

## Ø 10 mm Film Dielectric Trimmers



### FEATURES

- Housing diameter 10 mm
- For a basic grid of 2.54 mm (0.1") or 2.50 mm
- Top and bottom or top adjustment
- Round head
- Mounting: radial
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

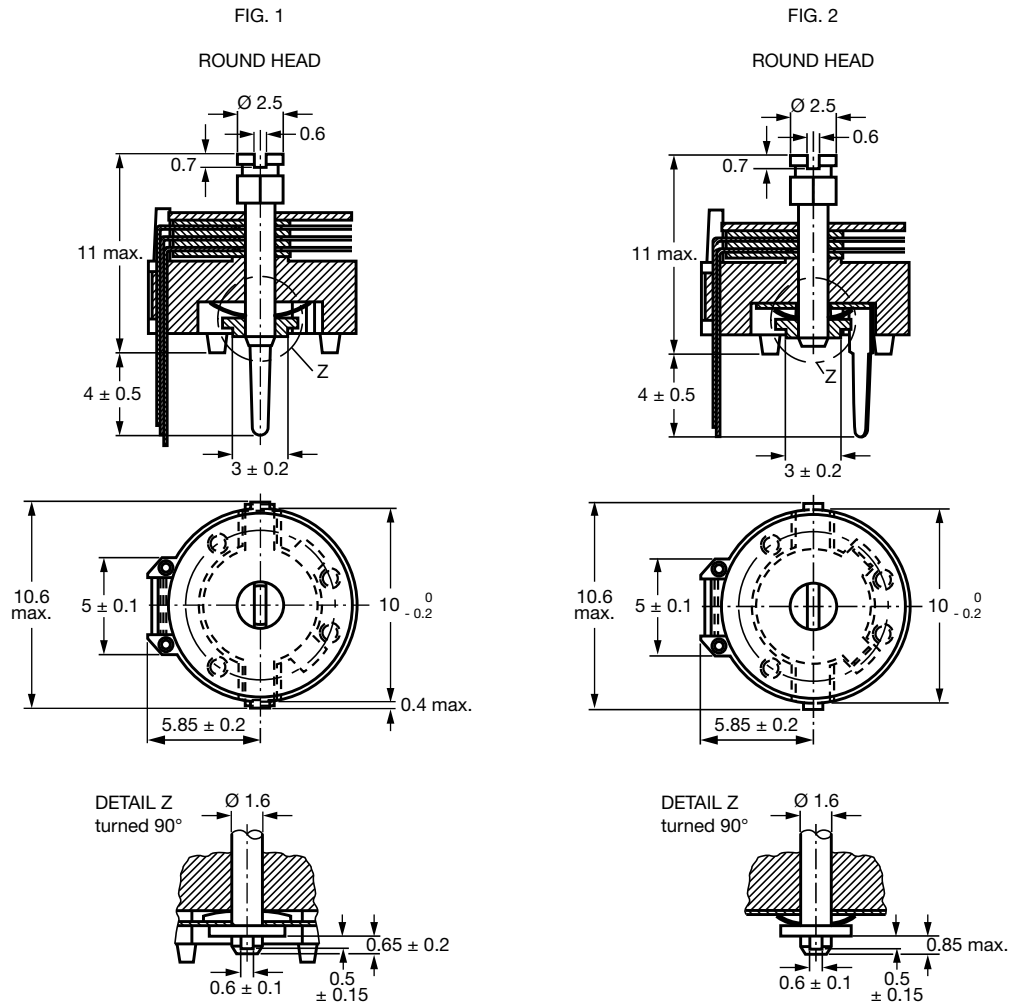

**RoHS**  
COMPLIANT

### APPLICATIONS

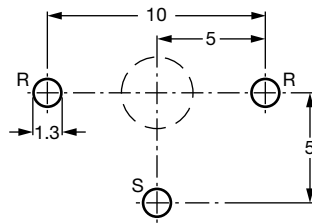
- Antennas
- Impedance matching circuits
- Medical
- RF
- For consumer and industrial equipment

