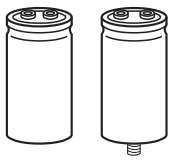
Aluminum electrolytic capacitors

Capacitors with screw terminals – accessories

Series/Type: **B44020, B44030**

Date: December 2019

Capacitors with screw terminals – accessories

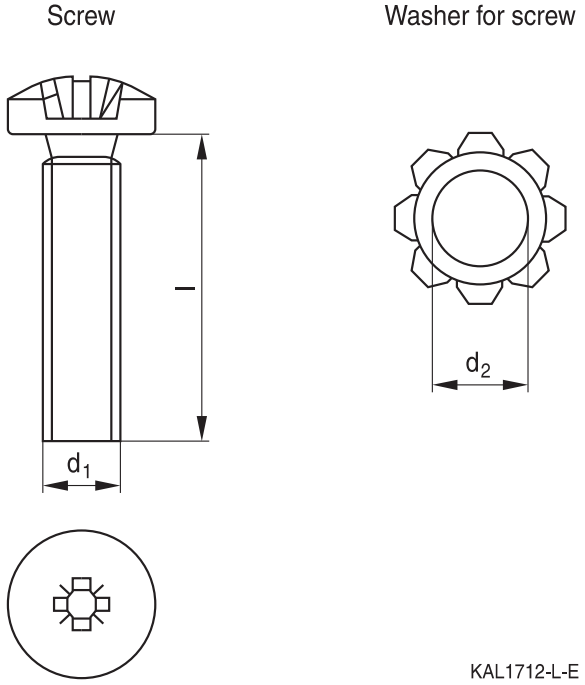


Capacitors with screw terminals – accessories

Basic accessories

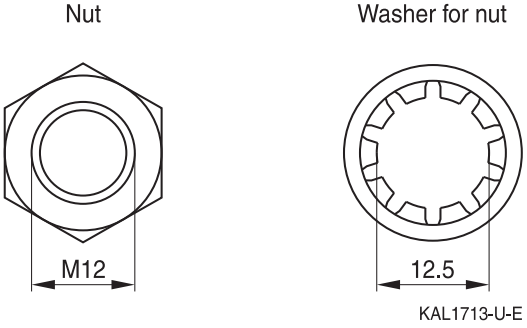
One packing unit contains accessories for 16 capacitors.

For terminals

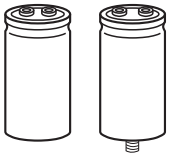


Thread d1	d2 mm	Toothed washers	Screws	Maximum torque	Ordering code
M5	5.3	A 5.1 DIN 6797	DIN 7985 / ISO 7045-M5 x 10-5.6-Z l = 10 mm	2.5 Nm thread depth t ≥ 8 mm	B44020J0500B000
M6	6.4	A 6.4 DIN 6797	DIN 7985 / ISO 7045-M6 x 12-5.6-Z l = 12 mm	4.0 Nm thread depth t ≥ 9.5 mm	B44020J0600B000

For threaded stud

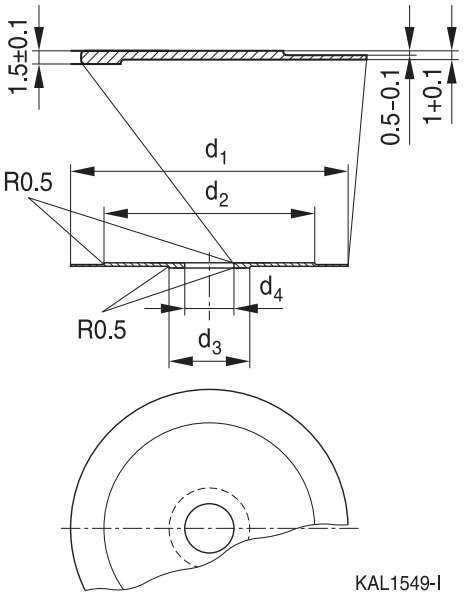


Thread	For terminal	Toothed washers	Nuts	Maximum torque	Ordering code
M12	M5	J 12.5 DIN 6797	Hex nut BM 12 DIN 439	10 Nm	B44020J0500B012
M12	M6	J 12.5 DIN 6797	Hex nut BM 12 DIN 439	10 Nm	B44020J0600B012



