

Attracting Tomorrow



New Generation PhiCap Capacitors



<https://in.tdk-electronics.tdk.com>



TDK India Pvt. Ltd. (formerly EPCOS India Pvt. Ltd.) is a member of the TDK Corporation, Japan. While TDK is the second largest producer of passive components in the world, EPCOS came into existence in 1999 as a spin off from mother company Siemens and was taken over by TDK in 2008.

With its broad portfolio, TDK offers a comprehensive range of products from a single source and focuses on future oriented, technologically demanding applications of information and communication technology, automotive electronics, industrial and consumer electronics. With global revenue of approx. USD 12 billion, TDK has over 110 design, manufacturing and sales offices spread across Europe, Japan, Asia, North and South America.

The company has been selling components in India since the 1960s under the umbrella of Siemens, then EPCOS and now TDK. TDK has three

world class manufacturing units in India since early 90's located in Kalyani West Bengal (for soft ferrites), in Nasik - Maharashtra (for Plastic film capacitors) and Bawal in Haryana for mobile batteries. Apart from 3 plants, TDK has 4 regional offices, 8 home offices, over 100 channel partners and employs over 3000 people in India.

TDK's product portfolio includes film capacitors (DC capacitors, AC motor run, Filter capacitors, DC Link capacitors, PFC capacitors, and MV capacitors), MV RPC Systems, Power Quality Solutions, aluminum electrolytic, ceramic capacitors, soft ferrites, inductors, chokes, coils, transformers, piezo and protection components like NTC, PTC, MOV, Surge arrestors, Zinc Oxide blocks, GD Tubes, piezo haptic devices, temperature and pressure sensors, inertial and gyrometric sensors, MEMS devices, Mobile phone batteries, IOT enabled wearable devices, magnets, recording devices, Flash memory applied devices, Radio wave

anechoic chambers, EMC measuring system, various products for mobile phones like camera actuators, MEMS Microphones, ITO film for touch panels etc. The company markets the product under 2 different bands of EPCOS and TDK.

In India the company produces metallized plastic film capacitors, DC Capacitors, Power Chip Capacitors (PCC) low power for Cars, batteries for Mobiles, AC motor run capacitors, Filter capacitors, LV PFC capacitors, key components required for PF correction system, APFC panels, MV capacitors, MV capacitor switch, MV reactive power compensation system.

TDK plants are certified to ISO 9001, ISO/TS 16949, IRIS and ISO 14001. The products have global approvals like UL, VDE, CSA, TUV, BIS, etc. and these products are exported to over 40 countries worldwide.

PhiCap PFC Capacitors

TDK Capacitors are designed and manufactured by making use of advance materials and processes. Higher crystalline and higher molecular weight BOPP ensures superior performance for voltage and thermal stresses. Use of high temperature grade film as compared to standard grade enhances the application duty.

TDK has mastered metallization processes. MPP profiles are developed considering resistivity of the electrode, profile, material composition, and thermodynamics during metallization process. Special MPP profiles are deployed in TDK designs provide higher current and higher pulse withstands.

TDK has state of art facilities for capacitor windings. A detailed consideration has been given to optimize the winding tension, an important parameter for Self-healing performance and humidity ingress at an air-conditioned ultra clean facility.

TDK ensures higher thickness, spray quality, grain size, number of layers, depth of penetration, fusing of spray

metal to electrode metal to achieve superior performance for switching and pulse current handling capabilities.

Drying and annealing is carried out to obtain a near humidity free and structurally stable capacitor. The process is designed to be non-invasive for dielectric and electrical contacts. Judicious selection of temperature and vacuum cycle ensures a reliable product.

PhiCap capacitors are a tried and tested series of MKP (metalized polypropylene) capacitors from TDK which have been used for PFC applications for more than 15 years. The power range varies from 1 to 33.1 KVAR per single capacitor can in three-phase capacitor design. The PhiCap capacitors are especially intended for power factor correction in industrial applications and are available in two designs:

Normal Duty (ND)
for linear inductive loads

Heavy Duty (HD)
for loads having some amount of non-linearity (with detuning reactor).



