Selector Guide

IXYS UK WESTCODE

Power Capacitors

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IXYS UK can offer a range of power electronics capacitors to suit almost any application from filtering and smoothing DC voltages to GTO/IGBT snubber circuits and medium frequency applications.

IXYS UK also introduces a range of bespoke DC-link capacitors, designed specifically for use in applications designed to utilise our range of 2.5kV, 4.5kV and 6.5kV press-pack IGBT's

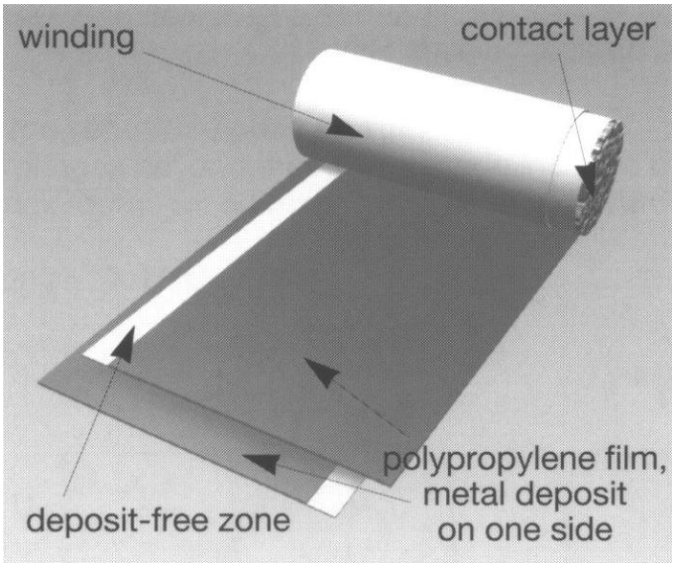
Power capacitors can be used for a wide variety of applications, even where extremely non-sinusoidal voltages and pulsed currents are present. Both AC and DC capacitors are available. AC capacitors are periodically recharged during operation; DC capacitors are periodically charged and discharged without recharge.

- Filters
- GTO and IGBT snubbers
- Smoothing
- Commutation
- Medium frequency applications
- Induction heating processes

Contents

Internal construction

The MKP-type capacitors consist of a low-loss dielectric formed by pure polypropylene film. A thin self-healing mixture of zinc and aluminium is metallized directly on one side of the PP-film under vacuum. In some cases, additional unmetallized layers are added between the metallized ones. The plastic film is wound into stable cylindrical windings on the most modern automated equipment. The ends of the capacitor windings are contacted by spraying with a metal contact layer facilitating a high current load and ensuring a low-inductance connection between the terminals and windings.
Our long-term experience as well as on-going research and improvements in this technology ensure the excellent self-healing characteristics of the dielectric and a long operating life of all our capacitors.
The link between PP-film and zinc contact layer is highly stressed during high surge or rms current and therefore considered very critical for operating life and reliability of the capacitor. By cutting the film for selected types in a wave-like manner, we increase the contact surface between film and zinc layer which substantially reduces this strain.



Impregnants

The use of filling materials in capacitors is necessary in order to insulate the capacitor electrodes from oxygen, humidity and other environmental interference. Without such insulation, the metal coating would corrode, an increasing number of partial discharges would occur, the capacitor would lose more and more of its capacitance and suffer increased dielectric losses, and a reduced operating life.
Therefore, an elaborate vacuum drying procedure is initiated immediately after insertion of the capacitor elements into the aluminium case and biologically degradable plant oil or solidifying PUR resin is introduced. Both protect the winding from environmental influence and provide an extended life-expectancy and stable capacitance.

Nomenclature

All parts are numbered using the following system

Example – E62.C58-102E4W

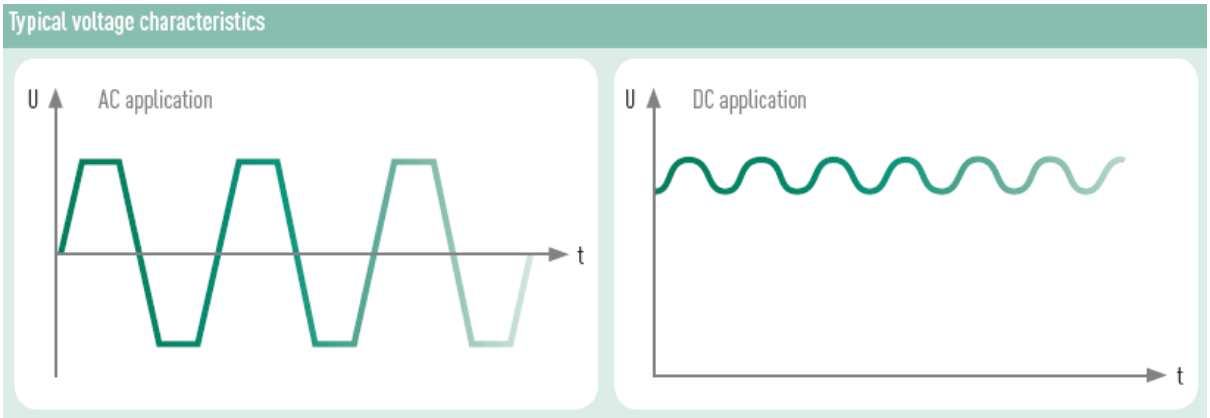
E62 – Capacitor type
C – Diameter (See table below)
58 – length
102 – Capacitance
E4 – mounting/termination arrangement
W – Fixed code

Diameter code table

Code	Diameter (mm)	Code	Diameter (mm)
C	30	**M**	75
D	35	**N**	85
E	40	**P**	95
F	45	**Q**	100
G	50	**R**	116
H	55	**S**	136
K	60	**T**	142
L	65	**U**	172

Capacitor types

- E62 heavy duty AC capacitors – perfect for AC rectification and snubber applications
- E62 3 phase capacitors – Perfect for rectification of 3-phase supplies
- E53 low self-inductance AC/DC film capacitors – Perfect for snubber applications
- E50 – PK16 high density DC film capacitors – Ideal solution for DC link applications



Damping or Snubber Capacitors (AC) are usually connected in series with a resistor, and are designed for the damping of undesirable voltage spikes caused by the so-called carrier storage effect during the switching of power semiconductors.

Commutation Capacitors (AC) are switched in parallel to a thyristor and designed to quench its conductive state. Since commutating capacitors are periodically and abruptly recharged, the peak current may substantially exceed the rms value. AC capacitors are used in low-detuned or close-tuned filter circuits for filtering or absorbing harmonics. As Pulse Discharge capacitors they are useful in applications with reversing voltages, e.g. in magnetising equipment.

The scope of application for DC capacitors is similarly diverse:

Smoothing Capacitors (DC) serve for the reduction of the AC component of fluctuating DC voltage in, for example;
- power supplies in radio and television technology (transmitters),
- high-voltage testing equipment,
- DC controllers,
- measurement and control technology, and
- cascaded circuits for generation of high DC voltage a.m.o.

Supporting Capacitors, DC-Filter or Buffer Circuit Capacitors (DC) are used for energy storage in intermediate DC circuits, e.g. in frequency converters for poly-phase drives, transistor and thyristor converters. They must be able to absorb and release very high currents within short periods, the peak value of the current being substantially greater than the rms value.

Surge (Pulse) Discharge Capacitors (DC) are capable of supplying or absorbing extreme short-time current surges. They are usually operated in discharge applications with non-reversing voltages, and at low repetition frequencies, e.g. in laser technology and lightning generators.

E62 – Heavy duty AC capacitors

In modern applications of power electronics, AC capacitors are among the most critical links in the chain of components when it comes to long operating life, safety and reliability of operation.

Using special metallizing patterns, the SINECUT slitting technology and optimised winding geometries enables us to supply AC capacitors with a high specific ratio of capacitance to volume, high AC voltage load capacity and outstanding suitability for high RMS and surge currents.

Our E62 cylindrical capacitors are perfect for non-sinusoidal voltages and pulsed currents, e.g. as damping or commutation capacitors switched in parallel to thyristors or connected in series with resistors (damping of undesirable voltage spikes during the switching of power semiconductors). They can be widely used as supporting, smoothing and surge discharge capacitors, further in AC filters, a.m.o. The low loss factor of our MKP dielectric compensates to a large extent for the losses caused by non-sinusoidal voltages.

