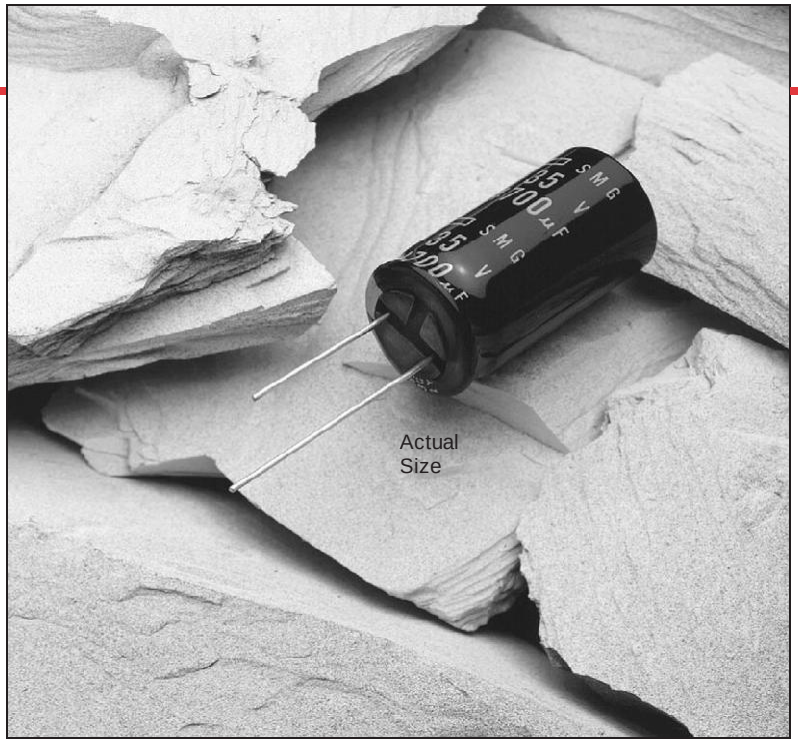
SMG Series

UNITED CHEMI-CON

- Miniature
- GeneralPurpose
- SolventProof
- LargeandSmall Capacitance
- +85˚C Maximum Temperature



The SMG series capacitors are a miniaturized version of the SME series. These capacitors are designedforaloadlifeof2,000hoursat85˚Cwithanoperatingtemperaturerangeof—40˚Cto +85˚Cexceptforthe450voltand20mmorlargerdiameterproductswhichhaveanoperating temperaturerangeof—25˚Cto+85˚C.

The SMG series capacitors below 315 volts were developed to withstand HCFC cleaning agents for five minutes by ultrasonic, vapor or immersion. This solvent proof design allows all circuit board components to be cleaned together, at the same time, without resorting to more expensive epoxyend-sealed capacitors. Refer to the Mini-Glossary for recommended cleaning conditions.

SummaryofSpecifications

- **Radialleadterminals.**
- **Capacitancerange:0.1to39,000µF.**
- **Voltagerange:6.3to450VDC.**
- **Operating temperature range: —40˚C to+85˚C for 6.3 to 400V; —25˚C to+85˚C for 450V and ≥20mm diameter.**
- **Leakagecurrent:Seespecificationstableforleakagecurrentvaluesat+20˚C.**
- **Standardcapacitancetolerance:±20%**
- **Nominalcasesize(DXL):5X11mmto25.4X40mm.**
- **Ratedlifetime:2,000hoursat+85˚C.**

