Film Capacitors – Power Factor Correction

PhaseCap Energy Plus

Series/Type:	**MKK**
Ordering code:	**B25675C***
Date:	March 2026
Version:	4.0

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Construction

- Dielectric: Polypropylene film
- Non PCB, Soft biodegradable resin
- Wave cut
- Extruded round aluminum can with stud
- Three-phase, delta connected
- Terminal type: safety terminal with M4 & M5 screws
- Provided with external discharge resistor
- Over pressure disconnector for **all 3** phases

Features

- Self-healing technology
- Naturally air cooled (or forced air cooling)
- Optimized capacitor safety terminals

Typical applications

- Shunt Power Factor Correction (according to scope defined in IEC 60831)
- Indoor mounting

Technical data and specifications

Characteristics	B25675C*	
Nominal capacitance C_N	See table in page 8 to 12	
Tolerance	–5 /+5%	
Connection	D (Delta)	
Nominal voltage V_N	Up to 1000 V_{RMS} (Details as per table in page 8 to 12)	
Nominal frequency f_N	50 Hz	60 Hz
Nominal output Q_N	Up to 60 kvar (Details as per table in page 8 to 12)	
Nominal current I_N	As per table in page 8 to 12	
Dimensions (d x h)*)	As per table in page 8 to 12	
Weight (approx.)	As per table in page 8 to 12	
Dielectric losses (tan δ_0)	0.2 W / kvar	
Total losses (tan δ)**)	Approx. 0.35 to 0.45 W / kvar	

*) Refer drawing on page no.5 to 6 for tolerance

**) excluding discharge resistor

Maximum ratings	
Maximum permissible AC voltage (V_{max})	V_N +10% (up to 8 h daily) V_N +15% (up to 30 min. daily) V_N +20% (up to 5 min. daily) V_N +30% (up to 1 min. daily)
Maximum permissible AC current (I_{max})	Up to 1.6 to 2.0 • I_N (A) up to 33.1 kvar Up to 1.6 • I_N (A) above 33.1 kvar (including combined effects of harmonics, overvoltage's and capacitance tolerance)
Maximum inrush current (I_S)	≤ 500 • I_N (A) depending on the individual type upto 33.1 kvar ≤ 400 • I_N (A) depending on the individual type above 33.1 kvar Max. 15000 switching's per year up to 33.1 kvar Max. 7500 switching's per year above 33.1 kvar
Maximum allowed hotspot temperature	+85 °C (short time considering effect of all worst case operating parameters like voltage, current, harmonic, ambient temperature and ventilation)

Test data	
Voltage test between terminals	2.15 • V_N V AC / 50 Hz, 2s
Voltage test between terminals (joined together) and container	3600 V AC / 50 Hz, 2 s up to V_N = 525 V AC 6000 V AC / 50 Hz, 2 s above V_N = 525 V AC

Environmental conditions	
Minimum ambient temperature	-40 °C
Maximum ambient temperature	+60 °C (short time) up to 33.1 kvar +55 °C (short time) above 33.1 kvar
Ambient temperature	Class -40/60 up to 33.1 kvar: Max. short time: +60 °C, max. mean 24 h: +50 °C; max mean 1 year: +40 °C; lowest temperature: -40 °C Class -40/D above 33.1 kvar: Max. short time: + 55 °C, max. mean 24 h: +45 °C; max mean 1 year: +35 °C; lowest temperature: -40 °C
Storage temperature	-40 °C to + 85 °C (capacitor must be cooled down below +50 °C before energized)
Humidity	Average relative < 95% (non condensing)
Vibration (Sinusoidal)	As per IEC 60721-3-2 (Transportation) Max. test conditions - Frequency: 8 to 200 Hz Acceleration: 2 g Displacement: 7.5 mm

Mean life expectancy	
t_{LD}	Up to 240 000 hours up to 33.1 kvar (temperature class –40/D) Hotspot temperature ≤ 65 °C (Max. mean ambient temperature per year = +35 °C) Up to 220 000 hours up to 33.1 kvar (temperature class –40/60) Hotspot temperature ≤ 70 °C (Max. mean ambient temperature per year = +40 °C) Up to 150 000 hours above 33.1 kvar (temperature class –40/D) Hotspot temperature ≤ 70 °C (Max. mean ambient temperature per year = +35 °C)

Terminals				
Protection degree	Isolated terminals, IP20, indoor mounting (optionally with terminal cap for IP54), VDE 0106 part 100			
Terminal type	Terminal type A & C	Terminal type B & D	Terminal type E	Terminal type F
Max. torque	1.2 Nm	2.0 Nm	2.0 Nm	2.5 Nm
Terminal cross section suitable for connecting multistrand copper cables	16 mm^2 (without cable and lug)	25 mm^2 (without cable and lug)	25 mm^2 (without cable and lug)	35 mm^2 (without cable and lug)
Maximum terminal current	50 A	80 A	80 A	130 A
Creepage distance (min)	12.7 mm		19.1 mm	12.7 mm
Clearance (min)	9.6 mm		19.1 mm	9.6 mm

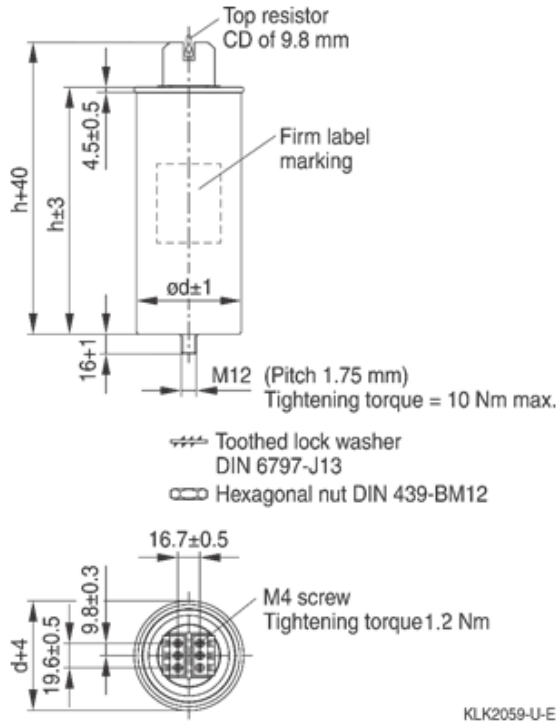
Mounting	
Fixing	Threaded bolt M12
Max. torque (Al can stud)	10 Nm
Mounting position	Upright / horizontal (horizontal only up to 224 mm height of capacitor) See “Maintenance and Installation Manual” for further details.
Maximum altitude	4000 m