Features

- Low weight and compact volume
- Voltage range 415 ... 525 V
- Output range 1 ... 33.1 kvar
- Long life expectancy
- High pulse current withstand capability
- Easy installation and connection
- Self-healing
- Overpressure dis-connector

Applications

- Power Factor Correction (PFC) automatic capacitor banks
- Fixed PFC applications, e.g. motor compensation
- Detuned PFC systems
- Dynamic PFC systems


PhiCap PFC Capacitors

PhiCap Normal Duty

- Non PCB, Semi-dry Biodegradable Resin
- 3-Ph Over pressure disconnecter
- Low losses

PhiCap Heavy Duty

- Non PCB, Semi-dry Biodegradable Resin
- 3-Ph Over pressure disconnecter
- Low losses

Technical Data	PhiCap Normal Duty 	PhiCap Heavy Duty 
Series Type	B32344N	B32447H / B32448H
Power KVAR	1....30KVAR	1....33.1KVAR
Rated Voltage	415....525V	415....525V
Frequency	50Hz	50Hz
Transient peak current (Maximum permissible)	$\leq 200 I_R$ (A)	$\leq 250 I_R$ (A)
Temprature Category	-25°C to 55°C	-25°Cto 55°C
Dielectric Losses	0.2 W / KVAR	≤ 0.2 W / KVAR
Losses(Without discharge Resister)	≤ 0.5 W / KVAR	≤ 0.5 W / KVAR
Tolerance	-5 / +10%	-5 / +10%
Maximum Permissible Voltage	$V_R + 10\%$ (up to 8 h daily) / $V_R + 15\%$ (up to 30 min daily)** $V_R + 20\%$ (up to 5 min daily) / $V_R + 30\%$ $V_R + 30\%$ (up to 1 min daily)**	$V_R + 10\%$ (up to 8 h daily) / $V_R + 15\%$ (up to 30 min daily)** $V_R + 20\%$ (up to 5 min daily) / $V_R + 30\%$ (up to 1 min daily)**
Maximum Permissible Current	Up to 1.3.... 1.5 I_R ***	Up to 1.8 I_R ***
Safety	Self-healing,Three phase overpressure disconnecter	Self-healing,Three phase overpressure disconnecter
Impregnation	Non-PCB, semi-dry biodegradable resin	Non-PCB, semi-dry biodegradable resin
Life Expectancy	Up to 100,000 h for -25/D	Up to 130,000 h for -25/D
Cooling	Natural or forced	Natural or forced
Case/Shape	Extruded round aluminium can with stud	Extruded round aluminium can with stud
Terminal	Fast-on terminal upto 7 KVAR; and above Screw terminal	6.3 Fast-on terminals for plastic top; Sigut terminals for metal top
Mounting and Grounding	Threaded stud at bottom of can (max.torque = 4Nm for M8 and 10Nm for M10)	Threaded stud at bottom of can (max.torque = 4Nm for M8 and 10Nm for M10)
Enclosure	IP20, indoor mounting (optionally with terminal cap for IP54)	IP20, indoor mounting (optionally with terminal cap for IP54)
Discharge Resister	Provided with discharge resistor	Provided with discharge resistor
Connection	Delta	Delta
Dielectric	Polypropylene film (metallised)	Polypropylene film (metallised)
No. of switching per annum	Max. 5000 switching	Max. 7500 switching
Reference Standard	IEC60831-1/2 and IS13340	IEC60831-1/2 and IS13340

** V_R rated voltage

*** I_R : RMS line current that occurs at rated sinusoidal voltage and rated frequency, excluding transients.

Note : for capacitors with different features/parameters than above, please check with our nearest sales office