SMGSeries

SMGSpecifications

Item	Characteristics
Operating Temperature Range	—40 to +85°C for 6.3 to 400V DC; —25 to +85°C for 450V DC and ≥20mm diameter case size.
Rated Voltage Range	6.3 to 450V DC
Capacitance Range	0.1 to 39,000μF
Capacitance Tolerance	±20% (M) at +20°C, 120Hz
Leakage Current	At +20°C ØD / DC Voltage / Test Time / Leakage Current (μA) ≤Ø18 / 6.3-100V / After 1 minute / I=0.03CV or 4μA, whichever is greater. ≤Ø18 / 160-450V / After 1 minute / CV≤1,000: I=0.1CV+40 / CV>1,000: I=0.04CV+100 ≤Ø18 / 160-450V / After 5 minutes / CV≤1,000: I=0.03CV+15 / CV>1,000: I=0.02CV+25 ≥Ø20 / 6.3-450V / After 3 minutes / I=0.03CV Where I=Leakage current (μA), C=Nominal capacitance (μF) and V=Rated voltage (V)
Dissipation Factor (Tan δ)	At +20°C, 120Hz Rated Voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100 / 160-250 / 350-400 / 450 Tanδ (DF) ≤Ø18: 0.34 / 0.24 / 0.20 / 0.16 / 0.14 / 0.12 / 0.09 / 0.08 / 0.20 / 0.24 / 0.24 Tanδ (DF) ≥Ø20: 0.28 / 0.24 / 0.20 / 0.16 / 0.14 / 0.12 / 0.10 / 0.10 / 0.15 / 0.15 / 0.20 When nominal capacitance exceeds 1,000μF, add 0.02 to the values above for each 1,000μF increase.
Low Temperature Characteristics	At 120Hz, impedance (Z) ratio between the —25°C or —40°C value and +20°C value shall not exceed the values given below. Rated Voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50-100 / 160-250 / 350-400 / 450 Z(—25℃)/Z(+20℃) ≤Ø18: 5 / 4 / 3 / 2 / 2 / 2 / 3 / 6 / 6 Z(—40℃)/Z(+20℃) ≤Ø18: 12 / 10 / 8 / 5 / 4 / 3 / 4 / 6 / – Z(—25℃)/Z(+20℃) ≥Ø20: 5 / 4 / 3 / 2 / 2 / 2 / 4 / 6 / 6
Ripple Current Multipliers *Refer to Section 4 of the Mini-Glossary for explanation of Ripple Current Multipliers.*	Ambient Temperature (°C) ≤Ø18: +70°C: 1.30 / +85°C: 1.00 Ambient Temperature (°C) ≥Ø20: +65°C: 1.23 / +85°C: 1.00 Frequency (Hz) ≤Ø18 Capacitance (μF) / Frequency (Hz): 50 / 120 / 300 / 1k / 10k / 100k 0.1-4.7μF: 0.65 / 1.00 / 1.35 / 1.75 / 2.30 / 2.50 10-47μF: 0.75 / 1.00 / 1.25 / 1.50 / 1.75 / 1.80 100-1000μF: 0.80 / 1.00 / 1.15 / 1.30 / 1.40 / 1.50 ≥2200μF: 0.85 / 1.00 / 1.03 / 1.05 / 1.08 / 1.08 Frequency (Hz) ≥Ø20 DC Rated Voltage / Frequency (Hz): 50 / 120 / 300 / 1k / 10k / 100k 10-50V: 0.95 / 1.00 / 1.03 / 1.05 / 1.08 / 1.08 63-100V: 0.92 / 1.00 / 1.07 / 1.13 / 1.19 / 1.20 160-250V: 0.81 / 1.00 / 1.17 / 1.32 / 1.45 / 1.50 315-450V: 0.77 / 1.00 / 1.16 / 1.30 / 1.41 / 1.43
Load Life	The following specifications shall be satisfied when the capacitors are restored to +20°C after subjecting them to the DC rated voltage for 2,000 hours at +85°C. The sum of DC voltage and peak AC voltage must not exceed the full rated voltage of the capacitors. Capacitance change: ≤±20% of initial measured value Tan δ (DF) : ≤200% of initial specified value Leakage current : ≤initial specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to +20°C after exposing them for 1,000 hours at +85°C without voltage applied. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements. Capacitance change: ≤±20% of initial measured value Tan δ (DF) : ≤200% of initial specified value Leakage current :≤initial specified value for 6.3-100V :≤500% of initial specified value for 160-450V Satisfies
Others	characteristic W of JIS C5141

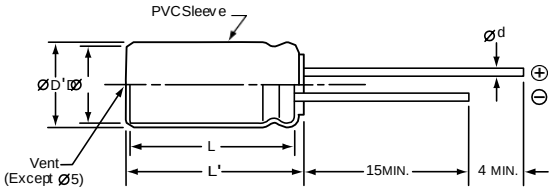
SMGSeries

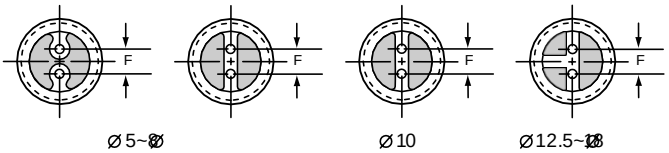
Diagramof Dimensions

VB/RadialLead

Unit:mm

≤ø18



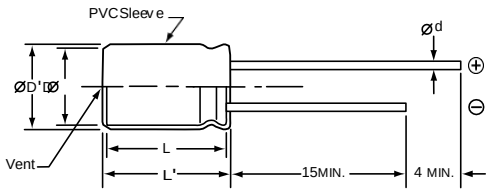


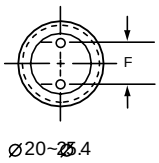
Gasescapeendsealforallcasediameters.

For optional lead configurations and tape and ammopackaging, refer to the beginning of the Miniature

øD	øD'max	L'max	ød	F±0.5
5	øD+0.5	L+1.5	0.5	2.0
6.3	øD+0.5	L+1.5	0.5	2.5
8	øD+0.5	L+1.5	0.6	3.5
10,12.5	øD+0.5	L+1.5	0.6	5.0
16,18	øD+0.5	L+1.5	0.8	7.5

≥ø20





øD	øD'max	L'max	ød	F±0.5
20	øD+0.5	L+2.0	1.0	10.0
22	øD+0.5	L+2.0	1.0	10.0
25.4	øD+0.5	L+2.0	1.0	12.5

PartNumberingSystemforSMGSeriesWhenordering,alwaysspecifycompletecatalognumberforSMG Series.

SMG 35 VB 472 M 18X35 LL

- LL — LeadLength: LLisStandard.
- 18X35 — CaseCode: SeeCaseSizesinTables. Capacitance
- M — Tolerance: M = ±20%
- 472 — CapacitanceValue: ExpressedinMicrofarads. Thefirsttwodigitsare significant figures, and the third digit indicates the number of zerosfor capacitance of 100µFor more. R indicates the decimal point for capacitancelessthan100µF(e.g.R47=.47µF;4R7=4.7µF; 47R=47µF;471=470µF;472=4,700µF;473=47,000µF).
- VB — LeadConfiguration: VB=RadialLead Terminals.
- 35 — DCRatedVoltage: ExpressedinVolts(e.g.35=35WVDC). Series
- SMG — Name: Indicates Basic Capacitor Design.