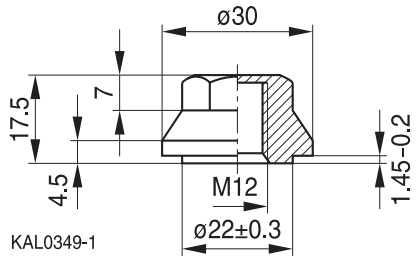
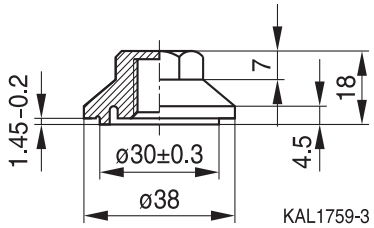
Additional accessories for capacitors with mounting stud on capacitor base

Insulating washer made of hostalen

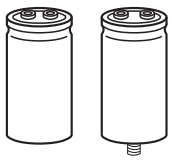
Capacitor diameter	Thread size	Dimensional drawing	Diameter d mm	Ordering code
51.6 mm	M12		d_1 –0.5 = 51 d_2 –0.5 = 31 d_3 ±0.3 = 21.5 d_4 ±0.2 = 13	B44020B0006B051
64.2 mm	M12		d_1 –0.5 = 63.5 d_2 –0.5 = 43.5 d_3 ±0.3 = 21.5 d_4 ±0.2 = 13	B44020B0006B064
76.9 mm	M12		d_1 –0.5 = 76 d_2 –0.5 = 56 d_3 ±0.3 = 21.5 d_4 ±0.2 = 13	B44020B0006B076
90.0 mm	M12		d_1 –0.5 = 89 d_2 –0.5 = 69 d_3 ±0.3 = 21.5 d_4 ±0.2 = 13	B44020B0006B090

Only for capacitors with threaded stud and without insulated base

Reinforced nylon cap nut

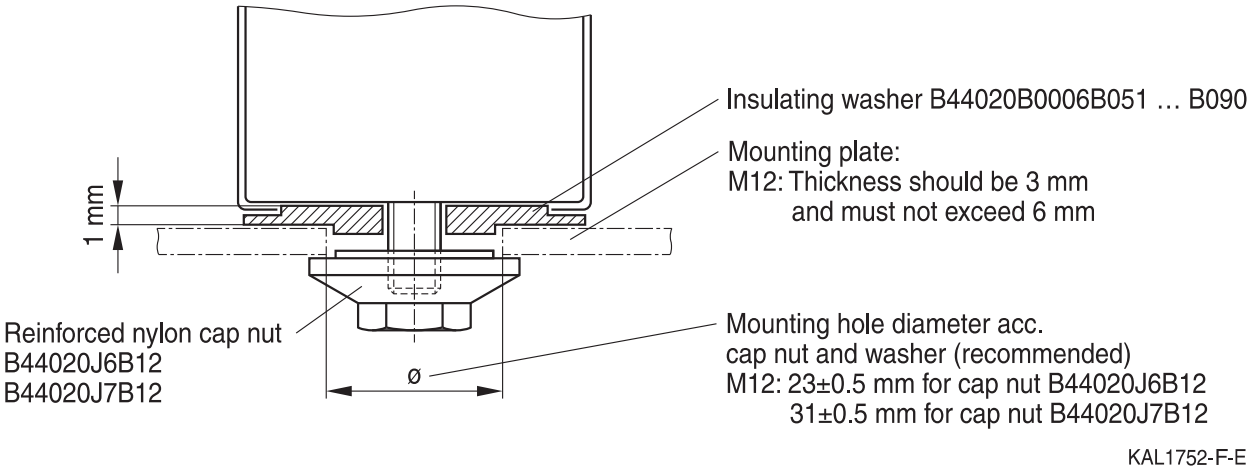
Capacitor diameter	Thread size	Dimensional drawing	Ordering code
> 40 mm	M12[1] width across flats 19 mm		B44020J0006B012
			B44020J0007B012

1) Maximum torque M12: 7.0 Nm for mounting thread length ≥ 13 mm; 5.0 Nm for mounting thread length ≥ 10 mm