Safety	
Film	Self-healing metallized polypropylene film
Impregnation	Filled with Non PCB, Soft biodegradable resin
Mechanical safety	Overpressure disconnector
Terminals	Touch proof IP20 safety terminals
Max. short circuit current	(AFC: 10 kA)
Integrated discharge resistors	Discharge time ≤ 60 s to 50 V or less for safe discharging except for power ratings above 33.1 kvar and voltage ratings above 690V having discharge time ≤ 180 s to 75 V or less

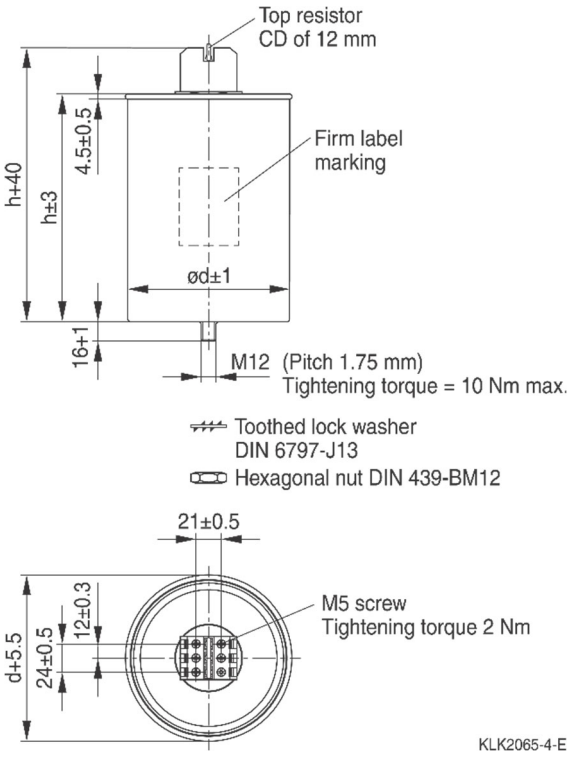
Approvals / reference standards		
Approval Mark	**Standard of reference**	**Certificate**
CE	IEC 60831–1/2 Edition 3.0 (2014)	-
c UL us	UL 810-5th edition	Available from 230 to 660 V AC & up to 33.1 kvar

