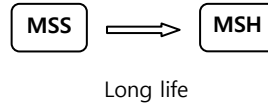


**MSS series**

- 85°C 2,000Hrs assured.
- Long life, High ripple
- For SMPS, Inverter
- RoHS compliant
- Halogen-free capacitors are also available.

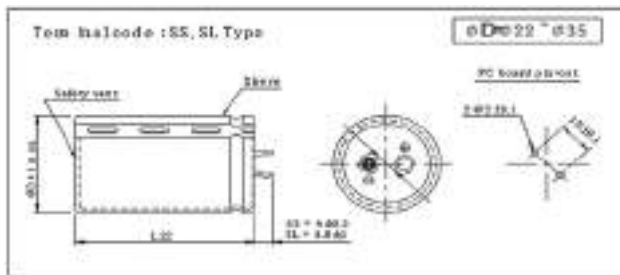
Standard RoHS Compliant



■ Specifications

Item	Characteristics	
Rated Voltage Range	16 ~ 250 Vdc	315 ~ 500 Vdc
Operating Temperature Range	-40 ~ +85°C	-25 ~ +85°C
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)	
Leakage Current	I=0.02CV or 3mA whichever is smaller Where, I:Max. Leakage current(µA), C:Nominal capacitance(µF), V:Rated voltage(Vdc) (at 20°C, 5min)	
Dissipation Factor(Tanδ)	Rated voltage (Vdc)	16 25 35 50~63 100 160~250 315~400 450~500
	Tanδ (max.)	0.40 0.35 0.30 0.25 0.20 0.15 0.15 0.20
Temperature characteristics (Max,impedance ratio)	Rated voltage (Vdc)	16 25 35 50~63 100 160~250 315~400 450~500
	Z(-25°C)/Z(20°C)	4 3 3 2 2 4 4 8
	Z(-40°C)/Z(20°C)	15 10 8 6 5 5 - -
Load life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for specified life times at 85°C2,000hrs. Capacitance change ≤±20% of the initial value Tan δ ≤200% of the initial specified value Leakage current ≤The 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 105°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 the initial value Tanδ ≤200% of the initial specified value Leakage current ≤The initial specified value	

■ Dimensions

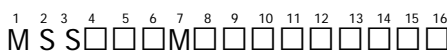


- Printed white color letter on black sleeve
- The standard design has no bottom plate

■ Rated ripple current multipliers

Vdc	Freq.(Hz)			
	60	120	1K	10K
16~50	0.95	1.00	1.05	1.08
63~100	0.92	1.00	1.13	1.19
160~250	0.81	1.00	1.32	1.45
350~450	0.77	1.00	1.30	1.41

■ Code numbering system



Terminal type  
Size (22X25: M25)  
Capacitance  
Capacitance tolerance(M:±20%, K:±10%, V : -10~20%)  
Working voltage(ex. 160V→160)  
Series name