Mounting instructions

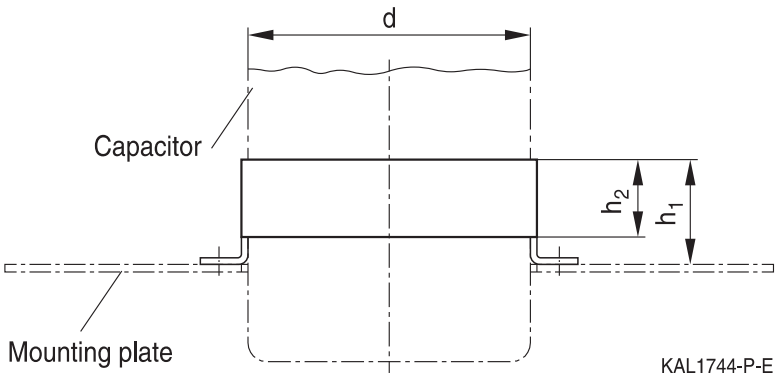
Insulated mounting with washer and cap nut (for capacitors with threaded stud and without insulated base):



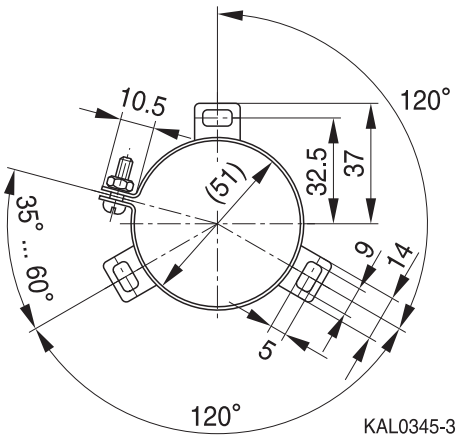
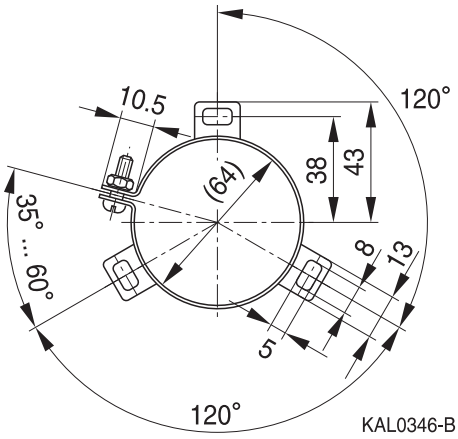
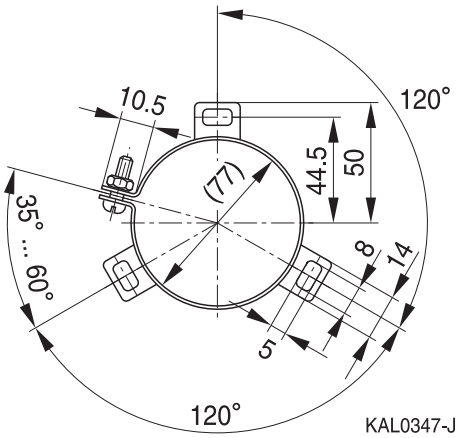
Mounting stud has the same potential as the negative terminal.
Attention must be paid on any relevant regulations (e.g. VDE, BSA or UL).

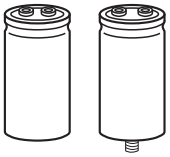
Ring clip mounting

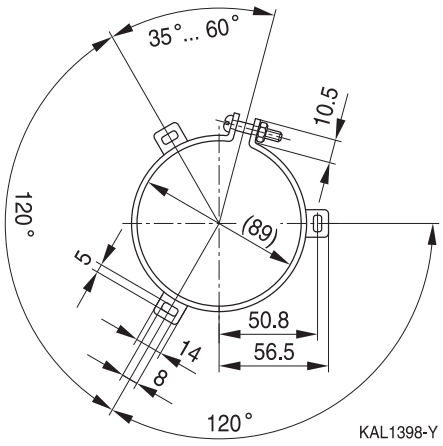
Ring clips are primarily used for upright mounting of screw terminal and photoflash capacitors. The ring clips are corrosion protected and are RoHS-compatible.