SMGSeries

StandardVoltageRatings-VB/RadialLead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog PartNumber	Nominal CaseSize* DXL(mm)	MaximumESR (Ω) at +20°C,120Hz	Maximum RippleCurrent (mA rms) at +85°C,120Hz
6.3Volts 8VoltsSurge	220	SMG6.3VB221M5X11LL	5X11	2.562	200
	330	SMG6.3VB331M6X11LL	6.3X11	1.708	270
	470	SMG6.3VB471M6X11LL	6.3X11	1.199	320
	680	SMG6.3VB681M8X11LL	8X11.5	0.829	445
	1,000	SMG6.3VB102M8X11LL	8X11.5	0.564	540
	1,500	SMG6.3VB152M10X16LL	10X16	0.376	760
	2,200	SMG6.3VB222M10X20LL	10X20	0.271	1,000
	3,300	SMG6.3VB332M10X20LL	10X20	0.191	1,185
	4,700	SMG6.3VB472M12X20LL	12.5X20	0.141	1,545
	6,800	SMG6.3VB682M12X25LL	12.5X25	0.107	1,915
	10,000	SMG6.3VB103M16X25LL	16X25	0.086	2,330
	10,000	SMG6.3VB103M20X25LL	20X25	0.076	2,310
	15,000	SMG6.3VB153M16X35LL	16X35.5	0.069	2,845
	15,000	SMG6.3VB153M20X30LL	20X30	0.062	2,660
	18,000	SMG6.3VB183M20X35LL	20X35	0.057	2,890
	18,000	SMG6.3VB183M22X30LL	22X30	0.057	2,860
	22,000	SMG6.3VB223M18X40LL	18X40	0.057	3,320
	22,000	SMG6.3VB223M20X40LL	20X40	0.053	3,130
	22,000	SMG6.3VB223M22X35LL	22X35	0.053	3,130
	27,000	SMG6.3VB273M22X40LL	22X40	0.049	3,280
	39,000	SMG6.3VB393M25X40LL	25.4X40	0.040	3,560
10 Volts 13Volts Surge	220	SMG10VB221M5X11LL	5X11	1.808	240
	330	SMG10VB331M6X11LL	6.3X11	1.205	290
	470	SMG10VB471M6X11LL	6.3X11	0.846	350
	680	SMG10VB681M10X12LL	10X12.5	0.585	535
	1,000	SMG10VB102M10X12LL	10X12.5	0.398	650
	1,500	SMG10VB152M10X20LL	10X20	0.265	880
	2,200	SMG10VB222M10X20LL	10X20	0.196	1,070
	3,300	SMG10VB332M12X20LL	12.5X20	0.141	1,420
	4,700	SMG10VB472M12X25LL	12.5X25	0.106	1,780
	6,800	SMG10VB682M16X25LL	16X25	0.083	2,220
	6,800	SMG10VB682M20X20LL	20X20	0.083	2,080
	10,000	SMG10VB103M16X35LL	16X35.5	0.070	2,670
	10,000	SMG10VB103M20X25LL	20X25	0.070	2,410
	12,000	SMG10VB123M20X30LL	20X30	0.064	2,620
	15,000	SMG10VB153M18X35LL	18X35.5	0.057	3,080
	15,000	SMG10VB153M20X35LL	20X35	0.057	2,870
	15,000	SMG10VB153M22X30LL	22X30	0.057	2,660
	18,000	SMG10VB183M22X35LL	22X35	0.053	3,050
	22,000	SMG10VB223M22X40LL	22X40	0.05	3,480
	33,000	SMG10VB333M25X40LL	25.4X40	0.044	3,560
16 Volts 20VoltsSurge	100	SMG16VB101M5X11LL	5X11	3.315	160
	150	SMG16VB151M6X11LL	6.3X11	2.210	210
	220	SMG16VB221M6X11LL	6.3X11	1.507	260
	330	SMG16VB331M8X11LL	8X11.5	1.005	370
	470	SMG16VB471M8X11LL	8X11.5	0.705	440
	680	SMG16VB681M10X16LL	10X16	0.488	645
	1,000	SMG16VB102M10X16LL	10X16	0.332	785
	1,500	SMG16VB152M12X20LL	12.5X20	0.221	1,065
	2,200	SMG16VB222M12X20LL	12.5X20	0.166	1,295
	3,300	SMG16VB332M12X25LL	12.5X25	0.121	1,655
	4,700	SMG16VB472M16X25LL	16X25	0.092	2,090
	4,700	SMG16VB472M20X20LL	20X20	0.092	1,960
	6,800	SMG16VB682M16X31LL	16X31.5	0.073	2,520
	6,800	SMG16VB682M20X25LL	20X25	0.073	2,330
	8,200	SMG16VB822M20X30LL	20X30	0.069	2,500
	10,000	SMG16VB103M18X35LL	18X35.5	0.063	2,920
	10,000	SMG16VB103M20X35LL	20X35	0.063	2,720