Ø22	M
Ø25	N
Ø30	O
Ø35	P



MSS series

Standard Ratings

Note1) Ripple current = mA rms/85°C, 120Hz

VV (Vdc)	Cap (uF)	Size ØxL(mm)	Tan δ	Ripple <sup>1)</sup>	Code No
16	8,200	22 x 25	0.40	2,560	MSS016□822M25□□□
	10,000	22 x 30	0.40	2,890	MSS016□103M30□□□
	12,000	22 x 30	0.40	3,130	MSS016□123M30□□□
		25 x 25	0.40	3,010	MSS016□123N25□□□
	1,500	22 x 35	0.40	3,690	MSS016□153M35□□□
		25 x 30	0.40	3,640	MSS016□153N30□□□
		30 x 25	0.40	3,730	MSS016□153O25□□□
	18,000	22 x 40	0.40	3,980	MSS016□183M40□□□
		25 x 35	0.40	3,980	MSS016□183N35□□□
		30 x 30	0.40	3,880	MSS016□183O30□□□
	22,000	22 x 50	0.40	4,520	MSS016□223M50□□□
		25 x 40	0.40	4,440	MSS016□223N40□□□
		30 x 30	0.40	4,380	MSS016□223O30□□□
	27,000	25 x 45	0.40	4,980	MSS016□273N45□□□
		30 x 35	0.40	4,950	MSS016□273O35□□□
		35 x 30	0.40	4,820	MSS016□273P30□□□
	33,000	25 x 50	0.40	5,490	MSS016□333N50□□□
		30 x 40	0.40	5,600	MSS016□333O40□□□
		35 x 30	0.40	5,460	MSS016□333P30□□□
	39,000	30 x 45	0.40	6,210	MSS016□393O45□□□
		35 x 35	0.40	6,120	MSS016□393P35□□□
		30 x 50	0.40	6,930	MSS016□473O50□□□
	47,000	35 x 40	0.40	6,890	MSS016□473P40□□□
		35 x 45	0.40	7,690	MSS016□563P45□□□
25	5,600	22 X 25	0.35	2,310	MSS025□562M25□□□
	6,800	22 X 30	0.35	2,560	MSS025□682M30□□□
		25 X 25	0.35	2,470	MSS025□682N25□□□
	8,200	22 X 35	0.35	2,860	MSS025□822M35□□□
		25 X 25	0.35	2,780	MSS025□822N25□□□
	10,000	22 X 35	0.35	3,310	MSS025□103M35□□□
		25 X 30	0.35	3,160	MSS025□103N30□□□
		30 X 25	0.35	3,020	MSS025□103O25□□□
	12,000	22 X 40	0.35	3,770	MSS025□123M40□□□
		25 X 35	0.35	3,630	MSS025□123N35□□□
		30 X 25	0.35	3,800	MSS025□123O25□□□
	15,000	22 X 50	0.35	4,210	MSS025□153M50□□□
		25 X 40	0.35	4,100	MSS025□153N40□□□
		30 X 30	0.35	4,000	MSS025□153O30□□□
	18,000	25 X 45	0.35	4,680	MSS025□183N45□□□
		30 X 35	0.35	4,660	MSS025□183O35□□□
		35 X 30	0.35	4,680	MSS025□183P30□□□
	22,000	25 X 50	0.35	5,190	MSS025□223N50□□□
		30 X 40	0.35	5,330	MSS025□223O40□□□
		35 X 35	0.35	5,260	MSS025□223P35□□□
	27,000	30 X 45	0.35	6,020	MSS025□273O45□□□
		35 X 40	0.35	6,020	MSS025□273P40□□□
	33,000	35 X 45	0.35	6,750	MSS025□333P45□□□
	39,000	35 X 50	0.35	7,560	MSS025□393P50□□□
35	3,900	22 X 25	0.30	2,220	MSS035□392M25□□□
	4,700	22 X 30	0.30	2,460	MSS035□472M30□□□
		25 X 25	0.30	2,430	MSS035□472N25□□□
	5,600	22 X 35	0.30	2,790	MSS035□562M35□□□
		25 X 30	0.30	2,750	MSS035□562N30□□□
	6,800	22 X 40	0.30	2,970	MSS035□682M40□□□
		25 X 30	0.30	2,890	MSS035□682N30□□□
		30 X 25	0.30	3,090	MSS035□682O25□□□
	8,200	22 X 45	0.30	3,470	MSS035□822M45□□□
		25 X 35	0.30	3,330	MSS035□822N35□□□
	10,000	30 X 30	0.30	3,290	MSS035□822O30□□□
		22 X 50	0.30	3,750	MSS035□103M50□□□
		25 X 40	0.30	3,650	MSS035□103N40□□□

