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WIMA SMD-PET



Metallized Polyester (PET) SMD Film Capacitors with Box Encapsulation. Capacitances from 0.01 μ F to 6.8 μ F. Rated Voltages from 63 VDC to 1000 VDC. Size Codes from 1812 to 6054.

Special Features

- Size codes 1812, 2220, 2824, 4030, 5040 and 6054 with PET and encapsulated
- Operating temperature up to 100° C
- Self-healing
- According to RoHS 2011/65/EU

Typical Applications

For general DC-applications e.g.

- By-pass
- Blocking
- Coupling and decoupling
- Timing

Construction

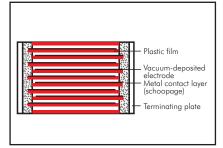
Dielectric:

Polyethylene-terephthalate (PET) film

Capacitor electrodes:

Vacuum-deposited

Internal construction:



Encapsulation:

Solvent-resistant, flame-retardant plastic case, UL 94 V-0

Terminations:

Tinned plates.

Marking:

Box colour: Black.

Electrical Data

Capacitance range:

0.01 μ F to 6.8 μ F

Rated voltages:

63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC, 1000 VDC

Capacitance tolerances:

 $\pm 20\%$, $\pm 10\%$ ($\pm 5\%$ available subject to special enquiry)

Operating temperature range:

-55° C to +100° C (+125° C available subject to special enquiry)

Climatic test category:

55/100/21 according to IEC for size codes 1812 to 2824 55/100/56 according to IEC for size codes 4030 to 6054

Insulation resistance at +20° C:

Test voltage: $1.6 U_r$, 2 sec. Voltage derating:

A voltage derating factor of 1.25 % per K must be applied from +85° C for DC voltages and from +75° C for AC voltages

Reliability:

Operational life $> 300\,000$ hours Failure rate < 2 fit (0.5 x U_r and 40° C)

U _r	U _{test}	C ≤ 0.33 µF	0.33 µF < C ≤ 6.8 µF
63 VDC 100 VDC	50 V 100 V	≥ 3.75 x 10 ³ MΩ	≥ 1250 sec (MΩ × μF)
≥ 250 VDC	100 V	≥ 1 x 10 ⁴ MΩ	≥ 3000 sec (MΩ x μF)

Measuring time: 1 min.

Dissipation factors at $+20^{\circ}$ C: tan δ

at f	C ≤ 0.1 µF	$0.1 \ \mu F < C \le 1.0 \ \mu F$	C > 1.0 µF
1 kHz	≤ 8 x 10 ⁻³	≤ 8 x 10 ⁻³	≤ 10 x 10 ⁻³
10 kHz	≤ 15 x 10 ⁻³	≤ 15 x 10 ⁻³	-
100 kHz	≤ 30 x 10 ⁻³	_	1

Maximum pulse rise time: for pulses equal to the rated voltage

Capacitance µF	20/200 20/200 40/400 21/210 25/250 32/												
0.01 0.022 0.033 0.068 0.1 0.22 0.33 0.68 1.0 2.2 3.3 6.8						50/500 32/320 - - - -							

Dip Solder Test/Processing

Resistance to soldering heat:

Test Tb in accordance with DIN IEC 60068-2-58/DIN EN 60384-19. Soldering bath temperature max. 260° C. Soldering duration max. 5 sec. Change in capacitance Δ C/C < 5%.

Soldering process:

Re-flow soldering (see temperature/time graphs page 13).

Packing

Available taped and reeled in blister pack.

Detailed taping information and graphs at the end of the catalogue.

For further details and graphs please refer to Technical Information.

