESMG6R3E□□222MJ20S |
| | 3,300 | 10×20 | 0.38 | 1,185 | ESMG6R3E□□332MJ20S |
| | 4,700 | 12.5×20 | 0.40 | 1,545 | ESMG6R3E□□472MK20S |
| | 6,800 | 12.5×25 | 0.44 | 1,915 | ESMG6R3E□□682MK25S |
| | 10,000 | 16×25 | 0.52 | 2,330 | ESMG6R3E□□103ML25S |
| | 10,000 | 20×25 | 0.46 | 2,310 | ESMG6R3E□□103MN25S |
| | 15,000 | 16×35.5 | 0.62 | 2,845 | ESMG6R3E□□153MLP1S |
| | 15,000 | 20×30 | 0.56 | 2,660 | ESMG6R3E□□153MN30S |
| | 18,000 | 20×35 | 0.62 | 2,890 | ESMG6R3E□□183MN35S |
| | 18,000 | 22×30 | 0.62 | 2,860 | ESMG6R3E□□183MP30S |
| | 22,000 | 18×40 | 0.76 | 3,320 | ESMG6R3E□□223MM40S |
| | 22,000 | 20×40 | 0.70 | 3,130 | ESMG6R3E□□223MN40S |
| | 22,000 | 22×35 | 0.70 | 3,130 | ESMG6R3E□□223MP35S |
| | 27,000 | 22×40 | 0.80 | 3,280 | ESMG6R3E□□273MP40S |
| | 39,000 | 25.4×40 | 1.04 | 3,560 | ESMG6R3E□□393MQ40S |
| 10 | 22 | 5×11 | 0.24 | 66 | ESMG100E□□220ME11D |
| | 33 | 5×11 | 0.24 | 83 | ESMG100E□□330ME11D |
| | 47 | 5×11 | 0.24 | 100 | ESMG100E□□470ME11D |
| | 100 | 5×11 | 0.24 | 146 | ESMG100E□□101ME11D |
| | 220 | 5×11 | 0.24 | 240 | ESMG100E□□221ME11D |
| | 330 | 6.3×11 | 0.24 | 290 | ESMG100E□□331MF11D |
| | 470 | 6.3×11 | 0.24 | 350 | ESMG100E□□471MF11D |
| | 1,000 | 10×12.5 | 0.24 | 650 | ESMG100E□□102MJC5S |
| | 2,200 | 10×20 | 0.26 | 1,070 | ESMG100E□□222MJ20S |
| | 3,300 | 12.5×20 | 0.28 | 1,420 | ESMG100E□□332MK20S |
| | 4,700 | 12.5×25 | 0.30 | 1,780 | ESMG100E□□472MK25S |
| | 6,800 | 16×25 | 0.34 | 2,220 | ESMG100E□□682ML25S |
| | 6,800 | 20×20 | 0.34 | 2,080 | ESMG100E□□682MN20S |
| | 10,000 | 16×35.5 | 0.42 | 2,670 | ESMG100E□□103MLP1S |
| | 10,000 | 20×25 | 0.42 | 2,410 | ESMG100E□□103MN25S |