Dimensional drawings

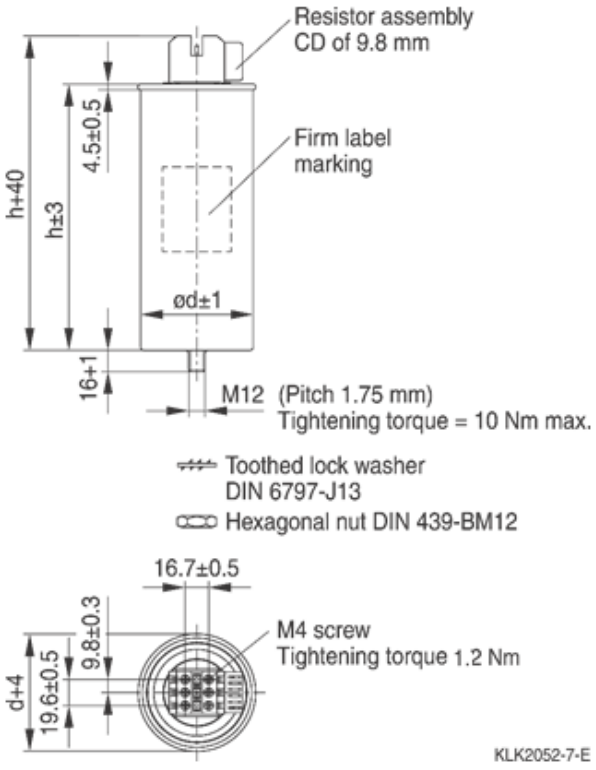
Terminal type A



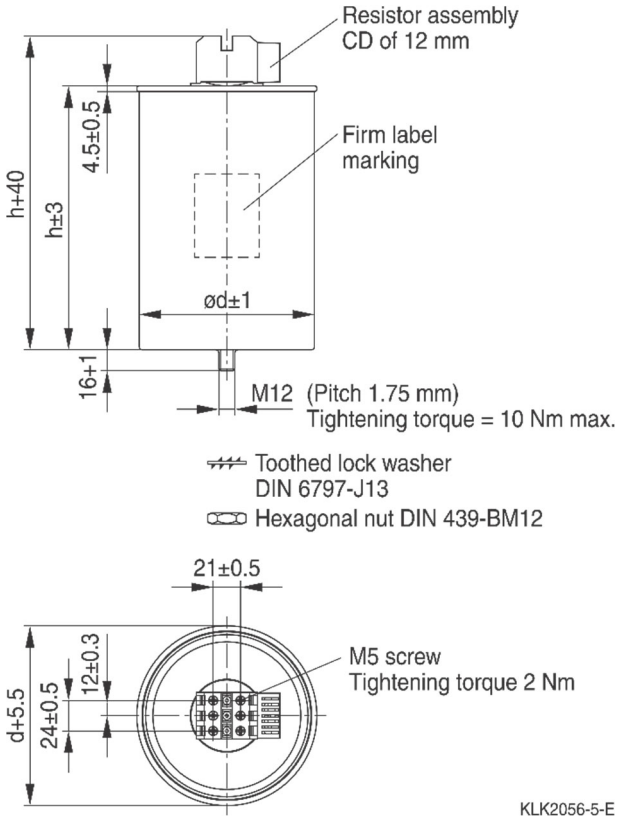
Terminal type B



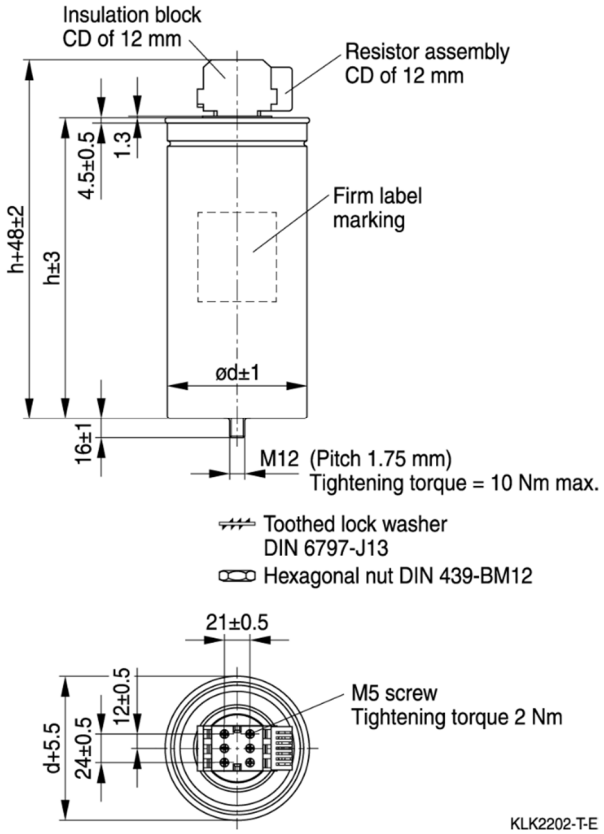
Terminal type C



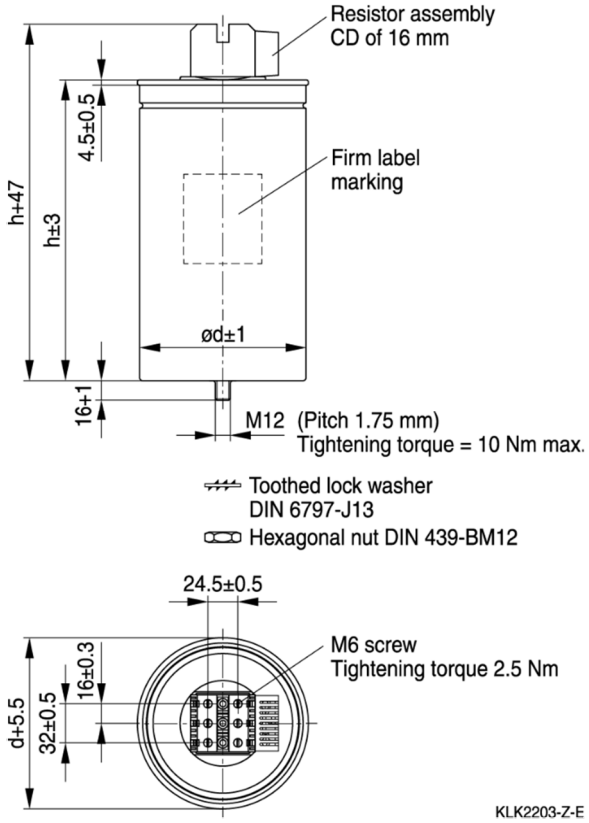
Terminal type D



Terminal type E



Terminal type F



Marking

PhaseCap Energy Plus

MKK440-D-25.0-04

B25675C4252J040

C_N = 3X 137 µF -5/+5 % Δ SH

U_N	Q_N/50Hz	Q_N/60Hz
440 V	25.0 kvar	30.0 kvar
415 V	22.2 kvar	26.7 kvar
400 V	20.7 kvar	24.8 kvar

U_I = 3/8kV -40/60

Overpressure disconnector Non PCB

IEC 60831 - 1/2 (2014) CE

AFC 10kA -40...+60°C

Internally protected

CSA C22.2 No. 190 cULus

CSA Temp Amb 46°C

Made by TDK 04.26N

Discharge Capacitor Before Handling.