WIMA SMD-PET



Continuation

General Data

		63	3 VDC/40 VAC*		10	00 VDC/63 VAC*		25	0 VDC/160 VAC*
Capacitance	Size	H		Size	H	1	Size	H	
·	code	± 0.3	Part number	code	± 0.3	Part number	code	± 0.3	Part number
0.01 µF	1812	3.0	SMDTC02100KA00	1812	3.0	SMDTD02100KA00	2220	3.5	SMDTF02100QA00
	2220	3.5	SMDTC02100QA00	2220	3.5	SMDTD02100QA00	2824	3.0	SMDTF02100TA00
0.015	2824	3.0	SMDTC02100TA00	2824	3.0	SMDTD02100TA00	0000	2.5	CV 4DT[00] [00 400
0.015 "	1812 2220	3.0	SMDTC02150KA00 SMDTC02150QA00	1812 2220	3.0	SMDTD02150KA00 SMDTD02150QA00	2220 2824	3.5	SMDTF02150QA00 SMDTF02150TA00
	2824	3.0	SMDTC02150TA00	2824	3.0	SMDTD02150Q/100	2024	0.0	3/10/10/2130/7/00
0.022 "	1812	3.0	SMDTC02220KA00	1812	3.0	SMDTD02220KA00	2220	3.5	SMDTF02220QA00
	2220	3.5	SMDTC02220QA00	2220	3.5	SMDTD02220QA00	2824	3.0	SMDTF02220TA00
0.000	2824	3.0	SMDTC02220TA00	2824	3.0	SMDTD02220TA00	0000	2.5	
0.033 "	1812 2220	3.0	SMDTC02330KA00 SMDTC02330QA00	1812 2220	3.0	SMDTD02330KA00 SMDTD02330QA00	2220 2824	3.5	SMDTF02330QA00 SMDTF02330TA00
	2824	3.0	SMDTC02330TA00	2824	3.0	SMDTD02330TA00	4030	5.0	SMDTF02330VA00
0.047 "	1812	3.0	SMDTC02470KA00	1812	3.0	SMDTD02470KA00	2220	3.5	SMDTF02470QA00
	2220	3.5	SMDTC02470QA00	2220	3.5	SMDTD02470QA00	2824	3.0	SMDTF02470TA00
0.070	2824	3.0	SMDTC02470TA00	2824	3.0	SMDTD02470TA00	4030	5.0	SMDTF02470VA00
0.068 "	1812 2220	3.0	SMDTC02680KA00 SMDTC02680QA00	1812 2220	3.0	SMDTD02680KA00 SMDTD02680QA00	2220 2824	4.5* 3.0	SMDTF02680QB00 SMDTF02680TA00
	2824	3.0	SMDTC02680TA00	2824	3.0	SMDTD02680TA00	4030	5.0	SMDTF02680VA00
0.1 µF	1812	4.0*	SMDTC03100KB00	1812	4.0*	SMDTD03100KB00	2220	4.5*	SMDTF03100QB00
	2220	3.5	SMDTC03100QA00	2220	3.5	SMDTD03100QA00	2824	5.0	SMDTF03100TB00
0.15	2824	3.0	SMDTC03100TA00	2824	3.0	SMDTD03100TA00	4030	5.0	SMDTF03100VA00
0.15 "	1812 2220	4.0*	SMDTC03150KB00 SMDTC03150QA00	1812 2220	4.0	SMDTD03150KB00 SMDTD03150QA00	2824 4030	5.0	SMDTF03150TB00 SMDTF03150VA00
	2824	3.0	SMDTC03150TA00	2824	3.0	SMDTD03150TA00	4000	3.0	3/1011031307400
0.22 "	1812	4.0*	SMDTC03220KB00	1812	4.0	SMDTD03220KB00	2824	5.0	SMDTF03220TB00
	2220	3.5	SMDTC03220QA00	2220	3.5	SMDTD03220QA00	4030	5.0	SMDTF03220VA00
0.00	2824	3.0	SMDTC03220TA00	2824	3.0	SMDTD03220TA00	0004	5.0	0.4075000007000
0.33 "	1812 2220	4.0 4.5*	SMDTC03330KB00 SMDTC03330QB00	2220 2824	4.5	SMDTD03330QB00 SMDTD03330TB00	2824 4030	5.0	SMDTF03330TB00 SMDTF03330VA00
	2824	5.0*	SMDTC03330TB00	4030	5.0	SMDTD03330VA00	5040	6.0	SMDTF03330XA00
0.47 "	1812	4.0	SMDTC03470KB00	2220	4.5	SMDTD03470QB00	4030	5.0	SMDTF03470VA00
	2220	4.5*	SMDTC03470QB00	2824	5.0	SMDTD03470TB00	5040	6.0	SMDTF03470XA00
0.70	2824	5.0*	SMDTC03470TB00	4030	5.0	SMDTD03470VA00	5040	/ 0	CA ADTEGO / GOVA GO
0.68 "	2220 2824	4.5 5.0*	SMDTC03680QB00 SMDTC03680TB00	2824 4030	5.0	SMDTD03680TB00 SMDTD03680VA00	5040	6.0	SMDTF03680XA00
	4030	5.0	SMDTC03680VA00	5040	6.0	SMDTD03680XA00			
1.0 µF	2220	4.5	SMDTC04100QB00	2824	5.0	SMDTD04100TB00	6054	7.0	SMDTF04100YA00
	2824	5.0*	SMDTC04100TB00	4030	5.0	SMDTD04100VA00			
1.5	4030	5.0	SMDTC04100VA00	5040	6.0	SMDTD04100XA00			
1.5 "	2824 4030	5.0 5.0	SMDTC04150TB00 SMDTC04150VA00	4030 5040	5.0	SMDTD04150VA00 SMDTD04150XA00	* \/ars	ion ac	cording to catalogue 2013
	1000	0.0	3/10/1004/30//100	0040	0.0	3/10/1004/30/100		availal	
2.2 "	2824	5.0	SMDTC04220TB00	5040	6.0	SMDTD04220XA00			
	4030	5.0	SMDTC04220VA00						
0.0	4000	F 0	CL 4DTCC 4000) (4.00	50.40	/ 0	CL 4DTD0 4000V400			
3.3 "	4030	5.0	SMDTC04330VA00	5040	6.0	SMDTD04330XA00		Part	number completion:
									rance: 20 % = M
4.7 "	5040	6.0	SMDTC04470XA00	6054	7.0	SMDTD04470YA00		10101	10 % = K
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									5 % = J
(0	1051	7.0	CA 4DTCO 4 400 /4 00					Pack	
6.8 "	6054	7.0	SMDTC04680YA00					Pin le	ength: none = 00
								Таре	ed version see page 147.
* 40 1		1.4							