The E62 capacitors are housed in hermetically sealed aluminium cans which are filled with environmentally friendly plant oil as standard; optionally, many of them can be made available with a filling of inert gas. The gas filling is not only environmentally friendly, but also permits mounting in ay position, while oil filled capacitors should always be mounted vertically

Standards	IEC 61071 (optional IEC 61881)
Can	Aluminium.
Mounting Position	terminals pointing upwards
Filling Material	Liquid, based on vegetable oil, non-PCB
Internal Protection	Break-action mechanism
Fire Load	40 MJ/kg
C_N Tolerance	±10% (optional ±5%)
Insulation Strength	C x R_{is} 5000 s
$\tan\delta_0$	2 x 10^{-4}
Operating Temperatures	Θ_{min} to Θ_{min} -25°C to +85°C
	$\Theta_{HOTSPOT} \leq 85°C$
Storing Temperature	-40°C to +85°C
Failure Rate	100FIT
	Reference interval - 100,000 Hours at $\Theta_{HOTSPOT} \leq 70°C$

V_{AC} – 420V, V_{RMS} – 300V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.D58-153D1W	15	700	3.1	16	60	35	58	D1
E62.E58-203D1W	20	700	2.6	16	60	40	58	D1
E62.D81-223E2W	22	700	5.4	10	80	35	81	E2
E62.D81-243E2W	24	700	5	10	80	35	81	E2
E62.D81-243D1W	24	700	5.7	10	80	35	81	D1
E62.E81-353D1W	35	700	4	16	80	40	81	D1
E62.K80-433Z1W	42.5	700	2.3	20	90	60	80	Z1
E62.F81-503D1W	50	700	3.3	16	80	45	81	D1
E62.G85-603G1W	60	700	3.3	32	100	50	85	G1
E62.H85-753D1W	75	700	2.1	40	110	55	85	D1
E62.H85-803D1W	80	700	4.7	16	80	55	85	D1
E62.K85-903D1W	90	700	2.5	16	80	60	85	D1
E62.L10-953Z1W	95	700	2.3	30	110	65	105	Z1
E62.G12-104G1W	100	700	3.1	40	100	50	124	G1
E62.M10-124C6W	120	700	1	50	140	75	105	C6
E62.M10-134Z1W	130	700	3.4	40	110	75	105	Z1
E62.L10-134G1W	130	700	2.4	30	110	65	109	G1
E62.L13-154G1W	150	700	4.4	358	110	65	135	G1
E62.N11-174S1W	167	700	1.2	43	110	95	112	S1
E62.N10-174C6W	170	700	0.82	50	140	85	105	C6
E62.L14-204G1W	200	700	4.4	30	140	65	145	G1
E62.P11-224S1W	217	700	1.1	43	110	95	112	S1
E62.P10-224C6W	220	700	1.3	50	140	95	105	C6
E62.L16-224D2W	220	700	130	65	160	4.5	16	D2
E62.L16-254G1W	250	700	1.2	80	160	65	160	G1
E62.M16-304D2W	300	700	4.1	16	90	75	160	D2
E62.N16-344S1W	340	700	1.8	50	110	85	169	S1
E62.N24-404C6W	400	700	0.68	80	160	85	245	C6
E62.P17-434S1W	434	700	1	50	120	95	179	S1
E62.P17-474C6W	470	700	0.53	50	160	95	176	C6
E62.Q17-504C6W	500	700	0.57	80	160	100	176	C6
E62.P24-544C6W	540	700	0.9	80	170	95	245	C6
E62.S32-205C6W	2000	700	0.6	100	190	136	320	C6

V_{AC} – 500V, V_{RMS} – 360V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.B48-102E1W	1	840	18.6	6	60	25	48	E1
E62.E81-203D1W	20	840	5.4	16	80	40	81	D1
E62.E81-253D1W	25	840	4.3	16	80	40	81	D1
E62.K80-303Z1W	30	840	2.4	20	90	60	80	Z1
E62.F81-333D1W	33	840	3.7	16	80	45	81	D1
E62.G85-403G1W	40	840	3.6	30	100	50	85	G1
E62.H85-503G1W	50	840	4.4	25	110	55	85	G1
E62.H85-503D1W	50	840	3	16	80	55	85	D1
E62.K10-553C68W	55	840	2.2	40	110	60	105	C6
E62.K85-603D1W	60	840	2.8	16	80	60	85	D1
E62.L10-703Z1W	70	840	2.4	30	110	65	105	Z1
E62.L95-753G1W	75	840	2.3	40	100	65	95	G1
E62.L13-104G1W	100	840	4.3	40	120	65	135	G1
E62.M12-124Z1W	120	840	2.6	30	110	75	120	Z1
E62.N12-154S1W	150	840	1.4	50	110	85	124	S1
E62.L16-164D2W	160	840	4.2	16	100	65	160	D2
E62.M16-204D2W	200	840	3.9	16	140	75	160	D2
E62.M17-204L1W	200	840	2.2	43	130	75	176	L1
E62.N16-254S1W	250	840	1.9	50	110	85	169	S1
E62.P17-304C6W	300	840	1.1	80	160	95	176	C6
E62.P17-324S1W	320	840	1	50	120	95	179	S1
E62.R24-624C6W	620	840	0.58	100	160	116	245	C6
E62.R24-754C6W	750	840	0.57	100	170	116	245	C6
E62.S24-105C6W	1000	840	0.56	100	170	136	245	C6
E62.S32-155C6W	1500	840	0.5	100	190	136	320	C6

V_{AC} – 640V, V_{RMS} – 450V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.B48-471E1W	0.47	1000	7.4	8	60	25	48	E1
E62.C58-402E1W	4	1000	5.9	10	60	30	58	E1
E62.C58-472E1W	4.7	1000	5.4	10	60	30	58	E1
E62.C58-502E1W	5	1000	4.9	10	60	30	58	E1
E62.D58-602E2W	6	1000	4.5	16	60	35	58	E2
E62.D58-682E2W	6.8	1000	4.1	16	60	35	58	E2
E62.E58-103D1W	10	1000	3.2	16	60	40	58	D1
E62.E81-153D1W	15	1000	5.5	16	80	40	81	D1
E62.G62-153G1W	15	1000	2.9	25	100	50	62	G1
E62.E81-183D1W	18	1000	4.8	16	80	40	81	D1
E62.F81-223D1W	22	1000	4.3	16	80	45	81	D1
E62.K80-233Z1W	23	1000	2.5	20	90	60	80	Z1
E62.F81-253D1W	25	1000	4	16	80	45	81	D1
E62.G85-303G1W	30	1000	3.9	33	100	50	85	G1
E62.H85-403D1W	40	1000	3.4	16	80	55	85	D1
E62.K10-413C68W	41	1000	2.4	40	110	60	105	C6
E62.K85-473D1W	47	1000	2.9	16	80	60	85	D1
E62.K98-503D1W	50	1000	3.9	16	120	60	98	D1
E62.L95-503G1W	50	1000	3.4	40	100	65	95	G1
E62.L10-523Z1W	52	1000	2.5	30	110	65	105	Z1
E62.K98-603D1W	60	1000	3.2	16	120	60	98	D1
E62.L10-683G1W	68	1000	3.7	30	100	65	109	G1
E62.M10-753L1W	75	1000	2.7	43	110	75	105	L1
E62.N10-803L1W	80	1000	1.4	43	110	85	105	L1
E62.K14-104D1W	100	1000	5.1	16	120	60	148	D1
E62.N12-104C6W	100	1000	0.53	80	100	85	120	C6
E62.L16-124D2W	120	1000	5	16	130	65	160	D2
E62.P10-124L1W	120	1000	1.6	43	110	95	105	L1
E62.N16-144C6W	140	1000	0.81	100	160	85	164	C6
E62.M16-154Z1W	145	1000	3.3	30	110	75	164	Z1
E62.M16-154D2W	150	1000	4.6	16	110	75	160	D2
E62.N14-164S1W	155	1000	1.8	50	110	85	149	S1
E62.P17-204C6W	200	1000	0.7	80	160	95	176	C6
E62.P15-224S1W	220	1000	1.7	50	130	95	159	S1
E62.Q17-254C6W	250	1000	0.63	80	160	100	176	C6
E62.P17-254L1W	250	1000	1.3	43	130	95	176	L1
E62.R17-354C6W	350	1000	0.57	80	160	116	176	C6
E62.R24-504C6W	500	1000	0.6	100	170	116	245	C6
E62.R32-754C6W	750	1000	0.64	100	190	116	320	C6
E62.S24-804C6W	800	1000	0.63	100	170	136	245	C6
E62.S32-105C6W	1000	1000	0.62	100	190	136	320	C6

V_{AC} – 680V, V_{RMS} – 480V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.C58-332E1W	3.3	1120	6.5	15	60	30	58	E1
E62.E81-123D1W	12	1120	5.8	16	80	40	81	D1
E62.E81-153D1W	15	1120	5.4	16	80	40	81	D1
E62.K80-183Z1W	17.5	1120	2.6	20	90	60	80	Z1
E62.F81-203D1W	20	1120	4.2	16	80	45	81	D1
E62.H85-303D1W	30	1120	3.3	16	80	55	85	D1
E62.K10-313C68W	31	1120	2.6	40	110	60	105	C6
E62.K85-333D1W	33	1120	3.2	16	80	60	85	D1
E62.L10-393Z1W	39	1120	2.7	30	110	65	105	Z1
E62.L95-403D2W	40	1120	3.3	16	120	65	95	D2
E62.H12-503D1W	50	1120	5.2	16	100	55	124	D1
E62.L10-503D2W	50	1120	3.7	16	120	65	109	D2
E62.K12-603D1W	60	1120	5	16	140	60	124	D1
E62.M10-603L1W	60	1120	2.3	43	110	75	105	L1
E62.M12-663Z1W	66	1120	2.6	30	110	75	120	Z1
E62.N10-683L1W	68	1120	1.5	43	110	85	105	L1
E62.K14-703D1W	70	1120	6	16	140	60	148	D1
E62.N12-863S1W	86	1120	1.6	50	110	85	124	S1
E62.L16-903D2W	90	1120	4.8	16	110	65	160	D2
E62.M16-104D2W	100	1120	5.1	16	100	75	160	D2
E62.Q10-104L1W	100	1120	1.3	43	110	100	105	L1
E62.P12-104C6W	100	1120	1.1	80	150	95	120	C6
E62.R12-154C6W	150	1120	0.95	80	150	116	124	C6
E62.P14-154S1W	152	1120	1.7	50	110	95	149	S1
E62.P17-184L1W	180	1120	1.4	43	130	95	176	L1
E62.Q17-204C6W	200	1120	0.66	80	160	100	176	C6
E62.R17-284C6W	280	1120	0.6	80	160	116	176	C6
E62.R24-404C6W	400	1120	0.6	100	170	116	245	C6
E62.S24-604C6W	600	1120	0.56	100	170	136	245	C6
E62.S32-804C6W	800	1120	0.63	100	190	136	320	C6

