

SINGLE-ENDED LEADS – Low Impedance and long life 105°C / 3000-6000 h

Description

Long life 3000-6000 hours and high reliability.

Applications

High frequency switching mode circuits.

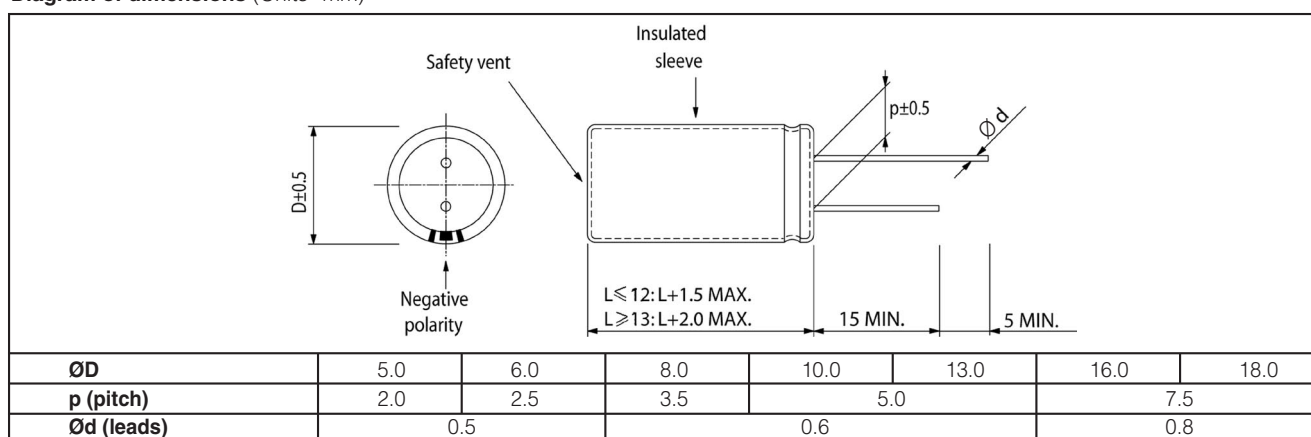
Features

Case with $\varnothing D \geq 6.0$ mm has the safety vent at the bottom.
Different case size available for capacitance value.

Marking

Series: (ESW), Operating temperature: (105°C)
Capacitance (μF), Rated voltage: (Vdc),
Negative polarity: (white line), Date code

Diagram of dimensions (Units=mm)



Electrical characteristics

Rated voltage	6.3 to 100 Vdc
Operating temperature	-40 to +105°C
Capacitance range	0.47 μF to 15000 μF
Capacitance tolerance	$\pm 20\%$ at 120Hz / 20°C
Endurance test	3000 to 6000 h (see conditions in Test method and performance)
Leakage current	$I = 0.01 CV (\mu A)$ or $3\mu A$ whichever is greater C = rated capacitance (μF); V = rated voltage (Vdc) (after than D.C. rated working voltage at 20°C has been applied for 2 min)

Impedance Z characteristics at 120 Hz

Rated voltage (Vdc)	6.3	10	16	25	35	50	63	100
Z (-40°C) / Z (20°C)	3	3	3	3	3	3	3	3

Compensation factor of ripple current (R.C.) vs. frequency

Capacitance range	120 Hz	1 KHz	10 KHz	100 KHz
0.47 μF to 33 μF	0.42	0.70	0.90	1.00
39 μF to 270 μF	0.50	0.73	0.92	1.00
330 μF to 680 μF	0.55	0.77	0.94	1.00
820 μF to 1800 μF	0.60	0.80	0.96	1.00
2200 μF to 15000 μF	0.70	0.85	0.98	1.00

Compensation factor of ripple current (R.C.) vs. temperature

Temperature	65°C	85°C	105°C
Multiplier factors	2.1	1.7	1.0

Test method and performance

Conditions	Load life test	Shelf life test
Temperature: Test duration:	105°C $\leq \varnothing 6.0$ mm: 3000 h $\varnothing 8.0$ mm: 4000 h $\varnothing 10.0$ mm: 5000 h $\geq \varnothing 13.0$ mm: 6000 h	105°C 1000 hours
Ripple current: Voltage:	max ripple current at 100KHz 105°C specified in table. the sum of D.C. voltage and the peak A.C. voltage must not exceed the rated voltage of capacitor.	no ripple current applied. no voltage applied.
Performance	The following specifications will be satisfied when the capacitors will be restored at 25°C.	
Capacitance change: Dissipation factor: Leakage current:	within 25% of initial value. not exceed 200% of the initial requirement. not exceed initial requirement.	within 25% of initial value. not exceed 200% of the initial requirement. not exceed initial requirement.