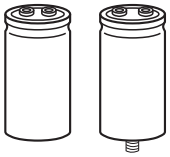


It is recommended to insert an additional insulating strip between capacitor and ring clip to avoid any risk of damage due to edges from the clip. The strip is included in delivery. For ordering code, see the following table. Attention must be paid to any relevant regulations (e.g. VDE, BSA or UL).

d	h_1 mm	h_2	Ring clip version	Ordering code with insulating strip
51.6	22	15		B44030J0051B000 (insulating strip length: 325 mm)
64.3	29	19		B44030J0064B000 (insulating strip length: 420 mm)
76.9	29	19		B44030J0075B000 (insulating strip length: 495 mm)



d	h_1 mm	h_2	Ring clip version	Ordering code with insulating strip
90.0	29	19		B44030J0090B000 (insulating strip length: 585 mm)

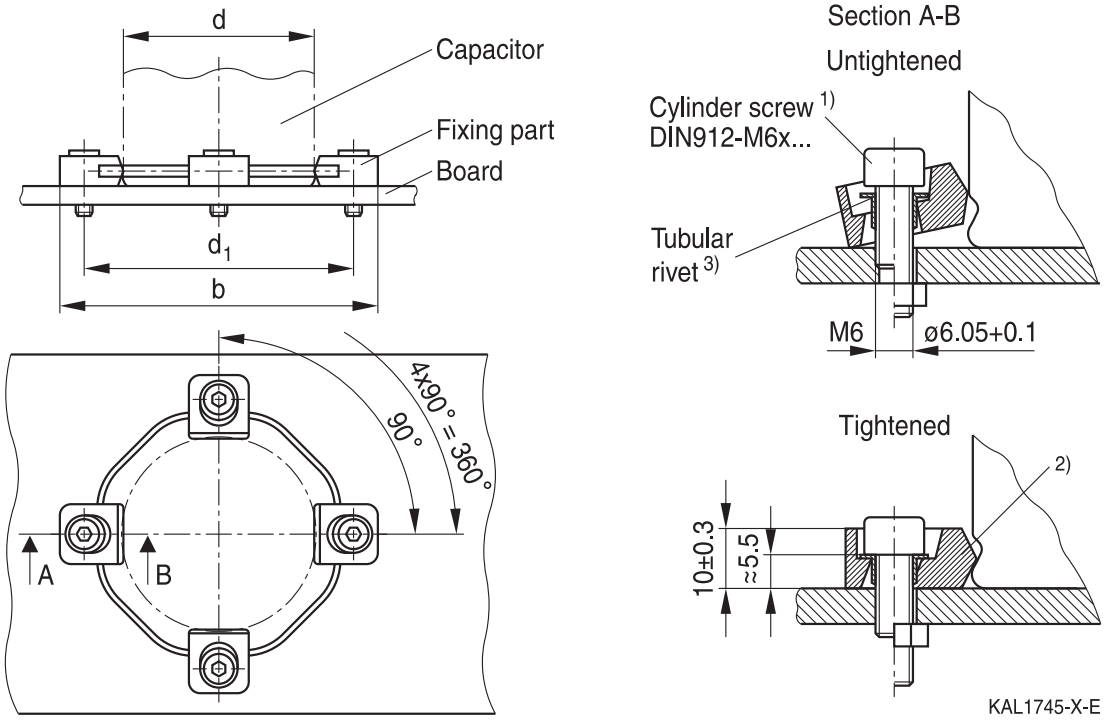


Clamp mounting

Screw terminal capacitors without threaded stud and with a diameter ≥ 64.3 mm can also be mounted with ring clamps. Clamp mounting offers the following advantages:

- Optimum heat transfer between capacitor base and board due to pressure contact
- High vibration resistance
- Electrically insulated material

Dimensional drawing



1) Length of screw depends on application.

2) The screws have to be tightened uniformly and crosswise until the fixing part rests flatly on the board.

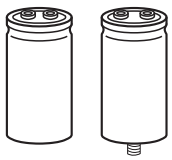
3) Tubular rivets included in delivery package.

General hints for mounting: If required, the four fixation parts can be cut out from the common carrier ring and mounted separately.