| | 12,000 | 20×30 | 0.46 | 2,620 | ESMG100E□□123MN30S |
| | 15,000 | 18×35.5 | 0.52 | 3,080 | ESMG100E□□153MMP1S |
| | 15,000 | 20×35 | 0.52 | 2,870 | ESMG100E□□153MN35S |
| | 15,000 | 22×30 | 0.52 | 2,660 | ESMG100E□□153MP30S |
| | 18,000 | 22×35 | 0.58 | 3,050 | ESMG100E□□183MP35S |
| | 22,000 | 22×40 | 0.66 | 3,480 | ESMG100E□□223MP40S |
| | 33,000 | 25.4×40 | 0.88 | 3,560 | ESMG100E□□333MQ40S |
| 16 | 10 | 5×11 | 0.20 | 50 | ESMG160E□□100ME11D |
| | 22 | 5×11 | 0.20 | 75 | ESMG160E□□220ME11D |
| | 33 | 5×11 | 0.20 | 91 | ESMG160E□□330ME11D |
| | 47 | 5×11 | 0.20 | 109 | ESMG160E□□470ME11D |
| | 100 | 5×11 | 0.20 | 160 | ESMG160E□□101ME11D |
| | 220 | 6.3×11 | 0.20 | 260 | ESMG160E□□221MF11D |
| | 330 | 8×11.5 | 0.20 | 370 | ESMG160E□□331MHB5D |
| | 470 | 8×11.5 | 0.20 | 440 | ESMG160E□□471MHB5D |
| | 1,000 | 10×16 | 0.20 | 785 | ESMG160E□□102MJ16S |
| | 2,200 | 12.5×20 | 0.22 | 1,295 | ESMG160E□□222MK20S |
| | 3,300 | 12.5×25 | 0.24 | 1,655 | ESMG160E□□332MK25S |
| | 4,700 | 16×25 | 0.26 | 2,090 | ESMG160E□□472ML25S |
| | 4,700 | 20×20 | 0.26 | 1,960 | ESMG160E□□472MN20S |
| | 6,800 | 16×31.5 | 0.30 | 2,520 | ESMG160E□□682MLN3S |
| | 6,800 | 20×25 | 0.30 | 2,330 | ESMG160E□□682MN25S |
| | 8,200 | 20×30 | 0.34 | 2,500 | ESMG160E□□822MN30S |
| | 10,000 | 18×35.5 | 0.38 | 2,920 | ESMG160E□□103MMP1S |
| | 10,000 | 20×35 | 0.38 | 2,720 | ESMG160E□□103MN35S |
| | 10,000 | 22×30 | 0.38 | 2,660 | ESMG160E□□103MP30S |
| | 12,000 | 20×40 | 0.42 | 2,900 | ESMG160E□□123MN40S |
| | 12,000 | 22×35 | 0.42 | 2,900 | ESMG160E□□123MP35S |
| | 15,000 | 22×40 | 0.48 | 3,380 | ESMG160E□□153MP40S |
| | 22,000 | 25.4×40 | 0.62 | 3,720 | ESMG160E□□223MQ40S |

| WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mArms/ 85℃,120Hz) | Part No. |
|---|---|---|---|---|---|
| 25 | 4.7 | 5×11 | 0.16 | 36 | ESMG250E□□4R7ME11D |
| | 10 | 5×11 | 0.16 | 53 | ESMG250E□□100ME11D |
| | 22 | 5×11 | 0.16 | 78 | ESMG250E□□220ME11D |
| | 33 | 5×11 | 0.16 | 96 | ESMG250E□□330ME11D |
| | 47 | 5×11 | 0.16 | 115 | ESMG250E□□470ME11D |
| | 100 | 6.3×11 | 0.16 | 190 | ESMG250E□□101MF11D |
| | 220 | 8×11.5 | 0.16 | 330 | ESMG250E□□221MHB5D |
| | 330 | 8×11.5 | 0.16 | 440 | ESMG250E□□331MHB5D |
| | 470 | 10×12.5 | 0.16 | 545 | ESMG250E□□471MJC5S |
| | 1,000 | 10×20 | 0.16 | 955 | ESMG250E□□102MJ20S |
| | 2,200 | 12.5×25 | 0.18 | 1,540 | ESMG250E□□222MK25S |
| | 3,300 | 16×25 | 0.20 | 1,975 | ESMG250E□□332ML25S |
| | 3,300 | 20×20 | 0.20 | 1,850 | ESMG250E□□332MN20S |
| | 4,700 | 16×31.5 | 0.22 | 2,420 | ESMG250E□□472MLN3S |
| | 4,700 | 20×25 | 0.22 | 2,420 | ESMG250E□□472MN25S |
| | 5,600 | 20×30 | 0.24 | 2,430 | ESMG250E□□562MN30S |
| | 6,800 | 18×35.5 | 0.26 | 2,880 | ESMG250E□□682MMP1S |
| | 6,800 | 20×35 | 0.26 | 2,680 | ESMG250E□□682MN35S |
| | 6,800 | 22×30 | 0.26 | 2,510 | ESMG250E□□682MP30S |
| | 8,200 | 20×40 | 0.30 | 2,810 | ESMG250E□□822MN40S |
| | 8,200 | 22×35 | 0.30 | 2,810 | ESMG250E□□822MP35S |
| | 10,000 | 22×40 | 0.34 | 3,240 | ESMG250E□□103MP40S |
| | 12,000 | 22×40 | 0.38 | 3,240 | ESMG250E□□123MP40S |
| | 15,000 | 25.4×40 | 0.44 | 3,610 | ESMG250E□□153MQ40S |
| 35 | 4.7 | 5×11 | 0.14 | 41 | ESMG350E□□4R7ME11D |
| | 10 | 5×11 | 0.14 | 59 | ESMG350E□□100ME11D |
| | 22 | 5×11 | 0.14 | 88 | ESMG350E□□220ME11D |
| | 33 | 5×11 | 0.14 | 108 | ESMG350E□□330ME11D |
| | 47 | 5×11 | 0.14 | 130 | ESMG350E□□470ME11D |
| | 100 | 6.3×11 | 0.14 | 210 | ESMG350E□□101MF11D |
| | 220 | 8×11.5 | 0.14 | 385 | ESMG350E□□221MHB5D |
| | 330 | 10×12.5 | 0.14 | 490 | ESMG350E□□331MJC5S |
| | 470 | 10×16 | 0.14 | 645 | ESMG350E□□471MJ16S |