Ordering codes

Ordering code	Series/type	Nominal capacitance C_N	Nominal voltage V_N	Output & Nominal current at 50 Hz I_N		Output & Nominal current at 60 Hz I_N		Dimensions d × h	Weight approx.	Terminal type	PU* pcs.
		µF	V	kvar	A	kvar	A	mm	kg		
Rated voltage 230 V AC, delta connection											
B25675C2052J030	MKK230-D-5.0-04	3x 100.3	230	5.0	12.6 [5]	6.0	15.1 [2]	75 x 218	1.1	A	9
B25675C2072J530	MKK230-D-7.5-04	3x 150.4	230	7.5	18.8 [5]	9.0	22.6 [2]	100 x 192	1.8	B	6
B25675C2102J030	MKK230-D-10.0-04	3x 200.5	230	10.0	25.1 [4]	12.0	30.1 [2]	100 x 224	2.1	B	6
B25675C2122J530	MKK230-D-12.5-04	3x 250.7	230	12.5	31.4 [2]	15.0	37.7 [1]	116 x 207	2.6	B	4
B25675C2152J030	MKK230-D-15.0-04	3x 300.8	230	15.0	37.7 [1]	-	-	125 x 207	3.0	B	4
Rated voltage 400 V AC, delta connection											
B25675C4052J000	MKK400-D-5.0-04	3x 33.2	400	5.0	7.2 [5]	6.0	8.7 [2]	75 x 164	0.9	A	6
B25675C4062J300	MKK400-D-6.3-04	3x 41.8	400	6.3	9.1 [5]	7.6	11.0 [2]	75 x 164	0.9	A	6
B25675C4072J500	MKK400-D-7.5-04	3x 49.7	400	7.5	10.8 [5]	9.0	13.0 [2]	75 x 200	1.1	A	6
B25675C4082J300	MKK400-D-8.3-04	3x 55.0	400	8.3	12.0 [5]	10.0	14.4 [2]	75 x 200	1.1	A	6
B25675C4102J400	MKK400-D-10.4-04	3x 69.0	400	10.4	15.0 [4]	12.5	18.0 [1]	75 x 218	1.1	A	9
B25675C4122J500	MKK400-D-12.5-04	3x 82.9	400	12.5	18.0 [4]	15.0	21.7 [1]	85 x 200	1.3	A	9
B25675C4152J000	MKK400-D-15.0-04	3x 99.5	400	15.0	21.7 [3]	18.0	26.0 [1]	85 x 218	1.5	A	4
B25675C4162J700	MKK400-D-16.7-04	3x 110.7	400	16.7	24.1 [2]	20.0	28.9 [1]	100 x 207	1.9	B	6
B25675C4202J000	MKK400-D-20.0-04	3x 132.6	400	20.0	28.9 [1]	24.0	34.6 [1]	100 x 224	2.1	B	6
B25675C4252J000	MKK400-D-25.0-04	3x 165.8	400	25.0	36.1 [1]	30.0	43.3 [1]	116 x 192	2.4	B	4
B25675C4282J100	MKK400-D-28.1-04	3x 186.3	400	28.1	40.6 [1]	-	-	125 x 192	2.8	B	4
B25675C4302J000	MKK400-D-30.0-04	3x 198.9	400	30.0	43.3 [1]	-	-	116 x 224	2.8	B	4
B25675C4332J000	MKK400-D-33.0-04	3x 218.8	400	33.0	47.6 [1]	-	-	125 x 207	3.0	B	4
B25675C4402J000	MKK400-D-40.0-04	3x 265.2	400	40.0	57.7 [1]	48.0	69.3 [1]	136 x 233	3.7	F	4
B25675C4502J000	MKK400-D-50.0-04	3x 331.5	400	50.0	72.2 [1]	60.0	86.6 [1]	136 x 312	5.0	F	2
Rated voltage 415 V AC, delta connection											
B25675C4052J015	MKK415-D-5.0-04	3x 30.8	415	5.0	7.0 [5]	6.0	8.3 [2]	75 x 164	0.9	A	6
B25675C4062J315	MKK415-D-6.3-04	3x 38.8	415	6.3	8.8 [5]	7.6	10.6 [2]	75 x 164	0.9	A	6
B25675C4072J515	MKK415-D-7.5-04	3x 46.2	415	7.5	10.4 [5]	9.0	12.5 [2]	75 x 200	1.1	A	6
B25675C4082J315	MKK415-D-8.3-04	3x 51.1	415	8.3	11.5 [5]	10.0	13.9 [2]	75 x 200	1.1	A	6
B25675C4102J415	MKK415-D-10.4-04	3x 64.1	415	10.4	14.5 [5]	12.5	17.4 [2]	75 x 200	1.1	A	6
B25675C4122J515	MKK415-D-12.5-04	3x 77.0	415	12.5	17.4 [4]	15.0	20.9 [1]	85 x 200	1.3	A	9
B25675C4152J015	MKK415-D-15.0-04	3x 92.4	415	15.0	20.9 [3]	18.0	25.0 [1]	85 x 200	1.3	A	9
B25675C4162J715	MKK415-D-16.7-04	3x 102.9	415	16.7	23.2 [2]	20.0	27.8 [1]	100 x 207	1.9	B	6
B25675C4202J015	MKK415-D-20.0-04	3x 123.2	415	20.0	27.8 [1]	24.0	33.4 [1]	100 x 207	1.9	B	6
B25675C4252J015	MKK415-D-25.0-04	3x 154.0	415	25.0	34.8 [1]	30.0	41.7 [1]	116 x 192	2.4	B	4
B25675C4282J115	MKK415-D-28.1-04	3x 173.1	415	28.1	39.1 [1]	-	-	116 x 207	2.6	B	4
B25675C4302J015	MKK415-D-30.0-04	3x 184.8	415	30.0	41.7 [1]	-	-	116 x 207	2.6	B	4
B25675C4332J015	MKK415-D-33.0-04	3x 203.3	415	33.0	45.9 [1]	-	-	116 x 224	2.8	B	4
B25675C4402J015	MKK415-D-40.0-04	3x 246.4	415	40.0	55.6 [1]	48.0	66.8 [1]	136 x 217	3.7	F	4
B25675C4502J015	MKK415-D-50.0-04	3x 308.0	415	50.0	69.6 [1]	60.0	83.5 [1]	136 x 279	4.5	F	2