Dimensions and ordering codes

Capacitor diameter d	d_1 ±0.2 mm	b mm	Ordering code
64.3 mm	87	104	B44030A0165B000
76.9 mm	99	116	B44030A0175B000
90.0 mm	112	130	B44030A0190B000

Screws are not included in the delivery package.



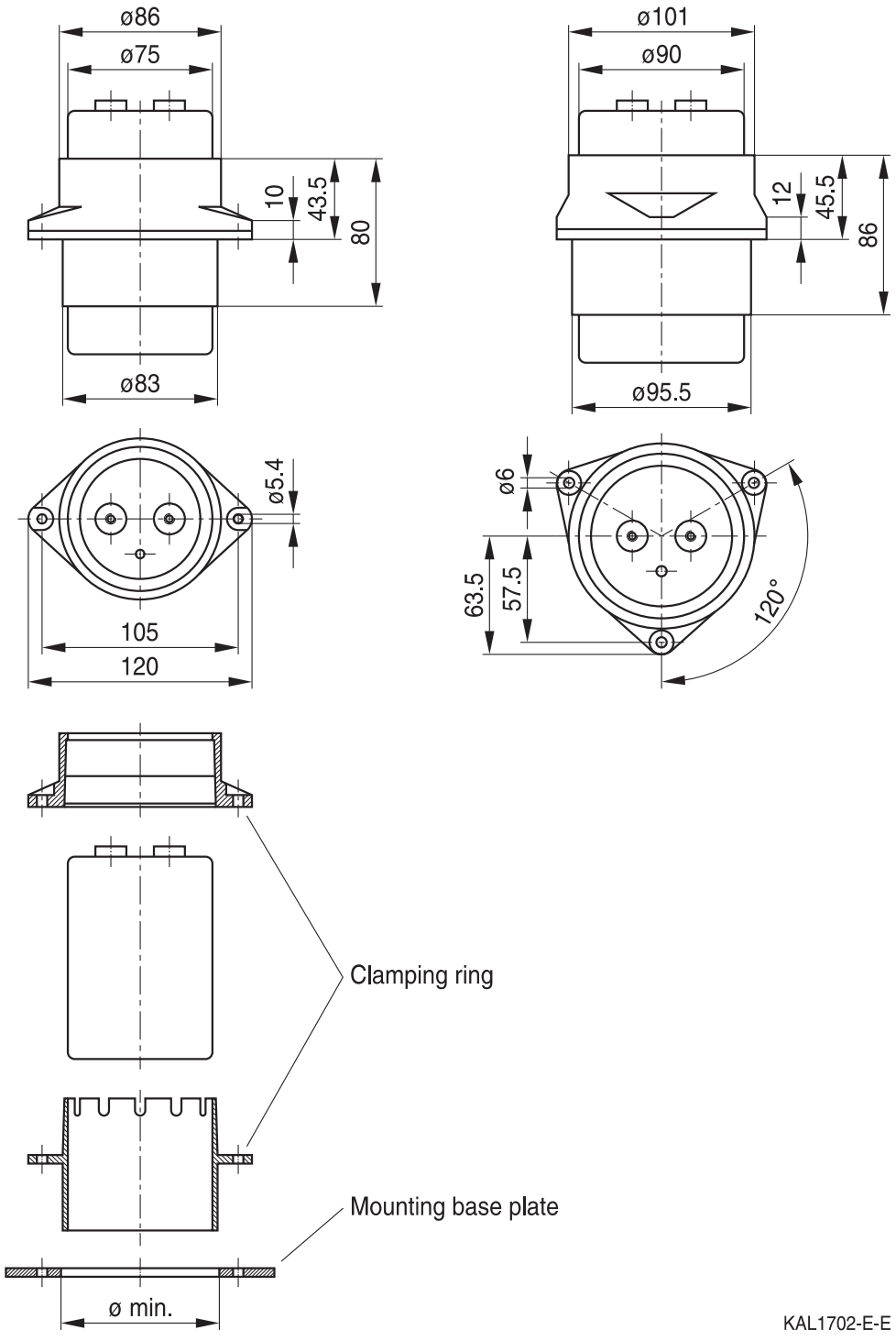
Mounting set (ring clamps)

- Protects the capacitor against tilt and the terminals from mechanical stress
- Fits for different capacitor length
- Electrically insulated clamping material

