

# RF Power Capacitors Class1

10kV Discs

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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

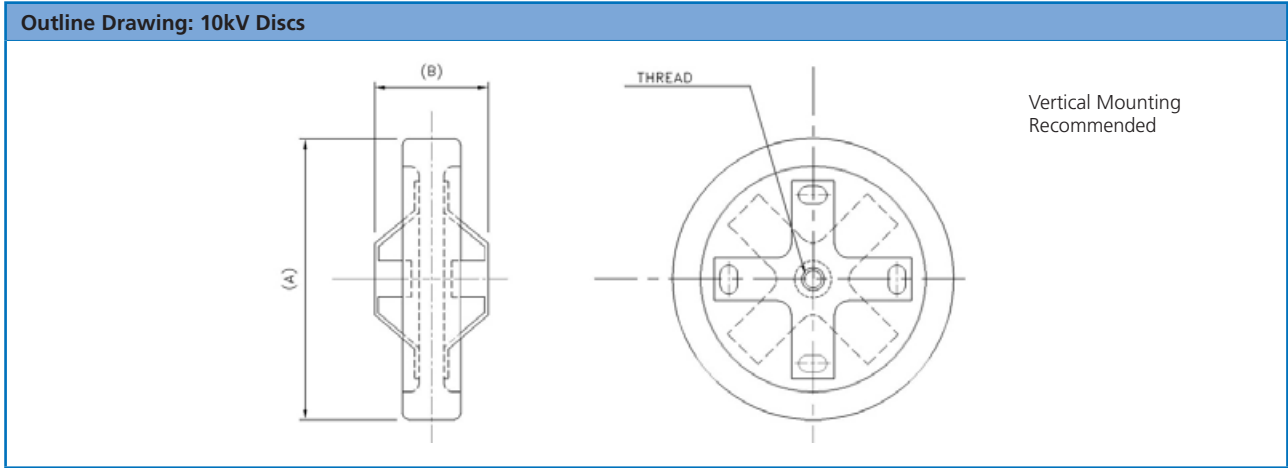
- Radio Broadcast Transmitters
- Induction and Dielectric Heating Equipment
- HF Filter, By-Pass & Coupling Circuits
- High Power Matching Tuned Circuits
- Antenna Circuits
- Industrial Applications
- High Power matching networks –Plasma Generators
- High quality medical imaging systems (MRI)

### 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 <sup>-4</sup>	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
Tan δ 1 kHz (Cap > 1000 pF)	x 10 <sup>-4</sup>	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Dielectric Strength	kVmm <sup>-1</sup> dc	22	20	15	10	10
Volume Resistivity	Ωm	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>