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Technical data and ordering codes

Rated cap. 120 Hz 20°C (μF)	Case size DxL (mm)	6.3 Vdc Rated voltage - 8 Vdc Surge voltage				P/N
		D.F. 120 Hz 25°C (tgδ %)	Z 100 kHz 25°C (Ω)	R.C. 100kHz 105°C (mA _{rms})	L.C. 20°C 2 min. (μA)	
22	5 x 11	22	0.600	180	3	ESW226M6R3AC3AA
33	5 x 11	22	0.600	180	3	ESW336M6R3AC3AA
47	5 x 11	22	0.600	180	3	ESW476M6R3AC3AA
100	5 x 11	22	0.600	180	6	ESW107M6R3AC3AA
150	6 x 11	22	0.250	290	9	ESW157M6R3AE3AA
220	6 x 11	22	0.250	290	14	ESW227M6R3AE3AA
330	6 x 11	22	0.250	290	21	ESW337M6R3AE3AA
330	6 x 15	22	0.230	430	21	ESW337M6R3AE4AA
470	8 x 11	22	0.117	555	30	ESW477M6R3AG3AA
560	8 x 11	22	0.117	555	35	ESW567M6R3AG3AA
680	10 x 12	22	0.090	755	43	ESW687M6R3AH1AA
820	8 x 15	22	0.085	730	52	ESW827M6R3AG4AA
820	10 x 12	22	0.090	755	52	ESW827M6R3AH1AA
1000	10 x 12	22	0.090	755	63	ESW108M6R3AH1AA
1200	8 x 20	22	0.065	955	76	ESW128M6R3AG6AA
1200	10 x 15	22	0.068	1050	76	ESW128M6R3AH2AA
1500	10 x 19	22	0.052	1220	94	ESW158M6R3AH4AA
2200	10 x 25	22	0.045	1440	139	ESW228M6R3AH5AA
2200	13 x 20	22	0.038	1815	139	ESW228M6R3AL3AA
2700	10 x 30	22	0.035	1815	170	ESW278M6R3AH6AA
3300	13 x 20	22	0.038	1655	208	ESW338M6R3AL3AA
3900	13 x 25	22	0.030	1945	246	ESW398M6R3AL4AA
4700	16 x 25	22	0.022	2555	296	ESW478M6R3AM7AA
4700	13 x 30	22	0.025	2310	296	ESW478M6R3AL8AA
5600	13 x 36	22	0.022	2510	353	ESW568M6R3AL6AA
5600	16 x 20	22	0.029	2205	353	ESW568M6R3AM5AA
6800	16 x 25	22	0.022	2555	428	ESW688M6R3AM7AA
6800	18 x 20	22	0.028	2490	428	ESW688M6R3AN4AA
8200	16 x 32	22	0.018	3010	517	ESW828M6R3AM2AA
10000	16 x 32	22	0.016	3150	630	ESW109M6R3AM2AA
10000	18 x 25	22	0.020	2740	630	ESW109M6R3AN5AA
12000	18 x 32	22	0.016	3635	756	ESW129M6R3AN1AA
15000	18 x 36	22	0.015	3680	945	ESW159M6R3AN2AA