V_{AC} – 750V, V_{RMS} – 530V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.C81-472E1W	4.7	1260	6.1	16	110	40	81	D1
E62.E58-682D1W	6.8	1260	3	16	100	50	62	D1
E62.E81-103D1W	10	1260	3.1	20	110	50	62	G1
E62.G62-103D1W	10	1260	2.8	20	90	60	80	Z1
E62.G62-103G1W	10	1260	5.9	16	110	45	85	B2
E62.K80-133Z1W	13	1260	5.1	16	80	50	85	D1
E62.F85-153B2W	15	1260	4.2	27	100	50	85	G1
E62.G85-163D1W	16	1260	3.5	16	120	60	85	D1
E62.G85-203G1W	20	1260	2.9	40	110	55	85	G1
E62.K85-223D1W	22	1260	3.4	16	120	60	85	D1
E62.H85-243G1W	24	1260	3.2	16	120	60	85	D1
E62.K85-263D1W	26	1260	3.2	30	110	65	105	Z1
E62.K85-293D1W	29	1260	11.4	16	120	50	148	D1
E62.L10-303Z1W	30	1260	3.6	37	100	65	95	G1
E62.G14-333D1W	33	750	5.6	30	120	65	109	G1
E62.L95-333G1W	33	1260	2.4	43	110	75	105	L1
E62.L10-403G1W	40	1260	3.1	30	110	75	120	Z1
E62.M10-473L1W	47	1260	6.2	35	140	65	145	G1
E62.M12-513Z1W	51	1260	1.5	43	110	85	105	L1
E62.L14-603G1W	60	1260	1.8	50	110	85	124	S1
E62.N10-603L1W	60	1260	5.6	16	140	65	160	D2
E62.N12-653S1W	65	1260	1.4	43	110	95	105	L1
E62.L16-703D2W	70	1260	5.3	20	130	75	160	D2
E62.P10-753L1W	75	1260	1.4	43	110	100	105	L1
E62.M16-803D2W	80	1260	1.8	50	110	95	149	S1
E62.Q10-803L1W	80	1260	1.4	43	130	100	176	C6
E62.P14-124S1W	116	1260	0.7	80	160	95	176	L1
E62.Q17-154C6W	150	1260	0.61	80	160	116	176	C6
E62.P17-154L1W	150	1260	0.61	100	170	116	245	C6
E62.R17-224C6W	220	1260	0.59	100	160	116	245	C6
E62.R24-334C6W	330	1260	0.56	100	170	136	245	C6
E62.R24-334C6W	350	1260	0.64	100	190	136	320	C6
E62.S24-504C6W	500	1260	6.1	16	110	40	81	D1
E62.S32-604C6W	600	1260	3	16	100	50	62	D1

V_{AC} – 850V, V_{RMS} – 600V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.C58-202E1W	2	1200	8.1	10	60	30	58	E1
E62.C58-202E4W	2	1400	8.1	10	60	30	58	E4
E62.C58-222E4W	2.2	1400	7.5	10	60	30	58	E4
E62.C58-222E1W	2.2	1200	7.5	10	60	30	58	E1
E62.D58-332D1W	3.3	1200	13.8	10	80	35	58	D1
E62.C81-332E1W	3.3	1200	5.6	16	60	30	81	E1
E62.C81-402E1W	4	1200	11.7	10	80	30	81	E1
E62.C81-402E4W	4	1400	11.7	10	80	30	81	E4
E62.K80-113Z1W	10.5	1400	2.9	20	90	60	80	Z1
E62.F85-123B2W	12	1400	6.2	16	110	45	85	B2
E62.G85-153D1W	15	1200	4.3	16	80	50	85	D1
E62.G85-153G1W	15	1400	4.6	25	80	50	85	G1
E62.G85-163G1W	16	1400	4.5	30	100	50	85	G1
E62.K10-193C68W	19	1400	3.1	40	110	60	105	C6
E62.L10-253Z1W	24.5	1400	3.4	30	110	65	105	Z1
E62.L95-253D2W	25	1200	3.6	16	120	65	95	D2
E62.L95-253G1W	25	1400	3.9	40	100	65	95	G1
E62.L10-303G1W	30	1400	4.4	30	110	65	109	G1
E62.M10-333L1W	33	1400	2.7	38	110	75	105	L1
E62.M12-413Z1W	41	1400	3.2	30	110	75	120	Z1
E62.N10-473L1W	47	1400	2.2	43	110	85	105	L1
E62.L14-503G1W	50	1400	5.6	25	120	65	145	G1
E62.N12-553S1W	53	1400	1.9	50	110	85	124	S1
E62.L16-553D2W	55	1200	6	16	130	65	160	D2
E62.P10-603L1W	60	1400	1.4	43	110	95	105	L1
E62.M16-683D2W	68	1200	5.4	16	100	75	160	D2
E62.N17-803C6W	80	1400	1.6	80	160	85	176	C6
E62.P14-943S1W	94	1400	1.9	50	110	95	149	S1
E62.P17-124C6W	120	1400	0.74	80	160	95	176	C6
E62.Q17-134C6W	130	1400	0.91	80	160	100	176	C6
E62.R17-184C6W	180	1400	0.63	80	160	116	176	C6
E62.R24-274C6W	270	1400	0.62	100	170	116	245	C6
E62.S24-404C6W	400	1400	0.58	100	170	136	245	C6
E62.S32-504C6W	500	1400	0.4	100	190	136	320	C6

V_{AC} – 1000V, V_{RMS} – 720V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.C58-152E1W	1.5	1200	5	10	60	30	58	E1
E62.C58-152E4W	1.5	1680	5	10	60	30	58	E4
E62.D58-222E2W	2.2	1200	3.8	16	60	35	58	E2
E62.C81-302E1W	3	1200	7.2	10	80	30	81	E1
E62.C81-302E4W	3	1680	7.2	10	80	30	81	E4
E62.D81-402E2W	4	1200	5.8	10	80	35	81	E2
E62.G62-472G1W	4.7	1680	3.6	25	110	50	62	G1
E62.E81-502D1W	5	1200	5	16	80	40	81	D1
E62.K80-682Z1W	6.8	1200	2.4	20	90	60	80	Z1
E62.F81-682D1W	6.8	1200	4.1	16	80	45	81	D1
E62.F81-802D1W	8	1200	3.7	16	80	45	81	D1
E62.F85-802B2W	8	1680	5	16	110	45	85	B2
E62.G85-802G1W	8	1680	4	26	120	50	85	G1
E62.G85-103G1W	10	1680	3.6	26	100	50	85	G1
E62.H85-123G1W	12	1680	3	30	110	55	85	G1
E62.K85-153D1W	15	1200	2.7	16	110	60	85	D1
E62.L95-163G1W	16	1680	3.3	40	110	65	95	G1
E62.L10-253Z1W	16.5	1680	2.7	30	110	65	105	Z1
E62.L95-183G1W	18	1680	3.2	40	100	65	95	G1
E62.L95-203D2W	20	1200	2.8	16	120	65	95	D2
E62.M10-203C6W	20	1680	1.2	50	140	75	105	C6
E62.M10-233Z1W	22.5	1680	2.5	30	110	75	105	Z1
E62.K17-283K1W	28	1680	0.94	50	140	60	176	K1
E62.N10-283C6W	28	1680	0.85	50	140	85	105	C6
E62.P10-333C6W	33	1680	1.4	50	110	95	105	C6
E62.L16-383D2W	38	1200	4.8	20	140	65	160	D2
E62.M16-533D2W	53	1200	4.3	20	130	75	160	D2
E62.P14-643S1W	64	1200	1.5	50	110	95	149	S1

V_{AC} – 1000V, V_{RMS} – 720V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.P17-683C6W	68	1680	0.65	80	160	95	176	C6
E62.Q17-803C6W	80	1680	0.61	80	160	100	176	C6
E62.R17-124C6W	120	1680	0.54	80	160	116	176	C6
E62.R24-184C6W	180	1680	0.57	100	170	116	245	C6
E62.R32-224C6W	220	1680	0.64	100	180	116	320	C6
E62.S24-254C6W	250	1680	0.54	100	170	136	245	C6
E62.S32-334C6W	330	1680	0.61	100	190	136	320	C6