| | 1,000 | 12.5×20 | 0.14 | 1,145 | ESMG350E□□102MK20S |
| | 2,200 | 16×25 | 0.16 | 1,785 | ESMG350E□□222ML25S |
| | 2,200 | 20×20 | 0.16 | 1,670 | ESMG350E□□222MN20S |
| | 3,300 | 16×35.5 | 0.18 | 2,275 | ESMG350E□□332MLP1S |
| | 3,300 | 20×25 | 0.18 | 2,050 | ESMG350E□□332MN25S |
| | 3,900 | 20×30 | 0.18 | 2,310 | ESMG350E□□392MN30S |
| | 4,700 | 18×35.5 | 0.20 | 2,700 | ESMG350E□□472MMP1S |
| | 4,700 | 20×35 | 0.20 | 2,510 | ESMG350E□□472MN35S |
| | 4,700 | 22×30 | 0.20 | 2,380 | ESMG350E□□472MP30S |
| | 5,600 | 20×40 | 0.22 | 2,690 | ESMG350E□□562MN40S |
| | 5,600 | 22×35 | 0.22 | 2,690 | ESMG350E□□562MP35S |
| | 6,800 | 22×40 | 0.24 | 3,090 | ESMG350E□□682MP40S |
| | 10,000 | 25.4×40 | 0.32 | 3,480 | ESMG350E□□103MQ40S |
| 50 | 0.10 | 5×11 | 0.12 | 1.3 | ESMG500E□□R10ME11D |
| | 0.22 | 5×11 | 0.12 | 2.9 | ESMG500E□□R22ME11D |
| | 0.33 | 5×11 | 0.12 | 4.3 | ESMG500E□□R33ME11D |
| | 0.47 | 5×11 | 0.12 | 6.2 | ESMG500E□□R47ME11D |
| | 1.0 | 5×11 | 0.12 | 17 | ESMG500E□□1R0ME11D |
| | 2.2 | 5×11 | 0.12 | 28 | ESMG500E□□2R2ME11D |
| | 3.3 | 5×11 | 0.12 | 35 | ESMG500E□□3R3ME11D |
| | 4.7 | 5×11 | 0.12 | 41 | ESMG500E□□4R7ME11D |
| | 10 | 5×11 | 0.12 | 60 | ESMG500E□□100ME11D |
| | 22 | 5×11 | 0.12 | 95 | ESMG500E□□220ME11D |
| | 33 | 5×11 | 0.12 | 125 | ESMG500E□□330ME11D |
| | 47 | 6.3×11 | 0.12 | 155 | ESMG500E□□470MF11D |
| | 100 | 8×11.5 | 0.12 | 260 | ESMG500E□□101MHB5D |
| | 220 | 10×12.5 | 0.12 | 430 | ESMG500E□□221MJC5S |
| | 330 | 10×16 | 0.12 | 585 | ESMG500E□□331MJ16S |
| | 470 | 10×20 | 0.12 | 755 | ESMG500E□□471MJ20S |
| | 1,000 | 12.5×25 | 0.12 | 1,340 | ESMG500E□□102MK25S |
| | 1,500 | 20×20 | 0.12 | 1,570 | ESMG500E□□152MN20S |
| | 2,200 | 16×35.5 | 0.14 | 2,075 | ESMG500E□□222MLP1S |
| | 2,200 | 20×25 | 0.14 | 1,880 | ESMG500E□□222MN25S |
| | 2,700 | 20×30 | 0.14 | 2,150 | ESMG500E□□272MN30S |