Ordering code	Series/type	Nominal capacitance C_N	Nominal voltage V_N	Output & Nominal current at 50 Hz I_N		Output & Nominal current at 60 Hz I_N		Dimensions d × h	Weight approx.	Terminal type	PU* pcs.
		µF	V	kvar	A	kvar	A	mm	kg		
Rated voltage 440 V AC, delta connection											
B25675C4052J040	MKK440-D-5.0-04	3x 27.4	440	5.0	6.6 [5]	6.0	7.9 [2]	75 x 164	0.9	A	6
B25675C4062J040	MKK440-D-6.0-04	3x 32.9	440	6.0	7.9 [5]	7.2	9.4 [2]	75 x 164	0.9	A	6
B25675C4062J340	MKK440-D-6.3-04	3x 34.5	440	6.3	8.3 [5]	7.6	10.0 [2]	75 x 164	0.9	A	6
B25675C4072J040	MKK440-D-7.0-04	3x 38.4	440	7.0	9.2 [5]	8.4	11.0 [2]	75 x 200	1.1	A	6
B25675C4072J540	MKK440-D-7.5-04	3x 41.1	440	7.5	9.8 [5]	9.0	11.8 [2]	75 x 200	1.1	A	6
B25675C4082J040	MKK440-D-8.0-04	3x 43.8	440	8.0	10.5 [5]	9.6	12.6 [2]	75 x 200	1.1	A	6
B25675C4082J340	MKK440-D-8.3-04	3x 45.5	440	8.3	10.9 [5]	10.0	13.1 [2]	75 x 200	1.1	A	6
B25675C4092J040	MKK440-D-9.0-04	3x 49.3	440	9.0	11.8 [5]	10.8	14.2 [2]	75 x 200	1.1	A	6
B25675C4102J040	MKK440-D-10.0-04	3x 54.8	440	10.0	13.1 [4]	12.0	15.7 [1]	75 x 200	1.1	A	6
B25675C4102J440	MKK440-D-10.4-04	3x 57.0	440	10.4	13.6 [4]	12.5	16.4 [1]	85 x 200	1.3	A	9
B25675C4122J040	MKK440-D-12.0-04	3x 65.8	440	12.0	15.7 [4]	14.4	18.9 [1]	85 x 200	1.3	A	9
B25675C4122J540	MKK440-D-12.5-04	3x 68.5	440	12.5	16.4 [4]	15.0	19.7 [1]	85 x 200	1.3	A	9
B25675C4142J240	MKK440-D-14.2-04	3x 77.8	440	14.2	18.6 [4]	17.0	22.3 [1]	85 x 200	1.3	A	9
B25675C4152J040	MKK440-D-15.0-04	3x 82.2	440	15.0	19.7 [3]	18.0	23.6 [1]	85 x 218	1.5	A	4
B25675C4162J740	MKK440-D-16.7-04	3x 91.5	440	16.7	21.9 [2]	20.0	26.2 [1]	100 x 207	1.9	B	6
B25675C4182J840	MKK440-D-18.8-04	3x 103.0	440	18.8	24.7 [2]	22.6	29.7 [1]	100 x 207	1.9	B	6
B25675C4202J040	MKK440-D-20.0-04	3x 109.6	440	20.0	26.2 [1]	24.0	31.5 [1]	100 x 207	1.9	B	6
B25675C4252J040	MKK440-D-25.0-04	3x 137.0	440	25.0	32.8 [1]	30.0	39.4 [1]	116 x 192	2.4	B	4
B25675C4282J140	MKK440-D-28.1-04	3x 154.0	440	28.1	36.9 [1]	-	-	116 x 207	2.6	B	4
B25675C4302J040	MKK440-D-30.0-04	3x 164.4	440	30.0	39.4 [1]	-	-	125 x 192	2.8	B	4
B25675C4332J140	MKK440-D-33.1-04	3x 181.4	440	33.1	43.4 [1]	-	-	116 x 224	2.8	B	4
B25675C4402J040	MKK440-D-40.0-04	3x 219.2	440	40.0	52.5 [1]	48.0	63.0 [1]	136 x 217	3.7	F	4
B25675C4502J040	MKK440-D-50.0-04	3x 274.0	440	50.0	65.6 [1]	60.0	78.7 [1]	136 x 279	4.5	F	2
B25675C4562J040	MKK440-D-56.0-04	3x 306.9	440	56.0	73.5 [1]	-	-	136 x 312	5.0	F	2
B25675C4602J040	MKK440-D-60.0-04	3x 328.8	440	60.0	78.7 [1]	-	-	136 x 312	5.0	F	2
Rated voltage 480 V AC, delta connection											
B25675C4052J080	MKK480-D-5.0-04	3x 23.0	480	5.0	6.0 [5]	6.0	7.2 [2]	75 x 164	0.9	A	6
B25675C4062J380	MKK480-D-6.3-04	3x 29.0	480	6.3	7.6 [5]	7.6	9.1 [2]	75 x 164	0.9	A	6
B25675C4072J580	MKK480-D-7.5-04	3x 34.5	480	7.5	9.0 [5]	9.0	10.8 [2]	75 x 200	1.1	A	6
B25675C4082J380	MKK480-D-8.3-04	3x 38.2	480	8.3	10.0 [5]	10.0	12.0 [2]	75 x 200	1.1	A	6
B25675C4102J480	MKK480-D-10.4-04	3x 47.9	480	10.4	12.5 [5]	12.5	15.0 [2]	75 x 200	1.1	A	6
B25675C4112J080	MKK480-D-11.0-04	3x 50.7	480	11.0	13.2 [5]	13.2	15.9 [2]	85 x 200	1.3	A	9
B25675C4122J580	MKK480-D-12.5-04	3x 57.6	480	12.5	15.0 [4]	15.0	18.0 [1]	85 x 200	1.3	A	9
B25675C4132J880	MKK480-D-13.8-04	3x 63.5	480	13.8	16.6 [4]	16.6	20.0 [1]	85 x 200	1.3	A	9
B25675C4152J080	MKK480-D-15.0-04	3x 69.1	480	15.0	18.0 [3]	18.0	21.7 [1]	100 x 207	1.9	B	6
B25675C4162J780	MKK480-D-16.7-04	3x 76.9	480	16.7	20.1 [2]	20.0	24.1 [1]	100 x 207	1.9	B	6
B25675C4202J080	MKK480-D-20.0-04	3x 92.1	480	20.0	24.1 [2]	24.0	28.9 [1]	100 x 207	1.9	B	6
B25675C4202J880	MKK480-D-20.8-04	3x 95.8	480	20.8	25.0 [1]	25.0	30.1 [1]	116 x 207	2.6	B	4
B25675C4222J080	MKK480-D-22.0-04	3x 101.3	480	22.0	26.5 [1]	26.4	31.8 [1]	116 x 207	2.6	B	4
B25675C4252J080	MKK480-D-25.0-04	3x 115.1	480	25.0	30.1 [1]	30.0	36.1 [1]	116 x 192	2.4	B	4
B25675C4282J180	MKK480-D-28.1-04	3x 129.4	480	28.1	33.8 [1]	-	-	116 x 207	2.6	B	4