SINGLE-ENDED LEADS - Low Impedance and long life 105°C / 3000-6000 h

Rated cap. 120 Hz 20°C (μF)	Case size DxL (mm)	10 Vdc Rated voltage - 13 Vdc Surge voltage				P/N
		D.F. 120 Hz 25°C (tgδ %)	Z 100 kHz 25°C (Ω)	R.C. 100kHz 105°C (mA _{rms})	L.C. 20°C 2 min. (μA)	
22	5 x 11	19	0.600	180	3	ESW226M010AC3AA
33	5 x 11	19	0.600	180	3	ESW336M010AC3AA
47	5 x 11	19	0.600	180	5	ESW476M010AC3AA
82	5 x 11	19	0.600	180	8	ESW826M010AC3AA
100	5 x 11	19	0.600	180	10	ESW107M010AC3AA
150	6 x 11	19	0.250	290	15	ESW157M010AE3AA
180	6 x 11	19	0.250	290	18	ESW187M010AE3AA
220	6 x 11	19	0.250	290	22	ESW227M010AE3AA
220	6 x 15	19	0.230	430	22	ESW227M010AE4AA
330	8 x 11	19	0.117	555	33	ESW337M010AG3AA
470	8 x 11	19	0.117	555	47	ESW477M010AG3AA
680	8 x 15	19	0.085	730	68	ESW687M010AG4AA
680	10 x 12	19	0.090	755	68	ESW687M010AH1AA
1000	8 x 20	19	0.065	995	100	ESW108M010AG6AA
1000	10 x 15	19	0.068	1050	100	ESW108M010AH2AA
1200	10 x 19	19	0.052	1220	120	ESW128M010AH4AA
1500	10 x 19	19	0.052	1220	150	ESW158M010AH4AA
1500	10 x 25	19	0.045	1440	150	ESW158M010AH5AA
2200	10 x 30	19	0.035	1815	220	ESW228M010AH6AA
2200	13 x 20	19	0.038	1655	220	ESW228M010AL3AA
2700	13 x 25	19	0.030	1945	270	ESW278M010AL4AA
3300	13 x 25	19	0.030	1945	330	ESW338M010AL4AA
3300	13 x 30	19	0.025	2310	330	ESW338M010AL8AA
3900	13 x 36	19	0.022	2510	390	ESW398M010AL6AA
3900	16 x 20	19	0.029	2205	390	ESW398M010AM5AA
4700	16 x 25	19	0.022	2555	470	ESW478M010AM7AA
5600	16 x 25	19	0.022	2555	560	ESW568M010AM7AA
5600	18 x 20	19	0.028	2490	560	ESW568M010AN4AA
6800	16 x 32	19	0.018	3010	680	ESW688M010AM2AA
6800	18 x 25	19	0.020	2740	680	ESW688M010AN5AA
8200	16 x 36	19	0.016	3150	820	ESW828M010AM3AA
8200	18 x 32	19	0.016	3635	820	ESW828M010AN1AA
10000	18 x 36	19	0.015	3680	1000	ESW109M010AN2AA
15000	18 x 40	19	0.014	3800	1500	ESW159M010AN3AA

