Film Capacitors

Marking and ordering code system

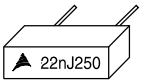
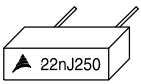
Date: July 2020

1 Capacitor markings

Depending on the capacitor size, the markings are positioned either on the side and/or the top of the component. The coded forms specified in IEC 60062:2004 are used to indicate the rated capacitance, capacitance tolerance and date of manufacture.

The lot number (production batch number) ensures unique identification of a particular capacitor and allows, together with the date of manufacture, exact assignment to the process data of the entire production run (traceability).

Marking examples
Boxed capacitors (without EMI suppression capacitors)

Style	Lead spacing	Marking example	Marking
MKT	5 mm	Version 1  KMK17394	Side stamping: Manufacturer's logo, C_R, tolerance, V_R
		Version 2  KMK0994-V-E	Side stamping: C_R, tolerance, V_R, manufacturer's logo, coded type "1", date of manufacture (year and month coded)
		Version 3  KMK0995-4-E	Top stamping: Manufacturer's logo, C_R, tolerance, V_R
	7.5 mm	Version 1  KMK0995-4-E	Top stamping: Manufacturer's logo, C_R, tolerance, V_R
		Version 2  KMK0994-V-E	Side stamping: C_R, tolerance, V_R, Manufacturer's logo, coded type "1", date of manufacture (year and month coded).

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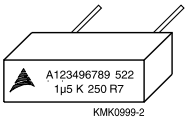
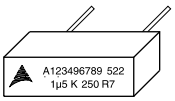
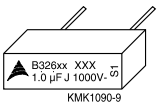
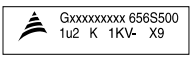
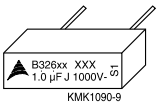
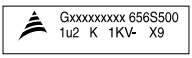
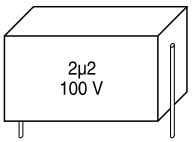
Style	Lead spacing	Marking example	Marking
MKT MKP	10 mm	 KMK0999-2	Manufacturer's logo *1st line:* Lot number (1 character, 9 digits), series number (film material is coded in the series number) *2nd line:* C_R, tolerance, V_R (DC or AC), date of manufacture (year and month coded)
MKT MKP MFP	15 ... 37.5 mm	Version 1  KMK0999-2	Manufacturer's logo *1st line:* Lot number (1 character, 9 digits), series number (film material is coded in the series number) *2nd line:* C_R, tolerance, V_R (DC or AC), date of manufacture (year and month coded)
		Version 2  KMK1090-9	Manufacturer's logo *1st line:* Series number, film material (MKP or MFP) *2nd line:* C_R, tolerance, V_R (DC or AC) *Vertical:* Date of manufacture (year and month coded)
		Version 3  KMK1735-0	Manufacturer's logo *1st line:* Lot number, series number *2nd line:* C_R, tolerance, V_R (DC or AC), date of manufacture (year and month coded)
MKP	52.5 mm	Version 1  KMK1090-9	Manufacturer's logo *1st line:* Series number, film material (MKP or MFP) *2nd line:* C_R, tolerance, V_R (DC or AC) *Vertical:* Date of manufacture (year and month coded)
		Version 2  KMK1735-0	Manufacturer's logo *1st line*: Lot number, series number *2nd line*: C_R, tolerance, V_R (DC), date of manufacture

SilverCap™ capacitors

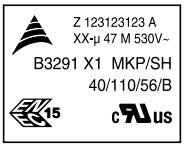
Style	Lead spacing	Marking example	Marking
MKT	7.5 ... 27.5 mm	 KMK1280-2	*1st line:* C_R *2nd line:* V_R

EMI suppression capacitors

X1-330 V AC:

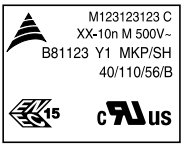
KMK1736-1

X1-530 VAC:



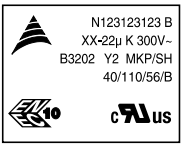
KMK1737-2

Y1-500 V AC:



KMK1557-M

Y2-300 V AC:



KMK1738-3

X2-305 V AC (B3292 C/D): For X2 EMI capacitors we distinguish between two different types of marking, depending on the capacitance.