***Thecasesizesintablearewithnosleeve,refertodiagramforcasesizeswithsleeve.**

SMGSeries

StandardVoltageRatings-VB/RadialLead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog PartNumber	Nominal CaseSize* DXL(mm)	MaximumESR (Ω) at +20°C,120Hz	Maximum RippleCurrent (mA rms) at +85°C,120Hz
16 Volts 20VoltsSurge	10,000	SMG16VB103M22X30LL	22X30	0.063	2,660
	12,000	SMG16VB123M20X40LL	20X40	0.058	2,900
	12,000	SMG16VB123M22X35LL	22X35	0.058	2,900
	15,000	SMG16VB153M22X40LL	22X40	0.053	3,380
	22,000	SMG16VB223M25X40LL	25.4X40	0.047	3,720
25Volts 32VoltsSurge	47	SMG25VB47RM5X11LL	5X11	5.643	115
	68	SMG25VB68RM5X11LL	5X11	3.900	135
	100	SMG25VB101M6X11LL	6.3X11	2.652	190
	150	SMG25VB151M6X11LL	6.3X11	1.768	230
	220	SMG25VB221M8X11LL	8X11.5	1.205	330
	330	SMG25VB331M8X11LL	8X11.5	0.804	440
	470	SMG25VB471M10X12LL	10X12.5	0.564	545
	680	SMG25VB681M10X20LL	10X20	0.390	785
	1,000	SMG25VB102M10X20LL	10X20	0.265	955
	1,500	SMG25VB152M12X25LL	12.5X25	0.177	1,270
	2,200	SMG25VB222M12X25LL	12.5X25	0.136	1,540
	3,300	SMG25VB332M16X25LL	16X25	0.100	1,975
	3,300	SMG25VB332M20X20LL	20X20	0.100	1,850
	4,700	SMG25VB472M16X31LL	16X31.5	0.078	2,420
	4,700	SMG25VB472M20X25LL	20X25	0.078	2,240
	5,600	SMG25VB562M20X30LL	20X30	0.071	2,430
	6,800	SMG25VB682M18X35LL	18X35.5	0.063	2,880
	6,800	SMG25VB682M20X35LL	20X35	0.063	2,680
	6,800	SMG25VB682M22X30LL	22X30	0.063	2,510
	8,200	SMG25VB822M20X40LL	20X40	0.061	2,810
	8,200	SMG25VB822M22X35LL	22X35	0.061	2,810
	10,000	SMG25VB103M22X40LL	22X40	0.056	3,240
	12,000	SMG25VB123M22X40LL	22X40	0.052	3,240
	15,000	SMG25VB153M25X40LL	25.4X40	0.049	3,610
35Volts 44VoltsSurge	47	SMG35VB47RM5X11LL	5X11	4.937	130
	68	SMG35VB68RM6X11LL	6.3X11	3.410	170
	100	SMG35VB101M6X11LL	6.3X11	2.321	210
	150	SMG35VB151M8X11LL	8X11.5	1.547	315
	220	SMG35VB221M8X11LL	8X11.5	1.055	385
	330	SMG35VB331M10X12LL	10X12.5	0.703	490
	470	SMG35VB471M10X16LL	10X16	0.494	645
	680	SMG35VB681M12X20LL	12.5X20	0.341	940
	1,000	SMG35VB102M12X20LL	12.5X20	0.232	1,145
	1,500	SMG35VB152M16X25LL	16X25	0.155	1,470
	2,200	SMG35VB222M16X25LL	16X25	0.121	1,785
	2,200	SMG35VB222M20X20LL	20X20	0.121	1,670
	3,300	SMG35VB332M16X35LL	16X35.5	0.090	2,275
	3,300	SMG35VB332M20X25LL	20X25	0.090	2,050
	3,900	SMG35VB392M20X30LL	20X30	0.077	2,310
	4,700	SMG35VB472M18X35LL	18X35.5	0.071	2,700
	4,700	SMG35VB472M20X35LL	20X35	0.071	2,510
	4,700	SMG35VB472M22X30LL	22X30	0.071	2,380
	5,600	SMG35VB562M20X40LL	20X40	0.065	2,690
	5,600	SMG35VB562M22X35LL	22X35	0.065	2,690
	6,800	SMG35VB682M22X40LL	22X40	0.059	3,090
	10,000	SMG35VB103M25X40LL	25.4X40	0.053	3,480
50Volts 63VoltsSurge	0.1	SMG50VBR10M5X11LL	5X11	1,989.0	1.3
	0.22	SMG50VBR22M5X11LL	5X11	904.091	2.9
	0.33	SMG50VBR33M5X11LL	5X11	602.727	4.3
	0.47	SMG50VBR47M5X11LL	5X11	423.191	6.2
	1.0	SMG50VB1R0M5X11LL	5X11	198.900	17
	2.2	SMG50VB2R2M5X11LL	5X11	90.409	28

