

Metallized Film Capacitor

Power Electronic Capacitors

Series/Type: MKP AC Filter – Three phase

Ordering code: C53*

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Version: 01

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■ Features

- Metallized polypropylene film design,excellent self-healing property
- Anti-explosion design,overpressure tear-off fuse more safety
- Structural diversity, include cap type design, bolt type design and tab type design
- Suitable fpr power factor correction and LCL filter, widely used in wind power, photovoltaic and other occasions

■ Reference Standards

- IEC61071
- IEC60831
- RoHS
- UL 810

■ Specifications

- Capacitance range **3×8μF...3×330μF**
- Capacitance tolerance **±5%(J), ±10%(K)**
- Rated RMS voltage **230V.ac...850V.ac**
- Dielectric dissipation factor($\tan \delta_0$) **2×10^{-4}**
- Loss factor($\tan \delta$)at 100Hz **$\leq 2.0 \times 10^{-3}$**
- Operating temperature range **-40°C...70°C**
- Storage temperature Range **-40°C...85°C**
- Maximum altitude **$\leq 2000\text{m}$**
- Rated frequency **50Hz/60Hz**
- Explosion-proof device **Overpressure disconnecter**
- Internal stuffing **Oil(Non PCB)**
- Cooling **Naturally air-cooled or force cooled**
- Whether has the discharge resistor **Configured according to customer requirements**

■ Test data

- Capacitance measurement **$C_N \pm 5\%(J)$; $C_N \pm 10\%(K)$;**
- Test voltage between terminals **$1.5U_{rms} @10S$ or $2.15U_N @10S$**
- Test voltage between terminals to case **$4000 \text{ V.ac} @10S$**
- Loss factor($\tan \delta$)at 100Hz **2.0×10^{-3}**

■ Installation

- Mounting and grounding **M8/M10/M12 threaded bolt on bottom of the aluminum case**
- Terminal form **Tab or Male terminals**
- Max. torque(case) **M8:5N.m; M10:7N.m; M12:10N.m**
- Max. torque terminal **M5:2N.m; M6:3N.m; M8:6N.m**

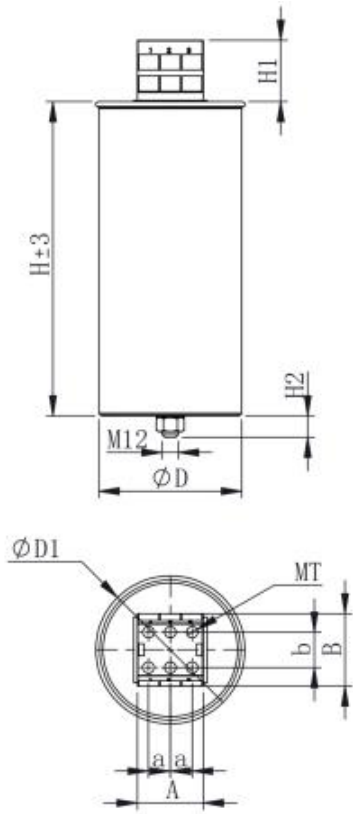
■ Structure of ordering code

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
C	5	1	3	3	1	5	0	6	J	3	2	M	A	0	1	0	1
A			B			C			D	E		F	G	H	I	J	K

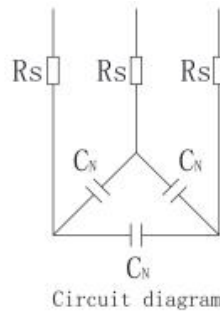
- A: Capacitor series
C51=AC filter capacitor-single phase
- B: Rated RMS voltage
如: 331=33*10¹=330V
- C: Rated capacitance
如: 506=50*10⁶=50000000pF=50μF
- D: Capacitance tolerance
J=±5%, K=±10%
- E: Terminal center hole distance
32=32mm 50=50mm
- F: Terminal shape
F=Screw hole M=Screw
- G: Case material
A=Aluminum case P=Plastic case
- H: Product features
0=Ordinary 1=Double 85
- I: Capacitor connection method
1=single phase S=Triangle connection method
Y=Star connection method(three line) T=Star connection method(four line)
- J: Inner use
- H: Serial number