SINGLE-ENDED LEADS - Low Impedance and long life 105°C / 3000-6000 h

Rated cap. 120 Hz 20°C (μF)	Case size DxL (mm)	16 Vdc Rated voltage - 20 Vdc Surge voltage				P/N
		D.F. 120 Hz 25°C (tgδ %)	Z 100 kHz 25°C (Ω)	R.C. 100kHz 105°C (mA _{rms})	L.C. 20°C 2 min. (μA)	
10	5 x 11	16	0.600	180	3	ESW106M016AC3AA
22	5 x 11	16	0.600	180	4	ESW226M016AC3AA
33	5 x 11	16	0.600	180	5	ESW336M016AC3AA
47	5 x 11	16	0.600	180	8	ESW476M016AC3AA
56	5 x 11	16	0.600	180	9	ESW566M016AC3AA
100	6 x 11	16	0.250	290	16	ESW107M016AE3AA
120	6 x 11	16	0.250	290	19	ESW127M016AE3AA
150	6 x 11	16	0.250	290	24	ESW157M016AE3AA
180	6 x 15	16	0.230	430	29	ESW187M016AE4AA
220	8 x 11	16	0.117	555	35	ESW227M016AG3AA
330	8 x 11	16	0.117	555	53	ESW337M016AG3AA
470	8 x 15	16	0.085	730	75	ESW477M016AG4AA
470	10 x 12	16	0.090	755	75	ESW477M016AH1AA
680	8 x 20	16	0.065	995	109	ESW687M016AG6AA
680	10 x 15	16	0.068	1050	109	ESW687M016AH2AA
820	10 x 19	16	0.052	1220	131	ESW827M016AH4AA
1000	10 x 19	16	0.052	1220	160	ESW108M016AH4AA
1200	10 x 25	16	0.045	1440	192	ESW128M016AH5AA
1500	10 x 30	16	0.035	1815	240	ESW158M016AH6AA
1500	13 x 20	16	0.038	1655	240	ESW158M016AL3AA
2200	13 x 25	16	0.030	1945	352	ESW228M016AL4AA
2700	13 x 30	16	0.025	2310	432	ESW278M016AL8AA
2700	16 x 20	16	0.029	2205	432	ESW278M016AM5AA
3300	13 x 36	16	0.022	2510	528	ESW338M016AL6AA
3300	16 x 25	16	0.022	2555	528	ESW338M016AM7AA
3900	16 x 25	16	0.022	2555	624	ESW398M016AM7AA
3900	18 x 20	16	0.028	2490	624	ESW398M016AN4AA
4700	16 x 32	16	0.018	3010	752	ESW478M016AM2AA
4700	18 x 25	16	0.020	2740	752	ESW478M016AN5AA
5600	18 x 32	16	0.016	3150	896	ESW568M016AN1AA
5600	18 x 36	16	0.016	3635	896	ESW568M016AN2AA
6800	18 x 36	16	0.015	3680	1088	ESW688M016AN2AA
8200	18 x 36	16	0.015	3680	1312	ESW828M016AN2AA
10000	18 x 40	16	0.014	3800	1600	ESW109M016AN3AA

SINGLE-ENDED LEADS - Low Impedance and long life 105°C / 3000-6000 h

Rated cap. 120 Hz 20°C (μF)	Case size DxL (mm)	25 Vdc Rated voltage - 32 Vdc Surge voltage			L.C. 20°C 2 min. (μA)	P/N
		D.F. 120 Hz 25°C (tgδ %)	Z 100 kHz 25°C (Ω)	R.C. 100kHz 105°C (mA _{rms})		
4.7	5 x 11	14	0.600	180	3	ESW475M025AC3AA
10	5 x 11	14	0.600	180	3	ESW106M025AC3AA
22	5 x 11	14	0.600	180	5	ESW226M025AC3AA
33	5 x 11	14	0.600	180	8	ESW336M025AC3AA
39	5 x 11	14	0.600	180	10	ESW396M025AC3AA
47	5 x 11	14	0.600	180	12	ESW476M025AC3AA
82	6 x 11	14	0.250	290	20	ESW826M025AE3AA
100	6 x 11	14	0.250	290	25	ESW107M025AE3AA
120	6 x 15	14	0.230	430	30	ESW127M025AE4AA
150	8 x 11	14	0.117	555	37	ESW157M025AG3AA
220	8 x 11	14	0.117	555	55	ESW227M025AG3AA
330	8 x 15	14	0.085	730	82	ESW337M025AG4AA
330	10 x 12	14	0.090	755	82	ESW337M025AH1AA
470	8 x 20	14	0.065	995	117	ESW477M025AG6AA
470	10 x 15	14	0.068	1050	117	ESW477M025AH2AA
560	10 x 19	14	0.052	1220	140	ESW567M025AH4AA
680	10 x 19	14	0.052	1220	170	ESW687M025AH4AA
820	10 x 25	14	0.045	1440	205	ESW827M025AH5AA
1000	10 x 30	14	0.035	1815	250	ESW108M025AH6AA
1000	13 x 20	14	0.038	1655	250	ESW108M025AL3AA
1500	13 x 25	14	0.030	1945	375	ESW158M025AL4AA
1500	16 x 25	14	0.022	2555	375	ESW158M025AM7AA
1800	13 x 30	14	0.025	2310	450	ESW188M025AL8AA
1800	16 x 20	14	0.029	2205	450	ESW188M025AM5AA
2200	13 x 36	14	0.022	2510	550	ESW228M025AL6AA
2200	16 x 25	14	0.022	2555	550	ESW228M025AM7AA
2200	18 x 20	14	0.028	2490	550	ESW228M025AN4AA
2700	16 x 25	14	0.022	2555	675	ESW278M025AM7AA
3300	16 x 32	14	0.018	3010	825	ESW338M025AM2AA
3300	18 x 25	14	0.020	2740	825	ESW338M025AN5AA
3900	16 x 36	14	0.016	3150	975	ESW398M025AM3AA
3900	18 x 32	14	0.016	3635	975	ESW398M025AN1AA
4700	18 x 36	14	0.015	3680	1175	ESW478M025AN2AA
6800	18 x 40	14	0.014	3800	1700	ESW688M025AN3AA