V_{AC} – 1200V, V_{RMS} – 850V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.B58-101E1W	0.1	1200	15	8	60	25	58	E1
E62.C58-101E1W	0.1	1200	12.7	8	60	30	58	E1
E62.C58-151E1W	0.15	1200	10.4	8	60	30	58	E1
E62.C58-221E1W	0.22	1200	7.5	10	60	30	58	E1
E62.C58-331E1W	0.33	1200	6.5	10	60	30	58	E1
E62.C58-471E1W	0.47	1200	8.2	10	60	30	58	E1
E62.C58-501E1W	0.5	1200	5.9	10	60	30	58	E1
E62.C58-501E4W	0.5	2000	5.9	10	60	30	58	E4
E62.C58-681E1W	0.68	1200	6.6	10	60	30	58	E1
E62.C58-102E1W	1	1200	6	10	60	30	58	E1
E62.C58-102E4W	1	2000	6	10	60	30	58	E4
E62.C58-122E1W	1.2	1200	5.6	10	60	30	58	E1
E62.C81-152E1W	1.5	1200	9.9	10	60	30	81	E1
E62.C81-202E1W	2	1200	8.7	10	60	30	81	E1
E62.C81-202E4W	2	2000	8.7	10	60	30	81	E4
E62.C93-222E1W	2.2	1200	11.1	10	90	30	93	E1
E62.C93-222E4W	2.2	2000	11.1	10	90	30	93	E4
E62.G62-332B2W	3.3	2000	4	16	80	50	62	B2
E62.E81-402D1W	4	1200	5.2	16	80	40	81	D1
E62.E81-472D1W	4.7	1200	4.7	16	60	40	81	D1
E62.F81-502D1W	5	1200	4.5	16	80	45	81	D1
E62.K80-502Z1W	5	2000	2.6	20	90	60	80	Z1
E62.G85-582D1W	5.75	1200	3.8	16	80	50	85	D1
E62.G85-682D1W	6.8	1200	3.7	16	80	50	85	D1
E62.G85-682G1W	6.8	2000	3.7	33	100	50	85	G1
E62.K85-103D1W	10	1200	3.1	16	80	60	85	D1
E62.L95-103G1W	10	2000	3.7	40	100	65	95	G1
E62.L10-123Z1W	12	2000	2.9	30	110	65	105	Z1
E62.H12-153D1W	15	1200	4.7	16	100	55	124	D1
E62.L10-153G1W	15	2000	3.9	40	120	65	109	G1
E62.L13-203G11W	20	2000	4.7	30	120	65	135	G1
E62.M12-213Z1W	21	2000	2.8	30	110	75	120	Z1
E62.K15-223D1W	22	1200	5.4	16	100	60	151	D1
E62.N12-273S1W	26.5	2000	1.6	50	110	85	124	S1
E62.L16-303D2W	30	1200	4.5	16	130	65	160	D2
E62.L16-303G1W	30	2000	5.3	40	130	65	160	G1
E62.Q10-323C6W	32	2000	0.79	50	140	100	105	C6
E62.N17-333C6W	33	2000	1.3	80	160	85	176	G1
E62.M16-333D2W	33	1200	4.8	16	120	75	160	D2
E62.N14-333S1W	33	2000	2.2	50	140	85	140	S1
E62.N17-403C6W	40	2000	0.76	80	160	85	176	C6
E62.M16-403D2W	40	1200	4.5	16	130	75	160	D2
E62.P14-473S1W	47	2000	1.6	50	110	95	149	S1
E62.N24-683C6W	68	2000	0.81	80	160	85	245	C6
E62.P24-803C6W	80	1900	1	80	170	95	245	C6
E62.R17-104C6W	100	2000	1	80	150	116	176	C6
E62.R28-154C6W	150	2000	1.4	100	180	116	280	C6

V_{AC} – 1350V, V_{RMS} – 960V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.C81-152E4W	1.5	2250	9.9	10	80	30	81	E4
E62.F85-402B2W	4	2250	6	16	130	45	85	B2
E62.G85-402G1W	4	2250	5	26	120	50	85	G1
E62.G85-502G1W	5	2250	4.4	25	100	50	85	G1
E62.H85-682G1W	6.8	2250	4	25	110	55	85	G1
E62.M10-103C6W	10	2250	1.6	45	140	75	105	C6
E62.N10-153C6W	15	2250	1.2	50	120	85	105	C6
E62.N10-163C6W	16	2250	1.1	50	140	85	105	C6
E62.P10-203C6W	20	2250	0.96	50	140	95	105	C6
E62.M17-223C6W	22	2250	0.97	80	160	75	176	C6
E62.P17-403C6W	40	2250	0.71	80	160	95	176	C6
E62.Q17-473C6W	47	2250	0.67	80	160	100	176	C6
E62.Q24-683C6W	68	2250	1	80	160	100	245	C6
E62.R17-683C6W	68	2250	0.59	80	160	116	176	C6
E62.R24-104C6W	100	2250	0.6	100	170	116	245	C6
E62.S24-154C6W	150	2250	0.56	100	170	136	245	C6
E62.S32-204C6W	200	2250	0.62	100	190	136	320	C6

V_{AC} – 1700V, V_{RMS} – 1200V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.C58-331E4W	0.33	2800	6.5	10	60	30	58	E4
E62.C58-471E4W	0.47	2800	8.2	10	60	30	58	E4
E62.C81-681E4W	0.68	2800	16.1	10	80	30	81	E4
E62.C81-102E4W	1	2800	11.5	10	80	30	81	E4
E62.F62-102B2W	1	2800	5.8	16	150	45	62	B2
E62.F85-152B2W	1.5	2800	6.4	16	120	45	85	B2
E62.F85-222B2W	2.2	2800	7.3	10	80	45	85	B2
E62.F85-252B2W	2.5	2800	6.8	16	120	45	85	B2
E62.G85-332B2W	3.3	2800	5.9	16	120	50	85	B2
E62.M10-402C6W	4	2800	2.8	48	140	75	105	C6
E62.H85-472B2W	4.7	2800	5	16	120	55	85	B2
E62.M10-682C6W	6.8	2800	1.8	46	140	75	105	C6
E62.H14-822D1W	8.2	2800	8.9	16	190	55	148	D1
E62.N10-103C6W	10	2800	1.3	50	140	85	105	C6
E62.P10-123C6W	12	2800	1.2	50	140	95	105	C6
E62.M17-123C6W	12	2800	1.4	80	160	75	176	C6
E62.P17-253C6W	25	2800	0.8	80	160	95	176	C6
E62.Q17-303C6W	30	2800	0.73	80	160	100	176	C6
E62.R17-403C6W	40	2800	0.65	80	160	116	176	C6
E62.R17-503C6W	50	2800	1.6	80	150	116	176	C6
E62.R24-603C6W	60	2800	0.64	100	170	116	245	C6
E62.S24-903C6W	90	2800	0.56	100	170	136	245	C6
E62.S28-104C6W	100	2800	0.94	100	190	136	280	C6
E62.S32-134C6W	125	2800	0.64	100	190	136	320	C6

V_{AC} – 2000V, V_{RMS} – 1400V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.M17-103C6W	10	3400	2.1	40	170	75	176	C6
E62.P17-153C6W	15	3400	1.6	40	170	95	176	C6
E62.Q17-203C6W	20	3400	1.3	50	160	100	176	C6
E62.R17-303C6W	30	3400	1	50	160	116	176	C6
E62.R32-403C6W	40	3400	1.1	80	190	116	320	C6
E62.S24-503C6W	50	3400	0.88	100	170	136	245	C6
E62.R32-543C6W	54	3400	1.1	80	180	116	320	C6
E62.R32-603C6W	60	3400	1	100	180	116	320	C6
E62.S32-903C6W	90	3400	1	100	190	136	320	C6

V_{AC} – 2100V, V_{RMS} – 1500V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.C58-101E4W	0.1	3600	12.7	9	60	30	58	E4
E62.C58-151E4W	0.15	3600	10.4	9	60	30	58	E4
E62.C58-221E4W	0.22	3600	7.5	10	60	30	58	E4
E62.F62-221B2W	0.22	3600	6.8	16	100	45	62	B2
E62.F62-471B21W	0.47	3600	5.7	16	100	45	62	B2
E62.G62-681B2W	0.68	3600	4.7	16	100	50	62	B2
E62.F10-102B21W	1	3600	7.4	16	140	45	105	B2
E62.H10-152B2W	1.5	3600	5.7	16	120	55	105	B2
E62.F10-202B2W	2	3500	5.9	16	120	45	105	B2
E62.P17-133C6W	13	3600	1.3	80	160	95	176	C6
E62.R20-333C6W	33	3600	1.2	80	150	116	205	C6
E62.R32-403CRW	40	3600	1.1	100	180	116	320	CR
E62.S32-603CRW	60	3600	1	100	190	136	320	CR
E62.S32-703CRW	70	3600	1.1	100	190	136	320	CR

V_{AC} – 2400V, V_{RMS} – 1700V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.G10-202B2W	2	4000	5.6	16	120	50	105	B2
E62.H10-222B2W	2.2	4000	5	16	120	55	105	B2
E62.H15-402B2W	4	4000	7.5	16	190	55	151	B2
E62.M17-682C6W	6.8	4000	2.5	40	160	75	176	C6
E62.N17-103C6W	10	4000	1.9	40	170	85	176	C6
E62.R17-203C61W	20	4000	1.6	50	160	116	176	C6
E62.R17-223CRW	22	4000	1.1	50	160	116	176	CR
E62.S17-253CRW	25	4000	0.59	80	160	136	176	CR
E62.S24-333CRW	33	4000	0.6	100	160	136	245	CR