□□ : Fill with appropriate lead forming or taping code.

# SMG Series

## ◆STANDARD RATINGS

is non solvent-proof.

| WV (Vdc) | Cap (μF) | Case size φDXL(mm) | tanδ | Rated ripple current (mArms/ 85℃,120Hz) | Part No. |
|---|---|---|---|---|---|
| 50 | 3,300 | 18×35.5 | 0.16 | 2,500 | ESMG500E□□332MMP1S |
| | 3,300 | 20×35 | 0.16 | 2,420 | ESMG500E□□332MN35S |
| | 3,300 | 22×30 | 0.16 | 2,420 | ESMG500E□□332MP30S |
| | 3,900 | 20×40 | 0.16 | 2,590 | ESMG500E□□392MN40S |
| | 3,900 | 22×35 | 0.16 | 2,590 | ESMG500E□□392MP35S |
| | 4,700 | 22×40 | 0.18 | 2,960 | ESMG500E□□472MP40S |
| | 6,800 | 25.4×40 | 0.22 | 3,360 | ESMG500E□□682MQ40S |
| 63 | 10 | 5×11 | 0.09 | 65 | ESMG630E□□100ME11D |
| | 22 | 5×11 | 0.09 | 100 | ESMG630E□□220ME11D |
| | 33 | 6.3×11 | 0.09 | 140 | ESMG630E□□330MF11D |
| | 47 | 6.3×11 | 0.09 | 170 | ESMG630E□□470MF11D |
| | 100 | 10×12.5 | 0.09 | 300 | ESMG630E□□101MJC5S |
| | 220 | 10×16 | 0.09 | 490 | ESMG630E□□221MJ16S |
| | 330 | 10×20 | 0.09 | 710 | ESMG630E□□331MJ20S |
| | 470 | 12.5×20 | 0.09 | 900 | ESMG630E□□471MK20S |
| | 820 | 20×20 | 0.09 | 1,370 | ESMG630E□□821MN20S |
| | 1,000 | 16×25 | 0.09 | 1,300 | ESMG630E□□102ML25S |
| | 1,000 | 20×25 | 0.09 | 1,600 | ESMG630E□□102MN25S |
| | 1,500 | 20×30 | 0.09 | 1,850 | ESMG630E□□152MN30S |
| | 2,200 | 20×35 | 0.11 | 2,330 | ESMG630E□□222MN35S |
| | 2,200 | 22×30 | 0.11 | 2,190 | ESMG630E□□222MP30S |
| | 2,700 | 20×40 | 0.11 | 2,640 | ESMG630E□□272MN40S |
| | 3,300 | 22×40 | 0.13 | 2,810 | ESMG630E□□332MP40S |
| | 3,900 | 25.4×40 | 0.13 | 3,100 | ESMG630E□□392MQ40S |
| 100 | 0.10 | 5×11 | 0.08 | 2.1 | ESMG101E□□R10ME11D |
| | 0.22 | 5×11 | 0.08 | 4.7 | ESMG101E□□R22ME11D |
| | 0.33 | 5×11 | 0.08 | 7.0 | ESMG101E□□R33ME11D |
| | 0.47 | 5×11 | 0.08 | 10 | ESMG101E□□R47ME11D |
| | 1.0 | 5×11 | 0.08 | 21 | ESMG101E□□1R0ME11D |
| | 2.2 | 5×11 | 0.08 | 30 | ESMG101E□□2R2ME11D |
| | 3.3 | 5×11 | 0.08 | 40 | ESMG101E□□3R3ME11D |
| | 4.7 | 5×11 | 0.08 | 45 | ESMG101E□□4R7ME11D |
| | 10 | 6.3×11 | 0.08 | 75 | ESMG101E□□100MF11D |
| | 22 | 8×11.5 | 0.08 | 130 | ESMG101E□□220MHB5D |
| | 33 | 8×11.5 | 0.08 | 180 | ESMG101E□□330MHB5D |
| | 47 | 10×12.5 | 0.08 | 230 | ESMG101E□□470MJC5S |
| | 100 | 10×20 | 0.08 | 370 | ESMG101E□□101MJ20S |
| | 220 | 12.5×25 | 0.08 | 620 | ESMG101E□□221MK25S |
| | 330 | 12.5×25 | 0.08 | 760 | ESMG101E□□331MK25S |
| | 330 | 20×20 | 0.08 | 870 | ESMG101E□□331MN20S |
| | 470 | 16×25 | 0.08 | 1,000 | ESMG101E□□471ML25S |