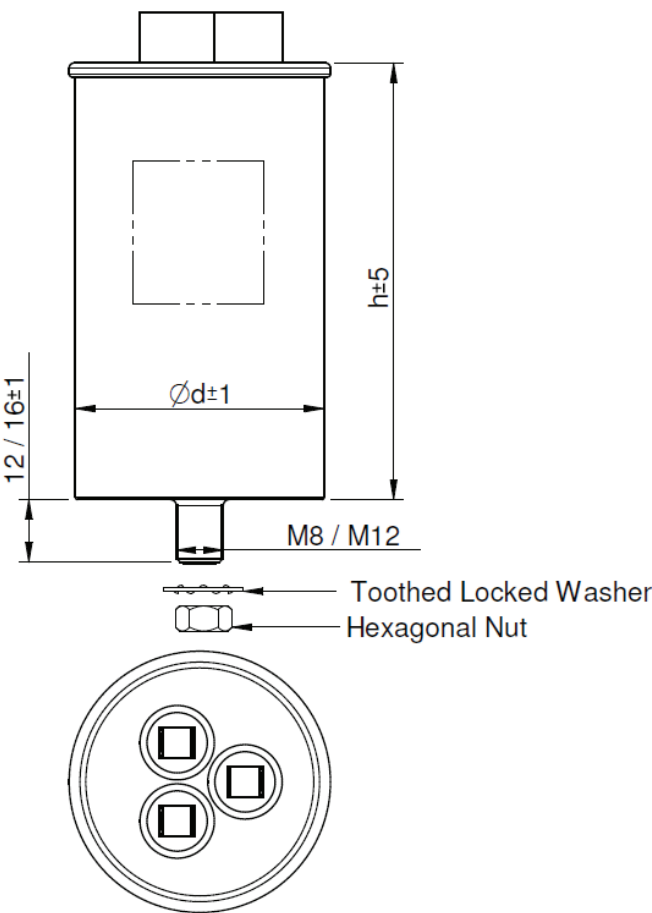
PhiCap Normal Duty (ND) Capacitors

PhiCap Normal Duty (ND) Capacitors Ordering Codes					
Power 50Hz KVA _r	Rated Capacitance C _R μF	Rated Current I _R 50 Hz	Dimensions d X h mm	Terminal Type	Ordering Code
Rated Voltage V_R V 415					
2.5	3 x 15.4	3.5	55 x 112	A	B32344N4022A515
3.0	3 x 18.5	4.2	55 x 137	A	B32344N4032A015
4.0	3 x 24.7	5.6	55 x 147	A	B32344N4042A015
5.0	3 x 30.8	7.0	63.5 x 137	A	B32344N4052A015
7.5	3 x 46.2	10.4	75 x 167	B	B32344N4072A515
10.0	3 x 61.6	13.9	75 x 197	B	B32344N4102A015
12.5	3 x 77.0	17.4	75 x 197	B	B32344N4122A515
20.0	3 x 123.3	27.8	75 x 270	B	B32344N4202A015
25.0	3 x 154.1	34.8	85 x 270	B	B32344N4252A015
Rated Voltage V_R V 440					
1.0	3 x 5.5	1.3	50 x 75	A	B32344N4012A040
2.0	3 x 11.0	2.6	50 x 112	A	B32344N4022A040
2.5	3 x 13.7	3.3	50 x 112	A	B32344N4022A540
3.0	3 x 16.4	3.9	55 x 112	A	B32344N4032A040
4.0	3 x 21.9	5.2	55 x 137	A	B32344N4042A040
5.0	3 x 27.4	6.6	55 x 147	A	B32344N4052A040
6.0	3 x 32.9	7.9	63.5 x 137	A	B32344N4062A040
7.0	3 x 38.4	9.2	63.5 x 147	A	B32344N4072A040
7.5	3 x 41.1	9.8	75 x 157	B	B32344N4072A540
8.3	3 x 45.5	10.9	75 x 157	B	B32344N4082A340
9.0	3 x 49.3	11.8	75 x 167	B	B32344N4092A040
10.0	3 x 54.8	13.1	75 x 167	B	B32344N4102A040
12.5	3 x 68.5	16.4	75 x 167	B	B32344N4122A540
15.0	3 x 82.2	19.7	75 x 270	B	B32344N4152A040
20.0	3 x 109.7	26.2	85 x 270	B	B32344N4202A040
25.0	3 x 137.1	32.8	90 x 270	B	B32344N4252A040
28.0	3 x 153.5	36.7	85 x 348	B	B32344N4282A040
30.0	3 x 164.5	39.4	90 x 348	B	B32344N4302A040
Rated Voltage V_R V 480					
5.0	3 x 23.0	6.0	63.5 x 136	A	B32344N4052A080
8.3	3 x 38.2	10.0	75 x 167	B	B32344N4082A380
10.4	3 x 47.9	12.5	75 x 197	B	B32344N4102A480
12.5	3 x 57.6	15.0	75 x 197	B	B32344N4122A580
15.0	3 x 69.1	18.0	75 x 270	B	B32344N4152A080
20.8	3 x 95.8	25.0	90 x 270	B	B32344N4202A880
25.0	3 x 115.2	30.1	85 x 348	B	B32344N4252A080
27.7	3 x 127.6	33.3	90 x 348	B	B32344N4272A780
30.0	3 x 138.2	36.1	90 x 348	B	B32344N4302A080
Rated Voltage V_R V 525					
5.0	3 x 19.3	5.5	63.5 x 146	A	B32344N5052A025
8.3	3 x 32	9.1	75 x 160	B	B32344N5082A325
10.4	3 x 40.1	11.4	75 x 197	B	B32344N5102A425
12.5	3 x 48.1	13.7	85 x 197	B	B32344N5122A525
16.7	3 x 64.3	18.4	85 x 270	B	B32344N5162A725
20.8	3 x 80.1	22.9	90 x 270	B	B32344N5202A825
26.5	3 x 102.1	29.1	90 x 348	B	B32344N5262A525