V_{AC} – 4000V, V_{RMS} – 2800V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.F81-101B2W	0.1	5000	9.6	16	100	45	81	B2
E62.F81-151B2W	0.15	5000	7	16	90	45	81	B2
E62.M10-201CRW	0.2	5000	5.1	16	150	75	105	CR
E62.F10-221B21W	0.22	5000	14.5	16	140	45	105	B2
E62.K10-221CDW	0.22	5000	6.9	16	140	60	105	CD
E62.F10-331B2W	0.33	5000	14	16	140	45	105	B2
E62.F10-391B2W	0.39	5000	12.3	16	140	45	105	B2
E62.F10-471B2W	0.47	5000	10.8	16	140	45	105	B2
E62.F10-501B2W	0.5	5000	10.4	16	140	45	105	B2
E62.H10-681B2W	0.68	5000	8.5	16	120	55	105	B2
E62.M12-102CRW	1	5000	3.9	40	150	75	120	CR
E62.M14-152CDW	1.5	4000	5.2	16	140	75	140	CD
E62.N12-182CRW	1.8	5000	2.7	40	150	85	120	CR
E62.P12-192CRW	1.9	5000	2.6	40	150	95	120	CR
E62.N14-202CDW	2	4000	2.1	16	140	85	140	CD
E62.P12-222CRW	2.2	5000	2	40	150	95	120	CR
E62.P20-472CRW	4.7	5000	1.2	40	170	95	205	CR
E62.R20-602CRW	6	5000	0.8	80	160	116	205	CR
E62.R28-103CRW	10	5000	2.6	50	180	116	280	CR

V_{AC} – 5000V, V_{RMS} – 3500V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.F10-101B2W	0.1	5000	14.9	16	140	45	105	B2
E62.F10-151B2W	0.15	5000	12.9	16	140	45	105	B2
E62.F10-221B2W	0.22	5000	14.5	16	140	45	105	B2
E62.K12-331CDW	0.33	5000	8.7	16	140	60	120	CD
E62.K12-471CDW	0.47	5000	7.1	16	140	60	120	CD
E62.K14-681CDW	0.68	5000	8.9	16	140	60	140	CD
E62.M14-102CDW	1	5000	6.5	16	140	75	140	CD
E62.N14-152CDW	1.5	5000	4.8	16	140	85	140	CD
E62.P14-202CDW	2	5000	3.9	16	140	95	140	CD

Termination style

B2

C6

CD

CR

D1

D2

E1

E2

E4

G1

K1

L1

S1

Z1

For full dimensional drawings please contact IXYS UK

Other values of capacitance/voltage are available. Please contact IXYS UK with your specification

E62-3ph – 3-phase capacitors

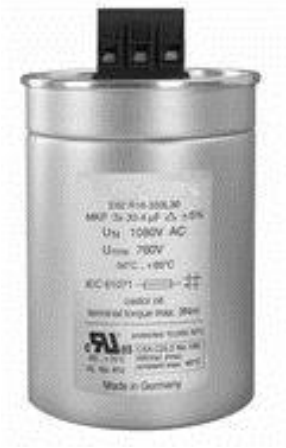
Our three-phase filter capacitors stand out by their high AC voltage load capacity. They have been designed especially for heavy duty operation in extreme or sophisticated operating conditions such as AC filtering and power factor correction in wind power and UPS applications, harmonic filtering in three-phase mains with high or unusual levels of harmonic distortion.

Thanks to their construction, they have a very low series resistance and a small self-inductance. Our basic design principle – preferring short winding elements with comparably large diameters – as well as the use of wavecut technology in many models, serves for high RMS and surge current strength.

The three capacitor elements are connected in delta internally; the plant oil filling is environmentally friendly and serves for optimised heat dissipation and improved internal insulation. Many capacitors of the E62-3ph range are also available as completely dry options with nitrogen filling on request. The finger-proof CAPAGRIP screw terminals of our E62-3ph series re rated IP20 and make simple and reliable connections and easy addition of IP20-resistors or reactors for discharge.

Very good self-healing characteristics and the integrated over-pressure protection ensure safe operation and controlled disconnection in the event of overload or failure at the end of operating life.

Standards	IEC 61071 (optional IEC 61881, IEC60831)
	UL 810
Can	Aluminium.
Mounting Position	terminals pointing upwards
Filling Material	Liquid, based on vegetable oil, non-PCB
Internal Protection	Break-action mechanism
Fire Load	40 MJ/kg
C_N Tolerance	±5%
$\tan\delta_0$	2×10^{-4}
Operating Temperatures	Θ_{min} to Θ_{min} -50°C to +85°C
	$\Theta_{HOTSPOT} \leq 85°C$
Storing Temperature	-50°C to +85°C
Failure Rate	100FIT
	Reference interval - 100,000 Hours at $\Theta_{HOTSPOT} \leq 70°C$



V_{AC} – 640V, V_{RMS} – 450V

Part No.	Capacitance Per phase µF	Series resistance per phase R_S Ω	Maximum current per phase I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.K15-243D3W	24	1.5	16	110	60	151	D3
E62.M16-333L3W	33	1.2	56	90	75	164	L3
E62.M16-403L3W	40	1.2	56	130	75	164	L3
E62.N16-463L3W	46	1.1	56	110	85	164	L3
E62.N16-513L3W	51	1.1	56	140	85	164	L3
E62.P16-573L3W	57	0.8	56	120	95	164	L3
E62.P16-683L3W	68	0.8	56	100	95	164	L3
E62.R16-803L3W	80	0.6	56	100	116	164	L3
E62.R16-104L3W	100	0.4	56	100	116	164	L3
E62.R23-134M3W	135	0.55	80	120	116	230	M3
E62.S23-204M3W	200	0.55	80	125	136	230	M3

V_{AC} – 750V, V_{RMS} – 530V

Part No.	Capacitance Per phase µF	Series resistance per phase R_S Ω	Maximum current per phase I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.G15-902D3W	9	1.8	16	100	50	151	D3
E62.G15-103D3W	10	1.8	16	100	50	151	L3
E62.H15-123D3W	12	1.7	16	100	55	151	D3
E62.K15-163D3W	16	1.6	16	100	60	151	D3
E62.M16-233L3W	23	1.2	56	100	75	164	L3
E62.N16-293L3W	29	1.2	56	130	85	164	L3
E62.N16-303L3W	30	1.2	56	120	85	164	L3
E62.P16-383L3W	38.4	0.65	56	120	95	164	L3
E62.Q16-483L3W	47.9	0.75	56	145	100	164	L3
E62.R23-104M3W	100	0.6	80	120	116	230	M3

V_{AC} – 850V, V_{RMS} – 600V

Part No.	Capacitance Per phase µF	Series resistance per phase R_S Ω	Maximum current per phase I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.G15-602D3W	6	2	16	100	50	151	D3
E62.G15-672D3W	6.7	2	16	100	50	151	D3
E62.H15-902D3W	9	1.7	16	100	55	151	D3
E62.H15-113D3W	11	1.8	16	100	55	151	D3
E62.K15-123D3W	12	1.7	16	105	60	151	D3
E62.M16-143L3W	14	1.3	56	130	75	164	L3
E62.M16-193L3W	19	1.2	56	100	75	164	L3
E62.N16-253L3W	25	1.1	56	100	85	164	L3
E62.P16-303L3W	30	0.7	56	100	95	164	L3
E62.Q16-383L3W	37.5	0.8	56	100	100	164	L3
E62.R16-503L3W	50	0.4	56	100	116	164	L3
E62.S19-863L3W	86	0.5	56	100	136	196	L3

V_{AC} – 1080V, V_{RMS} – 760V

Part No.	Capacitance Per phase µF	Series resistance per phase R_S Ω	Maximum current per phase I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.G15-472D3W	4.7	1.8	16	100	50	151	D3
E62.H15-502D3W	5	1.6	16	100	55	151	D3
E62.M16-622L3W	6.2	1.2	56	120	75	164	L3
E62.K15-732D3W	7.3	1.5	16	100	60	151	D3
E62.M16-972L3W	9.7	1.2	56	120	75	164	L3
E62.M16-113L3W	11	0.9	56	120	75	164	L3
E62.P16-173L3W	16.7	0.65	56	130	95	164	L3
E62.P16-183L3W	18.4	0.6	56	110	95	164	L3
E62.Q16-223L3W	22	0.6	56	120	100	164	L3
E62.R16-283L3W	27.6	0.4	56	120	116	164	L3
E62.R16-333L3W	33.4	0.4	56	120	116	164	L3
E62.R23-493L3W	49	0.55	56	120	116	230	L3
E62.S19-563L3W	55.7	0.4	56	130	136	196	L3

V_{AC} – 1130V, V_{RMS} – 800V

Part No.	Capacitance Per phase µF	Series resistance per phase R_S Ω	Maximum current per phase I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.Q19-253L3W	24.9	0.55	56	130	100	196	L3
E62.R19-333L3W	33.2	0.53	56	130	116	196	L3
E62.S19-413L3W	41.4	0.5	56	130	136	196	L3
E62.S19-463L3W	46.5	0.5	56	130	136	196	L3