SINGLE-ENDED LEADS - Low Impedance and long life 105°C / 3000-6000 h

Rated cap. 120 Hz 20°C (μF)	Case size DxL (mm)	35 Vdc Rated voltage - 44 Vdc Surge voltage			L.C. 20°C 2 min. (μA)	P/N
		D.F. 120 Hz 25°C (tgδ %)	Z 100 kHz 25°C (Ω)	R.C. 100kHz 105°C (mA _{rms})		
4.7	5 x 11	12	0.600	180	3	ESW475M035AC3AA
10	5 x 11	12	0.600	180	3	ESW106M035AC3AA
22	5 x 11	12	0.600	180	8	ESW226M035AC3AA
27	5 x 11	12	0.600	180	9	ESW276M035AC3AA
33	5 x 11	12	0.600	180	12	ESW336M035AC3AA
47	6 x 11	12	0.250	290	16	ESW476M035AE3AA
56	6 x 11	12	0.250	290	20	ESW566M035AE3AA
82	6 x 15	12	0.230	430	29	ESW826M035AE4AA
100	8 x 11	12	0.117	555	35	ESW107M035AG3AA
150	8 x 11	12	0.117	555	52	ESW157M035AG3AA
220	8 x 15	12	0.085	730	77	ESW227M035AG4AA
220	10 x 12	12	0.090	755	77	ESW227M035AH1AA
330	8 x 20	12	0.065	995	115	ESW337M035AG6AA
330	10 x 15	12	0.068	1050	115	ESW337M035AH2AA
390	10 x 19	12	0.052	1220	136	ESW397M035AH4AA
470	10 x 19	12	0.052	1220	164	ESW477M035AH4AA
560	10 x 25	12	0.045	1440	196	ESW567M035AH5AA
680	10 x 30	12	0.035	1815	238	ESW687M035AH6AA
680	13 x 20	12	0.038	1655	238	ESW687M035AL3AA
1000	13 x 25	12	0.030	1945	350	ESW108M035AL4AA
1200	13 x 30	12	0.025	2310	420	ESW128M035AL8AA
1200	16 x 20	12	0.029	2205	420	ESW128M035AM5AA
1500	13 x 36	12	0.022	2510	525	ESW158M035AL6AA
1500	16 x 25	12	0.022	2555	525	ESW158M035AM7AA
1800	16 x 25	12	0.022	2555	630	ESW188M035AM7AA
1800	18 x 20	12	0.028	2490	630	ESW188M035AN4AA
2200	16 x 32	12	0.018	3010	770	ESW228M035AM2AA
2200	18 x 25	12	0.020	2740	770	ESW228M035AN5AA
2700	16 x 36	12	0.016	3150	945	ESW278M035AM3AA
2700	18 x 32	12	0.016	3635	945	ESW278M035AN1AA
3300	18 x 36	12	0.015	3680	1155	ESW338M035AN2AA
4700	18 x 40	12	0.014	3800	1645	ESW478M035AN3AA