^{*} AC voltage: f = 50 Hz; 1.4 x U_{rms} + UDC $\leq U_{r}$

Dims. in mm.

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WIMA SMD-PET



Continuation

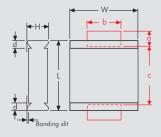
General Data

		40	0 VDC/200 VAC*		630	0 VDC/300 VAC*		100	00 VDC/400 VAC*
Capacitance	Size code	H ± 0.3	Part number	Size code	H ± 0.3	Part number	Size code	H ± 0.3	Part number
0.01 µF	2824 4030	3.0 5.0	SMDTG02100TA00 SMDTG02100VA00	4030	5.0	SMDTJ02100VA00			
0.015 "	2824 4030	3.0 5.0	SMDTG02150TA00 SMDTG02150VA00	4030	5.0	SMDTJ02150VA00	5040	6.0	SMDTO12150XA00
0.022 "	2824 4030	5.0* 5.0	SMDTG02220TB00 SMDTG02220VA00	5040	6.0	SMDTJ02220XA00	5040	6.0	SMDTO12220XA00
0.033 "	2824 4030	5.0 5.0	SMDTG02330TB00 SMDTG02330VA00	5040	6.0	SMDTJ02330XA00	5040	6.0	SMDTO12330XA00
0.047 "	2824 4030	5.0 5.0	SMDTG02470TB00 SMDTG02470VA00	5040	6.0	SMDTJ02470XA00	6054	7.0	SMDTO12470YA00
0.068 "	4030 5040	5.0 6.0	SMDTG02680VA00 SMDTG02680XA00	5040	6.0	SMDTJ02680XA00			
0.1 μF	4030 5040	5.0 6.0	SMDTG03100VA00 SMDTG03100XA00	6054	7.0	SMDTJ03100YA00			
0.15 "	4030 5040	5.0 6.0	SMDTG03150VA00 SMDTG03150XA00	6054	7.0	SMDTJ03150YA00			
0.22 "	5040	6.0	SMDTG03220XA00	6054	7.0	SMDTJ03220YA00			
0.33 "	5040	6.0							
0.47 "	6054	7.0	SMDTG03470YA00						