Ordering code	Series/type	Nominal capacitance C_N	Nominal voltage V_N	Output & Nominal current at 50 Hz I_N		Output & Nominal current at 60 Hz I_N		Dimensions d × h	Weight approx.	Terminal type	PU* pcs.
		µF	V	kvar	A	kvar	A	mm	kg		
Rated voltage 480 VAC, delta connection											
B25675C4302J080	MKK480-D-30.0-04	3x 138.1	480	30.0	36.1 [1]	-	-	125 x 192	2.8	B	4
B25675C4312J080	MKK480-D-31.0-04	3x 142.7	480	31.0	37.3 [1]	-	-	125 x 192	2.8	B	4
B25675C4332J080	MKK480-D-33.0-04	3x 154.0	480	33.0	39.7 [1]	-	-	116 x 224	2.8	B	4
B25675C4402J080	MKK480-D-40.0-04	3x 184.2	480	40.0	48.1 [1]	48.0	57.7 [1]	136 x 217	3.7	F	4
B25675C4502J080	MKK480-D-50.0-04	3x 230.2	480	50.0	60.1 [1]	60.0	72.2 [1]	136 x 279	4.5	F	2
B25675C4562J080	MKK480-D-56.0-04	3x 257.9	480	56.0	67.4 [1]	-	-	136 x 312	5.0	F	2
B25675C4602J080	MKK480-D-60.0-04	3x 276.3	480	60.0	72.2 [1]	-	-	136 x 312	5.0	F	2
Rated voltage 525 VAC, delta connection											
B25675C5052J025	MKK525-D-5.0-04	3x 19.2	525	5.0	5.5 [5]	6.0	6.6 [2]	75 x 164	0.9	A	6
B25675C5062J325	MKK525-D-6.3-04	3x 24.2	525	6.3	6.9 [5]	7.6	8.4 [2]	75 x 164	0.9	A	6
B25675C5072J525	MKK525-D-7.5-04	3x 28.9	525	7.5	8.2 [5]	9.0	9.9 [2]	75 x 185	1.0	A	6
B25675C5082J325	MKK525-D-8.3-04	3x 31.9	525	8.3	9.1 [5]	10.0	11.0 [2]	75 x 200	1.1	A	6
B25675C5102J425	MKK525-D-10.4-04	3x 40.0	525	10.4	11.4 [5]	12.5	13.7 [2]	85 x 185	1.2	A	9
B25675C5122J525	MKK525-D-12.5-04	3x 48.1	525	12.5	13.7 [5]	15.0	16.5 [2]	85 x 200	1.3	A	9
B25675C5132J225	MKK525-D-13.2-04	3x 50.8	525	13.2	14.5 [5]	15.8	17.4 [2]	85 x 200	1.3	A	9
B25675C5152J025	MKK525-D-15.0-04	3x 57.7	525	15.0	16.5 [4]	18.0	19.8 [1]	85 x 218	1.5	A	4
B25675C5162J725	MKK525-D-16.7-04	3x 64.3	525	16.7	18.4 [3]	20.0	22.0 [1]	100 x 207	1.9	B	6
B25675C5182J425	MKK525-D-18.4-04	3x 70.8	525	18.4	20.2 [2]	22.1	24.3 [1]	100 x 207	2.0	B	6
B25675C5202J025	MKK525-D-20.0-04	3x 77.0	525	20.0	22.0 [2]	24.0	26.4 [1]	100 x 224	2.1	B	6
B25675C5202J825	MKK525-D-20.8-04	3x 80.1	525	20.8	22.9 [2]	25.0	27.5 [1]	100 x 224	2.1	B	6
B25675C5252J025	MKK525-D-25.0-04	3x 96.2	525	25.0	27.5 [1]	30.0	33.0 [1]	116 x 207	2.6	B	4
B25675C5262J525	MKK525-D-26.5-04	3x 102.0	525	26.5	29.1 [1]	31.8	35.0 [1]	116 x 207	2.6	B	4
B25675C5282J125	MKK525-D-28.1-04	3x 108.2	525	28.1	30.9 [1]	-	-	125 x 192	2.8	B	4
B25675C5302J025	MKK525-D-30.0-04	3x 115.5	525	30.0	33.0 [1]	-	-	125 x 207	3.0	B	4
B25675C5332J125	MKK525-D-33.1-04	3x 127.4	525	33.1	36.4 [1]	-	-	136 x 192	3.3	B	4
B25675C5342J425	MKK525-D-34.4-04	3x 132.4	525	34.4	37.8 [1]	-	-	136 x 192	3.3	B	4
B25675C5372J125	MKK525-D-37.1-04	3x 142.8	525	37.1	40.8 [1]	-	-	136 x 224	3.6	B	4
B25675C5402J025	MKK525-D-40.0-04	3x 154.0	525	40.0	44.0 [1]	48.0	52.8 [1]	136 x 233	3.7	F	4
B25675C5502J025	MKK525-D-50.0-04	3x 192.5	525	50.0	55.0 [1]	60.0	66.0 [1]	136 x 312	5.0	F	2
B25675C5602J025	MKK525-D-60.0-04	3x 230.9	525	60.0	66.0 [1]	-	-	136 x 351	5.7	F	2
Rated voltage 600 VAC, delta connection											
B25675C6052J300	MKK600-D-5.3-04	3x 15.6	600	5.3	5.1 [5]	6.4	6.2 [2]	75 x 185	1.0	C	6
B25675C6062J200	MKK600-D-6.2-04	3x 18.3	600	6.2	6.0 [5]	7.4	7.1 [2]	75 x 185	1.0	C	6
B25675C6062J900	MKK600-D-6.9-04	3x 20.3	600	6.9	6.6 [5]	8.3	8.0 [2]	75 x 200	1.1	C	6
B25675C6082J300	MKK600-D-8.3-04	3x 24.5	600	8.3	8.0 [4]	10.0	9.6 [1]	75 x 218	1.1	C	9
B25675C6102J400	MKK600-D-10.4-04	3x 30.6	600	10.4	10.0 [4]	12.5	12.0 [1]	85 x 200	1.3	C	9
B25675C6122J500	MKK600-D-12.5-04	3x 36.8	600	12.5	12.0 [4]	15.0	14.4 [1]	100 x 192	1.8	D	6
B25675C6132J900	MKK600-D-13.9-04	3x 41.0	600	13.9	13.4 [4]	16.7	16.1 [1]	100 x 207	1.9	D	6
B25675C6142J600	MKK600-D-14.6-04	3x 43.0	600	14.6	14.0 [4]	17.5	16.8 [1]	100 x 207	1.9	D	6
B25675C6162J700	MKK600-D-16.7-04	3x 49.2	600	16.7	16.1 [3]	20.0	19.2 [1]	100 x 224	2.1	D	6
B25675C6202J000	MKK600-D-20.0-04	3x 58.9	600	20.0	19.2 [2]	24.0	23.1 [1]	116 x 207	2.6	D	4