V_{AC} – 1200V, V_{RMS} – 850V

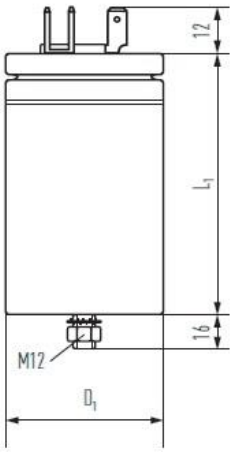
Part No.	Capacitance Per phase µF	Series resistance per phase R_S Ω	Maximum current per phase I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.G15-252D3W	2.5	1.8	16	100	50	151	D3
E62.G15-302D3W	3	1.7	16	100	50	151	D3
E62.G15-402D3W	4	1.6	16	100	50	151	D3
E62.M16-802L3W	8	1.3	56	120	75	164	L3
E62.N16-123L3W	12	1.1	56	120	85	164	L3
E62.Q19-233L3W	23	0.5	56	130	100	196	L3
E62.R16-253L3W	25	0.4	56	130	116	164	L3
E62.R23-413L3W	41.5	0.55	56	120	116	230	L3
E62.S23-503L3W	50	0.5	56	125	136	230	L3
E62.S23-563M3W	55.7	0.45	80	130	136	230	M3

V_{AC} – 1400V, V_{RMS} – 1000V

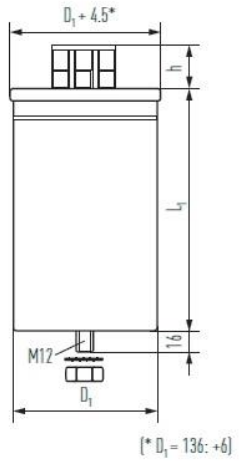
Part No.	Capacitance Per phase µF	Series resistance per phase R_S Ω	Maximum current per phase I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.R16-113L3W	11	0.45	56	130	116	164	L3
E62.R23-203L3W	20	0.6	56	120	116	230	L3
E62.S23-333L3W	33	0.55	56	120	136	230	L3
E62.S28-403L3W	40	0.65	56	140	136	280	L3

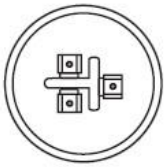
V_{AC} – 1700V, V_{RMS} – 1200V

Part No.	Capacitance Per phase µF	Series resistance per phase R_S Ω	Maximum current per phase I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E62.P23-123L3W	12	1	56	140	95	230	L3
E62.S23-223L3W	22	0.6	56	120	136	230	L3

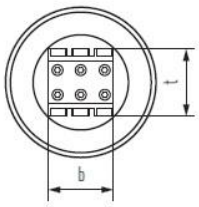


Housing design	**L3/M3**
Can material	Aluminium
Mounting stud	M12
Lid	Flanged Aluminium
Terminal	
L3	2x25mm² per contact M5, T2; torque: 2.5-3Nm
M3	2x50mm2 per contact M6, T2; torque: 3.2-3.7Nm
I_{MAX} (Terminals)	
L3	56A
M3	104A
Protection	IP20
L	16mm
Humidity class	C





Housing design	**D3**
Can material	Aluminium
Mounting stud	M12
Lid	Flanged Aluminium
Terminal	
L3	2x25mm² per contact M5, T2; torque: 2.5-3Nm
M3	2x50mm2 per contact M6, T2; torque: 3.2-3.7Nm
I_{MAX} (Terminals)	
L3	56A
M3	104A
Protection	IP20
L	16mm
Humidity class	C



Dimensions (mm)

	Design L3	Design M3
h	**35**	**45**
b	**42**	**49**
t	**44**	**55**

E50 – PK16 DC Link capacitors

The E50 PK16 capacitor can be universally used for the assembly of low inductance DC buffer circuits and DC filters; with its high energy density it can replace banks of series-connected electrolytic capacitors as well as large film capacitors in rectangular cases.
The capacitance in a DC buffer circuit must be sufficiently sized to both handle and smoothen the occurring ripple currents. The traditional use of series/parallel-connected electrolytic capacitors offered large capacitance at seeming low cost, however the low cost per microfarad is countered by very low current strength, the high sensitivity to voltage and current surges, as well as high risk of field failures resulting in high maintenance cost.

Advanced know-how in special capacitor film coating and many years of practical experience in designing and manufacturing capacitors have allowed the design of the E50 PK16 range with high current density. With fivefold the current strength of conventional electrolytic capacitors, it is not necessary to reproduce the same capacitance in film technology.

Instead, the user now gets a superior technical solution within the same – or even less – space offering:

- **Superior voltage and current strength**
- **Dramatic increase in operational life**
- **Drastic reduction of failures**
- **Minimisation of power dissipation losses**
- **Substantial reduction of self-inductance and series resistance**
- **More exact manufacturing tolerances**
- **Elimination of sharing resistors**

Thanks to its compact cylindrical aluminium (NT/NZ) or plastic (N4) can design these capacitors are ideal for both electrical and mechanical requirements of high-speed IGBT converters.
Its robust terminals and the robust fixing stud allow for very simple and reliable mounting that unites lowest inductance and highest current strength. The particularly large creepage and clearance distances make this design suitable for a wide range of operating voltages. As a result, existing standard converter concepts can easily be adapted to new applications without having to change the principal construction and to re-approve the entire system.

The capacitors listed in the following pages have been designed specifically to match the requirements of IXYS UK's press-pack IGBT range in most inverter/converter applications

Other voltage/capacitor ratings are available on request. Please contact IXYS UK for more information

Standards		IEC 61071 (optional IEC 61881) UL 810
Can		Aluminium/plastic (UL94:V0)
Mounting Position		Optional
Filling Material		Solid, based on vegetable oil, non-PCB
Internal Protection		None
Fire Load		40 MJ/kg
C_N Tolerance		±5%
Insulation strength	**$C \times R_{is}$**	5000s
tanδ$_0$		2 x 10^{-4}
Operating Temperatures		
	Θ_{min}	-40°C
	$\Theta_{max\ (HOTSPOT)}$ ⌀67mm-85mm -	≤ 85°C
	$\Theta_{max\ (HOTSPOT)}$ ⌀116mm -	≤ 88°C
	$\Theta_{max\ (HOTSPOT)}$ ⌀136mm -	≤ 75°C
Storing Temperature		-40°C to +85°C
Lifetime		>200k hours
Failure Rate		50FIT Reference interval - 100,000 Hours at $\Theta_{HOTSPOT} \leq 70°C$

V_{DC} – 1300V Suitable for use in systems utilising the 2500V IXYS UK press-pack IGBT

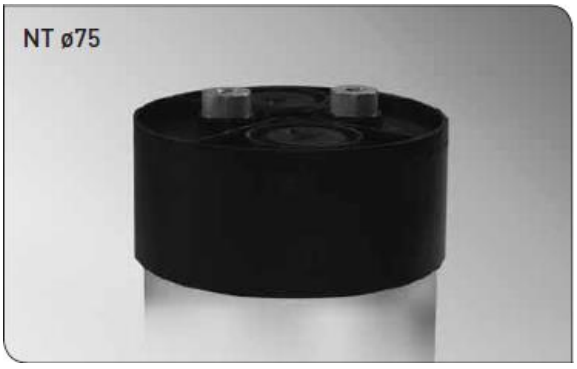
Part No.	Capacitance µF	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E50.N15-254N5W	250	4.2	60	40	85	155	N5
E50.N15-304NTW	300	3.7	60	40	85	155	NT
E50.R16-554NTW	545	2.3	80	40	116	165	NT
E50.N25-564NTW	560	2.3	60	60	85	252	NT
E50.R23-824NTW	820	1.7	100	50	116	230	NT
E50.R29-115NTW	1090	1.4	100	60	116	295	NT
E50.R34-145NTW	1370	1.1	100	70	116	345	NT
E50.S29-165NTW	1560	1.1	120	70	136	295	NT
E50.S34-205NTW	1950	0.69	120	70	136	345	NT

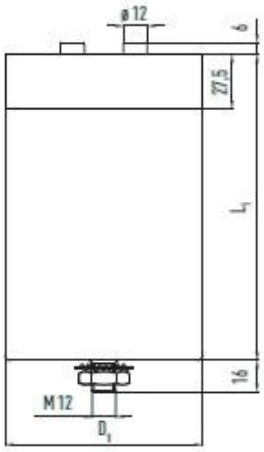
V_{DC} – 2800V Suitable for use in systems utilising the 4500V IXYS UK press-pack IGBT

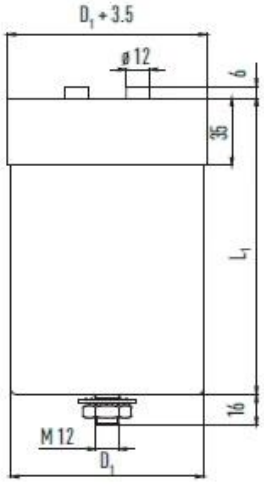
Part No.	Capacitance µF	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E50.N15-603NTW	60	1.3	50	40	85	155	NT
E50.N23-104NTW	100	1.7	60	60	85	232	NT
E50.R16-114NTW	110	0.66	80	40	116	165	NT
E50.R23-174NTW	165	0.63	100	50	116	230	NT
E50.R29-224NTW	220	0.62	100	60	116	295	NT
E50.R34-284NTW	275	0.85	100	70	116	345	NT
E50.S29-314NTW	310	0.61	120	70	136	295	NT
E50.S34-394NTW	390	0.76	120	70	136	345	NT