***Thecasesizesintablearewithnosleeve,refertodiagramforcasesizeswithsleeve.**

SMGSeries

StandardVoltageRatings-VB/RadialLead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog PartNumber	Nominal CaseSize* DXL(mm)	MaximumESR (Ω) at +20°C,120Hz	Maximum RippleCurrent (mA rms) at +85°C,120Hz
50Volts 63VoltsSurge	3.3	SMG50VB3R3M5X11LL	5X11	60.273	35
	4.7	SMG50VB4R7M5X11LL	5X11	42.319	41
	10	SMG50VB10RM5X11LL	5X11	19.890	60
	22	SMG50VB22RM5X11LL	5X11	9.041	95
	33	SMG50VB33RM5X11LL	5X11	6.027	125
	47	SMG50VB47RM6X11LL	6.3X11	4.232	155
	68	SMG50VB68RM8X11LL	8X11.5	2.930	210
	100	SMG50VB101M8X11LL	8X11.5	1.989	260
	150	SMG50VB151M10X12LL	10X12.5	1.326	350
	220	SMG50VB221M10X12LL	10X12.5	0.904	430
	330	SMG50VB331M10X16LL	10X16	0.603	585
	470	SMG50VB471M10X20LL	10X20	0.423	755
	680	SMG50VB681M12X25LL	12.5X25	0.293	1,100
	1,000	SMG50VB102M12X25LL	12.5X25	0.199	1,340
	1,500	SMG50VB152M16X31LL	16X31.5	0.133	1,650
	1,500	SMG50VB152M20X20LL	20X20	0.133	1,570
	2,200	SMG50VB222M16X35LL	16X35.5	0.105	2,075
	2,200	SMG50VB222M20X25LL	20X25	0.105	1,880
	2,700	SMG50VB272M20X30LL	20X30	0.086	2,150
	3,300	SMG50VB332M18X35LL	18X35.5	0.080	2,500
	3,300	SMG50VB332M20X35LL	20X35	0.080	2,420
	3,300	SMG50VB332M22X30LL	22X30	0.080	2,420
	3,900	SMG50VB392M20X40LL	20X40	0.068	2,590
	3,900	SMG50VB392M22X35LL	22X35	0.068	2,590
	4,700	SMG50VB472M22X40LL	22X40	0.063	2,960
	6,800	SMG50VB682M25X40LL	25.4X40	0.054	3,360
63Volts 79VoltsSurge	10	SMG63VB10RM5X11LL	5X11	14.918	65
	22	SMG63VB22RM5X11LL	5X11	6.781	100
	33	SMG63VB33RM6X11LL	6.3X11	4.520	140
	47	SMG63VB47RM6X11LL	6.3X11	3.174	170
	100	SMG63VB101M10X12LL	10X12.5	1.492	300
	220	SMG63VB221M10X16LL	10X16	0.678	490
	330	SMG63VB331M10X20LL	10X20	0.452	710
	470	SMG63VB471M12X20LL	12.5X20	0.317	900
	820	SMG63VB821M20X20LL	20X20	0.182	1,370
	1,000	SMG63VB102M16X25LL	16X25	0.149	1,300
	1,000	SMG63VB102M20X25LL	20X25	0.149	1,600
	1,500	SMG63VB152M20X30LL	20X30	0.099	1,850
	2,200	SMG63VB222M20X35LL	20X35	0.083	2,330
	2,200	SMG63VB222M22X30LL	22X30	0.083	2,190
	2,700	SMG63VB272M20X40LL	20X40	0.068	2,640
	3,300	SMG63VB332M22X40LL	22X40	0.065	2,810
	3,900	SMG63VB392M25X40LL	25.4X40	0.055	3,100
100Volts 125 VoltsSurge	0.1	SMG100VBR10M5X11LL	5X11	1,326.0	2.1
	0.22	SMG100VBR22M5X11LL	5X11	602.727	4.7
	0.33	SMG100VBR33M5X11LL	5X11	401.818	7
	0.47	SMG100VBR47M5X11LL	5X11	282.128	10
	1.0	SMG100VB1R0M5X11LL	5X11	132.600	21
	2.2	SMG100VB2R2M5X11LL	5X11	60.273	30
	3.3	SMG100VB3R3M5X11LL	5X11	40.182	40
	4.7	SMG100VB4R7M5X11LL	5X11	28.213	45
	10	SMG100VB10RM6X11LL	6.3X11	13.260	75
	22	SMG100VB22RM8X11LL	8X11.5	6.027	130
	33	SMG100VB33RM8X11LL	8X11.5	4.018	180
	47	SMG100VB47RM10X12LL	10X12.5	2.821	230
	100	SMG100VB101M10X20LL	10X20	1.326	370
	220	SMG100VB221M12X25LL	12.5X25	0.603	620