^{*} AC voltage: f = 50 Hz; 1.4 x U_{rms} + UDC \leq U_{r}

Dims. in mm.

Solder pad recommendation



Part number	completion:
Tolerance:	20 % = M 10 % = K 5 % = J
Packing: Pin length:	bulk = S none = 00
Taped version	on see page 147.

	Size code	L ±0.3	W ±0.3	d	a min.	b min.	c max.
	1812	4.8	3.3	0.5	1.2	3.5	3.5
ı	2220	5.7	5.1	0.5	1.2	4	4.5
ı	2824	7.2	6.1	0.5	1.2	4	6.5
ı	4030	10.2	7.6	0.5	2.5	6	9
ı	5040	12.7	10.2	0.7	2.5	6	11.5
ı	6054	15.3	13.7	0.7	2.5	6	14

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^{*} Version according to catalogue 2013 still available

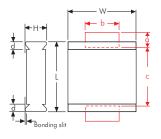
Recommendation for Processing — and Application of SMD Capacitors



Layout Form

The components can generally be positioned on the carrier material as desired. In order to prevent soldering shadows or ensure regular temperature distribution, extreme concentration of the components should be avoided. In practice, it has proven best to keep a minimum distance of the soldering surfaces between two WIMA SMDs of twice the height of the components.

Solder Pad Recommendation



Size	L	W	d	а	b	С
code	± 0.3	± 0.3		min.	min.	max.
1812	4.8	3.3	0.5	1.2	3.5	3.5
2220	5.7	5.1	0.5	1.2	4	4.5
2824	7.2	6.1	0.5	1.2	4	6.5
4030	10.2	7.6	0.5	2.5	6	9
5040	12.7	10.2	0.7	2.5	6	11.5
6054	15.3	13.7	0.7	2.5	6	14

The solder pad size recommendations given for each individual series are to be understood as minimum dimensions which can at any time be adjusted to the layout form.

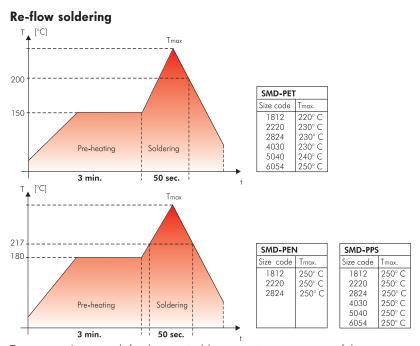
Processing

The processing of SMD components

- assembling
- soldering
- electrical final inspection/calibrating

must be regarded as a complete process. The soldering of the printed circuit board, for example, can constitute considerable stress on all the electronic components. The manufacturer's instructions on the processing of the components are mandatory.

Soldering Process



Temperature/time graph for the permissible processing temperature of the WIMA SMD film capacitor for typical convection soldering processes.

Due to versatile procedures exact processing parameters for re-flow soldering processes cannot be specified. The graph depicted is to be understood as a recommendation to help establishing a suitable soldering profile fulfilling the requirements in practice at the user. During processing a max. temperature of T=210° C inside the component should not be exceeded. Due to the differing heat absorption the length of the soldering process should be kept as short as possible for smaller size codes.