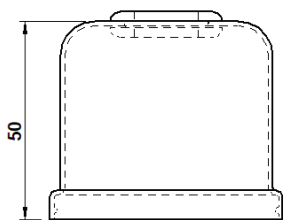
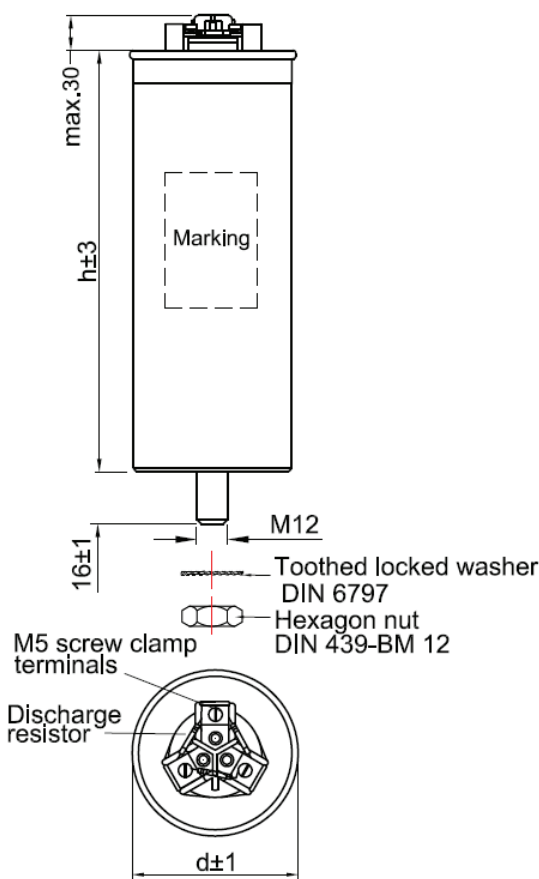
PhiCap Normal Duty (ND) Capacitors