■ **Outline Drawing(Specific according to customer requirements)**

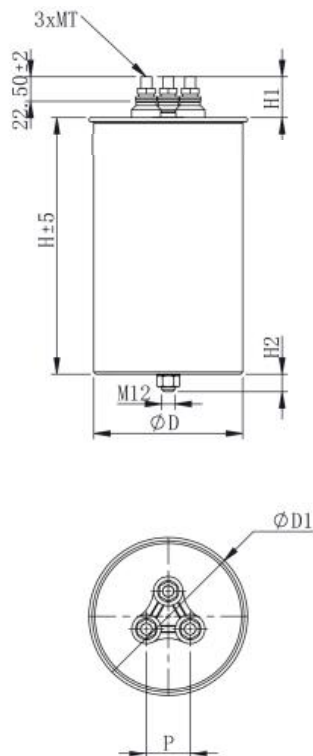
● **Cap type design**



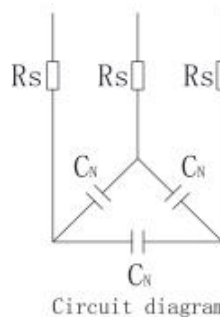
D±1	76/86/96/116	136
a±0.5	15	16.5
b±0.5	19.4	25
A±1	43.5	49
B±1	44.5	54.5
H1±2	35	45
H2±1	16	18
MT	M5	M6



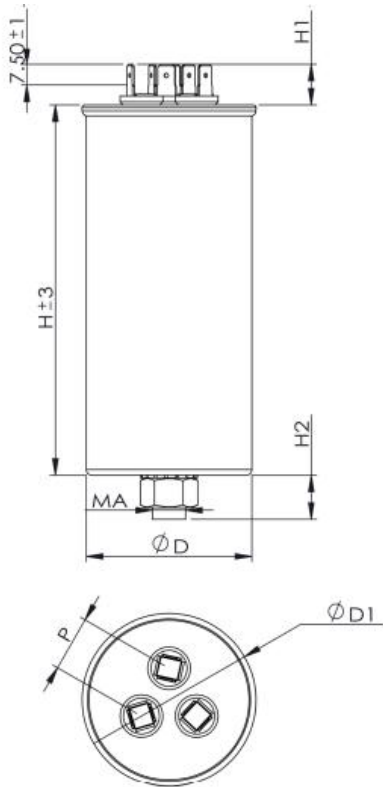
● **Bolt type design**



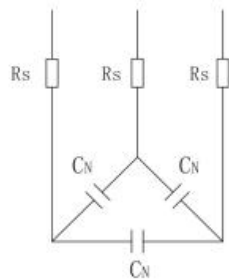
D±1	116	136
H1±1	38	38
H2±2	16	18
P±1	40	40
MB	M8	M8