SMD Handsoldering

WIMA SMD capacitors with plastic film dielectric are generally suitable for hand-soldering, e.g. for lab purposes, with a soldering iron where, however, similar to automated soldering processes, a certain duration and temperature should not be exceeded. These parameters are dependent on the physical size of the components and the relevant heat absorption involved.

The below data are to be regarded as guideline values and should serve to avoid damage to the dielectric caused by excessive heat during the soldering process. The soldering quality depends on the tool used and on the skill and experience of the person with the soldering iron in hand.

Size code	Temperature °C / °F	Time duration
1812	250 / 482	2 sec plate 1 / 5 sec off / 2 sec plate 2
2220	250 / 482	3 sec plate 1 / 5 sec off / 3 sec plate 2
2824	260 / 500	3 sec plate 1 / 5 sec off / 3 sec plate 2
4030	260 / 500	5 sec plate 1 / 5 sec off / 5 sec plate 2
5040	260 / 500	5 sec plate 1 / 5 sec off / 5 sec plate 2
6054	260 / 500	5 sec plate 1 / 5 sec off / 5 sec plate 2

Recommendation for Processing — and Application of SMD Capacitors (Continuation)



Solder Paste

To achieve reliable soldering results one of the following solder alloys have from case to case proven being workable:

Lead free solder paste

Sn - Bi

Sn - Zn (Bi)

Sn - Ag - Cu Isuitable for SMD-PET 5040/6054, SMD-PEN and SMD-PPS)

Solder paste with lead

Sn - Pb - Ag (Sn60-Pb40-A, Sn63-Pb37-A)

Washing

WIMA SMD components with plastic encapsulation - like all other components of similar construction irrespective of the make - cannot be regarded as hermetically sealed. Due to today's common washing substances, e. g. on aqueous basis instead of the formerly used halogenated hydrocarbons, with enhanced washing efficiency it became obvious that assembled SMD capacitors may show an impermissibly high deviation of the electrical parameters after a corresponding washing process. Hence it is recommended to refrain from applying industrial washing processes for WIMA SMD capacitors in order to avoid possible damages.

Initial Operation/Calibration

Due to the stress which the components are subjected to during processing, reversible parameter changes occur in almost all electronic components. The capacitance recovery accuracy to be expected with careful processing is within a scope of

 $|\Delta C/C| \le 5 \%$.

For the initial operation of the device a minimum storage time of

 $t \ge 24 \text{ hours}$

is to be taken into account. With calibrated devices or when the application is largely dependent on capacitance it is advisable to prolong the storage time to

t ≥ 10 days

In this way ageing effects of the capacitor structure can be anticipated. Parameter changes due to processing are not to be expected after this period of time

Humidity Protection Bags

Taped WIMA SMD capacitors are shipped in humidity protection bags according to JEDEC standard (ESD/EMI-shield/water-vapour proof).

Under controlled conditions the components can be stored two years and more in the originally sealed bag. Opened packing units should immediately be used up for processing. If storage is necessary the opened packing units should be stored air-tight in the original plastic bag.

Reliability

Taking account of the manufacturer's guidelines and compatible processing, the WIMA SMD stand out for the same high quality and reliability as the analogous through-hole WIMA series. The technology of metallized film capacitors used e.g. in WIMA SMD-PET achieves the best values for all fields of application. The expected value is about:

 $\lambda_0 \leqslant 2 \; \text{fit}$

Furthermore the production of all WIMA components is subject to the regulations laid down by ISO 9001:2008 as well as the guidelines for component specifications set out by IEC quality assessment system (IECQ) for electronic components.