Dimensional drawings

Terminal Type A



Terminal Type B



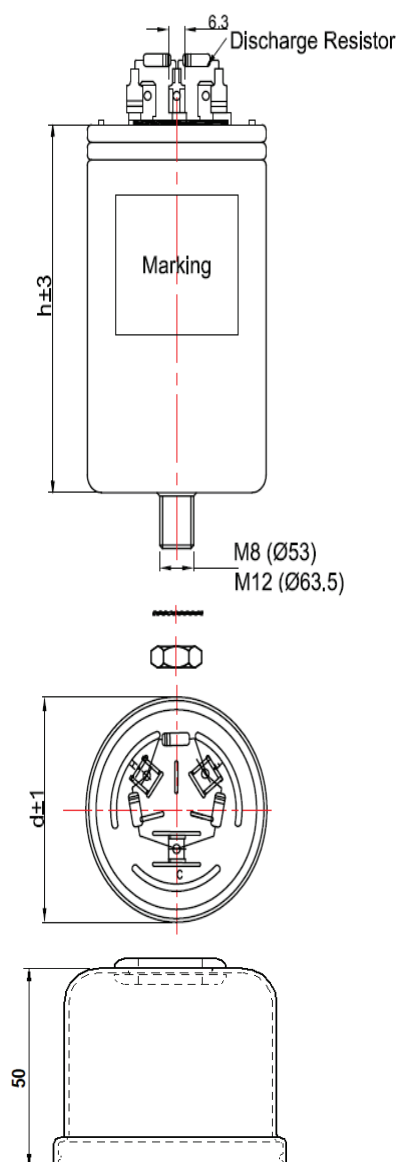
PhiCap Heavy Duty (HD) Capacitors

PhiCap Heavy Duty (HD) Capacitors Ordering Codes					
Power 50Hz KVA _r	Rated Capacitance C _R μF	Rated Current I _R 50 Hz	Dimensions d X h mm	Terminal Type	Ordering Code
Rated Voltage V_R V 415					
5.0	3 x 30.8	7.0	63.5x129	A	B32447H4052A015
7.5	3 x 46.2	10.4	75 x160	B	B32448H4072A515
10.0	3 x 61.6	13.9	75 x197	B	B32448H4102A015
12.5	3 x 77.0	17.4	75 x197	B	B32448H4122A515
15.0	3 x 92.4	20.9	75 x 270	B	B32448H4152A015
20.0	3 x 123.2	27.8	75 x 270	B	B32448H4202A015
25.0	3 x 154.0	34.8	85 x 270	B	B32448H4252A015
Rated Voltage V_R V 440					
1.0	3 x 5.5	1.3	53x117	A	B32447H4012A040
2.0	3 x 11.0	2.6	53x117	A	B32447H4022A040
3.0	3 x 16.4	3.9	53x117	A	B32447H4032A040
4.0	3 x 21.9	5.2	53x152	A	B32447H4042A040
5.0	3 x 27.4	6.6	53x152	A	B32447H4052A040
7.5	3 x 41.1	9.8	75x160	B	B32448H4072A540
10.0	3 x 54.8	13.1	75x197	B	B32448H4102A040
12.5	3 x 68.5	16.4	75x197	B	B32448H4122A540
15.0	3 x 82.2	19.7	75x270	B	B32448H4152A040
20.0	3 x 109.6	26.2	85x270	B	B32448H4202A040
25.0	3 x 137.0	32.8	90x270	B	B32448H4252A040
28.1	3 x 154.0	36.9	85x348	B	B32448H4282A140
30.0	3 x 164.4	39.4	90x348	B	B32448H4302A040
Rated Voltage V_R V 480					
5.0	3 x 23.0	6.0	63.5x152	A	B32447H4052A080
5.5	3 x 25.3	6.6	63.5x152	A	B32447H4052A580
6.3	3 x 29.0	7.6	63.5x152	A	B32447H4062A380
8.3	3 x 38.2	10.0	75x160	B	B32448H4082A380
10.4	3 x 47.9	12.5	75x197	B	B32448H4102A480
11.1	3 x 51.1	13.4	75x197	B	B32448H4112A180
12.5	3 x 57.6	15.0	75x197	B	B32448H4122A580
13.8	3 x 63.5	16.6	75x270	B	B32448H4132A880
15.0	3 x 69.1	18.0	75x270	B	B32448H4152A080
16.7	3 x 76.9	20.1	85x270	B	B32448H4162A780
18.7	3 x 86.1	22.5	85x270	B	B32448H4182A780
20.0	3 x 92.1	24.1	85x270	B	B32448H4202A080
22.0	3 x 101.3	26.5	85x348	B	B32448H4222A080
25.0	3 x 115.1	30.1	85x348	B	B32448H4252A080
27.7	3 x 127.5	33.3	90x348	B	B32448H4272A780
28.1	3 x 129.4	33.8	90x348	B	B32448H4282A180
30.0	3 x 138.1	36.1	90x348	B	B32448H4302A080
Rated Voltage V_R V 525					
5.0	3 x 19.2	5.5	63.5x152	A	B32447H5052A025
6.3	3 x 24.2	6.9	75x160	B	B32448H5062A325
6.6	3 x 25.4	7.3	75x160	B	B32448H5062A625
8.3	3 x 31.9	9.1	75x160	B	B32448H5082A325
10.4	3 x 40.0	11.4	75x197	B	B32448H5102A425
12.5	3 x 48.1	13.7	85x197	B	B32448H5122A525
13.2	3 x 50.8	14.5	75x270	B	B32448H5132A225
16.7	3 x 64.3	18.4	85x270	B	B32448H5162A725
20.0	3 x 77.0	22.0	90x270	B	B32448H5202A025
25.0	3 x 96.2	27.5	90x348	B	B32448H5252A025
26.5	3 x 102.0	29.1	90 x 348	B	B32448H5262A525
30.0	3 x 115.5	33.0	116x280	C	B32448H5302A025
33.1	3 x 127.4	36.4	116x280	C	B32448H5332A125