| | 680 | 20×30 | 0.08 | 1,360 | ESMG101E□□681MN30S |
| | 820 | 22×30 | 0.08 | 1,540 | ESMG101E□□821MP30S |
| | 1,000 | 18×40 | 0.08 | 1,380 | ESMG101E□□102MM40S |
| | 1,000 | 20×35 | 0.08 | 1,720 | ESMG101E□□102MN35S |
| | 1,200 | 22×40 | 0.08 | 1,980 | ESMG101E□□122MP40S |
| | 1,800 | 25.4×40 | 0.08 | 2,490 | ESMG101E□□182MQ40S |
| 160 | 3.3 | 6.3×11 | 0.20 | 40 | ESMG161E□□3R3MF11D |
| | 4.7 | 6.3×11 | 0.20 | 48 | ESMG161E□□4R7MF11D |
| | 10 | 10×12.5 | 0.20 | 94 | ESMG161E□□100MJC5S |
| | 22 | 10×20 | 0.20 | 170 | ESMG161E□□220MJ20S |
| | 33 | 10×20 | 0.20 | 205 | ESMG161E□□330MJ20S |
| | 47 | 12.5×20 | 0.20 | 270 | ESMG161E□□470MK20S |
| | 100 | 12.5×25 | 0.20 | 430 | ESMG161E□□101MK25S |
| | 220 | 16×31.5 | 0.20 | 760 | ESMG161E□□221MLN3S |
| | 220 | 20×25 | 0.15 | 730 | ESMG161E□□221MN25S |
| | 330 | 18×35.5 | 0.20 | 995 | ESMG161E□□331MMP1S |
| | 330 | 20×30 | 0.15 | 920 | ESMG161E□□331MN30S |
| | 390 | 20×35 | 0.15 | 1,160 | ESMG161E□□391MN35S |
| | 390 | 22×30 | 0.15 | 1,160 | ESMG161E□□391MP30S |
| | 470 | 20×40 | 0.15 | 1,340 | ESMG161E□□471MN40S |
| | 470 | 22×35 | 0.15 | 1,340 | ESMG161E□□471MP35S |
| | 560 | 22×40 | 0.15 | 1,470 | ESMG161E□□561MP40S |
| | 680 | 25.4×40 | 0.15 | 1,570 | ESMG161E□□681MQ40S |
| 200 | 3.3 | 6.3×11 | 0.20 | 40 | ESMG201E□□3R3MF11D |
| | 4.7 | 8×11.5 | 0.20 | 55 | ESMG201E□□4R7MHB5D |
| | 10 | 10×12.5 | 0.20 | 94 | ESMG201E□□100MJC5S |
| 200 | 22 | 10×20 | 0.20 | 170 | ESMG201E□□220MJ20S |
| | 33 | 10×20 | 0.20 | 205 | ESMG201E□□330MJ20S |
| | 47 | 12.5×20 | 0.20 | 270 | ESMG201E□□470MK20S |
| | 100 | 16×25 | 0.20 | 475 | ESMG201E□□101ML25S |
| | 100 | 20×20 | 0.15 | 460 | ESMG201E□□101MN20S |
| | 180 | 20×25 | 0.15 | 660 | ESMG201E□□181MN25S |
| | 220 | 18×35.5 | 0.20 | 810 | ESMG201E□□221MMP1S |
| | 220 | 20×30 | 0.15 | 750 | ESMG201E□□221MN30S |
| | 270 | 20×30 | 0.15 | 830 | ESMG201E□□271MN30S |
| | 330 | 20×35 | 0.15 | 1,070 | ESMG201E□□331MN35S |
| | 330 | 22×30 | 0.15 | 1,070 | ESMG201E□□331MP30S |
| | 390 | 20×40 | 0.15 | 1,190 | ESMG201E□□391MN40S |
| | 390 | 22×30 | 0.15 | 1,160 | ESMG201E□□391MP30S |
| | 470 | 22×40 | 0.15 | 1,350 | ESMG201E□□471MP40S |
| | 560 | 22×40 | 0.15 | 1,430 | ESMG201E□□561MP40S |
| | 680 | 25.4×40 | 0.15 | 1,620 | ESMG201E□□681MQ40S |
| 250 | 2.2 | 6.3×11 | 0.20 | 32 | ESMG251E□□2R2MF11D |
| | 3.3 | 8×11.5 | 0.20 | 46 | ESMG251E□□3R3MHB5D |
| | 4.7 | 8×11.5 | 0.20 | 55 | ESMG251E□□4R7MHB5D |
| | 10 | 10×16 | 0.20 | 105 | ESMG251E□□100MJ16S |