VV (Vdc)	Cap (uF)	Size ØxL(mm)	Tan δ	Ripple <sup>1)</sup>	Code No
35	10,000	30 X 30	0.30	3,610	MSS035□103O30□□□
		25 X 45	0.30	4,150	MSS035□123N45□□□
		30 X 35	0.30	4,140	MSS035□123O35□□□
	12,000	35 X 30	0.30	4,270	MSS035□123P30□□□
		25 X 50	0.30	4,800	MSS035□153N50□□□
	15,000	30 X 40	0.30	4,800	MSS035□153O40□□□
		35 X 35	0.30	4,950	MSS035□153P35□□□
		30 X 45	0.30	5,300	MSS035□183O45□□□
	18,000	35 X 40	0.30	5,710	MSS035□183P40□□□
		35 X 45	0.30	6,380	MSS035□223P45□□□
	22,000	35 X 50	0.30	6,900	MSS035□273P50□□□
	50	2,200	22 X 25	0.25	1,930
2,700		22 X 30	0.25	2,210	MSS050□272M30□□□
3,300		22 X 30	0.25	2,410	MSS050□332M30□□□
		25 X 25	0.25	2,380	MSS050□332N25□□□
3,900		22 X 35	0.25	2,720	MSS050□392M35□□□
		25 X 30	0.25	2,680	MSS050□392N30□□□
4,700		22 X 40	0.25	3,020	MSS050□472M40□□□
		25 X 30	0.25	3,070	MSS050□472N30□□□
		30 X 25	0.25	3,010	MSS050□472O25□□□
5,600		22 X 45	0.25	3,430	MSS050□562M45□□□
		25 X 35	0.25	3,470	MSS050□562N35□□□
		30 X 30	0.25	3,430	MSS050□562O30□□□
6,800		22 X 50	0.25	3,940	MSS050□682M50□□□
		25 X 40	0.25	3,870	MSS050□682N40□□□
		30 X 35	0.25	3,930	MSS050□682O35□□□
8,200		25 X 45	0.25	4,440	MSS050□822N45□□□
		30 X 35	0.25	4,470	MSS050□822O35□□□
		35 X 30	0.25	4,410	MSS050□822P30□□□
	30 X 40	0.25	5,080	MSS050□103O40□□□	
10,000	35 X 35	0.25	4,920	MSS050□103P35□□□	
	30 X 50	0.25	5,720	MSS050□123O50□□□	
12,000	35 X 40	0.25	5,690	MSS050□123P40□□□	
	35 X 45	0.25	6,560	MSS050□153P45□□□	
18,000	35 X 50	0.25	7,140	MSS050□183P50□□□	
63	1,800	22 X 25	0.20	1,900	MSS063□182M25□□□
	2,200	22 X 30	0.20	2,350	MSS063□222M30□□□
		25 X 25	0.20	2,300	MSS063□222N25□□□
	2,700	22 X 35	0.20	2,500	MSS063□272M35□□□
		25 X 30	0.20	2,520	MSS063□272N30□□□
	3,300	22 X 35	0.20	2,720	MSS063□332M35□□□
		25 X 30	0.20	2,740	MSS063□332N30□□□
		30 X 25	0.20	2,840	MSS063□332O25□□□
	3,900	22 X 40	0.20	3,090	MSS063□392M40□□□
		25 X 35	0.20	3,130	MSS063□392N35□□□
		30 X 30	0.20	3,090	MSS063□392O30□□□
	4,700	22 X 50	0.20	3,690	MSS063□472M50□□□
		25 X 40	0.20	3,590	MSS063□472N40□□□
		30 X 30	0.20	3,540	MSS063□472O30□□□
	5,600	25 X 45	0.20	4,010	MSS063□562N45□□□
		30 X 35	0.20	4,000	MSS063□562O35□□□
		35 X 30	0.20	3,750	MSS063□562P30□□□
	6,800	25 X 50	0.20	4,520	MSS063□682N50□□□
30 X 40		0.20	4,550	MSS063□682O40□□□	
8,200	35 X 30	0.20	4,440	MSS063□682P30□□□	
	30 X 45	0.20	5,120	MSS063□822O45□□□	
	35 X 35	0.20	5,050	MSS063□822P35□□□	
10,000	30 X 50	0.20	5,780	MSS063□103O50□□□	
	35 X 40	0.20	5,750	MSS063□103P40□□□	
12,000	35 X 45	0.20	6,470	MSS063□123P45□□□	