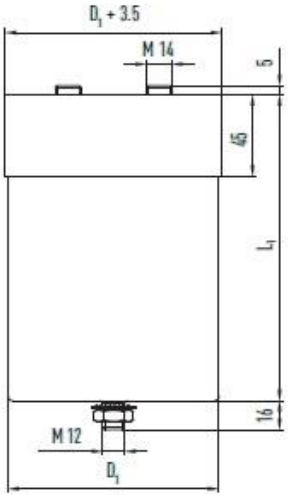
V_{DC} – 3600V Suitable for use in systems utilising the 6500V IXYS UK press-pack IGBT

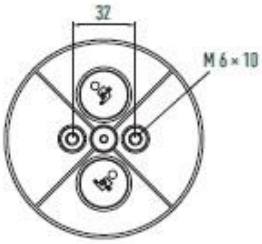
Part No.	Capacitance µF	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E50.N15-293NTW	29	1.4	50	40	85	155	NT
E50.N23-503NTW	50	1.9	60	60	85	232	NT
E50.R16-573NTW	57	0.67	80	40	116	165	NT
E50.R23-863NTW	85.5	0.65	100	50	116	230	NT
E50.R29-114NTW	114	0.68	100	60	116	295	NT
E50.R34-144NTW	142	0.88	100	70	116	345	NT
E50.S29-164NTW	160	0.63	120	70	136	295	NT



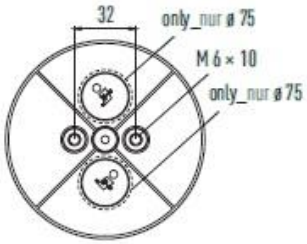




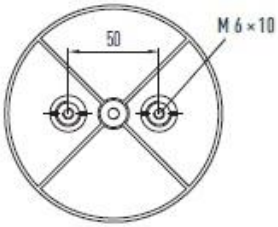




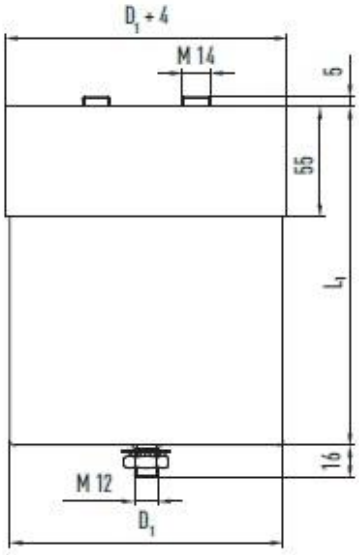
N5

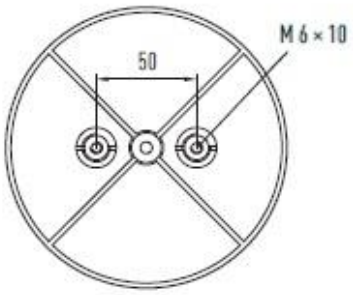


NT Ø75mm-Ø85mm



NT Ø116mm





NT Ø136mm

Can material	Aluminium filled with solid PU resin
Mounting stud	M12
Lid	Plastic (UL94:V0)
Terminal	
NT/N5	Internal thread M6×10mm (torque – 4Nm)
Protection	IP00

Dimensions (mm)

	K (mm)	L (mm)	Humidity Class	I_{max} (terminals)
N5/NT Ø 75-85	**36**	**20**	**F**	**80A**
NT Ø 116-136	**45**	**35**	**F**	**120A**

E53 – Snubber capacitors

In power electronics in general, but particularly in low inductance buffer circuits, the call for capacitors with low inductance poses problems. Traditional high voltage capacitors are filled with oil, and the generous bushings required for creepage/clearance as well as internal safety mechanisms add substantially to the self-inductance of the capacitor.

Despite the high voltage ratings, the E53 range is made in dry technology and without expensive bushings. For the sake of optimised self-inductance, the E53 capacitors are made without safety mechanism; by clever internal design they can be laid out in such manner that partial discharges and consequential risk of failures in the customers' application are reduced to a minimum

The E53 range utilises sophisticated metallizing patterns, the SINECUT slitting technology and clever winding geometries to produce snubber capacitors with particularly low series resistance and high pulse strength. Therefore, they are particularly suited to the damping of GTO thyristors, as supplied by IXYS UK, and low inductance buffer circuits with high RMS currents. Their very low self-inductance makes them also suitable for use in high current applications with medium frequencies.

Along with their very good ratio of capacitance to volume, the E53 capacitors also have high pulse strength and very good self-healing characteristics without loss or shift of capacitance.

Standards	IEC 61071 (optional IEC 61881)
	UL 810
	CSA22.2
Can	plastic (UL94:V0)
Mounting Position	Optional
Filling Material	Solid, based on vegetable oil, non-PCB
Internal Protection	None
Fire Load	40 MJ/kg
C_N Tolerance	±10%
Self-inductance	15nH
tanδ₀	2×10^{-4}
Operating Temperatures	
Θ_{min}	-40°C-+85°C
$\Theta_{max\ (HOTSPOT)}$ ⌀67mm-85mm -	≤ 85°C
Storing Temperature	-40°C to +85°C
Lifetime	>200k hours
Failure Rate	100FIT
	Reference interval - 100,000 Hours at $\Theta_{HOTSPOT} \leq 70°C$

H1

T1

V_{AC} – 280V, V_{RMS} – 200V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E53.H56-503T1W	50	550	0.8	60	15	55	56	T1
E53.M56-104T2W	100	550	0.4	80	15	75	56	T2
E53.P56-204T2W	200	550	0.2	80	15	95	56	T2
E53.Q56-254T2W	250	550	0.15	80	15	105	56	T2
E53.R56-274T2W	270	550	0.15	100	15	115	56	T2
E53.R10-384T2W	380	550	0.31	100	15	115	100	T2

V_{AC} – 350V, V_{RMS} – 250V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E53.H56-333T1W	33	700	0.95	55	15	55	56	T1
E53.M56-683T2W	68	700	0.5	80	15	75	56	T2
E53.P56-124T2W	120	700	0.3	80	15	95	56	T2
E53.Q56-154T2W	150	700	0.25	100	15	105	56	T2
E53.R56-204T2W	200	700	0.2	100	15	115	56	T2
E53.R10-314T2W	310	700	0.3	100	15	115	100	T2
E53.H56-303T1W	30	900	0.85	60	15	55	56	T1
E53.M56-603T2W	60	900	0.5	80	15	75	56	T2
E53.P56-104T2W	100	900	0.35	80	15	95	56	T2
E53.Q56-124T2W	120	900	0.2	100	15	105	56	T2
E53.R56-144T2W	140	900	0.2	100	15	115	56	T2
E53.R10-274T2W	265	900	0.35	110	15	115	100	T2
E53.H56-123T1W	12	1100	1.7	40	15	55	56	T1
E53.H56-153T1W	15	1100	1.1	4	15	55	56	T1
E53.M56-253T2W	25	1100	0.71	70	15	75	56	T2
E53.P56-503T2W	50	1100	0.34	80	15	95	56	T2
E53.Q56-603T2W	60	1100	0.35	100	15	105	56	T2
E53.R56-803T2W	80	1100	0.21	100	15	115	56	T2
E53.R10-184T2W	175	1100	0.41	100	15	115	100	T2
E53.H56-802T1W	8	1400	2	38	15	55	56	T1
E53.M56-163T2W	16	1400	1	60	15	75	56	T2
E53.P56-303T2W	30	1400	0.55	80	15	95	56	T2
E53.Q56-403T2W	40	1400	0.4	100	15	105	56	T2
E53.R56-503T2W	50	1400	0.3	100	15	115	56	T2
E53.R10-114T2W	110	1400	0.52	100	15	115	100	T2

V_{AC} – 700V, V_{RMS} – 500V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E53.H56-472T1W	4.7	1700	1.3	45	15	55	56	T1
E53.M56-103T2W	10	1700	0.6	80	15	75	56	T2
E53.P56-163T2W	16	1700	0.37	80	15	95	56	T2
E53.Q56-223T2W	22	1700	0.27	100	15	105	56	T2
E53.R56-333T2W	33	1700	0.2	100	15	115	56	T2
E53.R10-683T2W	68	1700	0.35	100	15	115	100	T2
E53.H56-332T1W	3.3	2000	1.6	40	15	55	56	T1
E53.M56-802T2W	8	2000	0.65	80	15	75	56	T2
E53.P56-143T2W	14	2000	0.35	80	15	95	56	T2
E53.Q56-183T2W	18	2000	0.3	100	15	105	56	T2
E53.R56-243T2W	24	2000	0.2	100	15	115	56	T2
E53.R10-533T2W	52.2	2000	0.39	100	15	115	100	T2
E53.H56-252T1W	2.5	2250	1.8	40	15	55	56	T1
E53.M56-602T2W	6	2250	0.76	70	15	75	56	T2
E53.P56-103T2W	10	2250	0.46	80	15	95	56	T2
E53.Q56-153T2W	15	2250	0.27	100	15	105	56	T2
E53.R56-183T2W	18	2250	0.25	100	15	115	56	T2
E53.R10-403T2W	40	2250	0.45	100	15	115	100	T2
E53.H56-152T1W	1.5	2800	2.4	32	15	55	56	T1
E53.M56-332T2W	3.3	2800	1.1	60	15	75	56	T2
E53.P56-752T2W	7.5	2800	0.5	80	15	95	56	T2
E53.Q56-103T2W	10	2800	0.4	100	15	105	56	T2
E53.R56-123T2W	12	2800	0.3	100	15	115	56	T2
E53.R10-253T2W	25	2800	0.57	100	15	115	100	T2