| | 22 | 10×20 | 0.20 | 170 | ESMG251E□□220MJ20S |
| | 33 | 12.5×20 | 0.20 | 230 | ESMG251E□□330MK20S |
| | 47 | 12.5×25 | 0.20 | 295 | ESMG251E□□470MK25S |
| | 82 | 20×20 | 0.15 | 420 | ESMG251E□□820MN20S |
| | 100 | 16×31.5 | 0.20 | 515 | ESMG251E□□101MLN3S |
| | 100 | 20×25 | 0.15 | 490 | ESMG251E□□101MN25S |
| | 120 | 20×25 | 0.15 | 530 | ESMG251E□□121MN25S |
| | 180 | 20×30 | 0.15 | 680 | ESMG251E□□181MN30S |
| | 220 | 18×40 | 0.20 | 825 | ESMG251E□□221MM40S |
| | 220 | 20×35 | 0.15 | 780 | ESMG251E□□221MN35S |
| | 220 | 22×30 | 0.15 | 820 | ESMG251E□□221MP30S |
| | 270 | 20×40 | 0.15 | 880 | ESMG251E□□271MN40S |
| | 270 | 22×35 | 0.15 | 880 | ESMG251E□□271MP35S |
| | 330 | 22×40 | 0.15 | 1,060 | ESMG251E□□331MP40S |
| | 390 | 25.4×40 | 0.15 | 1,200 | ESMG251E□□391MQ40S |
| 315 | 47 | 20×20 | 0.15 | 310 | ESMG3B1E□□470MN20S |
| | 68 | 20×25 | 0.15 | 400 | ESMG3B1E□□680MN25S |
| | 82 | 20×25 | 0.15 | 440 | ESMG3B1E□□820MN25S |
| | 100 | 20×30 | 0.15 | 500 | ESMG3B1E□□101MN30S |
| | 120 | 20×30 | 0.15 | 550 | ESMG3B1E□□121MN30S |
| | 180 | 20×40 | 0.15 | 720 | ESMG3B1E□□181MN40S |
| | 180 | 22×35 | 0.15 | 720 | ESMG3B1E□□181MP35S |
| | 220 | 22×40 | 0.15 | 810 | ESMG3B1E□□221MP40S |
| | 270 | 25.4×40 | 0.15 | 920 | ESMG3B1E□□271MQ40S |
| 350 | 0.47 | 6.3×11 | 0.24 | 15 | ESMG351E□□R47MF11D |
| | 1.0 | 6.3×11 | 0.24 | 22 | ESMG351E□□1R0MF11D |
| | 2.2 | 8×11.5 | 0.24 | 38 | ESMG351E□□2R2MHB5D |
| | 3.3 | 8×11.5 | 0.24 | 46 | ESMG351E□□3R3MHB5D |
| | 4.7 | 10×12.5 | 0.24 | 65 | ESMG351E□□4R7MJC5S |
| | 10 | 10×20 | 0.24 | 115 | ESMG351E□□100MJ20S |
| | 22 | 12.5×20 | 0.24 | 185 | ESMG351E□□220MK20S |
| | 33 | 16×25 | 0.24 | 275 | ESMG351E□□330ML25S |
| | 47 | 16×25 | 0.24 | 325 | ESMG351E□□470ML25S |
| | 47 | 20×20 | 0.15 | 310 | ESMG351E□□470MN20S |
| | 68 | 20×25 | 0.15 | 400 | ESMG351E□□680MN25S |
| | 100 | 18×31.5 | 0.24 | 530 | ESMG351E□□101MMN3S |
| | 100 | 20×30 | 0.15 | 500 | ESMG351E□□101MN30S |
| | 120 | 20×35 | 0.15 | 560 | ESMG351E□□121MN35S |
| | 220 | 25.4×40 | 0.15 | 890 | ESMG351E□□221MQ40S |
| 400 | 1.0 | 6.3×11 | 0.24 | 22 | ESMG401E□□1R0MF11D |
| | 2.2 | 8×11.5 | 0.24 | 38 | ESMG401E□□2R2MHB5D |
| | 3.3 | 10×12.5 | 0.24 | 54 | ESMG401E□□3R3MJC5S |
| | 4.7 | 10×16 | 0.24 | 71 | ESMG401E□□4R7MJ16S |
| | 10 | 10×20 | 0.24 | 115 | ESMG401E□□100MJ20S |
| | 22 | 12.5×25 | 0.24 | 205 | ESMG401E□□220MK25S |
| | 33 | 16×25 | 0.24 | 275 | ESMG401E□□330ML25S |
| | 33 | 20×20 | 0.15 | 260 | ESMG401E□□330MN20S |