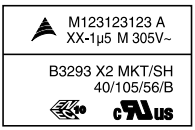
C ≤ 10 µF

KMK1541-3

C > 10 µF

KMK1542-2

X2-305 V AC (B3293 A/B):



KMK1318-E

X2-305 V AC (B3293 H/J):

KMK1582-Y

X2-350 V AC:

KMK1872-T

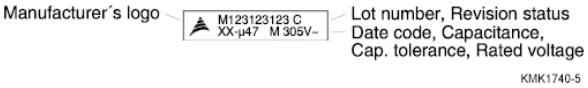
Marking and ordering code system

For all EMI capacitors:

If the capacitor is wide enough, the entire marking will be on the top. In this case, the stamping will contain the following information:

1st line: Manufacturer's logo, lot number, revision status
2nd line: Date code, capacitance, cap. tolerance, rated voltage
3rd line: Type number, interference suppression, sub class, style/self-healing
4th line: Climatic category
5th line: Marks of conformity

If the capacitor is not wide enough for the entire marking, the information in the marking will be split between the top and side. In this case, the following partial information will be found on the top:



Codes for rated capacitance

Rated capacitance	To IEC 60062	Short code
100 pF	100p	n1
150 pF	150p	n15
1.0 nF	1n0	1n
1.5 nF	1n5	
10 nF	10n	
100 nF	100n	µ1
150 nF	150n	µ15
1.0 µF	1µ0	1µ
1.5 µF	1µ5	
10 µF	10µ	
15 µF	15µ	

Codes for capacitance tolerance

Cap. tolerance	Code letter	Remark
–	A	Capacitance tolerances for which no code letter is defined can be indicated by an A. The meaning of code A must then be mutually specified in other documentation.
±2.5%	H	
±5%	J	
±10%	K	
±20%	M	

Marking and ordering code system

Codes for date of manufacture (to IEC 60062:2004)

Code for year				Code for month			
Year	Code letter	Year	Code letter	Month	Code numeral	Month	Code numeral/letter
2012	C	2018	K	January	1	July	7
2013	D	2019	L	February	2	August	8
2014	E	2020	M	March	3	September	9
2015	F	2021	N	April	4	October	O
2016	H	2022	P	May	5	November	N
2017	J	2023	R	June	6	December	D

E.g.: J5 ≙ 2017 May

Marking types

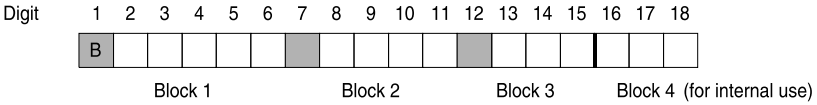
The capacitors may have either an ink-jet marking or a laser marking. The main advantage of laser marking is that it cannot be removed by solvents, which ensures the reliable identification of the capacitor. Moreover, because the laser marking process reduces the amount of chemicals used, it is an environmentally friendly marking solution.

2 Ordering code system

A component and the packing in which it is to be delivered are defined by the ordering code, which has 15 digits (plus 3 additional digits for internal use). For all capacitors the ordering codes are explicitly stated (together with the corresponding tolerance and/or packing variants) in the data sheets.

Should there be any doubt about the coding system, however, then it is better to order the capacitor using a plain text description (i.e. without a code).

Basic structure of the ordering code:



Digit	Meaning
1	B = Passive components
2, 3	32 = Metallized film capacitors, EMI suppression capacitors 81 = EMI suppression capacitors
4 ... 6	Type (block 1 is termed the "type number")
7	Revision status
8	Rated DC voltage, coded (not for EMI suppression capacitors)
9 ... 11	Rated capacitance (coding method for value in pF) Examples: Digit 9 10 11 B 3 2 6 5 2 A 3 1 5 4 K = 15 · 10 ^{4} pF = 150 nF
12	Code letter for capacitance tolerance
13 ... 15	Codes for lead and taping parameters (refer to respective data sheet).
16 ... 18	Internal use

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 and the website of EPCOS, 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.epcos.com/orderingcodes.