RF Power Feed-Through Capacitors with Conductor Rod, Class 1 Ceramic

QUICK REFERENCE DATA				
DESCRIPTION	VALUE			
Ceramic Class	1			
Ceramic Dielectric	R85	R85, R230		
Type	DBF 050166	DBF 050180		
Voltage (V_p)	25 000	20 000	30 000	40 000
Min. Capacitance (pF)	500	3000	1000	2000
Max. Capacitance (pF)	500	3000	2000	2000
Mounting	Screw terminal			

MATERIAL

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

Connection terminals:
made from copper / brass, silver plated.

FINISH

Capacitor body completely protective lacquered.

The DBF-styled capacitors features umbrella-shaped insulation rims made from silicone elastomer to minimize the adverse effects of moisture, dust and other impurities in the working environment and to improve the characteristics of the electrical field.

MARKING

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

ACCESSORIES ADDED

All feed-through capacitors are supplied with the necessary nuts and washers to make the connection to the conductor rod.

FEATURES

- High voltage ratings
- High feed-through currents
- The insulation rim is made from silicone rubber minimize the adverse effects of moisture, dust and other impurities in the working environment

APPLICATIONS

Filtering purposes in industrial and medical RF power equipment where high voltages and high feed-through currents are required.

CAPACITANCE RANGE

500 pF to 3.0 nF

CAPACITANCE TOLERANCE

± 20 %, ± 10 %

CERAMIC DIELECTRICS

- R85 (TCC - 750 ppm/K)
- R230 (TCC - 750 ppm/K)

RATED VOLTAGE

- 20 kV_p
- 25 kV_p
- 30 kV_p
- 40 kV_p

DIELECTRIC STRENGTH TEST

(1) 50 000 V_{DC}, 5 minutes; U_R = 30 kV_p and 40 kV_p types only

(2) 160 % to 200 % of rated AC voltage (50 Hz, 5 minutes)

DISSIPATION FACTOR

Max. 0.05 %
Measuring frequencies:
1 MHz (< 1 nF); 300 kHz or 100 kHz (> 1 nF)

INSULATION RESISTANCE

Min. 10 000 MΩ (at 25 °C)

OPERATING TEMPERATURE RANGE

-55 °C to +100 °C

For technical questions, contact: powcap@vishay.com

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SAP PART NUMBER AND ELECTRICAL DATA

PART NUMBER	CERAMIC	CAP. VALUES (pF)	RATED VOLTAGE (kV_P)	RATED POWER (1) (kvar)	RATED CURRENT (A_{RMS})	FEED-THROUGH CURRENT (2) (A)
TYPE DBF 050166						
DBF50166BQ501##BJ1	R85	500	25.0	70.0	50.0	70.0
TYPE DBF 050180						
DBF50180WV102##BJ1	R85	1000	30.0	70.0	87.0	70.0
DBF50180WV152##BJ1		1500				
DBF50180WV202##BK1	R230	2000	30.0			
DBF50180WZ202##BK1		2000	40.0			
DBF50180WP302##BK1		3000	20.0	100.0	60.0	

