RF Power Capacitors Class1

10-15kV Hi-Load: Feed-Through Mounting

CeramTec
THE CERAMIC EXPERTS

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The CeramTec Group is a world leader in the design and manufacture of complex electronic ceramic components and assemblies used in a wide range of applications and cutting edge technologies. CeramTec UK specialises in the development and production of dielectric and ferroelectric materials and components. This range of high voltage RF discs capacitors is fabricated from very low loss CLASS 1 ceramic dielectric materials which permit them to carry very high electrical loads over a wide frequency range.

APPLICATIONS INCLUDE

- Radio Broadcast Transmitters
- Induction and Dielectric Heating Equipment
- HF Filter, By-Pass & Coupling Circuits
- High Power Matching Tuned Circuits
- Antenna Circuits
- Industrial Applications
- High Power matching networks –Plasma Generators
- High quality medical imaging systems (MRI)

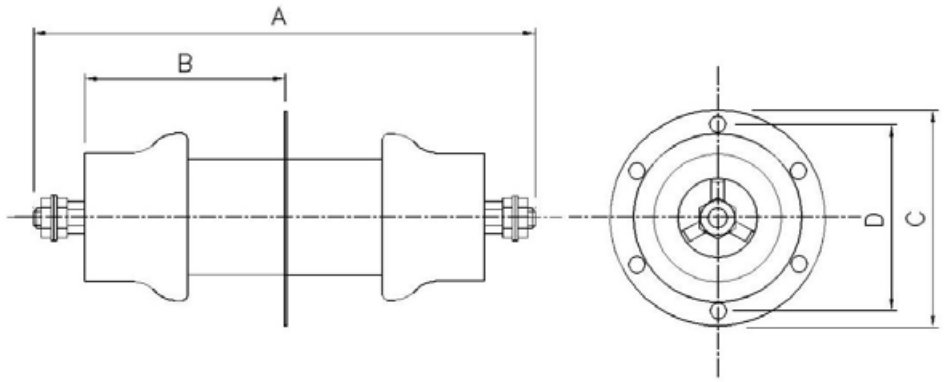
FEATURES

- Low loss Class 1 ceramic dielectric materials with noble metal electrodes resulting in low self heating.
- High Voltage / High Reactive Power Ratings
- Very low NPO capacitance-temperature characteristics available that result in correspondingly low tuned frequency drift.
- Low Inductance construction permitting higher frequency use.
- Low magnetic susceptibility

Material Characteristics						
Dielectric Constant @ 20°C / 1 MHz		15	36	77	90	190
Temperature Coefficient of Capacitance	ppm/°C	+100 ±60	0 ±30	0 ±30	-750 ±80	-1300 ±120
Tan δ 1 MHz (Cap ≤ 1000 pF)	x 10^{-4}	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
Tan δ 1 kHz (Cap > 1000 pF)	x 10^{-4}	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Dielectric Strength	kVmm^{-1} dc	22	20	15	10	10
Volume Resistivity	Ωm	10^{13}	10^{13}	10^{13}	10^{13}	10^{13}

Electrical Specification	
Capacitance Range	150 – 4000pF (see table)
Capacitance Tolerance	±20 % ±10 % Consult factory for other tolerances
Rated RF Voltage	10-15kV pk (see table)
Test Voltage (50 Hz)	√2 x Rated Voltage / 60sec
RF Voltage, Current kVAr & Load v Frequency	See RF rating curves (ref 30°C max ambient temperature)
Operating Temperature Range	-25°C +95°C
Maximum Relative Humidity	75 %

Outline Drawing: 10kV Discs



Vertical Mounting Recommended

Type 860 – Female Thread (M6)

Electrical Characteristics

Type No	Cap Value pF	TCC ppm/ °C	Rated (ACpk + DC) kVpk	Rated AC kVpk	Test 50 Hz kVrms	Max POWER Rating (kVAr)	Max Current Rating (A rms)	A nom (mm)	B nom (mm)	C nom (mm)	D nom (mm)
07	150	+100	10	7.5	10	80	30	138	44	72	59
08	430	0	10	7.5	10	80	30	138	44	72	59
09	1000	-750	10	7.5	10	60	30	138	44	72	59
804	2000	-1300	10	7.5	10	60	30	138	44	72	59
804	2500	-1300	10	7.5	10	60	30	138	44	72	59
96172	1000	-750	14	10	14	60	30	195	77.5	84	73
860	2000	-1300	15	12	15	200	75	129	64	120	99
860	3000	-1300	15	12	15	200	75	162	79	120	99
860	4000	-1300	15	12	15	200	75	184	92	120	99
Maximum feed-through current – 50 Amps rms all types other than Type 860											
Maximum feed-through current – 75 Amps rms – Type 860											