Ordering code	Series/type	Nominal capacitance C_N	Nominal voltage V_N	Output & Nominal current at 50 Hz I_N		Output & Nominal current at 60 Hz I_N		Dimensions d × h	Weight approx.	Terminal type	PU* pcs.
		µF	V	kvar	A	kvar	A	mm	kg		
Rated voltage 600 V AC, delta connection											
B25675C6202J800	MKK600-D-20.8-04	3x 61.3	600	20.8	20.0 [2]	25.0	24.1 [1]	116 x 207	2.6	D	4
B25675C6252J000	MKK600-D-25.0-04	3x 73.7	600	25.0	24.1 [1]	30.0	28.9 [1]	125 x 207	3.0	D	4
B25675C6282J000	MKK600-D-28.0-04	3x 82.5	600	28.0	26.9 [1]	-	-	136 x 192	3.3	D	4
B25675C6302J000	MKK600-D-30.0-04	3x 88.4	600	30.0	28.9 [1]	-	-	136 x 207	3.6	D	4
Rated voltage 690 V AC, delta connection											
B25675C6052J390	MKK690-D-5.3-04	3 x 11.8	690	5.3	4.4 [5]	6.4	5.4 [2]	75x185	1.0	C	6
B25675C6062J290	MKK690-D-6.2-04	3 x 13.8	690	6.2	5.2 [5]	7.4	6.2 [2]	75x200	1.1	C	6
B25675C6062J990	MKK690-D-6.9-04	3 x 15.4	690	6.9	5.8 [5]	8.3	6.9 [2]	75x200	1.1	C	6
B25675C6082J390	MKK690-D-8.3-04	3 x 18.5	690	8.3	6.9 [5]	10.0	8.4 [2]	75x200	1.1	C	6
B25675C6102J490	MKK690-D-10.4-04	3 x 23.2	690	10.4	8.7 [4]	12.5	10.5 [1]	75x200	1.1	C	6
B25675C6122J590	MKK690-D-12.5-04	3 x 27.9	690	12.5	10.5 [4]	15.0	12.6 [1]	85x200	1.3	C	9
B25675C6132J990	MKK690-D-13.9-04	3 x 31.0	690	13.9	11.6 [4]	16.7	14.0 [1]	85x200	1.3	C	9
B25675C6142J690	MKK690-D-14.6-04	3 x 32.5	690	14.6	12.2 [4]	17.5	14.6 [1]	100x207	1.9	D	6
B25675C6162J790	MKK690-D-16.7-04	3 x 37.2	690	16.7	14.0 [4]	20.0	16.7 [1]	100x192	1.8	D	6
B25675C6202J090	MKK690-D-20.0-04	3 x 44.6	690	20.0	16.7 [3]	24.0	20.1 [1]	100x207	1.9	D	6
B25675C6202J890	MKK690-D-20.8-04	3 x 46.3	690	20.8	17.4 [3]	25.0	20.9 [1]	100x224	2.1	D	6
B25675C6252J090	MKK690-D-25.0-04	3 x 55.7	690	25.0	20.9 [2]	30.0	25.1 [1]	116x192	2.4	D	4
B25675C6282J090	MKK690-D-28.0-04	3 x 62.4	690	28.0	23.4 [1]	-	-	116x207	2.6	D	4
B25675C6302J090	MKK690-D-30.0-04	3 x 66.8	690	30.0	25.1 [1]	-	-	125x192	2.8	D	4
Rated voltage 800 V AC, delta connection											
B25675C8152J000	MKK800-D-15.0-04	3 x 24.9	800	15.0	10.8 [3]	18.0	13.0 [1]	100x224	2.1	E	6
B25675C8202J000	MKK800-D-20.0-04	3 x 33.2	800	20.0	14.4 [2]	24.0	17.3 [1]	116x224	2.8	E	4
B25675C8252J000	MKK800-D-25.0-04	3 x 41.4	800	25.0	18.0 [1]	30.0	21.7 [1]	116x224	2.8	E	4
B25675C8282J000	MKK800-D-28.0-04	3 x 46.4	800	28.0	20.2 [1]	-	-	116x248	3.1	E	4
B25675C8302J000	MKK800-D-30.0-04	3 x 49.7	800	30.0	21.7 [1]	-	-	116x248	3.1	E	4
Rated voltage 900 V AC, delta connection											
B25675C9152J000	MKK900-D-15.0-04	3 x 19.6	900	15.0	9.6 [3]	18.0	11.5 [1]	100x224	2.1	E	6
B25675C9202J000	MKK900-D-20.0-04	3 x 26.2	900	20.0	12.8 [2]	24.0	15.4 [1]	116x224	2.8	E	4
B25675C9252J000	MKK900-D-25.0-04	3 x 32.7	900	25.0	16.0 [1]	30.0	19.2 [1]	116x224	2.8	E	4
B25675C9302J000	MKK900-D-30.0-04	3 x 39.3	900	30.0	19.2 [1]	-	-	116x248	3.1	E	4

[1].....max. current 1.6 times I_N
[2].....max. current 1.7 times I_N
[3].....max. current 1.8 times I_N
[4].....max. current 1.9 times I_N
[5].....max. current 2.0 times I_N

Ordering code	Series/type	Nominal capacitance C_N	Nominal voltage V_N	Output & Nominal current at 50 Hz I_N		Output & Nominal current at 60 Hz I_N		Dimensions d × h	Weight approx.	Terminal type	PU* pcs.
		µF	V	kvar	A	kvar	A	mm	kg		
Rated voltage 1000 V AC, delta connection											
B25675C0152J000	MKK1000-D-15.0-04	3 x 15.9	1000	15.0	8.7 [4]	18.0	10.4 [1]	100x224	2.1	E	6
B25675C0202J000	MKK1000-D-20.0-04	3 x 21.2	1000	20.0	11.5 [2]	24.0	13.9 [1]	116x224	2.8	E	4
B25675C0252J000	MKK1000-D-25.0-04	3 x 26.5	1000	25.0	14.4 [1]	30.0	17.3 [1]	116x248	3.1	E	4
B25675C0302J000	MKK1000-D-30.0-04	3 x 31.8	1000	30.0	17.3 [1]	-	-	116x282	3.5	E	2

[1]…..max. current 1.6 times I_N
[2]…..max. current 1.7 times I_N
[3]…..max. current 1.8 times I_N
[4]…..max. current 1.9 times I_N
[5]…..max. current 2.0 times I_N

Display of ordering codes for TDK Electronics products

The ordering code for one and the same product can be represented differently in data sheets, data books, other publications, on the company website, or in order-related documents such as shipping notes, order confirmations and product labels. **The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products**. Detailed information can be found on the Internet under www.tdk-electronics.tdk.com/orderingcodes.