Electrical Characteristics and Fields of Application

Basically the WIMA SMD series have the same electrical characteristics as the analogous through-hole WIMA capacitors. Compared to ceramic or tantalum dielectrics WIMA SMD capacitors have a

number of other outstanding qualities:

- favourable pulse rise time
- low ESR
- low dielectric absorption
- available in high voltage series
- large capacitance spectrum
- stand up to high mechanical stress
- good long-term stability

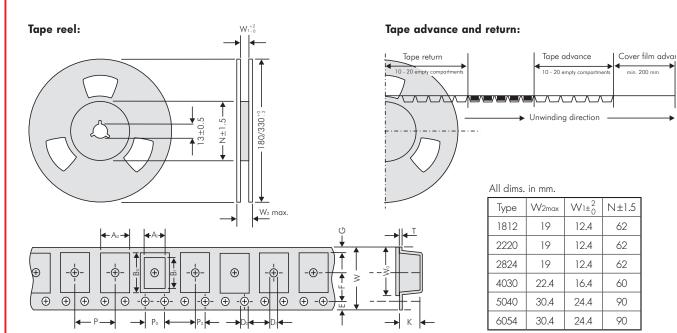
As regards technical performance as well as quality and reliability, the WIMA SMD series offer the possibility to cover nearly all applications of conventionally through-hole film capacitors with SMD components. Furthermore, the WIMA SMD series can now be used for all the demanding capacitor applications for which, in the past, the use of through-hole components was mandatory:

- measuring techniques
- oscillator circuits
- differentiating and integrating circuits
- A/D or D/A transformers
- sample and hold circuits
- automotive electronics

With the WIMA SMD programme available today, the major part of all plastic film capacitors can be replaced by WIMA SMD components. The field of application ranges from standard coupling capacitors to use in switch-mode power supplies as filter or charging capacitors with high voltage and capacitance values, as well as in telecommunications e.g. the well-known telephone capacitor $1\,\mu\text{F}/250\text{VDC}.$

Blister Tape Packaging and Packing Units of the WIMA SMD Capacitors





Size Code	1812	Ao ±0.1	Aı	Bo ±0.1	Ві	Do +0.1	D1	P +01	Po*	P ₂ ±0.05	E +0.1	F +0.05	G	W ±0,3	₩0 ±0,2	K +0.1	T ±0.1
Box size	Code	20.1		20.1		-0	-0	20.1	20.1	20.00	20.1	20.00		20.0	± 0.2	10.1	20.1
4.8×3.3×3	KA	3.55	3.3	5.1	4.8	Ø1.5	Ø1.5	8	4	2	1.75	5.5	2.2	12	9.5	3.4	0.3
4.8×3.3×4	КВ	3.55	3.3	5.1	4.8	Ø1.5	Ø1.5	8	4	2	1.75	5.5	2.2	12	9.5	4.4	0.3

taped Reel 180 mm Ø	taped Reel 330 mm Ø	bulk Standard
700	2500	3000
500	2000	3000

Packing units

Size Code	2220	A0 ±0.1	Aı	Bo ±0.1	Ві	Do +0.1	D1 +0.1	P +0.1	Po*	P ₂ ±0.05	E +0.1	F +0.05	G	W ±0.3	W ₀	K +0.1	T +0.1
Box size	Code					-0	-0										
5.7×5.1×3.5	QA	6.3	5.7	5.6	5.1	Ø1.5	Ø1.5	8	4	2	1.75	5.5	1.95	12	9.5	3.7	0.3
5.7×5.1×4.5	QB	6.3	5.7	5.6	5.1	Ø1.5	Ø1.5	8	4	2	1.75	5.5	1.95	12	9.5	4.7	0.3

taped Reel 180 mm Ø	taped Reel 330 mm Ø	bulk Standard
500	1800	3000
400	1500	3000