Notes

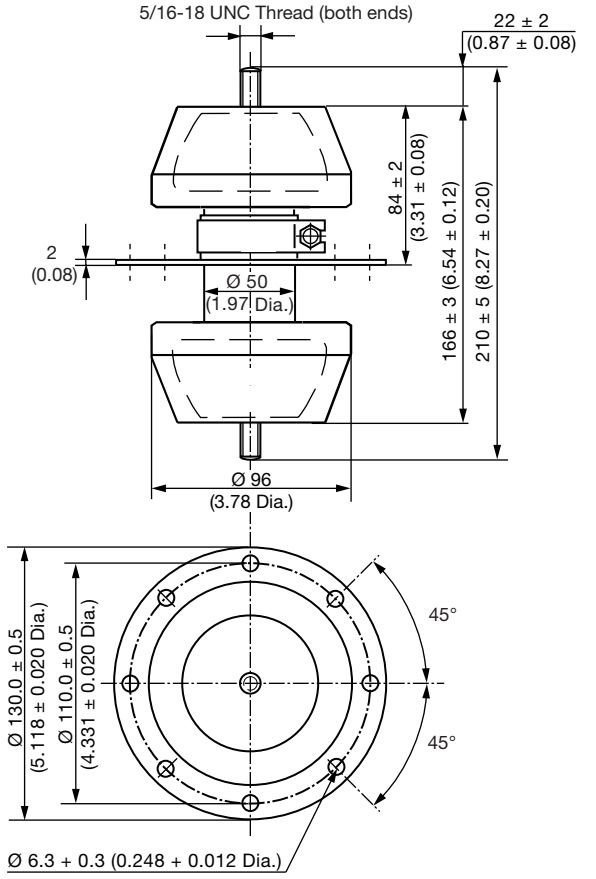
- ## 14th to 15th digit: capacitance tolerance code ± 20 % = 38, ± 10 % = 36

(1) The surface temperature during operation must not exceed +100 °C

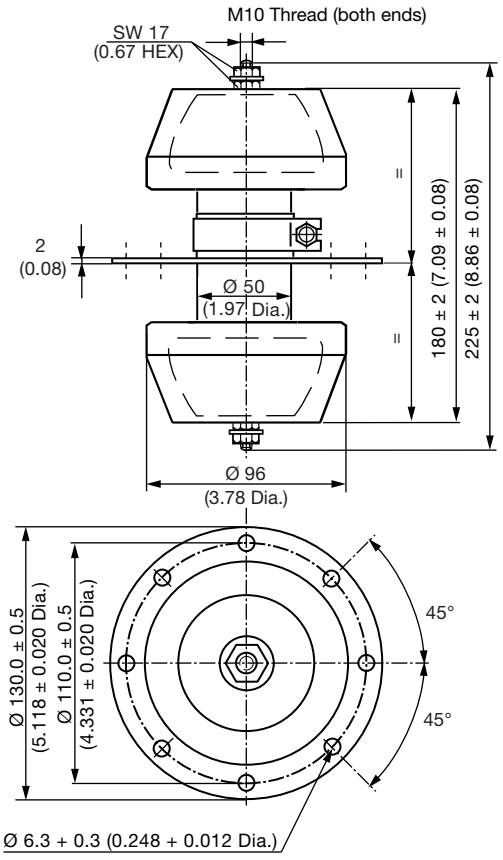
(2) DC or low frequency RMS current (< 20 kHz)

DIMENSIONS in millimeters (inches)

DBF 050166



DBF 050180



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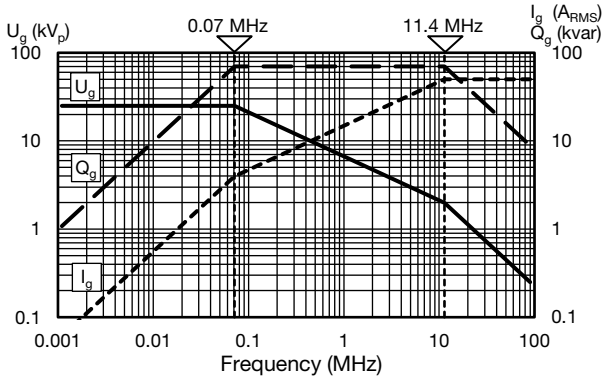
MOUNTING GUIDELINES

- The connection to one electrode must be flexible in order to prevent the generation of physical force which could damage the capacitor elements. Such forces are often generated by the dimensional differences resulting from the normal physical tolerances of these components.
- The capacitor elements must not be used as a mechanical support for other devices or components.
- Use two wrenches when tightening the nuts on both sides of the conductor rod.
  The outer electrode terminal flange of these feed-through capacitors components should be fixed after tightening the inner electrode's connection.
- Make sure that not too much force applied to the solder connections between hardware and noble metal electrode. A torque less than 5 Nm is recommended.

