

RF Power Barrel Capacitors, Class 1 and Class 2 Ceramic



LINKS TO ADDITIONAL RESOURCES



| QUICK REFERENCE DATA | | | |
|----------------------------|----------------|------------|------|
| DESCRIPTION | VALUE | | |
| Ceramic class | 1 | 1 | 2 |
| Ceramic dielectric | NP0 (C0G) | N750 (U2J) | X5U |
| Type | 7FAA | 7FAU | 5FAE |
| Voltage (V _{DC}) | 7500 | 7500 | 5000 |
| Min. capacitance (pF) | 10 | 75 | 500 |
| Max. capacitance (pF) | 50 | 100 | 1000 |
| Mounting | Screw terminal | | |

MATERIAL

Capacitor elements made from class 1 or class 2 ceramic dielectric with noble metal electrodes.

Connection terminals:
thread terminal, brass, tin plated.

Allowable torque: 1.47 Nm (13 lbf in)

FINISH

Capacitor finished with protective lacquer.

MARKING

Type designator, capacitance value and tolerance, rated peak voltage, ceramic material code, production date code, manufacturer logo.

FEATURES

- Small size
- Geometry minimizes inductance, and maximizes voltage and heat dissipation capability

APPLICATIONS

- Industrial and medical RF power supplies
- Low power broadcasting equipment
- Antenna coupling
- Induction heating equipment

CAPACITANCE RANGE

10 pF to 1.0 nF

CAPACITANCE TOLERANCE

± 10 %; ± 20 %

CERAMIC DIELECTRICS

- Class 1: NP0 (C0G), N750 (U2J)
- Class 2: X5U

RATED VOLTAGE

- 5.0 kV_{DC}
- 7.5 kV_{DC}

DIELECTRIC STRENGTH TEST

150 % of rated DC voltage

DISSIPATION FACTOR

- Class 1: max. 0.2 % (1 MHz)
- Class 2: max. 2.0 % (1 kHz)

INSULATION RESISTANCE

- Class 1: 100 000 MΩ (at 25 °C)
- Class 2: 10 000 MΩ (at 25 °C)

OPERATING TEMPERATURE RANGE

- Class 1: -55 °C to +100 °C
- Class 2: -55 °C to +85 °C

| SAP PART NUMBER AND ELECTRICAL DATA | | | | | | | | | |
|-------------------------------------|------------|------------------|-----------------------------------|---|--------|--------|---|--------|--------|
| PART NUMBER | CERAMIC | CAP. VALUES (pF) | RATED VOLTAGE (kV _{DC}) | MAX. POWER RATING ⁽¹⁾ (kvar) | | | MAXIMUM CURRENT RATING ⁽¹⁾ (A _{RMS}) | | |
| | | | | 1 MHz | 10 MHz | 30 MHz | 1 MHz | 10 MHz | 30 MHz |
| TYPE 7FAA, 7FAU | | | | | | | | | |
| 7FAA100K | NP0 (C0G) | 10 | 7.5 | 1.7 | 10 | 10 | 0.3 | 2.5 | 4.5 |
| 7FAA200K | | 20 | | 3.2 | 10 | 10 | 0.8 | 3.5 | 7.0 |
| 7FAA250K | | 25 | | 4.4 | 10 | 10 | 0.9 | 4.0 | 7.0 |
| 7FAA300K | | 30 | | 5.3 | 10 | 10 | 1.0 | 2.4 | 7.5 |
| 7FAA500K | | 50 | | 8.8 | 10 | 7.6 | 1.7 | 5.7 | 8.0 |
| 7FAU750K | N750 (U2J) | 75 | | 10 | 10 | 6.3 | 2.2 | 7.0 | 9.5 |
| 7FAU101K | | 100 | | 10 | 10 | 4.8 | 2.5 | 8.0 | 0.5 |
| TYPE 5FAE | | | | | | | | | |
| 5FAE501M | X5U | 500 | 5.0 | 0.4 | 0.4 | 0.2 | 0.9 | 1.9 | 1.9 |
| 5FAE801M | | 800 | | 0.6 | 0.3 | 0.2 | 1.7 | 3.5 | 3.5 |
| 5FAE102M | | 1000 | | 0.4 | 0.2 | 0.15 | 1.7 | 3.7 | 3.7 |

Notes

- # 8th digit of the part number: capacitance tolerance code $\pm 10\% = K$, $\pm 20\% = M$
- RoHS-compliant parts on request
- ⁽¹⁾ At rated voltage. Data presented is based on a minimum body temperature rise of 30 °C at +25 °C

| DIMENSIONS in millimeters (inches) | |
|-------------------------------------|---------------------------------------|
| | |
| TYPE | 5FAE, 7FAA, 7FAU |
| Diameter D_{max} . | 20.7 (0.815) |
| Thread size | 6-32 UNC-2B thread; 4.0 (0.157) depth |
| Length L_1_{max} . ⁽¹⁾ | 22.6 (0.890) |
| Length L_2_{max} . ⁽¹⁾ | 17.0 (0.670) |

Note

- ⁽¹⁾ Dimension L will vary depending upon capacitance value

| RELATED DOCUMENTS | |
|---------------------|--|
| General Information | www.vishay.com/doc?22071 |



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