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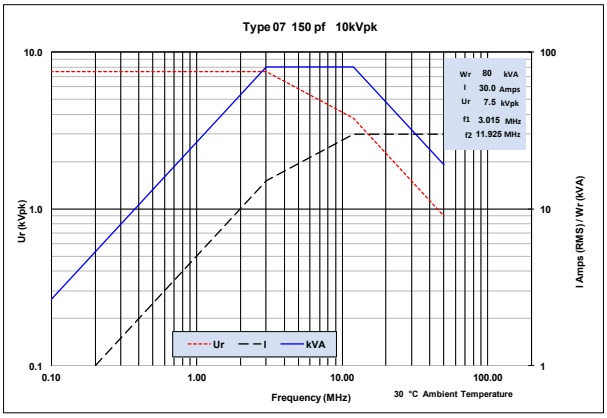

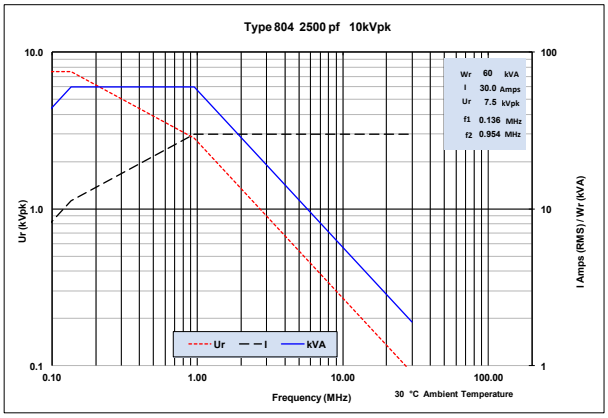

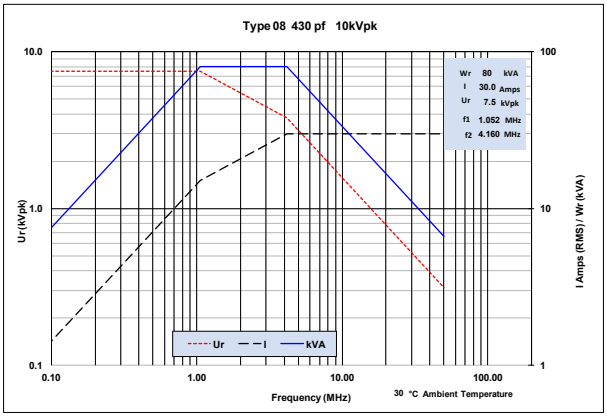

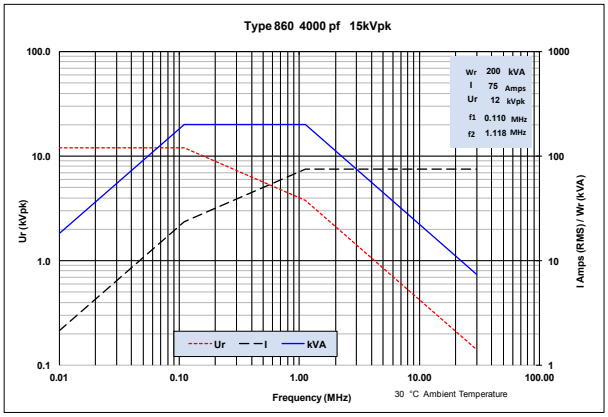

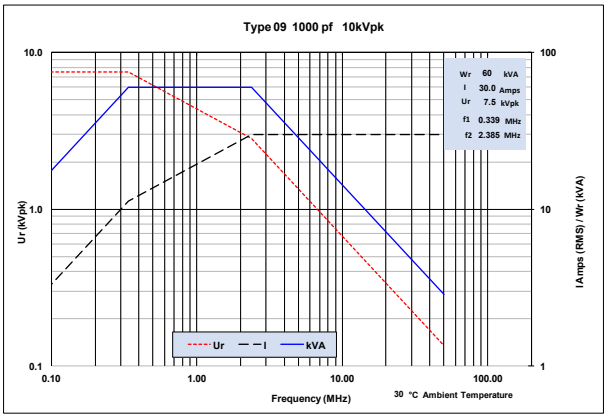

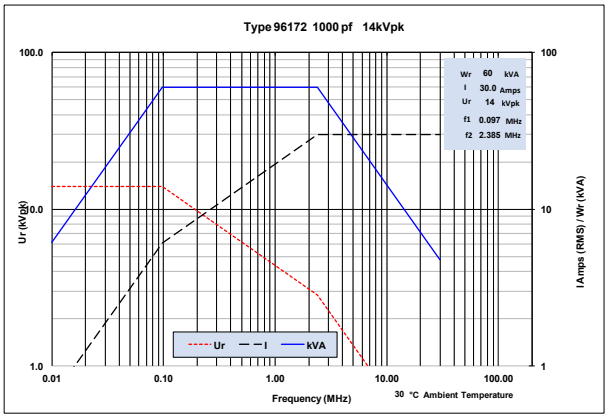

The above RF load conditions are based on the maximum body temperature rise of 45°C from an ambient temperature of 30°C.

CeramTec UK Limited
Vauxhall Industrial Estate
Ruabon
Wrexham
LL14 6HY
United Kingdom
Phone +44 (0) 1978 810 456
electroceramics@ceramtec.co.uk
www.ceramtec.com

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