Size Code	2824	A0 ±0.1	Aı	Bo ±0.1	Ві	Do +0.1	D1 +0.1	P +0.1	Po*	P ₂ ±0.05	E +0.1	F +0.05	G	W ±0.3	₩0 ±0,2	'\	T +0.1
Box size	Code					-0	-0			_ 0.00		_0.00		_ 0.0			
7.2×6.1×3	TA	6.6	6.1	7.7	7.2	Ø1.5	Ø1.5	12	4	2	1.75	5.5	0.9	12	9.5	3.4	0.3
7.2×6.1×5	ТВ	6.6	6.1	7.7	7.2	Ø1.5	Ø1.5	12	4	2	1.75	5.5	0.9	12	9.5	5.4	0.4

taped Reel 330 mm Ø	bulk Standard
1500	2000
750	2000

	Code	A0 ±0.1	Aı	Bo ±0.1	Ві	Do +0.1 -0	D1 +0.1 -0			P ₂ ±0.05			G		W ₀ ±0.2		T ±0.1
Size Code 4030	VA	10.7	10.2	8.1	9.1	Ø1.5	Ø1.5	16	4	2	1.75	7.5	1.9	16	13.3	5.5	0.3
Size Code 5040	XA	13.5	12.7	11	11.5	Ø1.5	Ø1.5	16	4	2	1.75	11.5	4.7	24	21.3	6.5	0.3
Size Code 6054	YA	17.0	16.5	15.6	15.0	Ø1.5	Ø1.5	20	4	2	1.75	11.5	2.95	24	21.3	7.5	0.3

taped Reel	bulk				
330 mm Ø	Standard				
775	2000				
600	1000				
450	500				

Part number codes for SMD packing

W (Blister)	Ø in mm	Code
12	180	P
12	330	Q
16	330	R
24	330	T

Bulk Standard	

^{*} cumulative after 10 steps \pm 0.2 mm max. Samples and pre-production needs on request or 1 Reel minimum.

WIMA Part Number System



A WIMA part number consists of 18 digits and is composed as follows:

Field 1 - 4: Type description

Field 5 - 6: Rated voltage

Field 7 - 10: Capacitance

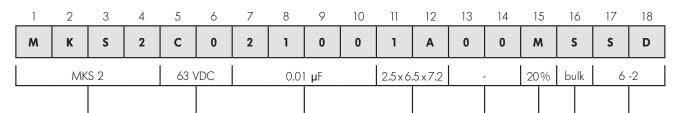
Field 11 - 12: Size and PCM

Field 13 - 14: Version code (e.g. Snubber versions)

Field 15: Capacitance tolerance

Field 16: Packing

Field 17 - 18: Pin length (untaped)