Dimensions and ordering codes

Capacitor diameter d	$\varnothing_{min}$	Ordering code
76.9 mm	84 mm	B44030A0375B000
90.0 mm	96.5 mm	B44030A0390B000

Dimensional drawing



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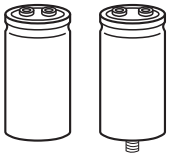


Cautions and warnings

Personal safety

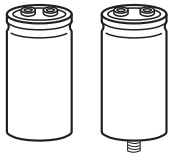
The electrolytes used have been optimized both with a view to the intended application and with regard to health and environmental compatibility. They do not contain any solvents that are detrimental to health, e.g. dimethyl formamide (DMF) or dimethyl acetamide (DMAC). Furthermore, some of the high-voltage electrolytes used are self-extinguishing.

As far as possible, we do not use any dangerous chemicals or compounds to produce operating electrolytes, although in exceptional cases, such materials must be used in order to achieve specific physical and electrical properties because no alternative materials are currently known. We do, however, restrict the amount of dangerous materials used in our products to an absolute minimum.

Materials and chemicals used in our aluminum electrolytic capacitors are continuously adapted in compliance with the TDK Electronics Corporate Environmental Policy and the latest EU regulations and guidelines such as RoHS, REACH/SVHC, GADSL, and ELV.

MDS (Material Data Sheets) are available on our website for all types listed in the data book.
MDS for customer specific capacitors are available upon request.
MSDS (Material Safety Data Sheets) are available for our electrolytes upon request.

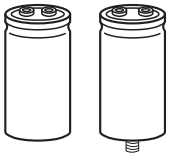
Nevertheless, the following rules should be observed when handling aluminum electrolytic capacitors: No electrolyte should come into contact with eyes or skin. If electrolyte does come into contact with the skin, wash the affected areas immediately with running water. If the eyes are affected, rinse them for 10 minutes with plenty of water. If symptoms persist, seek medical treatment. Avoid inhaling electrolyte vapor or mists. Workplaces and other affected areas should be well ventilated. Clothing that has been contaminated by electrolyte must be changed and rinsed in water.



Product safety

The table below summarizes the safety instructions that must be observed without fail. A detailed description can be found in the relevant sections of chapter "General technical information".

Topic	Safety information	Reference chapter "General technical information"
Polarity	Make sure that polar capacitors are connected with the right polarity.	1 "Basic construction of aluminum electrolytic capacitors"
Reverse voltage	Voltages of opposite polarity should be prevented by connecting a diode.	3.1.6 "Reverse voltage"
Mounting position of screw-terminal capacitors	Screw terminal capacitors must not be mounted with terminals facing down unless otherwise specified.	11.1. "Mounting positions of capacitors with screw terminals"
Robustness of terminals	The following maximum tightening torques must not be exceeded when connecting screw terminals: M5: 2.5 Nm M6: 4.0 Nm	11.3 "Mounting torques"
Mounting of single-ended capacitors	The internal structure of single-ended capacitors might be damaged if excessive force is applied to the lead wires. Avoid any compressive, tensile or flexural stress. Do not move the capacitor after soldering to PC board. Do not pick up the PC board by the soldered capacitor. Do not insert the capacitor on the PC board with a hole space different to the lead space specified.	11.4 "Mounting considerations for single-ended capacitors"
Soldering	Do not exceed the specified time or temperature limits during soldering.	11.5 "Soldering"
Soldering, cleaning agents	Do not allow halogenated hydrocarbons to come into contact with aluminum electrolytic capacitors.	11.6 "Cleaning agents"
Upper category temperature	Do not exceed the upper category temperature.	7.2 "Maximum permissible operating temperature"
Passive flammability	Avoid external energy, e.g. fire.	8.1 "Passive flammability"