SINGLE-ENDED LEADS - Low Impedance and long life 105°C / 3000-6000 h

Rated cap. 120 Hz 20°C (μF)	Case size DxL (mm)	50 Vdc Rated voltage - 63 Vdc Surge voltage			L.C. 20°C 2 min. (μA)	P/N
		D.F. 120 Hz 25°C (tgδ %)	Z 100 kHz 25°C (Ω)	R.C. 100kHz 105°C (mA _{rms})		
4.7	5 x 11	10	2.300	90	3	ESW475M050AC3AA
10	5 x 11	10	1.400	120	5	ESW106M050AC3AA
18	5 x 11	10	1.300	155	9	ESW186M050AC3AA
22	5 x 11	10	1.200	170	11	ESW226M050AC3AA
33	6 x 11	10	0.430	300	16	ESW336M050AE3AA
47	6 x 11	10	0.430	300	23	ESW476M050AE3AA
56	6 x 15	10	0.400	360	28	ESW566M050AE4AA
82	8 x 11	10	0.234	485	41	ESW826M050AG3AA
100	8 x 11	10	0.234	485	50	ESW107M050AG3AA
120	8 x 15	10	0.155	635	60	ESW127M050AG4AA
120	10 x 12	10	0.162	615	60	ESW127M050AH1AA
150	10 x 12	10	0.162	615	75	ESW157M050AH1AA
180	8 x 20	10	0.120	860	90	ESW187M050AG6AA
180	10 x 15	10	0.119	850	90	ESW187M050AH2AA
220	10 x 15	10	0.119	850	110	ESW227M050AH2AA
220	10 x 19	10	0.090	1030	110	ESW227M050AH4AA
270	10 x 25	10	0.082	1200	135	ESW277M050AH5AA
330	10 x 19	10	0.090	1030	165	ESW337M050AH4AA
330	10 x 30	10	0.060	1610	165	ESW337M050AH6AA
390	13 x 20	10	0.063	1480	195	ESW397M050AL3AA
470	13 x 20	10	0.060	1500	235	ESW477M050AL3AA
560	13 x 25	10	0.050	1832	280	ESW567M050AL4AA
680	13 x 25	10	0.050	1832	340	ESW687M050AL4AA
680	16 x 20	10	0.048	1835	340	ESW687M050AM5AA
820	13 x 36	10	0.034	2285	410	ESW827M050AL6AA
820	18 x 20	10	0.042	2420	410	ESW827M050AN4AA
1000	16 x 25	10	0.034	2235	500	ESW108M050AM7AA
1200	16 x 32	10	0.028	2700	600	ESW128M050AM2AA
1200	18 x 25	10	0.029	2610	600	ESW128M050AN5AA
1500	16 x 32	10	0.028	2700	750	ESW158M050AM2AA
1500	16 x 36	10	0.025	2790	750	ESW158M050AM3AA
1800	18 x 32	10	0.025	3000	900	ESW188M050AN1AA
2200	18 x 36	10	0.023	3100	1100	ESW228M050AN2AA