Type description:	Rated voltage:	Capacitance:	Size:	Tolerance:
SMD-PET = SME		22 pF = 0022	$4.8 \times 3.3 \times 3$ Size $1812 = KA$	$\pm 20\% = M$
SMD-PEN = SME		47 pF = 0047	$4.8 \times 3.3 \times 4$ Size $1812 = KB$	$\pm 10\% = K$
SMD-PPS = SME		100 pF = 0100	$5.7 \times 5.1 \times 3.5$ Size $2220 = QA$	±5% = J
FKP 02 = FKPC		150 pF = 0150	$5.7 \times 5.1 \times 4.5 \text{ Size } 2220 = QB$	$\pm 2.5\% = H$
MKS 02 = MKS		220 pF = 0220	$7.2 \times 6.1 \times 3$ Size $2824 = TA$	$\pm 1\%$ = E
FKS 2 = FKS2		330 pF = 0330	$7.2 \times 6.1 \times 5$ Size $2824 = TB$	l
FKP 2 = FKP2		470 pF = 0470	$10.2 \times 7.6 \times 5$ Size $4030 = VA$	
FKS 3 = FKS3		680 pF = 0680	$12.7 \times 10.2 \times 6$ Size $5040 = XA$	l _{n. 1} .
FKP 3 = FKP		1000 pF = 1100	$15.3 \times 13.7 \times 7$ Size $6054 = YA$	Packing:
MKS 2 = MKS		1500 pF = 1150	$2.5 \times 7 \times 4.6 \text{ PCM } 2.5 = 0B$	AMMO H16.5 $340 \times 340 = A$
MKP 2 = MKF		2200 pF = 1220	$3 \times 7.5 \times 4.6 \text{ PCM } 2.5 = 0 \text{C}$	AMMO H16.5 $490 \times 370 = B$
MKS 4 = MKS		3300 pF = 1330	$2.5 \times 6.5 \times 7.2 \text{ PCM} 5 = 1A$	AMMO H18.5 340 x 340 = C
MKP 4C = MKF		4700 pF = 1470	$3 \times 7.5 \times 7.2 \text{ PCM} 5 = 18$	AMMO H18.5 $490 \times 370 = D$
MKP 4 = MKF		6800 pF = 1680	$2.5 \times 7 \times 10 \text{ PCM } 7.5 = 2A$	REEL H16.5 360 = F
MKP 10 = MKF		$0.01 \mu F = 2100$	$3 \times 8.5 \times 10 \text{ PCM } 7.5 = 2B$	REEL H16.5 500 = H
$ \begin{array}{ccc} FKP & 1 & = FKP \\ MKP-X2 & = MKY \end{array} $		0.022 μ F = 2220 0.047 μ F = 2470	$3 \times 9 \times 13 \text{ PCM } 10 = 3A$ $4 \times 9 \times 13 \text{ PCM } 10 = 3C$	REEL H18.5 360 = I REEL H18.5 500 = J
MKP-X1R = MK		$0.047 \ \mu F = 2470$ $0.1 \ \mu F = 3100$	$5 \times 11 \times 18 \text{ PCM } 15 = 4B$	ROLL H16.5 = N
MKP-Y2 = MKY		$0.1 \mu F = 3100$ $0.22 \mu F = 3220$	$6 \times 12.5 \times 18 \text{ PCM } 15 = 40$	ROLL H18.5 = 0
MP 3-X2 = MPX		$0.47 \mu F = 3470$	$5 \times 14 \times 26.5 \text{ PCM } 22.5 = 5A$	BLISTER W12 180 = P
MP 3-X1 = MPX		$1 \mu F = 4100$	$6 \times 15 \times 26.5 \text{ PCM} 22.5 = 5B$	BLISTER W12 330 = Q
MP 3-Y2 = MPY		$2.2 \mu F = 4220$	$9 \times 19 \times 31.5 \text{ PCM } 27.5 = 6A$	BLISTER W12 330 = R
MP 3R-Y2 = MPR		$4.7 \mu F = 4470$	$11 \times 21 \times 31.5 \text{ PCM } 27.5 = 6B$	BLISTER W24 330 = T
MKP 4F = MKF		$10 \mu F = 5100$	$9 \times 19 \times 41.5 \text{ PCM} 37.5 = 7A$	Bulk/TPS Standard = S
Snubber $MKP = SNA$		$22 \mu F = 5220$	$11 \times 22 \times 41.5 \text{ PCM} 37.5 = 7B$	
Snubber FKP = SNF		$47 \mu F = 5470$	19x31x56 PCM 48.5 = 8D	
GTO MKP = GTO		$100 \mu F = 6100$	$25 \times 45 \times 57$ PCM $52.5 = 9D$	
DC-LINK MKP $3 = DCF$	3 305 VAC = AW	$220 \mu F = 6220$	l	
DC-LINK MKP 4 = DCF		$1000 \mu F = 7100$	·	·
DC-LINKMKP4S = DCP		$1500 \mu F = 7150$		
DC-LINK MKP 5 = DCP			Version code:	Pin length (untaped)
DC-LINK MKP $6 = DCF$			Standard = 00	$3.5 \pm 0.5 = C9$
DC-LINK HC = DCH			Version A1 $= 1A$	6-2 = SD
DC-LINK HY = DCH	IY		Version A1.1.1 = 1B	$16 \pm 1 = P1$
			Version A2 $= 2A$	 D:- I I \
				Pin length (taped)

The data on this page is not complete and serves only to explain the part number system. Part number information is listed on the pages of the respective WIMA range.

none