B44020, B44030

Capacitors with screw terminals – accessories

Topic	Safety information	Reference chapter "General technical information"
Active flammability	Avoid overload of the capacitors.	8.2 "Active flammability"
Maintenance	Make periodic inspections of the capacitors. Before the inspection, make sure that the power supply is turned off and carefully discharge the capacitors. Do not apply excessive mechanical stress to the capacitor terminals when mounting.	10 "Maintenance"
Storage	Do not store capacitors at high temperatures or high humidity. Capacitors should be stored at +5 to +35 °C and a relative humidity of ≤ 75%.	7.3 "Shelf life and storage conditions"
		Reference chapter "Capacitors with screw terminals"
Breakdown strength of insulating sleeves	Do not damage the insulating sleeve, especially when ring clips are used for mounting.	"Screw terminals – accessories"

Display of ordering codes for TDK Electronics products

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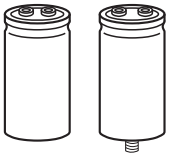
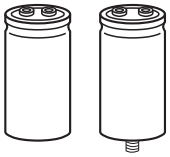


Symbols and terms

Symbol	English	German
C	Capacitance	Kapazität
C_R	Rated capacitance	Nennkapazität
C_S	Series capacitance	Serienkapazität
$C_{S,T}$	Series capacitance at temperature T	Serienkapazität bei Temperatur T
C_f	Capacitance at frequency f	Kapazität bei Frequenz f
d	Case diameter, nominal dimension	Gehäusedurchmesser, Nennmaß
d_{max}	Maximum case diameter	Maximaler Gehäusedurchmesser
ESL	Self-inductance	Eigeninduktivität
ESR	Equivalent series resistance	Ersatzserienwiderstand
ESR_f	Equivalent series resistance at frequency f	Ersatzserienwiderstand bei Frequenz f
ESR_T	Equivalent series resistance at temperature T	Ersatzserienwiderstand bei Temperatur T
f	Frequency	Frequenz
I	Current	Strom
I_{AC}	Alternating current (ripple current)	Wechselstrom
$I_{AC,RMS}$	Root-mean-square value of alternating current	Wechselstrom, Effektivwert
$I_{AC,f}$	Ripple current at frequency f	Wechselstrom bei Frequenz f
$I_{AC,max}$	Maximum permissible ripple current	Maximal zulässiger Wechselstrom
$I_{AC,R}$	Rated ripple current	Nennwechselstrom
I_{leak}	Leakage current	Reststrom
$I_{leak,op}$	Operating leakage current	Betriebsreststrom
l	Case length, nominal dimension	Gehäuselänge, Nennmaß
l_{max}	Maximum case length (without terminals and mounting stud)	Maximale Gehäuselänge (ohne Anschlüsse und Gewindebolzen)
R	Resistance	Widerstand
R_{ins}	Insulation resistance	Isolationswiderstand
R_{symm}	Balancing resistance	Symmetrierwiderstand
T	Temperature	Temperatur
ΔT	Temperature difference	Temperaturdifferenz
T_A	Ambient temperature	Umgebungstemperatur
T_C	Case temperature	Gehäusetemperatur
T_B	Capacitor base temperature	Temperatur des Gehäusebodens
t	Time	Zeit
Δt	Period	Zeitraum
t_b	Service life (operating hours)	Brauchbarkeitsdauer (Betriebszeit)



Symbol	English	German
V	Voltage	Spannung
V_F	Forming voltage	Formierspannung
V_{op}	Operating voltage	Betriebsspannung
V_R	Rated voltage, DC voltage	Nennspannung, Gleichspannung
V_S	Surge voltage	Spitzenspannung
X_C	Capacitive reactance	Kapazitiver Blindwiderstand
X_L	Inductive reactance	Induktiver Blindwiderstand
Z	Impedance	Scheinwiderstand
Z_T	Impedance at temperature T	Scheinwiderstand bei Temperatur T
tan δ	Dissipation factor	Verlustfaktor
λ	Failure rate	Ausfallrate
ε_0	Absolute permittivity	Elektrische Feldkonstante
ε_r	Relative permittivity	Dielektrizitätszahl
ω	Angular velocity; $2 \cdot \pi \cdot f$	Kreisfrequenz; $2 \cdot \pi \cdot f$

Note

All dimensions are given in mm.

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.
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3. **The warnings, cautions and product-specific notes must be observed.**
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Release 2018-10

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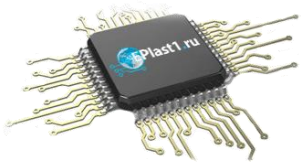
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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