

# High Voltage Ceramic Capacitors



## HP Type - Strontium-based Dielectric

### FEATURES

- Excellent behavior on pulse and discharge conditions
- Excellent capacitance vs voltage characteristic
- Optimized size, epoxy coating
- Low dissipation factor
- Very low Corona effect

### APPLICATIONS

- High-voltage supply for gas lasers
- Marx generators
- Power generators
- Copying machines
- Electronic microscopes

### REFERENCES - VOLTAGE AND CAPACITANCE RANGE

Style	Rated Voltage kVdc	Test Voltage kVrms	Reference	AC Corona inception voltage (kV) <5 pico C 50Hz	Capacitance ± 20% (pF)	Dimensions millimeters (inches)			
						D ±1	d	L ±1	h ±2
	20	22	HP 30 E Y 0751 M.-.	10	750	28 (1.100)	12 (0.472)	23 (0.906)	17 (0.669)
			HP 40 E Y 0142 M.-.		1400	38 (1.500)	12 (0.472)	23 (0.906)	17 (0.669)
			HP 40 E Y 0152 M.-.		1500	38 (1.500)	12 (0.472)	23 (0.906)	17 (0.669)
			HP 50 E Y 0202 M.-.		2000	48 (1.900)	12 (0.472)	23 (0.906)	17 (0.669)
			HP 50 E Y 0252 M.-.		2500	48 (1.900)	12 (0.472)	23 (0.906)	17 (0.669)
			HP 60 E Y 0302 M.-.		3000	58 (2.283)	15 (0.591)	23 (0.906)	17 (0.669)
	HP 60 E Y 0402 M.-.	4000	58 (2.283)	15 (0.591)	23 (0.906)	17 (0.669)			
	30	33	HP 30 E 3 0511 M.-.	15	510	28 (1.100)	12 (0.472)	26 (1.024)	20 (0.787)
			HP 40 E 3 0941 M.-.		940	38 (1.500)	12 (0.472)	26 (1.024)	20 (0.787)
			HP 40 E 3 0102 M.-.		1000	38 (1.500)	12 (0.472)	26 (1.024)	20 (0.787)
			HP 50 E 3 0152 M.-.		1500	48 (1.900)	12 (0.472)	26 (1.024)	20 (0.787)
			HP 50 E 3 0172 M.-.		1700	48 (1.900)	12 (0.472)	26 (1.024)	20 (0.787)
HP 60 E 3 0202 M.-.			2000		58 (2.283)	15 (0.591)	26 (1.024)	20 (0.787)	
40	44	HP 30 E 4 0391 M.-.	20	390	28 (1.100)	12 (0.472)	30 (1.180)	24 (0.945)	
		HP 40 E 4 0701 M.-.		700	38 (1.500)	12 (0.472)	30 (1.180)	24 (0.945)	
		HP 40 E 4 0721 M.-.		720	38 (1.500)	12 (0.472)	30 (1.180)	24 (0.945)	
		HP 50 E 4 0102 M.-.		1000	48 (1.900)	12 (0.472)	30 (1.180)	24 (0.945)	
		HP 50 E 4 0132 M.-.		1300	48 (1.900)	12 (0.472)	30 (1.180)	24 (0.945)	
		HP 60 E 4 0152 M.-.		1500	58 (2.283)	15 (0.591)	32 (1.260)	26 (1.024)	
50	53	HP 40 E 5 0561 M.-.	25	560	38 (1.500)	12 (0.472)	35 (1.378)	29 (1.142)	
		HP 50 E 5 0112 M.-.		1100	48 (1.900)	12 (0.472)	35 (1.378)	29 (1.142)	
		HP 60 E 5 0172 M.-.		1700	58 (2.283)	15 (0.591)	35 (1.378)	29 (1.142)	

- Other tolerance on capacitance value, 50 kV voltage: please consult us.

- Tightening torque: 0.3 m.daN max

### MARKING

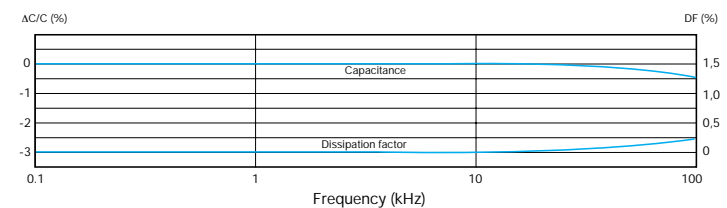
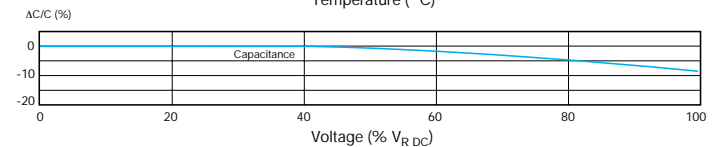
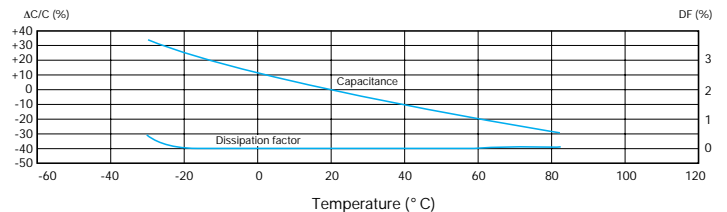
- On each part: logo, type, capacitance, rated voltage, manufacturing date
- On packaging: reference, lot number

