



EMI Suppression Capacitors (MKP)

B3202* Series

Series/Type: B32021, B32022, B32023, B32024, B32026

Date: March 2007

Version: 4

Typical applications

Y2 class for interference suppression
"Line to ground" applications.

Climatic

Maximum operating temperature of 110°C
Climatic category (IEC 60068-1): 40/110/56

Construction

Dielectric: Polypropylene (MKP)
Plastic case (UL 94 V-0)
Epoxy resin sealing (UL 94 V-0)

Features

Very small dimensions
Good self-healing properties
High voltage capability

Terminals

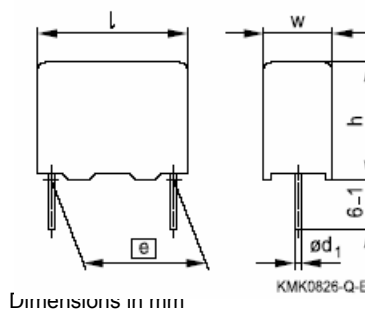
Parallel wire leads, lead-free tinned.
Standard lead lengths: 6-1mm.
Special lead lengths are available on request.

Marking

Manufacturer's logo and lot number,
date code, rated capacitance (coded),
capacitance tolerance (code letter) and
rated ac voltage (IEC)
Series number, sub-class (Y2),
dielectric code (MKP), climatic category,
passive flammability category, approvals.

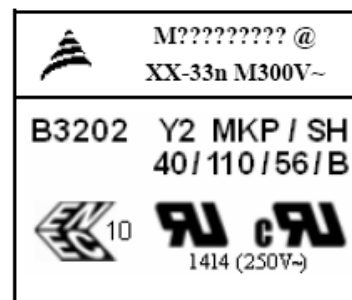
Delivery mode

Bulk (untaped)
Taped (Ammo pack or Reel)

Dimensional drawing


Dimensions in mm

Lead spacing e	Lead diameter d_1 (mm)	Type
10	0.6	B32021
15 ... 27.5	0.8	B32022 ... 24
37.5	1.0	B32026

Marking example:

Technical data

Technical data			
Rated AC voltage (IEC 60384-14)	300 V (50/60 Hz)		
Maximum continuous DC voltage (V DC)	1500 V		
Maximum continuous AC voltage (V AC)	480 V (50/60 Hz)		
Maximum operating temperature T _{Op,max}	+110 °C		
DC test voltage	4000 V (C ≤ 0.33 µF), 3700 V (C > 0.33 µF), 2 s		
Dissipation factor tan δ (in 10 ⁻³) at 20 °C, (upper limit values)		C ≤ 0.33 µF	C > 0.33 µF
	At 1 kHz	1	1
Insulation resistance R _{ins} or time constant τ = C _R · R _{ins} at 100 V DC, 20 °C, rel. humidity ≤ 65% and for 60 s (minimum “as delivered” values)	C _R ≤ 0.33 µF	C _R > 0.33 µF	
	100 000 MΩ	30 000 s	
Passive flammability category In accordance with IEC 40 (CO) 752	B		
Capacitance Tolerances (measured at 1 kHz)	±10% (K), ±20% (M)		



EMI suppression capacitors (MKP)