***Thecasesizesintablearewithnosleeve,refertodiagramforcasesizeswithsleeve.**

SMGSeries

StandardVoltageRatings-VB/RadialLead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog PartNumber	Nominal CaseSize* DXL(mm)	MaximumESR (Ω) at +20°C,120Hz	Maximum RippleCurrent (mA rms) at +85°C,120Hz
100Volts 125 VoltsSurge	330	SMG100VB331M12X25LL	12.5X25	0.402	760
	330	SMG100VB331M20X20LL	20X20	0.402	870
	470	SMG100VB471M16X25LL	16X25	0.282	1,000
	680	SMG100VB681M20X30LL	20X30	0.195	1,360
	820	SMG100VB821M22X30LL	22X30	0.162	1,540
	1,000	SMG100VB102M18X40LL	18X40	0.133	1,380
	1,000	SMG100VB102M20X35LL	20X35	0.133	1,720
	1,200	SMG100VB122M22X40LL	22X40	0.111	1,980
	1,800	SMG100VB182M25X40LL	25.4X40	0.074	2,490
160Volts 200VoltsSurge	3.3	SMG160VB3R3M6X11LL	6.3X11	100.455	40
	4.7	SMG160VB4R7M6X11LL	6.3X11	70.532	48
	10	SMG160VB10RM10X12LL	10X12.5	33.150	94
	22	SMG160VB22RM10X20LL	10X20	15.068	170
	33	SMG160VB33RM10X20LL	10X20	10.045	205
	47	SMG160VB47RM12X20LL	12.5X20	7.053	270
	100	SMG160VB101M12X25LL	12.5X25	3.315	430
	150	SMG160VB151M20X20LL	20X20	1.658	570
	220	SMG160VB221M16X31LL	16X31.5	1.510	760
	220	SMG160VB221M20X25LL	20X25	1.130	730
	330	SMG160VB331M18X35LL	18X35.5	1.005	995
	330	SMG160VB331M20X30LL	20X30	0.753	920
	390	SMG160VB391M20X35LL	20X35	0.638	1,160
	390	SMG160VB391M22X30LL	22X30	0.638	1,160
	470	SMG160VB471M20X40LL	20X40	0.529	1,340
	470	SMG160VB471M22X35LL	22X35	0.529	1,340
	560	SMG160VB561M22X40LL	22X40	0.444	1,470
	680	SMG160VB681M25X40LL	25.4X40	0.366	1,570
200Volts 250VoltsSurge	3.3	SMG200VB3R3M6X11LL	6.3X11	100.455	40
	4.7	SMG200VB4R7M8X11LL	8X11.5	70.532	55
	10	SMG200VB10RM10X12LL	10X12.5	33.150	94
	22	SMG200VB22RM10X20LL	10X20	15.068	170
	33	SMG200VB33RM10X20LL	10X20	10.045	205
	47	SMG200VB47RM12X20LL	12.5X20	7.053	270
	100	SMG200VB101M16X25LL	16X25	3.315	475
	100	SMG200VB101M20X20LL	20X20	2.486	460
	150	SMG200VB151M20X25LL	20X25	1.658	660
	180	SMG200VB181M20X25LL	20X25	1.381	660
	220	SMG200VB221M18X35LL	18X35	1.510	810
	220	SMG200VB221M20X30LL	20X30	1.130	750
	270	SMG200VB271M20X30LL	20X30	0.921	830
	330	SMG200VB331M20X35LL	20X35	0.753	1,070
	330	SMG200VB331M22X30LL	22X30	0.753	1,070
	390	SMG200VB391M20X40LL	20X40	0.638	1,190
	390	SMG200VB391M22X35LL	22X35	0.638	1,160
	470	SMG200VB471M22X40LL	22X40	0.529	1,350
	560	SMG200VB561M22X40LL	22X40	0.444	1,430
	680	SMG200VB681M25X40LL	25.4X40	0.366	1,620
250Volts 300VoltsSurge	2.2	SMG250VB2R2M6X11LL	6.3X11	150.682	32
	3.3	SMG250VB3R3M8X11LL	8X11.5	100.455	46
	4.7	SMG250VB4R7M8X11LL	8X11.5	70.532	55
	10	SMG250VB10RM10X16LL	10X16	33.150	105
	22	SMG250VB22RM10X20LL	10X20	15.068	170
	33	SMG250VB33RM12X20LL	12.5X20	10.045	230
	47	SMG250VB47RM12X25LL	12.5X25	7.053	295
	82	SMG250VB82RM20X20LL	20X20	3.032	420
	100	SMG250VB101M16X31LL	16X31.5	3.315	515
	100	SMG250VB101M20X25LL	20X25	2.486	490