Cautions and warnings

- In case of dents of more than 1 mm depth or any other mechanical damage, capacitors must not be used at all.
- This applies also in cases of oil leakages.
- To ensure the full functionality of the overpressure disconnector, elastic elements must not be hindered and a minimum space of 12 mm has to be kept above each capacitor.
- Do not handle the capacitor before it is discharged.
- Resonance cases must be avoided by appropriate application design in any case.
- Handle capacitors carefully, because they may still be charged even after disconnection due to faulty discharging devices.
- Protect the capacitor properly against over current and short circuit.
- Failure to follow cautions may result, worst case, in premature failures, bursting and fire.

Discharging

Capacitors must be discharged to a maximum of 10% of rated voltage before they are switched in again. This prevents an electric impulse discharge in the application, influences the capacitor's service life and protects against electric shock. The capacitor must be discharged to 75 V or less within 180 sec. There must be not any switch, fuse or any other disconnecting device in the circuit between the power capacitor and the discharging device. PhaseCap Energy-capacitors have a pre-mounted ceramic discharge module; alternatively discharge reactors are available from TDK. Discharge and short circuit capacitor before handling!

Service life expectancy

Electrical components do not have an unlimited service life expectancy; this applies to self-healing capacitors too. The maximum service life expectancy may vary depending on the application the capacitor is used in.

Safety

Electrical or mechanical misapplication of capacitors may be hazardous. Personal injury or property damage may result from bursting of the capacitor or from expulsion of oil or melted material due to mechanical disruption of the capacitor.

- Ensure good, effective grounding for capacitor enclosures.
- Provide means of disconnecting and insulating a faulty component/bank.
- The terminals of capacitors, connected bus bars and cables as well as other devices may also be energized.
- Follow good engineering practice.

Thermal load/over-temperature

After installation of the capacitor it is necessary to verify that maximum hot-spot temperature is not exceeded at extreme service conditions.

Overpressure disconnector

To ensure full functionality of an overpressure disconnector, the following must be observed:

1. The elastic elements must not be hindered, i.e.
- Connecting lines must be flexible leads (cables).
- There must be sufficient space (min. 12 mm) for expansion above the connections. This will enable a longitudinal extension of the can to secure the overpressure disconnector work.
- Folding beads must not be retained by clamps.

2. The maximum allowed fault current of 10000 A in accordance with UL 810 standard must be assured by the application.

3. Stress parameters of the capacitor must be within the IEC60831 specification.

Overcurrent and short circuit protection

- Use HRC fuses or MCCBs for short circuit protection. Short circuit protection and connecting cables should be selected so that 1.5 times the maximum total RMS capacitor current can be permanently handled.
- HRC fuses do not protect a capacitor against overload – they are only for short circuit protection.
- The HRC fuse rating should be 1.6 to 1.8 the maximum total RMS capacitor current.
- Do not use HRC fuses/Switch Fuse Unit to disconnect capacitors (risk of arcing).
- Use thermal magnetic over current relays for overload protection.

Mechanical protection

The capacitor has to be installed in a way that mechanical damages and dents in the aluminum can are avoided.

Grounding

The threaded bottom stud of the capacitor has to be used for grounding. In case grounding is done via metal chassis that the capacitor is mounted to, the layer of varnish beneath the washer and nut should be removed. The maximum tightening torque is 10 Nm for M12 stud.

Maintenance

- Check tightness of the connections/terminals periodically.
- Take current reading twice a year and compare with nominal current. Use a harmonic analyser or true effective RMS-meter.
- In case of current above the nominal current check your application for modifications.
- If a significant increase in the amount of non-linear loads has been detected, then a consultant has to be called in for a harmonic study.
- In case of the presence of harmonics installation of a de-tuned capacitor bank (reactors) must be considered.
- Check the temperature of capacitors directly after operation for a longer period, but make sure that the capacitors have been switched off. In case of excessive temperature of individual capacitors, it is recommended to replace these capacitors, as this should be an indication for loss factor increase, which is a sign for reaching end of life.

Storage and operating conditions

Do not use or store capacitors in corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. In dusty environments regular maintenance and cleaning especially of the terminals is required to avoid conductive path between phases and/or phases and ground.

Note

For detailed information about PFC capacitors and cautions, refer to the latest version of TDK PFC Product Profile.

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application.** As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.
2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified.** In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
3. **The warnings, cautions and product-specific notes must be observed.**
4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.tdk-electronics.tdk.com/material). Should you have any more detailed questions, please contact our sales offices.
5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.

   We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.
6. Unless otherwise agreed in individual contracts, **all orders are subject to our General Terms and Conditions of Supply.**
7. **Our manufacturing sites serving the automotive business apply the IATF 16949 standard.** The IATF certifications confirm our compliance with requirements regarding the quality management system in the automotive industry. Referring to customer requirements and customer specific requirements (“CSR”) TDK always has and will continue to have the policy of respecting individual agreements. Even if IATF 16949 may appear to support the acceptance of unilateral requirements, we hereby like to emphasize that **only requirements mutually agreed upon can and will be implemented in our Quality Management System.** For clarification purposes we like to point out that obligations from IATF 16949 shall only become legally binding if individually agreed upon.

Important notes

8. The trade names EPCOS, CarXield, CeraCharge, CeraDiode, CeraLink, CeraPad, CeraPlas, CSMP, CTVS, DeltaCap, DigiSiMic, FilterCap, FormFit, InsuGate, LeaXield, MediPlas, MiniBlue, MiniCell, MKD, MKK, ModCap, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PiezoBrush, PlasmaBrush, PowerHap, PQSine, PQvar, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, SurfIND, ThermoFuse, WindCap, XieldCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.tdk-electronics.tdk.com/trademarks.

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