B3202* Series Y2 / 300 V AC

Ordering codes and packing units

± 0.4 (mm)	C_R	Max. dimensions w × h × l mm	Ordering code	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
mm						
10	1.0 nF	4.0 × 9.0 × 13.0	B32021A3102+***	1000	1700	1000
	1.5 nF	4.0 × 9.0 × 13.0	B32021A3152+***	1000	1700	1000
	2.2 nF	4.0 × 9.0 × 13.0	B32021A3222+***	1000	1700	1000
	3.3 nF	4.0 × 9.0 × 13.0	B32021A3332+***	1000	1700	1000
	4.7 nF	5.0 × 11.0 × 13.0	B32021A3472+***	830	1300	1000
	5.6 nF	5.0 × 11.0 × 13.0	B32021A3562+***	830	1300	1000
	6.8 nF	5.0 × 11.0 × 13.0	B32021A3682+***	830	1300	1000
	8.2 nF	6.0 × 12.0 × 13.0	B32021A3822+***	680	1100	1000
15	10 nF	6.0 × 12.0 × 13.0	B32021A3103M***	680	1100	1000
	10 nF	5.0 × 10.5 × 18.0	B32022A3103+***	1170	1300	1000
	15 nF	6.0 × 11.0 × 18.0	B32022A3153+***	960	1100	1000
	22 nF	6.0 × 12.0 × 18.0	B32022A3223M***	960	1100	1000
	22 nF	7.0 × 12.5 × 18.0	B32022B3223+***	830	900	1000
	33 nF	8.0 × 14.0 × 18.0	B32022A3333+***	730	750	500
	47 nF	8.5 × 14.5 × 18.0	B32022A3473M***	680	700	500
	47 nF	13.0 × 14.0 × 18.0	B32022T3473+***	-	500	300
	47 nF	9.0 × 17.5 × 18.0	B32022B3473+***	640	700	500
	56 nF	9.0 × 17.5 × 18.0	B32022A3563+***	640	700	500
22.5	68 nF	9.0 × 17.5 × 18.0	B32022A3683M***	640	700	500
	82 nF	11.0 × 18.5 × 18.0	B32022A3823M***	-	550	300
	0.047 µF	6.0 × 15.0 × 26.5	B32023A3473+***	680	700	720
	0.056 µF	6.0 × 15.0 × 26.5	B32023A3563M***	680	700	720
	0.068 µF	7.0 × 16.0 × 26.5	B32023A3683+***	580	600	630
	0.068 µF	7.5 × 14.5 × 26.5	B32023B3683M***	550	500	570
	0.082 µF	8.5 × 16.5 × 26.5	B32023A3823+***	480	500	510
	0.1 µF	8.5 × 16.5 × 26.5	B32023A3104M***	480	500	510
	0.1 µF	10.5 × 16.5 × 26.5	B32023B3104+***	390	400	540
	0.15 µF	10.5 × 18.5 × 26.5	B32023A3154M***	390	400	540
	0.15 µF	10.5 × 20.5 × 26.5	B32023B3154+***	-	-	540
	0.22 µF	12.0 × 22.0 × 26.5	B32023A3224M***	-	-	450
27.5	0.22 µF	14.5 × 29.5 × 26.5	B32023B3224+***	-	-	540
	0.33 µF	14.5 × 29.5 × 26.5	B32023A3334+***	-	-	540
	0.39 µF	14.5 × 29.5 × 26.5	B32023A3394M***	-	-	540
	0.15 µF	11.0 × 19.0 × 31.5	B32024A3154+***	-	350	320
	0.22 µF	11.0 × 19.0 × 31.5	B32024A3224M***	-	350	320
	0.22 µF	11.0 × 21.0 × 31.5	B32024B3224+***	-	350	320
	0.33 µF	13.5 × 23.0 × 31.5	B32024A3334M***	-	250	260
	0.33 µF	14.0 × 24.5 × 31.5	B32024B3334+***	-	-	260
	0.47 µF	15.0 × 24.5 × 31.5	B32024A3474M***	-	-	240
	0.47 µF	18.0 × 27.5 × 31.5	B32024B3474+***	-	-	200
	0.47 µF	16.0 × 32.0 × 31.5	B32024C3474+***	-	-	220
	0.56 µF	16.0 × 32.0 × 31.5	B32024A3564+***	-	-	220
27.5	0.68 µF	19.0 × 30.0 × 31.5	B32024A3684M***	-	-	180
	0.68 µF	18.0 × 33.0 × 31.5	B32024B3684+***	-	-	200
	0.68 µF	21.0 × 31.0 × 31.5	B32024C3684+***	-	-	180
	0.82 µF	22.0 × 36.5 × 31.5	B32024A3824+***	-	-	160
	1.0 µF	22.0 × 36.5 × 31.5	B32024A3105M***	-	-	160

Further E series and intermediate capacitance values are available on request.

Composition of ordering code

+ = Capacitance tolerance code

M = ±20%

K = ±10%


*** = Packing code

289 = Ammo pack

189 = Reel pack

000 = Untaped (lead length 6-1mm)

Ordering codes and packing units

 ±0.4 (mm)	C _R	Max. dimensions w × h × l mm	Ordering code	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
mm						
37.5	0.33 μF	12.0 × 22.0 × 41.5	B32026A3334+***	-	-	135
	0.47 μF	14.0 × 25.0 × 41.5	B32026A3474+***	-	-	115
	0.56 μF	14.0 × 25.0 × 41.5	B32026A3564M***	-	-	115
	0.56 μF	16.0 × 28.5 × 41.5	B32026B3564+***	-	-	100
	0.68 μF	16.0 × 28.5 × 41.5	B32026A3684+***	-	-	100
	0.82 μF	16.0 × 28.5 × 41.5	B32026A3824M***	-	-	100
	0.82 μF	18.0 × 32.5 × 41.5	B32026B3824+***	-	-	90
	1.0 μF	18.0 × 32.5 × 41.5	B32026A3105M***	-	-	90
	1.0 μF	20.0 × 39.5 × 41.5	B32026B3105+***	-	-	75

Further E series and intermediate capacitance values are available on request.

Composition of ordering code

+ = Capacitance tolerance code

M = ±20%

K = ±10%




*** = Packing code

289 = Ammo pack

189 = Reel pack


000 = Untaped (lead length 6-1mm)

Approvals

Standards	Certificate	Marks of Conformity
EN 132400 / IEC 60384-14 (300 V AC)	40018909	
UL1414 (250 V AC) UL1283 (400 V AC)	E97863 E301966	
CSA C22.2 No.1 (250 V AC) CSA C22.2 No.8 (400 V AC)	E97863 E301966	

(1) approved by UL

dV/dt and K₀ values

 ±0.4 (mm)	10	15	22.5	27.5	37.5
dV/dt (V/μs)	800	600	500	400	300
K ₀ (V ² /μs)	677000	508000	423000	338000	254000

Note: The maximum values of dV/dt and K₀ must not be exceeded in order to avoid overheating of the capacitor.

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, EPCOS is 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 an EPCOS 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 passive 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 a passive 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 a passive 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.epcos.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.
6. Unless otherwise agreed in individual contracts, **all orders are subject to the current version of the “General Terms of Delivery for Products and Services in the Electrical Industry” published by the German Electrical and Electronics Industry Association (ZVEI)**.
7. The trade names EPCOS, EPCOS-JONES, Alu-X, BAOKE, CeraDiode, CSSP, MLSC, MotorCap, PhaseCap, PhaseMod, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMID, SIOV, SIP5D, SIP5K, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.epcos.com/trademarks.