DERATING DIAGRAMS

DBF50166BQ501##BJ1



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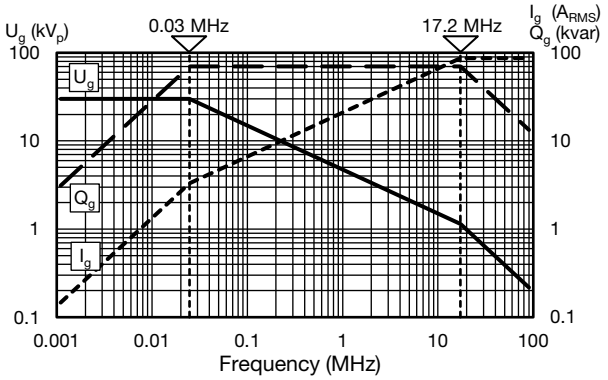

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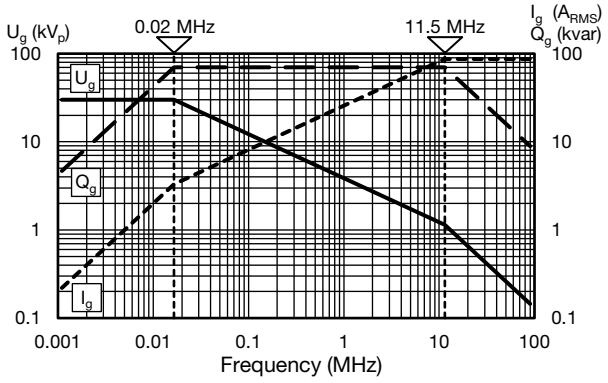

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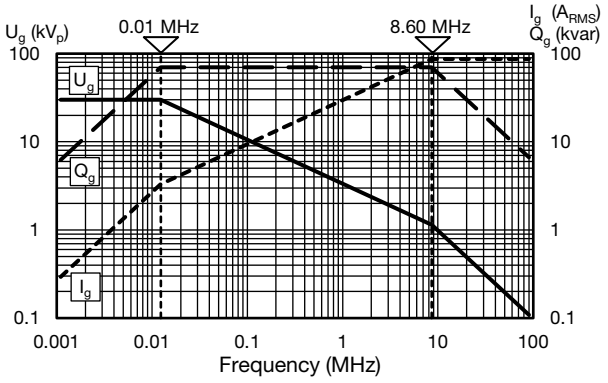

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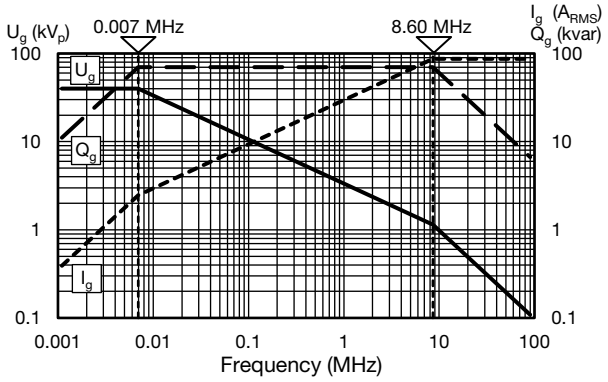

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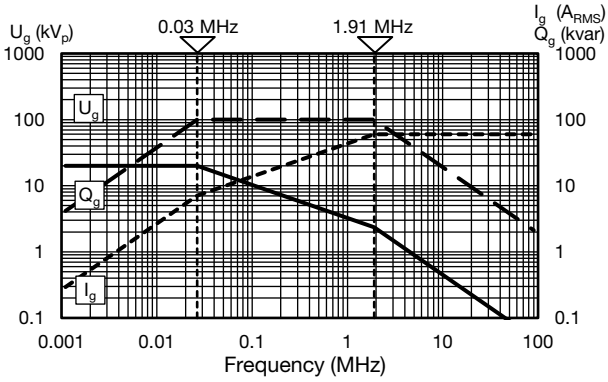

RELATED DOCUMENTS

General Information	www.vishay.com/doc?22071

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