● **Tab type design**



D±1	45	55	60
H1±1	12	12	12
H2±2	10	12	16
P±1.5	18	20	20
MA	M8	M10	M12



Circuit diagram

Technical data

C _N (μ F)	D (mm)	D _{1MAX} (mm)	H (mm)	ESR (m Ω)	ESL (nH)	R _{th} (K/W)	I _{MAX} (A)	Î (KA)	Î _s (KA)	W (kg)	Part number
U_N 325V.ac, U_{RMS} 230V.ac											
3 × 84	76	80	200	3 × 1.5	100	4.5	3 × 34	1.6	4.8	1.1	
3 × 105	76	80	230	3 × 1.6	120	4.0	3 × 36	1.5	4.5	1.2	
3 × 160	80	90	230	3 × 1.2	120	3.5	3 × 43	2.3	6.9	1.6	
3 × 250	116	121	200	3 × 0.8	110	3.1	3 × 53	3.0	9.0	2.4	
3 × 330	116	121	230	3 × 0.9	130	2.7	3 × 54	4.8	14.4	2.5	
U_N 625V.ac, U_{RMS} 440V.ac											
3 × 13	76	80	140	3 × 1.8	100	6.2	3 × 22	0.8	2.4	0.9	
3 × 16.5	76	80	140	3 × 1.5	100	5.6	3 × 25	1.1	3.3	0.9	
3 × 26.5	76	80	200	3 × 2.3	100	4.4	3 × 25	0.8	2.4	1.2	
3 × 33	76	80	200	3 × 1.9	100	4.0	3 × 28	1.0	3.0	1.2	
3 × 50	86	90	200	3 × 1.4	110	3.4	3 × 34	1.5	4.5	1.4	
3 × 66	86	90	230	3 × 1.5	120	2.9	3 × 36	1.4	4.2	1.7	
3 × 83	106	111	200	3 × 1.1	110	3.1	3 × 40	2.4	7.2	2.4	
3 × 100	116	121	200	3 × 1.0	110	2.8	3 × 43	2.9	8.7	2.4	
3 × 133	136	142	200	3 × 0.9	120	2.5	3 × 46	3.9	11.7	3.3	
3 × 154	136	142	200	3 × 0.8	120	2.3	3 × 48	4.0	12.0	3.3	
3 × 170	136	142	230	3 × 0.9	130	2.2	3 × 45	4.5	13.5	3.8	
U_N 760V.ac, U_{RMS} 540V.ac											
3 × 19	76	80	170	3 × 1.0	110	5.1	3 × 32	1.0	3.0	1.0	
3 × 23	76	80	170	3 × 1.0	110	5.0	3 × 33	1.2	3.6	1.2	
3 × 39	86	90	200	3 × 0.9	110	4.0	3 × 39	1.4	4.2	1.7	
3 × 48	86	90	230	3 × 1.0	120	3.6	3 × 40	1.3	3.9	1.9	
3 × 96	136	142	230	3 × 0.8	130	2.8	3 × 47	2.6	7.8	3.8	
U_N 980V.ac, U_{RMS} 690V.ac											
3 × 33.5	116	121	170	3 × 0.8	110	3.5	3 × 42	1.6	4.8	2.2	
3 × 38	116	121	200	3 × 0.8	110	3.5	3 × 40	1.3	3.9	2.4	
U_N 1070V.ac/1200V.ac, U_{RMS} 760V.ac/850V.ac											
3 × 8	76	80	170	3 × 1.3	110	5.6	3 × 24	0.6	1.8	1.0	
3 × 10	86	90	170	3 × 1.1	110	5.2	3 × 27	0.7	2.1	1.0	
3 × 12	86	90	170	3 × 1.0	110	4.8	3 × 29	0.9	2.7	1.0	
3 × 17	106	111	170	3 × 0.9	110	4.3	3 × 34	1.1	3.3	1.7	
3 × 23	86	90	230	3 × 1.1	120	3.4	3 × 37	0.9	2.7	1.6	
3 × 28	106	111	230	3 × 1.0	130	3.3	3 × 38	1.0	3.0	2.2	

Technical data

C_N (μF)	D (mm)	$D1_{MAX}$ (mm)	H (mm)	ESR ($m\Omega$)	ESL (nH)	R_{th} (K/W)	I_{MAX} (A)	\hat{I} (KA)	\hat{I}_S (KA)	W (kg)	Part number
U_N 1070V.ac/1200V.ac, U_{RMS} 760V.ac/850V.ac											
3 × 33	106	111	230	3 × 1.0	130	3.0	3 × 41	1.2	3.6	2.3	
3 × 38	116	121	230	3 × 0.9	130	2.9	3 × 42	1.4	4.2	2.8	
3 × 49	136	142	230	3 × 0.9	130	2.7	3 × 43	1.9	5.7	3.7	
3 × 55.8	136	142	230	3 × 0.8	130	2.5	3 × 45	2.2	6.6	3.8	

■ Term and characteristics

Term	Characteristics
C_N	Rated capacitance
U_N	Rated AC voltage
U_{NDC}	Rated DC voltage
U_r	Ripple voltage
U_s	Non-recurrent surge voltage
U_{T-T}	Test voltage between terminals
U_{T-C}	Test voltage between terminals to case
\hat{I}	Maximum peak current
I_{max}	Maximum current
\hat{I}_s	Maximum surge current
$\tan\delta_0$	Dielectric dissipation factor
$\tan\delta$	Loss factor
ESL	Self inductance
ESR	Equivalent series inductance of a capacitor
R_{ins}	Insulation resistance
f_r	Resonance frequency
W_R	Rated power
θ_{min}	Lowest operating temperature
θ_{max}	Maximum operating temperature
θ_{amb}	Cooling-air temperature
θ_{HS}	Hotspot temperature
θ_{ST}	Storage temperature
F_T	Derating factor
t_{LD}	Inverter and charge hybrid operating load duration
λ	Failure rate (FIT)