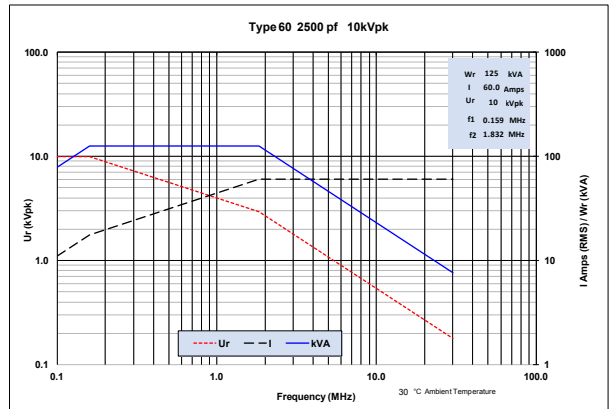
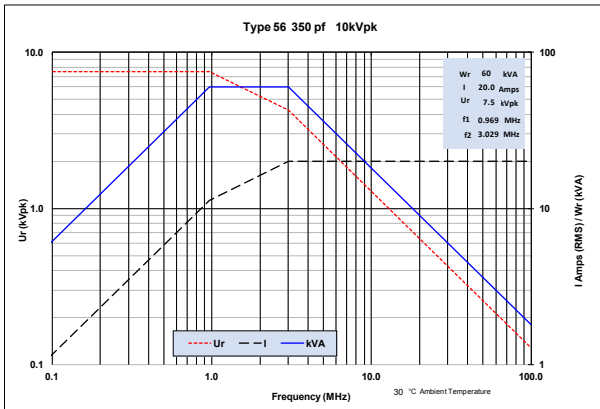
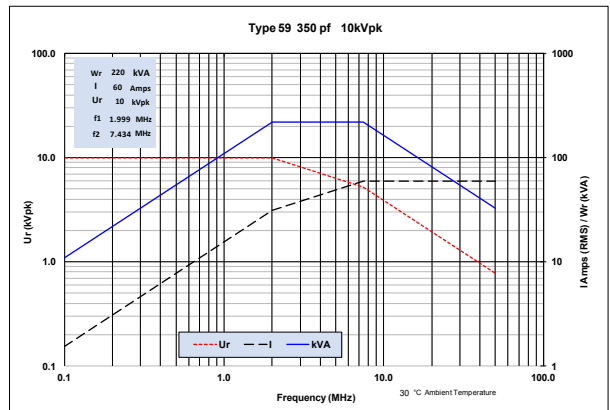
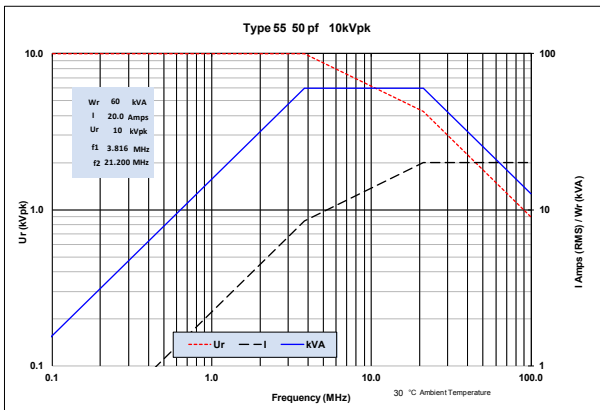
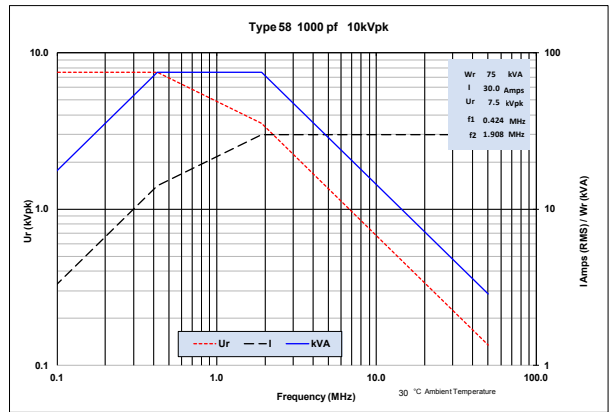
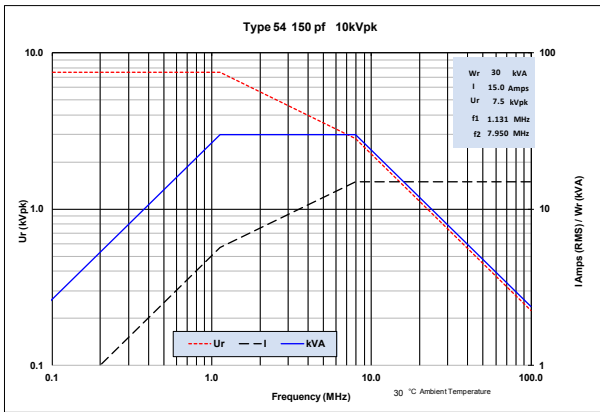
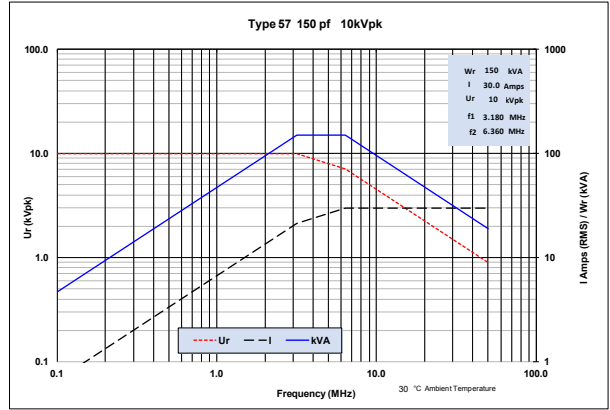
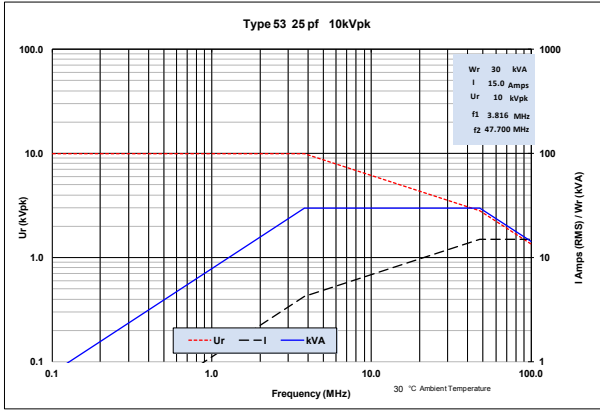
Electrical Specification	
Capacitance Range	10 – 5000pF (see table)
Capacitance Tolerance	±20 % ±10 % Consult factory for other tolerances
Rated RF Voltage	10kV pk (see table)
Test Voltage (50 Hz)	√2 x Rated Voltage / 60sec
RF Voltage, Current kVAR & Load v Frequency	See RF rating curves (ref 30°C max ambient temperature)
Operating Temperature Range	-25°C +95°C
Maximum Relative Humidity	75 %