PhiCap Heavy Duty (HD) Capacitors

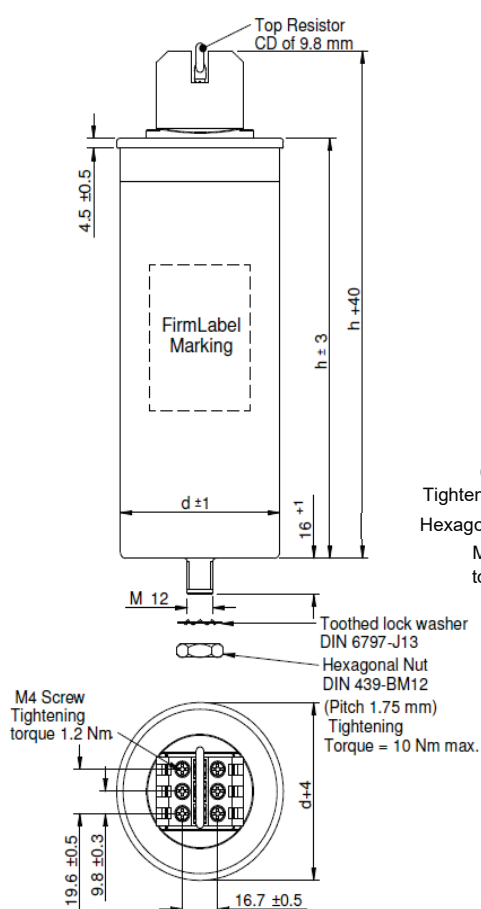
Dimensional drawings Capacitors with Plastic Top (B32447H)

Terminal Type A

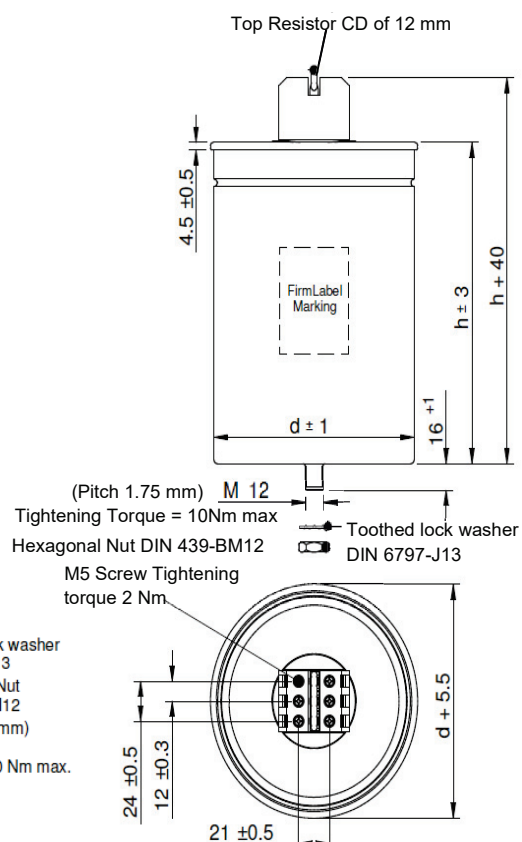


Dimensional drawings Capacitors with Metal Top (B32448H)

Terminal Type B



Terminal Type C



Authorized Dealer



For more details on products and applications
please contact our nearest sales office or write to us at
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