□□ : Fill with appropriate lead forming or taping code.

# SMG Series

## ◆STANDARD RATINGS

is non solvent-proof.

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mArms/ 85℃,120Hz) | Part No. |
|---|---|---|---|---|---|
| 400 | 47 | 16×31.5 | 0.24 | 350 | ESMG401E□□470MLN3S |
| | 56 | 20×25 | 0.15 | 350 | ESMG401E□□560MN25S |
| | 68 | 20×30 | 0.15 | 420 | ESMG401E□□680MN30S |
| | 100 | 20×35 | 0.15 | 520 | ESMG401E□□101MN35S |
| | 100 | 22×30 | 0.15 | 520 | ESMG401E□□101MP30S |
| | 120 | 20×40 | 0.15 | 580 | ESMG401E□□121MN40S |
| | 120 | 22×35 | 0.15 | 580 | ESMG401E□□121MP35S |
| | 180 | 25.4×40 | 0.15 | 790 | ESMG401E□□181MQ40S |
| 450 | 0.47 | 10×12.5 | 0.24 | 13 | ESMG451E□□R47MJC5S |
| | 1.0 | 10×12.5 | 0.24 | 19 | ESMG451E□□1R0MJC5S |
| | 2.2 | 10×12.5 | 0.24 | 32 | ESMG451E□□2R2MJC5S |
| | 3.3 | 10×16 | 0.24 | 44 | ESMG451E□□3R3MJ16S |
| | 4.7 | 10×20 | 0.24 | 56 | ESMG451E□□4R7MJ20S |
| | 10 | 12.5×20 | 0.24 | 91 | ESMG451E□□100MK20S |

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (mArms/ 85℃,120Hz) | Part No. |
|---|---|---|---|---|---|
| 450 | 22 | 16×25 | 0.24 | 165 | ESMG451E□□220ML25S |
| | 22 | 20×20 | 0.20 | 180 | ESMG451E□□220MN20S |
| | 33 | 16×31.5 | 0.24 | 215 | ESMG451E□□330MLN3S |
| | 33 | 20×25 | 0.20 | 240 | ESMG451E□□330MN25S |
| | 47 | 16×35.5 | 0.24 | 265 | ESMG451E□□470MLP1S |
| | 47 | 20×25 | 0.20 | 290 | ESMG451E□□470MN25S |
| | 56 | 20×30 | 0.20 | 320 | ESMG451E□□560MN30S |
| | 68 | 20×35 | 0.20 | 370 | ESMG451E□□680MN35S |
| | 68 | 22×30 | 0.20 | 370 | ESMG451E□□680MP30S |
| | 82 | 20×40 | 0.20 | 420 | ESMG451E□□820MN40S |
| | 82 | 22×35 | 0.20 | 420 | ESMG451E□□820MP35S |
| | 100 | 22×40 | 0.20 | 470 | ESMG451E□□101MP40S |
| | 120 | 25.4×40 | 0.20 | 520 | ESMG451E□□121MQ40S |

□□ : Fill with appropriate lead forming or taping code.

## ◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

(φ5 to φ18)

| Capacitance (μF) \ Frequency (Hz) | 50 | 120 | 300 | 1k | 10k | 100k |
|---|---|---|---|---|---|---|
| **0.1 to 4.7** | 0.65 | 1.00 | 1.35 | 1.75 | 2.30 | 2.50 |
| **10 to 47** | 0.75 | 1.00 | 1.25 | 1.50 | 1.75 | 1.80 |
| **100 to 1,000** | 0.80 | 1.00 | 1.15 | 1.30 | 1.40 | 1.50 |
| **2,200 to** | 0.85 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |

(φ20 to φ25.4)

| Rated Voltage (Vdc) \ Frequency (Hz) | 50 | 120 | 300 | 1k | 10k | 100k |
|---|---|---|---|---|---|---|
| **6.3 to 50** | 0.95 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |
| **63 to 100** | 0.92 | 1.00 | 1.07 | 1.13 | 1.19 | 1.20 |
| **160 to 250** | 0.81 | 1.00 | 1.17 | 1.32 | 1.45 | 1.50 |
| **315 to 450** | 0.77 | 1.00 | 1.16 | 1.30 | 1.41 | 1.43 |

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.