MSS series

Standard Ratings

Note1) Ripple current = mA rms/85°C, 120Hz

VW (Vdc)	Cap (uF)	Size ØxL(mm)	Tan δ	Ripple <sup>1)</sup>	Code No
200	470	25 x 25	0.15	1,950	MSS200□471N25□□□
		20 x 40	0.15	2,180	MSS200□561L40□□□
	560	22 x 35	0.15	2,180	MSS200□561M35□□□
		25 x 30	0.15	2,150	MSS200□561N30□□□
		30 x 25	0.15	2,150	MSS200□561O25□□□
	680	22 x 40	0.15	2,480	MSS200□681M40□□□
		25 x 30	0.15	2,480	MSS200□681N30□□□
		30 x 25	0.15	2,480	MSS200□681O25□□□
	820	22 x 45	0.15	2,810	MSS200□821M45□□□
		25 x 35	0.15	2,790	MSS200□821N35□□□
		30 x 30	0.15	2,800	MSS200□821O30□□□
	1,000	22 x 50	0.15	3,280	MSS200□102M50□□□
		25 x 40	0.15	3,280	MSS200□102N40□□□
		30 x 35	0.15	3,150	MSS200□102O35□□□
	1,200	30 x 35	0.15	3,610	MSS200□122O35□□□
		35 x 30	0.15	3,570	MSS200□122P30□□□
	1,500	30 x 45	0.15	4,130	MSS200□152O45□□□
		35 x 35	0.15	4,060	MSS200□152P35□□□
1,800	30 x 50	0.15	4,600	MSS200□182O50□□□	
	35 x 40	0.15	4,590	MSS200□182P40□□□	
2,200	35 x 45	0.15	5,250	MSS200□222P45□□□	
250	180	20 x 25	0.15	1,200	MSS250□181L25□□□
		20 x 25	0.15	1,260	MSS250□221L25□□□
	220	22 x 25	0.15	1,240	MSS250□221M25□□□
		20 x 30	0.15	1,420	MSS250□271L30□□□
	270	22 x 25	0.15	1,500	MSS250□271M25□□□
		20 x 35	0.15	1,680	MSS250□331L35□□□
	330	22 x 30	0.15	1,660	MSS250□331M30□□□
		25 x 25	0.15	1,610	MSS250□331N25□□□
	390	20 x 40	0.15	1,920	MSS250□391L40□□□
		22 x 35	0.15	1,880	MSS250□391M35□□□
		25 x 30	0.15	1,880	MSS250□391N30□□□
	470	22 x 35	0.15	2,150	MSS250□471M35□□□
		25 x 35	0.15	2,150	MSS250□471N35□□□
		30 x 25	0.15	2,040	MSS250□471O25□□□
	560	22 x 40	0.15	2,480	MSS250□561M40□□□
		25 x 35	0.15	2,350	MSS250□561N35□□□
		30 x 25	0.15	2,350	MSS250□561O25□□□
	680	25 x 40	0.15	2,670	MSS250□681N40□□□
		30 x 30	0.15	2,710	MSS250□681O30□□□
	820	25 x 45	0.15	3,010	MSS250□821N45□□□
		30 x 35	0.15	2,980	MSS250□821O35□□□
		35 x 30	0.15	2,960	MSS250□821P30□□□
	1,000	30 x 40	0.15	3,560	MSS250□102O40□□□
		35 x 35	0.15	3,480	MSS250□102P35□□□
1,200	30 x 45	0.15	3,990	MSS250□122O45□□□	
	35 x 35	0.15	3,840	MSS250□122P35□□□	
1,500	35 x 40	0.15	4,330	MSS250□152P40□□□	
1,800	35 x 50	0.15	4,540	MSS250□182P50□□□	
350	120	20 x 30	0.15	960	MSS350□121L30□□□
		22 x 25	0.15	1,040	MSS350□121M25□□□
	150	20 x 30	0.15	1,100	MSS350□151L30□□□
		22 x 30	0.15	1,200	MSS350□151M30□□□
		25 x 25	0.15	1,220	MSS350□151N25□□□
	180	20 x 35	0.15	1,240	MSS350□181L35□□□
		22 x 30	0.15	1,340	MSS350□181M30□□□
		25 x 25	0.15	1,370	MSS350□181N25□□□
	220	22 x 35	0.15	1,470	MSS350□221M35□□□
		25 x 30	0.15	1,530	MSS350□221N30□□□
		30 x 25	0.15	1,540	MSS350□221O25□□□