V_{AC} – 1050V, V_{RMS} – 750V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E53.H56-102T1W	1	3200	1.6	40	15	55	56	T1
E53.M56-252T2W	2.5	3200	0.65	75	15	75	56	T2
E53.P56-402T2W	4	3200	0.4	80	15	95	56	T2
E53.Q56-602T2W	6	3200	0.28	100	15	105	56	T2
E53.R56-702T2W	7	3200	0.25	100	15	115	56	T2

V_{AC} – 1400V, V_{RMS} – 1000V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E53.H56-122T1W	1.16	2450	1.2	20	15	55	56	T1
E53.M56-242T2W	2.4	2450	0.56	60	15	75	56	T2
E53.P56-422T2W	4.2	2450	0.32	80	15	95	56	T2
E53.Q56-522T2W	5.2	2450	0.26	100	15	105	56	T2
E53.R56-642T2W	6.4	2450	0.21	100	15	115	56	T2
E53.R10-802T2W	8	3600	0.52	100	15	115	100	T2
E53.R10-103T2W	10	3600	0.94	100	15	115	100	T2

V_{AC} – 2100V, V_{RMS} – 1500V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E53.H56-471T1W	0.47	3750	2.9	20	15	55	56	T1
E53.M56-112T2W	1.1	3750	1.2	60	15	75	56	T2
E53.P56-172T2W	1.7	3750	0.8	80	15	95	56	T2
E53.Q56-222T2W	2.15	3750	0.64	100	15	105	56	T2
E53.R56-272T2W	2.7	3750	0.51	100	15	115	56	T2
E53.R10-302T21W	3	5000	1.2	125	15	115	100	T2
E53.R10-402T21W	4	5000	1	125	15	115	100	T2

V_{AC} – 2450V, V_{RMS} – 1750V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E53.H97-221T1W	0.22	5600	13.7	25	15	55	97	T1
E53.H97-251T1W	0.25	5600	12.1	25	15	55	97	T1
E53.H97-501T1W	0.5	5600	8	25	15	55	97	T1
E53.H97-221T11W	0.22	7200	13.7	25	15	55	97	T1
E53.H97-251T1W	0.25	7200	12.1	25	15	55	97	T1

V_{DC} – 600V-900V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E53.N51-154H1W	150	600	0.75	60	30	85	51	H1
E53.N68-204H1W	200	600	0.84	60	35	85	68	H1
E53.N76-304H1W	300	600	1.1	60	40	85	76	H1
E53.N51-154H11W	150	700	0.7	60	30	85	51	H1
E53.N64-204H1W	200	700	0.92	60	35	85	64	H1
E53.N76-304H11W	300	700	1.2	60	40	85	76	H1
E55.H56-473T1W	47	900	0.58	45	15	55	56	H1
E53.N51-124H11W	120	900	0.84	60	30	85	51	H1
E53.N64-154H11W	150	900	1	60	35	85	64	H1
E53.N76-244H11W	240	900	1.3	60	40	85	76	H1
E53.Q56-254T2W	250	900	0.35	100	15	105	56	H1

V_{DC} – 1100V-1500V

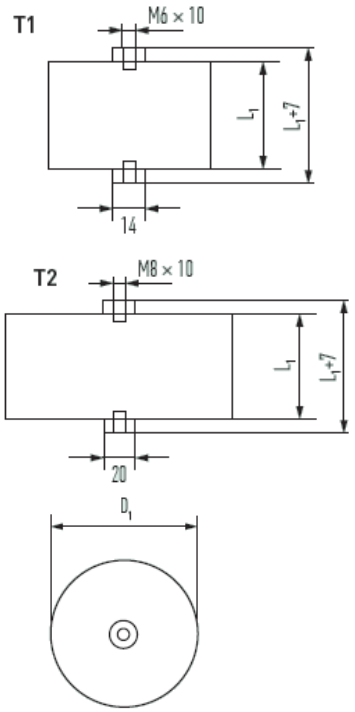
Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E53.N51-753H11W	75	1100	1	60	30	85	51	H1
E53.N64-104H1W	100	1100	0.9	60	35	85	64	H1
E53.N76-154H11W	150	1100	1.5	75	40	85	76	H1
E53.N51-503H11W	50	1300	1.1	70	30	85	51	H1
E53.M56-503T2W	50	1300	0.98	65	15	75	56	T2
E53.N64-683H1W	68	1300	1.3	70	35	85	64	H1
E55.P56-903T2W	90	1300	0.55	80	15	95	56	T2
E53.N76-104H11W	100	1300	1.5	60	40	85	76	H1
E53.N51-383H11W	37.5	1500	1.2	60	30	85	51	H1
E53.N64-503H1W	50	1500	1.5	60	35	85	64	H1
E53.N76-753H11W	75	1500	2	60	40	85	76	H1

V_{DC} – 1800V-2000V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E55.M56-223T2W	22	1800	1.5	40	15	75	56	T2
E53.N51-303H11W	30	1800	0.73	60	30	85	51	H1
E53.N64-403H1W	40	1800	1.6	60	35	85	64	H1
E53.N76-603H11W	60	1800	2.1	50	40	85	76	H1
E55.R56-803T2W	80	1800	0.45	100	15	115	56	T2
E53.N51-133H1W	13	2000	1.6	55	30	85	51	H1
E53.N64-303H1W	30	2000	1.3	55	35	85	64	H1
E53.N76-433H1W	43	2000	1.8	50	40	85	76	H1
E55.R56-803T2W	50	2000	0.55	100	15	115	56	T2

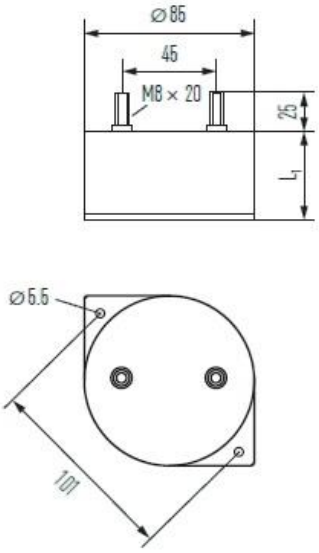
V_{DC} – 2200V-5000V

Part No.	Capacitance µF	Nominal DC Voltage V_{DC} V	Series resistance R_S Ω	Maximum current I_{MAX} A	Inductance L_e nH	Diameter mm	Length mm	Design
E53.N64-253H1W	24.5	2200	1.4	55	35	85	64	H1
E53.N76-353H1W	35	2200	1.9	50	40	85	76	H1
E55.R56-303T2W	30	2400	0.34	100	15	115	56	T2
E55.Q56-183T2W	18	2800	0.6	90	15	105	56	T2
E55.R56-103T2W	10	3200	0.71	100	15	115	56	T2
E55.R10-103T2W	10	5000	1.3	100	15	115	100	T2



Can material		Plastic can filled with solid PUR resin
Fixing		
	T1/T2	Axial thread
	H1	Lateral mounting brackets
Terminal		
	T1	M6 × 10mm
	T2	M8 × 10mm
	H1	Threaded studs M8 × 20mm
I_{MAX} (Terminals)		
	T1	60A
	T2	100A
	H1	100A
Protection		IP00
Humidity class		
	T1/T2	G
	H1	F

H1



Customer specific large capacitance AC and DC capacitors

In our E59 customer specific range, we can realize voltages up to 10kV AC and 25kV DC; the exact capacitance rating depends on the user's specific requirements.

Instead of flat pack windings, our capacitance is formed by homogenous cylindrical windings, avoiding the mechanical stress and instabilities at the edges of flat packs. The capacitors are housed in aluminium or steel cases and filled with solid resin which makes them absolutely dry and leakage proof. Their shape and size, as well as terminals and fixing can be adapted to the individual requirements of the customer.

Special terminals allow for substantial reduction of the self-inductance which can be further minimized by construction adjustments if required. At the same time, they are extremely overvoltage proof. They are especially suited for DC link circuits of converters, tuned filter circuits and such like.

Even at high temperatures, and after numerous self-healing dielectric breakdowns, the capacitance remains stable.

An irreversible pressure switch can be used for external monitoring of the internal pressure. It signals 0.5 atmospheres of pressure rise by closing (or optionally: opening) the contact, allowing for safe external disconnection in the event of overload or failure at the end of operating life.

Our highly skilled and experienced technical team are on hand to assist in designing a capacitor to suit your requirements

Maximum electrical ratings

Rated Voltage:	25kV DC/10kV AC
Insulation Level:	28/75kV
RMS Current:	950A
Surge Current:	700kA

Capacitor E59.A66-10501W
1000µF, 3kV DC
Custom designed for use in IGBT switching circuit

FM26085

IXYS UK Westcode Ltd's BS EN ISO9001 quality system is registered by BSI

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