***Thecasesizesintablearewithnosleeve,refertodiagramforcasesizeswithsleeve.**

SMGSeries

StandardVoltageRatings-VB/RadialLead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog PartNumber	Nominal CaseSize* DXL(mm)	MaximumESR (Ω) at +20°C,120Hz	Maximum RippleCurrent (mA rms) at +85°C,120Hz
250Volts 300VoltsSurge	120	SMG250VB121M20X25LL	20X25	2.072	530
	150	SMG250VB151M20X30LL	20X30	1.658	620
	180	SMG250VB181M20X30LL	20X30	1.381	680
	220	SMG250VB221M18X40LL	18X40	1.510	825
	220	SMG250VB221M20X35LL	20X35	1.130	780
	220	SMG250VB221M22X30LL	22X30	1.130	820
	270	SMG250VB271M20X40LL	20X40	0.921	880
	270	SMG250VB271M22X35LL	22X35	0.921	880
	330	SMG250VB331M22X40LL	22X40	0.753	1,060
	390	SMG250VB391M25X40LL	25.4X40	0.638	1,200
315Volts 365VoltsSurge Not SolventProof	47	SMG315VB47RM20X20LL	20X20	5.290	310
	68	SMG315VB68RM20X25LL	20X25	3.656	400
	82	SMG315VB82RM20X25LL	20X25	3.032	440
	100	SMG315VB101M20X30LL	20X30	2.486	500
	120	SMG315VB121M20X30LL	20X30	2.072	550
	150	SMG315VB151M20X35LL	20X35	1.658	640
	180	SMG315VB181M20X40LL	20X40	1.381	720
	180	SMG315VB181M22X35LL	22X35	1.381	720
	220	SMG315VB221M22X40LL	22X40	1.130	810
	270	SMG315VB271M25X40LL	25.4X40	0.921	920
350Volts 400VoltsSurge Not SolventProof	0.47	SMG350VBR47M6X11LL	6.3X11	846.383	15
	1.0	SMG350VB1R0M6X11LL	6.3X11	397.800	22
	2.2	SMG350VB2R2M8X11LL	8X11.5	180.818	38
	3.3	SMG350VB3R3M8X11LL	8X11.5	120.545	46
	4.7	SMG350VB4R7M10X12LL	10X12.5	84.638	65
	10	SMG350VB10RM10X20LL	10X20	39.780	115
	22	SMG350VB22RM12X20LL	12.5X20	18.082	185
	33	SMG350VB33RM16X25LL	16X25	12.055	275
	47	SMG350VB47RM16X25LL	16X25	8.464	325
	47	SMG350VB47RM20X20LL	20X20	5.290	310
	68	SMG350VB68RM20X25LL	20X25	3.656	400
	100	SMG350VB101M18X31LL	18X31.5	3.978	530
	100	SMG350VB101M20X30LL	20X30	2.486	500
	120	SMG350VB121M20X35LL	20X35	2.072	560
	120	SMG350VB121M22X30LL	22X30	2.072	560
	150	SMG350VB151M20X40LL	20X40	1.658	660
	150	SMG350VB151M22X35LL	22X35	1.658	660
	220	SMG350VB221M25X40LL	25.4X40	1.130	890
400Volts 450VoltsSurge Not SolventProof	1.0	SMG400VB1R0M6X11LL	6.3X11	397.800	22
	2.2	SMG400VB2R2M8X11LL	8X11.5	180.818	38
	3.3	SMG400VB3R3M10X12LL	10X12.5	120.545	54
	4.7	SMG400VB4R7M10X16LL	10X16	84.638	71
	10	SMG400VB10RM10X20LL	10X20	39.780	115
	22	SMG400VB22RM12X25LL	12.5X25	18.082	205
	33	SMG400VB33RM16X25LL	16X25	12.055	275
	33	SMG400VB33RM20X20LL	20X20	7.534	260
	47	SMG400VB47RM16X31LL	16X31.5	8.464	350
	56	SMG400VB56RM20X25LL	20X25	4.440	350
	68	SMG400VB68RM20X30LL	20X30	3.656	420
	100	SMG400VB101M20X35LL	20X35	2.486	520
	100	SMG400VB101M22X30LL	22X30	2.486	520
	120	SMG400VB121M20X40LL	20X40	2.072	580
	120	SMG400VB121M22X35LL	22X35	2.072	580
	150	SMG400VB151M22X40LL	22X40	1.658	710
	180	SMG400VB181M25X40LL	25.4X40	1.381	790