VW (Vdc)	Cap (uF)	Size ØxL(mm)	Tan δ	Ripple <sup>1)</sup>	Code No
350	270	22 x 40	0.15	1,700	MSS350□271M40□□□
		25 x 35	0.15	1,730	MSS350□271N35□□□
		30 x 25	0.15	1,800	MSS350□271O25□□□
	330	22 x 45	0.15	1,870	MSS350□331M45□□□
		25 x 35	0.15	1,970	MSS350□331N35□□□
		30 x 30	0.15	2,030	MSS350□331O30□□□
	390	25 x 40	0.15	2,140	MSS350□391N40□□□
		30 x 35	0.15	2,230	MSS350□391O35□□□
		35 x 30	0.15	2,300	MSS350□391P30□□□
	470	25 x 50	0.15	2,550	MSS350□471N50□□□
		30 x 35	0.15	2,530	MSS350□471O35□□□
	560	35 x 40	0.15	2,550	MSS350□471P30□□□
		30 x 30	0.15	2,730	MSS350□561O40□□□
	680	35 x 35	0.15	2,750	MSS350□561P35□□□
		30 x 50	0.15	3,150	MSS350□681O50□□□
	820	35 x 40	0.15	3,150	MSS350□681P40□□□
		35 x 45	0.15	3,470	MSS350□821P45□□□
	1,000	35 x 50	0.15	3,600	MSS350□102P50□□□
400	68	20 x 25	0.15	750	MSS400□680L25□□□
		20 x 30	0.15	820	MSS400□820L30□□□
	82	22 x 25	0.15	840	MSS400□820M25□□□
		20 x 30	0.15	950	MSS400□101L30□□□
	100	22 x 25	0.15	950	MSS400□101M25□□□
		20 x 35	0.15	1,070	MSS400□121L35□□□
	120	22 x 30	0.15	1,090	MSS400□121M30□□□
		25 x 25	0.15	1,130	MSS400□121N25□□□
	150	20 x 40	0.15	1,220	MSS400□151L40□□□
		22 x 35	0.15	1,240	MSS400□151M35□□□
		25 x 30	0.15	1,270	MSS400□151N30□□□
	180	22 x 40	0.15	1,410	MSS400□181M40□□□
		25 x 30	0.15	1,440	MSS400□181N30□□□
		30 x 25	0.15	1,520	MSS400□181O25□□□
	220	22 x 45	0.15	1,580	MSS400□221M45□□□
		25 x 35	0.15	1,640	MSS400□221N35□□□
		30 x 30	0.15	1,660	MSS400□221O30□□□
	270	25 x 40	0.15	1,790	MSS400□271N40□□□
		30 x 30	0.15	1,820	MSS400□271O30□□□
		25 x 45	0.15	2,000	MSS400□331N45□□□
	330	30 x 35	0.15	2,050	MSS400□331O35□□□
		35 x 30	0.15	2,050	MSS400□331P30□□□
		30 x 40	0.15	2,260	MSS400□391O40□□□
	390	35 x 35	0.15	2,280	MSS400□391P35□□□
30 x 45		0.15	2,510	MSS400□471O45□□□	
470	35 x 35	0.15	2,510	MSS400□471P35□□□	
	30 x 50	0.15	2,850	MSS400□561O50□□□	
560	35 x 40	0.15	2,850	MSS400□561P40□□□	
	35 x 50	0.15	3,100	MSS400□681P50□□□	
450	56	20 x 25	0.20	610	MSS450□560L25□□□
		20 x 30	0.20	710	MSS450□680L30□□□
	68	22 x 25	0.20	710	MSS450□680M25□□□
		20 x 35	0.20	800	MSS450□820L35□□□
	82	22 x 25	0.20	860	MSS450□820M25□□□
		20 x 35	0.20	880	MSS450□101L35□□□
	100	22 x 30	0.20	950	MSS450□101M30□□□
		25 x 25	0.20	970	MSS450□101N25□□□
		20 x 40	0.20	990	MSS450□121L40□□□
	120	22 x 35	0.20	1,070	MSS450□121M35□□□
		25 x 30	0.20	1,090	MSS450□121N30□□□
		30 x 25	0.20	1,120	MSS450□121O25□□□

**MSS series**

■ **Standard Ratings** Note1) Ripple current = mArms/85°C, 120Hz

WV (Vdc)	Cap (µF)	Size ØxL (mm)	Tan δ	Ripple <sup>1)</sup>	Code No
450	150	22 x 40	0.20	1,180	MSS450□151M40□□□
		25 x 30	0.20	1,250	MSS450□151N30□□□
		30 x 25	0.20	1,290	MSS450□151O25□□□
	180	22 x 45	0.20	1,320	MSS450□181M45□□□
		25 x 35	0.20	1,400	MSS450□181N35□□□
		30 x 30	0.20	1,450	MSS450□181O30□□□
	220	25 x 40	0.20	1,590	MSS450□221N40□□□
		30 x 30	0.20	1,640	MSS450□221O30□□□
		35 x 25	0.20	1,590	MSS450□221P25□□□
	270	30 x 35	0.20	1,890	MSS450□271O35□□□
		35 x 30	0.20	1,900	MSS450□271P30□□□
	330	30 x 40	0.20	2,120	MSS450□331O40□□□
		35 x 35	0.20	2,150	MSS450□331P35□□□
	390	30 x 45	0.20	2,350	MSS450□391O45□□□
		35 x 40	0.20	2,380	MSS450□391P40□□□
	470	35 x 45	0.20	2,680	MSS450□471P45□□□
	560	35 x 50	0.20	2,880	MSS450□561P50□□□