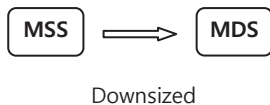




MDS series

Downsized RoHS Compliant

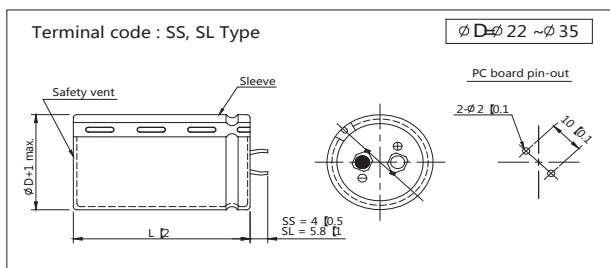
- 85°C 2,000Hrs assured.
- Downsized
- For SMPS, Inverter
- RoHS compliant
- Halogen-free capacitors are also available.



Specifications

Item	Characteristics	
Rated Voltage Range	160 ~ 250 Vdc	400 ~ 450 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)	160 ~ 400 450
	Tanδ (max.)	0.15 0.20
Temperature characteristics (Max,impedance ratio)	(at 20°C, 120Hz)	
	Rated voltage (Vdc)	160 ~ 250 400, 450
	Z(-25°C)/Z(20°C)	4 8
	Z(-40°C)/Z(20°C)	6 -
	(at 120Hz)	
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 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 the initial value Tanδ ≤200% of the initial specified value Leakage current ≤The initial specified value	

Dimensions



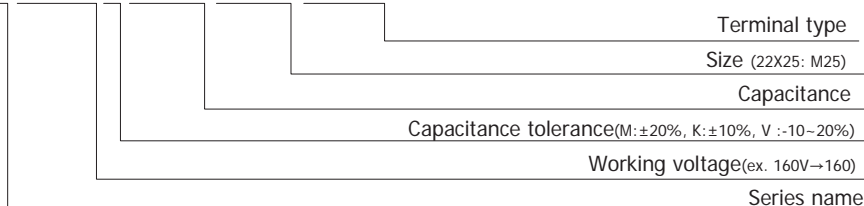
- Printed white color letter on black sleeve
- The standard design has no bottom plate

Rated ripple current multipliers

Vdc \ Freq.(Hz)	120	1K	10K	50K	100K
160 ~ 250	1.00	1.32	1.45	1.50	1.55
400, 450	1.00	1.30	1.41	1.43	1.48

Code numbering system

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
M D S □ □ □ M □ □ □ □ □ □ □ □ □ □ □ □