SINGLE-ENDED LEADS - Low Impedance and long life 105°C / 3000-6000 h

Rated cap. 120 Hz 20°C (μF)	Case size DxL (mm)	63 Vdc Rated voltage - 79 Vdc Surge voltage			L.C. 20°C 2 min. (μA)	P/N
		D.F. 120 Hz 25°C (tgδ %)	Z 100 kHz 25°C (Ω)	R.C. 100kHz 105°C (mA _{rms})		
4.7	5 x 11	9	4.700	68	3	ESW475M063AC3AA
6.8	5 x 11	9	2.500	95	4	ESW685M063AC3AA
10	5 x 11	9	2.100	110	6	ESW106M063AC3AA
12	5 x 11	9	2.000	145	8	ESW126M063AC3AA
15	6 x 11	9	1.200	160	9	ESW156M063AE3AA
22	6 x 11	9	0.710	250	14	ESW226M063AE3AA
33	6 x 11	9	0.710	250	21	ESW336M063AE3AA
39	6 x 15	9	0.700	330	25	ESW396M063AE4AA
47	8 x 11	9	0.342	405	30	ESW476M063AG3AA
68	8 x 11	9	0.342	405	43	ESW686M063AG3AA
100	8 x 15	9	0.230	535	63	ESW107M063AG4AA
100	10 x 12	9	0.256	535	63	ESW107M063AH1AA
120	10 x 15	9	0.194	600	76	ESW127M063AH2AA
150	10 x 15	9	0.194	660	94	ESW157M063AH2AA
180	10 x 19	9	0.147	885	113	ESW187M063AH4AA
180	13 x 16	9	0.150	1020	113	ESW187M063AL2AA
220	10 x 19	9	0.147	885	139	ESW227M063AH4AA
220	10 x 25	9	0.130	1050	139	ESW227M063AH5AA
270	16 x 15	9	0.090	1410	170	ESW277M063AM6AA
330	13 x 20	9	0.085	1285	208	ESW337M063AL3AA
390	13 x 25	9	0.070	1720	246	ESW397M063AL4AA
390	18 x 16	9	0.086	1690	246	ESW397M063AN6AA
470	13 x 25	9	0.070	1720	296	ESW477M063AL4AA
470	13 x 30	9	0.055	2090	296	ESW477M063AL8AA
470	16 x 20	9	0.059	1765	296	ESW477M063AM5AA
560	16 x 25	9	0.050	2160	353	ESW567M063AM7AA
680	13 x 36	9	0.047	2265	428	ESW687M063AL6AA
680	18 x 20	9	0.055	2290	428	ESW687M063AN4AA
820	16 x 32	9	0.043	2670	517	ESW827M063AM2AA
820	18 x 25	9	0.043	2585	517	ESW827M063AN5AA
1000	16 x 32	9	0.043	2670	630	ESW108M063AM2AA
1000	16 x 36	9	0.036	2770	630	ESW108M063AM3AA
1200	18 x 32	9	0.032	2950	756	ESW128M063AN1AA
1500	18 x 36	9	0.030	3095	945	ESW158M063AN2AA
2200	18 x 40	9	0.028	3200	1386	ESW228M063AN3AA

SINGLE-ENDED LEADS - Low Impedance and long life 105°C / 3000-6000 h

Rated cap. 120 Hz 20°C (μF)	Case size DxL (mm)	100 Vdc Rated voltage - 125 Vdc Surge voltage			L.C. 20°C 2 min. (μA)	P/N
		D.F. 120 Hz 25°C (tgδ %)	Z 100 kHz 25°C (Ω)	R.C. 100kHz 105°C (mA _{rms})		
0.47	5 x 11	8	43	20	3	ESW474M100AC3AA
1	5 x 11	8	20	30	3	ESW105M100AC3AA
2.2	5 x 11	8	9.800	44	3	ESW225M100AC3AA
3.3	5 x 11	8	6.600	58	3	ESW335M100AC3AA
4.7	5 x 11	8	4.600	74	5	ESW475M100AC3AA
6.8	5 x 11	8	3.500	95	7	ESW685M100AC3AA
10	6 x 11	8	1.800	130	10	ESW106M100AE3AA
15	8 x 11	8	0.830	180	15	ESW156M100AG3AA
18	6 x 15	8	0.800	200	18	ESW186M100AE4AA
22	8 x 11	8	0.680	230	22	ESW226M100AG3AA
33	8 x 15	8	0.450	360	33	ESW336M100AG4AA
33	10 x 12	8	0.460	320	33	ESW336M100AH1AA
47	8 x 20	8	0.370	420	47	ESW476M100AG6AA
47	10 x 15	8	0.370	420	47	ESW476M100AH2AA
68	10 x 19	8	0.300	490	68	ESW686M100AH4AA
82	10 x 25	8	0.250	540	82	ESW826M100AH5AA
100	13 x 20	8	0.180	580	100	ESW107M100AL3AA
150	13 x 25	8	0.130	710	150	ESW157M100AL4AA
180	13 x 30	8	0.120	790	180	ESW187M100AL8AA
180	16 x 20	8	0.130	750	180	ESW187M100AM5AA
220	16 x 25	8	0.100	890	220	ESW227M100AM7AA
220	18 x 20	8	0.110	850	220	ESW227M100AN4AA
330	16 x 25	8	0.090	1080	330	ESW337M100AM7AA
390	18 x 25	8	0.083	1260	390	ESW397M100AN5AA
470	16 x 32	8	0.076	1310	470	ESW477M100AM2AA
560	18 x 32	8	0.068	1370	560	ESW567M100AN1AA
560	18 x 36	8	0.064	1410	560	ESW567M100AN2AA
820	18 x 40	8	0.047	1520	820	ESW827M100AN3AA

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