***Thecasesizesintablearewithnosleeve,refertodiagramforcasesizeswithsleeve.**

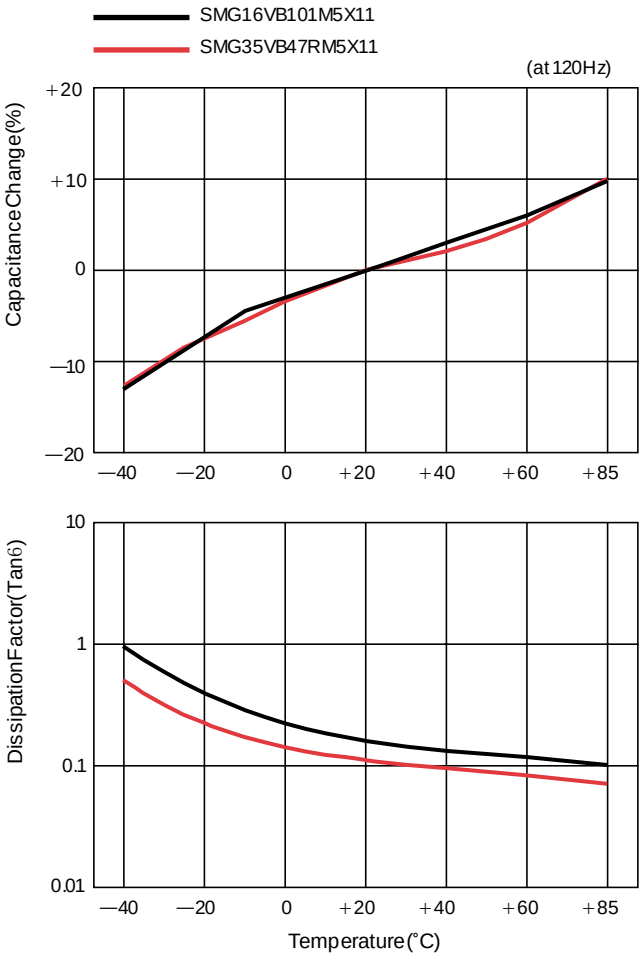
SMGSeries

StandardVoltageRatings-VB/RadialLead

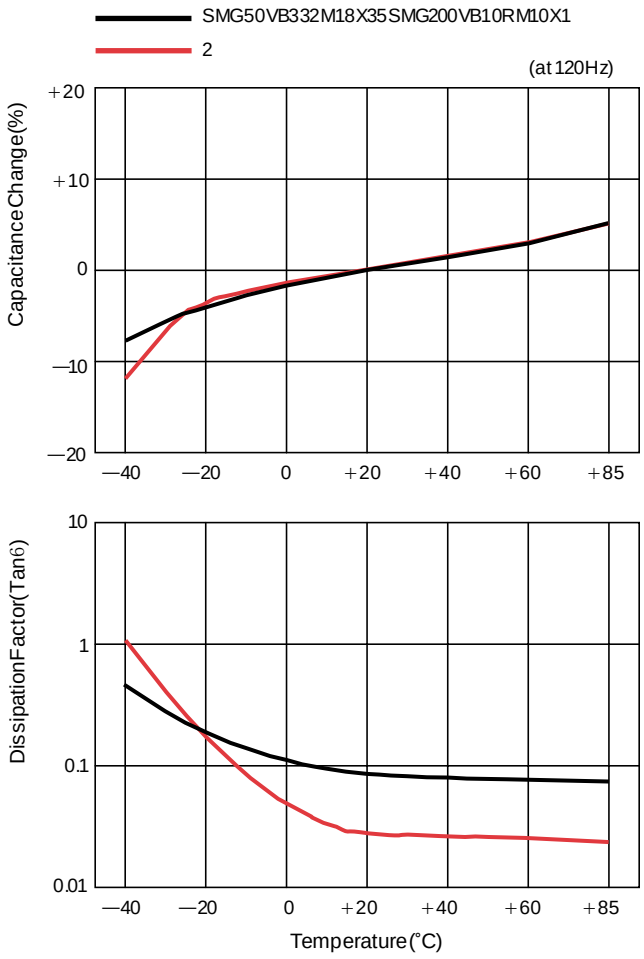
Rated Voltage (WVDC)	Capacitance (µF)	Catalog PartNumber	Nominal CaseSize* DXL(mm)	MaximumESR (Ω) at +20°C,120Hz	Maximum RippleCurrent (mA rms) at +85°C,120Hz
450Volts 500VoltsSurge Not SolventProof	0.47	SMG450VBR47M10X12LL	10X12.5	846.383	13
	1.0	SMG450VB1R0M10X12LL	10X12.5	397.800	19
	2.2	SMG450VB2R2M10X12LL	10X12.5	180.818	32
	3.3	SMG450VB3R3M10X16LL	10X16	120.545	44
	4.7	SMG450VB4R7M10X20LL	10X20	84.638	56
	10	SMG450VB10RM12X20LL	12.5X20	39.780	91
	22	SMG450VB22RM16X25LL	16X25	18.082	165
	22	SMG450VB22RM20X20LL	20X20	15.068	180
	33	SMG450VB33RM16X31LL	16X31.5	12.055	215
	33	SMG450VB33RM20X25LL	20X25	10.045	240
	47	SMG450VB47RM16X35LL	16X35.5	8.464	265
	47	SMG450VB47RM20X25LL	20X25	7.053	290
	56	SMG450VB56RM20X30LL	20X30	5.920	320
	68	SMG450VB68RM20X35LL	20X35	4.875	370
	68	SMG450VB68RM22X30LL	22X30	4.875	370
	82	SMG450VB82RM20X40LL	20X40	4.043	420
	82	SMG450VB82RM22X35LL	22X35	4.043	420
	100	SMG450VB101M22X40LL	22X40	3.315	470
	120	SMG450VB121M25X40LL	25.4X40	2.763	520

***Thecasesizesintablearewithnosleeve,refertodiagramforcasesizeswithsleeve.**

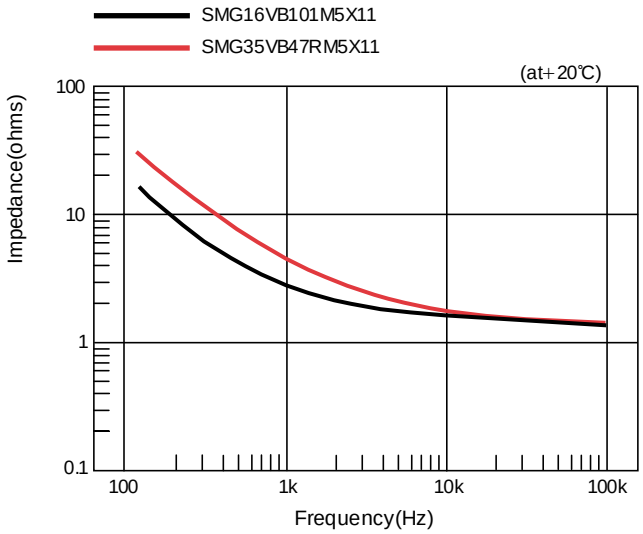
TemperatureCharacteristics



TemperatureCharacteristics



Impedance–FrequencyCharacteristics



Impedance–FrequencyCharacteristics