Size	Terminal type
022	M
025	N
030	O
035	P



MDS series

Standard Ratings

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

WV (Vdc)	Cap (uF)	Size ØxL (mm)	Tan δ	Ripple ¹⁾	Code No
160	560	22 x 25	0.15	2,250	MDS160□561M25□□□
	680	22 x 30	0.15	2,500	MDS160□681M30□□□
	820	22 x 35	0.15	2,750	MDS160□821M35□□□
		25 x 25	0.15	2,520	MDS160□821N25□□□
	1,000	22 x 40	0.15	3,000	MDS160□102M40□□□
		25 x 30	0.15	3,000	MDS160□102N30□□□
	1,200	22 x 40	0.15	3,050	MDS160□122M40□□□
		25 x 35	0.15	3,250	MDS160□122N35□□□
	1,500	30 x 25	0.15	3,050	MDS160□122O25□□□
		22 x 50	0.15	3,400	MDS160□152M50□□□
		25 x 40	0.15	3,400	MDS160□152N40□□□
	1,800	30 x 30	0.15	3,400	MDS160□152O30□□□
		35 x 25	0.15	3,400	MDS160□152P25□□□
		25 x 45	0.15	3,800	MDS160□182N45□□□
	2,200	30 x 35	0.15	4,200	MDS160□182O35□□□
		35 x 30	0.15	4,100	MDS160□182P30□□□
		30 x 40	0.15	4,450	MDS160□222O40□□□
	2,700	35 x 35	0.15	4,780	MDS160□222P35□□□
		30 x 45	0.15	4,900	MDS160□272O45□□□
	3,300	35 x 40	0.15	5,450	MDS160□272P40□□□
30 x 45		0.15	5,750	MDS160□332O45□□□	
3,900	35 x 50	0.15	6,000	MDS160□392P50□□□	
180	560	22 x 25	0.15	1,800	MDS180□561M25□□□
	680	22 x 30	0.15	1,900	MDS180□681M30□□□
	820	25 x 25	0.15	2,100	MDS180□681N25□□□
		22 x 35	0.15	2,450	MDS180□821M35□□□
	1,000	25 x 30	0.15	2,400	MDS180□821N30□□□
		22 x 40	0.15	2,800	MDS180□102M40□□□
	1,200	25 x 35	0.15	2,700	MDS180□102N35□□□
		30 x 25	0.15	2,650	MDS180□102O25□□□
	1,500	22 x 45	0.15	2,900	MDS180□122M45□□□
		25 x 40	0.15	3,000	MDS180□122N40□□□
		30 x 30	0.15	3,000	MDS180□122O30□□□
	1,800	35 x 25	0.15	3,000	MDS180□122P25□□□
		25 x 45	0.15	3,300	MDS180□152N45□□□
		30 x 35	0.15	3,300	MDS180□152O35□□□
	2,200	35 x 30	0.15	3,300	MDS180□152P30□□□
		25 x 50	0.15	3,600	MDS180□182N50□□□
		30 x 40	0.15	3,600	MDS180□182O40□□□
	2,700	35 x 30	0.15	3,400	MDS180□182P30□□□
		30 x 45	0.15	4,300	MDS180□222O45□□□
	3,300	35 x 35	0.15	4,300	MDS180□222P35□□□
30 x 50		0.15	4,700	MDS180□272O50□□□	
3,900	35 x 45	0.15	5,000	MDS180□332P45□□□	
200	470	22 x 25	0.15	1,430	MDS200□471M25□□□
	560	22 x 30	0.15	2,070	MDS200□561M30□□□
		25 x 25	0.15	2,070	MDS200□561N25□□□
	680	22 x 35	0.15	2,280	MDS200□681M35□□□
		25 x 30	0.15	2,280	MDS200□681N30□□□
	820	22 x 40	0.15	2,490	MDS200□821M40□□□
		25 x 30	0.15	2,340	MDS200□821N30□□□
	1,000	22 x 45	0.15	2,550	MDS200□102M45□□□
		25 x 35	0.15	2,550	MDS200□102N35□□□
	1,200	30 x 30	0.15	2,760	MDS200□102O30□□□
		22 x 50	0.15	2,810	MDS200□122M50□□□
		25 x 40	0.15	2,810	MDS200□122N40□□□
30 x 30		0.15	2,810	MDS200□122O30□□□	
		35 x 25	0.15	2,810	MDS200□122O30□□□