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)	Thread Size (mm)
53	10	+100	10	10	12	30	15	32	29	M4
53	15	+100	10	10	12	30	15	32	26	M4
53	25	+100	10	10	12	30	15	32	24	M4
55	25	+100	10	10	12	60	20	50	39	M4
55	35	+100	10	10	12	60	20	50	36	M4
55	50	+100	10	10	12	60	20	50	34	M4
57	50	+100	10	10	12	150	30	80	47	M6
57	100	+100	10	10	12	150	30	80	42	M6
57	150	+100	10	10	12	150	30	80	40	M6
59	150	+100	10	10	12	220	60	140	64	M6
59	250	+100	10	10	12	220	60	140	59	M6
59	350	+100	10	10	12	220	60	140	57	M6
54	50	-750	10	7.5	12	30	15	32	32	M4
54	100	-750	10	7.5	12	30	15	32	26	M4
54	150	-750	10	7.5	12	30	15	32	24	M4
56	150	-750	10	7.5	12	60	20	50	41	M4
56	250	-750	10	7.5	12	60	20	50	37	M4
56	350	-750	10	7.5	12	60	60	50	35	M4
58	350	-750	10	7.5	12	75	30	78	49	M6
58	500	-750	10	7.5	12	75	30	78	44	M6
58	1000	-750	10	7.5	12	75	30	78	41	M6
60	1000	-750	10	10	12	125	60	140	64.5	M6
60	1500	-750	10	10	12	125	60	140	61	M6
60	2500	-750	10	10	12	125	60	140	57	M6
830	2500	-1300	10	10	12	150	60	140	64	M6
830	5000	-1300	10	10	12	150	60	140	57	M6

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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.



The measured values mentioned before were determined for test samples and are applicable as standard values. The values were determined on the basis of DIN-/DIN-VDE standards and if these were not available, on the basis of CeramTec standards. The values indicated must not be transferred to arbitrary formats, components or parts featuring different surface qualities. They do not constitute a guarantee for certain properties. We expressly reserve the right to make technical changes.

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