

# we are innovative

Our capacitors are changing the way you fly

DC CAPACITORS



[www.api-capacitors.com](http://www.api-capacitors.com)

 **apicapacitors**

## DC CAPACITORS

API Capacitors design and manufacture DC capacitors that are not limited to a catalogue range. Current, voltage, size, mass and terminations are matched to the customer's requirement and application, a few of which are listed below.

Long life and high reliability is achieved using ultra low defect density, high isotactic, metallised polypropylene dielectric film incorporating an extended working temperature range and controlled self-healing capability. Elements are wound on the latest precision edge controlled automatic winding machines. High conductivity copper is used for low resistance internal connections. Capacitors are finished in powder coated corrosion free metal or insulated cases and filled with an environmentally safe oil or dry leak free resin.

### Typical Applications\*

Used in Transportation, Marine, Automotive, Aerospace, Military, Medical, Renewable Energy, Power Distribution sectors and other industrial applications.

Static/Non-static Drives (Propulsion, Traction, Elevators, Escalators, Conveyors, Cable Cars)  
 Power Electronics (Welding, Furnaces, Induction Heating, Lasers, Scanners, Detectors, DC-Link)  
 Power Transmission (Conditioning, Detuned, FACTS, STATCOM, SVC, HVDC)  
 Passenger/Freight Rail (Auxiliary Circuits: Lighting, Heating, Ventilation, Communication)  
 Electric/ Hybrid Vehicles (KERS)  
 Filters (Smoothing, Suppression, Harmonic, Electrolytic Replacement)  
 Converters (Inverters, Rectifiers, Choppers, Cycloconverters)

### Features

Long Life and High Reliability  
 Controlled Self-Healing Technology  
 Oil Filled or Dry Resin Filled  
 Metal or Insulated Cases  
 UV Resistance, Halogen Free, Low Smoke and Flame Retardant Materials

### Custom Design Capacitors

Designed to meet detailed or brief specifications. Our technical sales representatives can work closely with your design team at concept stage or at the later stages of a project when a time critical design is needed. Alternatively like for-like replacements for older retro-fit designs can be offered.

### Typical Characteristics\*

Rated Capacitance (C):	0.05 to 30,000 $\mu$ F
Peak Repetitive Voltage ( $U_{NDC}$ ):	100 to 20,000 V
Continuous RMS Current ( $I_{max}$ ):	10 to 1,000 A <sub>rms</sub>
Frequency ( $f_p$ ):	100 to 20,000 Hz
Ambient Temperature ( $t_{amb}$ ):	-40 to +85 °C
Case Materials:	Steel, Stainless Steel, Aluminium and Insulated Materials
Termination:	Threaded M5-M16 Copper/Brass, Ceramic/Polymer Insulators, Busbar, Cable and Laminated connections
Related Standards:	BS EN 61071, BS EN 61881

\* Applications and characteristics are for guidance only. Please contact us to discuss our full design capability.



## Product Information

These are low inductance capacitors for applications with IGBT inverters, GTO inverters and choppers. Generally three forms of construction are available, namely oil filled, hermetically sealed in metal clad enclosures, and dry film versions enclosed in either steel or high impact insulated moulded containers both encapsulated with a flame retardant epoxy resin. The latter versions are available with a choice of termination to suit their application.

## Applications

These capacitors are used in traction and static drive applications where voltage and current surges, and spikes are prevalent. They are an essential device for use in locomotives, metros and trams but equally important in marine and avionic applications and static frequency converters, renewable energy systems for local and HVDC transmission. The dielectric systems used in all of these designs provide the highest degree of integrity to ensure trouble free service and longevity.

## Construction

Low loss metallised polypropylene is used as the dielectric. Depending on the voltage, the assembled capacitor elements are impregnated with a minimal amount of high purity synthetic oil. The capacitor assembly is encased in fire resistant resin. All materials have been extensively used in the traction industry for over 20 years. The dielectric utilises special metallisation to ensure safe, reliable self- healing.



## Typical Characteristics\*

Capacitance value:	280 $\mu$ F to 7500 $\mu$ F
Tolerance:	$\pm$ 10%
Peak repetitive voltage (UN):	800 V to 4000 V
Impregnation Fluid:	Silicone Oil
Installation:	Suitable for vertical and horizontal mounting
Temperature Rating:	-40/+85°C
Max Ambient Temperature	+70°C
Dimensions:	380 x 150 x 235mm high (plus mounting feet and terminal)
Case Material:	DMC
Mass:	~18kg
Termination:	Choice of busbars are available to suit application.
Reference Standards:	BS EN 61071:2007



## HIGH CAPACITANCE, INSULATED CASE DC LINK CAPACITORS

Part No.	Capacitance C (μF)	Rated Voltage U <sub>n</sub> (V)	Max rms Current I <sub>max</sub> (A)	Peak Current I <sub>p</sub> (kA)	Surge Current I <sub>s</sub> (kA)	Self Inductance L (nH)	Series Resistance R <sub>s</sub> (mΩ)	Thermal Resistance R <sub>th</sub> (°C/W)
GB3721	7500	800	290	23.0	34.6	<30	0.48	0.39
GB3722	6000	900	285	20.8	31.2	<30	0.50	0.39
GB3723	4800	1000	280	18.5	27.7	<30	0.51	0.39
GB3724	4000	1100	275	16.9	25.4	<30	0.53	0.39
GB3725	3400	1200	270	15.7	23.6	<30	0.54	0.39
GB3726	2900	1300	265	14.5	21.7	<30	0.57	0.39
GB3727	2500	1400	260	13.5	20.2	<30	0.58	0.39
GB3728	1900	1600	255	11.7	17.5	<30	0.60	0.39
GB3729	1500	1800	250	10.4	15.6	<30	0.63	0.39
GB3730	1250	2000	245	9.5	14.4	<30	0.66	0.39
GB3731	1000	2200	240	8.5	12.7	<30	0.69	0.39
GB3732	850	2400	235	7.8	11.8	<30	0.72	0.39
GB3733	550	3000	225	6.4	9.5	<30	0.81	0.39
GB3734	440	3200	260	11.8	17.7	<30	0.60	0.39
GB3735	360	3600	250	10.6	15.7	<30	0.63	0.39
GB3736	280	4000	245	9.4	14.1	<30	0.67	0.39