WV (Vdc)	Cap (uF)	Size ØxL (mm)	Tan δ	Ripple ¹⁾	Code No
200	1,500	25 x 50	0.15	3,290	MDS200□152N50□□□
		30 x 35	0.15	2,980	MDS200□152O35□□□
		35 x 30	0.15	3,290	MDS200□152P30□□□
	1,800	30 x 40	0.15	3,320	MDS200□182O40□□□
		35 x 35	0.15	3,670	MDS200□182P35□□□
	2,200	30 x 50	0.15	4,180	MDS200□222O50□□□
		35 x 40	0.15	4,180	MDS200□222P40□□□
	2,700	35 x 45	0.15	4,340	MDS200□272P45□□□
		35 x 50	0.15	4,420	MDS200□332P50□□□
	250	330	22 x 25	0.15	1,300
390		22 x 30	0.15	1,910	MDS250□391M30□□□
470		25 x 25	0.15	2,000	MDS250□471N25□□□
560		22 x 40	0.15	2,250	MDS250□561M40□□□
		25 x 30	0.15	2,250	MDS250□561N30□□□
680		22 x 45	0.15	2,500	MDS250□681M45□□□
		25 x 35	0.15	2,500	MDS250□681N35□□□
		30 x 25	0.15	2,500	MDS250□681O25□□□
820		25 x 40	0.15	2,770	MDS250□821M40□□□
		30 x 30	0.15	2,770	MDS250□821O30□□□
	35 x 25	0.15	2,770	MDS250□821P25□□□	
1,000	25 x 50	0.15	3,320	MDS250□102N50□□□	
	30 x 35	0.15	3,320	MDS250□102O35□□□	
	35 x 30	0.15	3,320	MDS250□102P30□□□	
1,200	30 x 40	0.15	3,840	MDS250□122O40□□□	
	35 x 35	0.15	3,840	MDS250□122P35□□□	
1,500	30 x 50	0.15	4,250	MDS250□152O50□□□	
	35 x 40	0.15	4,250	MDS250□152P40□□□	
1,800	35 x 45	0.15	4,550	MDS250□182P45□□□	
2,200	35 x 50	0.15	4,750	MDS250□222P50□□□	
400	150	22 x 25	0.15	1,030	MDS400□151M25□□□
	180	22 x 30	0.15	1,160	MDS400□181M30□□□
		25 x 25	0.15	1,160	MDS400□181N25□□□
	220	22 x 35	0.15	1,400	MDS400□221M35□□□
		25 x 30	0.15	1,400	MDS400□221N30□□□
	270	22 x 40	0.15	1,500	MDS400□271M40□□□
		25 x 35	0.15	1,500	MDS400□271N35□□□
	330	22 x 45	0.15	1,700	MDS400□331M45□□□
		25 x 35	0.15	1,700	MDS400□331N35□□□
		30 x 30	0.15	1,700	MDS400□331O30□□□
	390	22 x 50	0.15	1,900	MDS400□391M50□□□
		25 x 40	0.15	1,900	MDS400□391N40□□□
		30 x 30	0.15	1,900	MDS400□391O30□□□
		35 x 25	0.15	1,900	MDS400□391P25□□□
	470	25 x 50	0.15	2,130	MDS400□471N50□□□
		30 x 35	0.15	2,130	MDS400□471O35□□□
		35 x 30	0.15	2,130	MDS400□471P30□□□
	560	30 x 40	0.15	2,390	MDS400□561O40□□□
35 x 35		0.15	2,390	MDS400□561P35□□□	
30 x 45		0.15	2,690	MDS400□681O45□□□	
680	35 x 35	0.15	2,690	MDS400□681P35□□□	
	35 x 40	0.15	2,960	MDS400□821P40□□□	
1,000	35 x 50	0.15	3,300	MDS400□102P50□□□	
450	120	22 x 25	0.20	930	MDS450□121M25□□□
	150	22 x 30	0.20	1,040	MDS450□151M30□□□
		25 x 25	0.20	1,040	MDS450□151N25□□□
	180	22 x 35	0.20	1,300	MDS450□181M35□□□
25 x 30		0.20	1,300	MDS450□181N30□□□	



MDS series

Standard Ratings

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

WV (Vdc)	Cap (uF)	Size ØxL(mm)	Tan δ	Ripple ¹⁾	Code No
450	220	22 x 40	0.20	1,400	MDS450□221M40□□□
		25 x 35	0.20	1,500	MDS450□221N35□□□
		30 x 25	0.20	1,400	MDS450□221O25□□□
	270	22 x 45	0.20	1,660	MDS450□271M45□□□
		25 x 40	0.20	1,800	MDS450□271N40□□□
		30 x 30	0.20	1,800	MDS450□271O30□□□
	330	25 x 45	0.20	1,950	MDS450□331M45□□□
		30 x 35	0.20	1,950	MDS450□331O35□□□
		35 x 30	0.20	1,950	MDS450□331P30□□□
	390	25 x 50	0.20	2,100	MDS450□391M50□□□
		30 x 35	0.20	2,100	MDS450□391O35□□□
		35 x 30	0.20	2,100	MDS450□391P30□□□
	470	30 x 40	0.20	2,320	MDS450□471O40□□□
		35 x 35	0.20	2,320	MDS450□471P35□□□
	560	30 x 50	0.20	2,660	MDS450□561O50□□□
		35 x 40	0.20	2,660	MDS450□561P40□□□
	680	35 x 45	0.20	2,820	MDS450□681P45□□□
	820	35 x 50	0.20	3,000	MDS450□821P50□□□