### ELECTRICAL CHARACTERISTICS

• Rated voltage ( $V_R$ )	20 to 50 kVdc
• Test voltage ( $V_E$ ) (50Hz, in oil, 60 s without destruction)	22 to 53 kV <sub>RMS</sub>
• Temperature ranges storage operating	-40 +125°C -30 +85°C
• Temperature characteristic	N4700
• Dissipation factor (25°C, 1 kHz, 1 V <sub>rms</sub> )	< 10.10 <sup>-4</sup>
• Insulation resistance (1000 V <sub>DC</sub> / 60 s)	> 100 G Ω
• Capacitance range (25°C - 1 kHz - 1 V <sub>rms</sub> )	390pF to 4000pF
• Tolerance	±20%
• Self-inductance	60 nH

### TYPICAL CURVES

Capacitance and dissipation factor changes vs temperature, DC voltage, frequency



# High Voltage Ceramic Capacitors



## How To Order

### ORDERING CODE

HP40	E	3	0102	M	--
<b>Type/Size</b> <b>High Voltage Radial-led Discs</b> 09 12 HZ 16 20 22 <b>Coated Discs</b> HT 30 HD 40 HR 60  30 HP 40 50 60 <b>Uncoated Discs</b> HU 30 HE 40 HS 60 <b>Rods</b> HB 30 HF 40 60	<b>Class Type I</b> A = P 100 C = NP0 H = N33 T = N470 U = N750 V = N1500  <b>Type II</b> E = N4700 N = N10000 W = +22 -56% X = +22 -82%	<b>Voltage</b> 1000 V: L 1600 V: M 2000 V: N 2500 V: P 3000 V: Q 4000 V: R 5000 V: S 6000/6300 V: T 8000/9000 V: U 10,000 V: V 12,500 V: W 15/16 kV: X 20/25 kV: Y 30 kV: 3 40 kV: 4 50 kV: 5  For the following types whose class or voltage is not specified but inferred by the type, the size and the value: write 0 (zero) in the 5th (class) or 6th digit case (voltage).	<b>Capacitance (EIA code)</b> <b>Capacitance expressed by 2 significant figures</b> 1st digit: 0 (zero) 2nd and 3rd digits: the 2 significant figures of the capacitance value. 4th digit: - for values $\geq 10\text{pF}$ and $\leq 990\mu\text{F}$ : the number of ZEROS to be added to the capacitance values - for values $\geq 1\text{pF}$ and $\leq 9.9\text{pF}$ : the figure 9 signifying that the capacitance value is to be multiplied by 0.1 Examples: 1000pF: 0102 8.2pF: 0829 <b>Capacitance expressed by 3 significant figures</b> 1st, 2nd and 3rd digits: the 3 significant figures of the capacitance value. 4th digit: - for values $> 100\text{pF}$ and $\leq 999\mu\text{F}$ : the number of ZEROS to be added to the capacitance value - for values $> 10\text{pF}$ and $< 100\text{pF}$ : the figure 9 signifying that the capacitance value is to be multiplied by 0.01. - for values $> 1\text{pF}$ and $\leq 10\text{pF}$ : the figure 8 signifying that the capacitance value is to be multiplied by 0.01. Examples: 196pF: 1960 47.2pF: 4729 8.28pF: 8288	<b>Tolerance</b> C < 10pF $\pm 1\text{pF}$ $\pm 2\text{pF}$ C $\geq 10\text{pF}$  $\pm 5\%$ $\pm 10\%$ $\pm 20\%$ -20 +50% -20 +80%	<b>Suffix</b> -- PY WH  Code Code J K M S Z
	Class not specified HD HE HR HS HB HF	Voltage not specified HT HU HB HF			

NOTE: Special drawing number

If customer requirements differ from the standard type, the codification of the product is modified as follows:

5th, 6th digit: -

7th digit: H for high voltage types

8th, 9th, 10th digit: drawing number

11th digit: -

12th, 13th digit: two digits number for revised edition number

# High Voltage Ceramic Capacitors



## Marking - Packaging - Identification

### MARKING

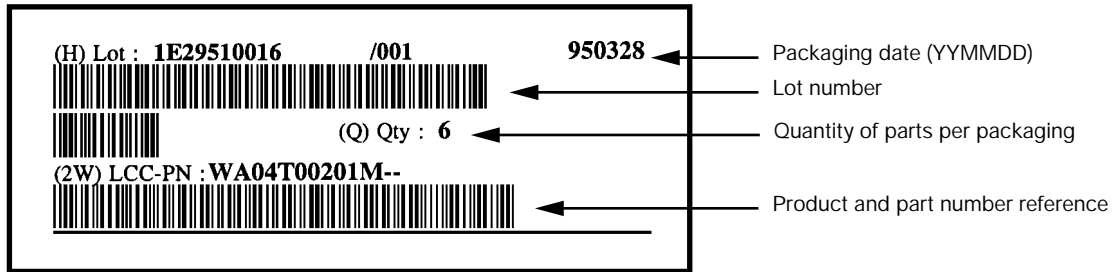
Each part is marked with the following indications:

- Logo
- Reference
- Rated capacitance (EIA code)
- Tolerance on capacitance (EIA code)
- Rated voltage

### IDENTIFICATION - TRACEABILITY

On the packaging of all shipped capacitors, you will find a bar code label (code 39). This label gives systematic information on the type of product, part number, lot number, packing date and quantity.

An example is given below:



This information allows traceability of the entire manufacturing process, from critical raw materials to shipment. This is extremely useful for any information request, customer complaint or product return.

### CROSS REFERENCES PREVIOUS REFERENCES / NEW REFERENCES

High Voltage	
Previous Reference	New Reference
HT030 ... 060	HT30 ... 60
HT030D ... 060D	HU30 ... 60
HTD230 ... 360	HD30 ... 60
HTD230D ... 360D	HE30 ... 60
HTX230 ... 360	HR30 ... 60
HTX230D ... 360D	HS30 ... 60
HTZ130 ... 160	HB30 ... 60
HTZ131 ... 161	HF30 ... 60