QUICK REFERENCE DATA		
Rated DC voltage	150 V <sub>DC</sub>	
Test DC voltage for 1 min	300 V <sub>DC</sub>	
Maximum contact resistance	10 mΩ	
Minimum insulation resistance	10 000 MΩ	
Category temperature range	PP	-40 °C to +70 °C
	PTFE	-40 °C to +85 °C
Climatic category (IEC 60068)	PP	40/070/21
	PTFE	40/085/21
Minimum storage temperature	-55 °C	
Related specification	IEC 60418-1 and 4	
Effective angle of rotation	180° (rotation in 180° only, see "Life of trimmer")	
Operating torque	2 mNm to 25 mNm	
Maximum axial thrust	2 N	
Capacitance range (C <sub>min.</sub> / C <sub>max.</sub> )	2.5 pF / 15 pF to 5.5 pF / 65 pF	
Life of trimmer	Maximum 10 cycles: rotation in 180° only (the electrical and mechanical performance is not guaranteed if rotated beyond 10 cycles)	
Quality level	Sampling and data evaluation for quality level in accordance with "MIL-STD-105D" and "IEC 60410": < 0.15 % major defects < 0.65 % minor defects  Each capacitor is tested for minimum C <sub>max.</sub> and is also subjected to the full test voltage.	

**DIMENSIONS** in millimeters

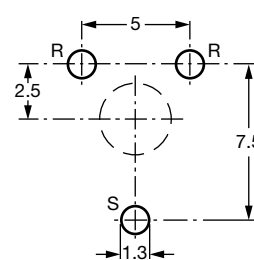


Trimmers BFC2 808 ..... series



R = Rotor, S = Stator

The large hole is for bottom adjustment and the diameter is determined by user's requirements.

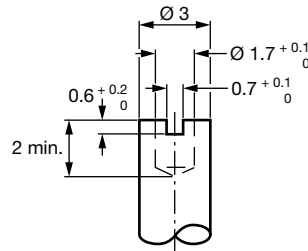


R = Rotor, S = Stator

Hole pattern

**ADJUSTMENT**

For top adjustment a screwdriver or trimming key can be used; for bottom adjustment a key is required as shown below.



Bottom adjustment key

ORDERING INFORMATION			
C <sub>min.</sub> / C <sub>max.</sub> (pF)	CATALOG NUMBER BFC2 808 .....		
	HOLE PATTERN 5 mm x 10 mm	HOLE PATTERN 7.5 mm x 5 mm	
	ROUND HEAD	ROUND HEAD	ROUND HEAD
	TOP AND BOTTOM ADJUSTMENT		TOP ADJUSTMENT
2.5 / 15	31159	32159	-
3 / 22.5	31229	32229	-
5.5 / 40	31409	32409	-
5.5 / 50	01029	01006	-
5.5 / 65	31659	32659	01001

**MOUNTING**

The trimmer can be mounted on printed-circuit boards with a grid of 2.50 mm or 2.54 mm and a minimum hole diameter of 1.25 mm.

**PACKAGING**

Bulk packaged in cardboard boxes lined with expanded plastic. For smallest packaging quantities (SPQ) see “Electrical Data” table.

ELECTRICAL DATA											
GUARANTEED MAX. C <sub>min.</sub> / MIN. C <sub>max.</sub> AT 200 kHz (pF)	SHAPE OF HEAD	FIG.	ADJ. MODE	DIEL.	tan δ AT C <sub>max.</sub> x 10 <sup>-4</sup>		TEMP. COEFF. (10 <sup>-6</sup> /K)	MIN. f <sub>res</sub> AT C <sub>max.</sub> (MHz)	COL. OF BASE	SP Q	CATALOG NUMBER BFC2 ... ..
					1 MHz	100 MHz					
2.5 / 15	Round	1	Top + bottom	PP	≤ 10	≤ 25	-200 ± 700	420	Blue	800	.... 808 31159
		2								800	.... 808 32159
3 / 22.5	Round	1	Top + bottom	PP	≤ 10	≤ 25	-200 ± 700	200	Green	800	.... 808 31229
		2								800	.... 808 32229
5.5 / 40	Round	1	Top + bottom	PP	≤ 10	≤ 25	-200 ± 400	200	Grey	800	.... 808 31409
		2								800	.... 808 32409
5.5 / 50	Round	1	Top + bottom	PTFE	≤ 10	≤ 25	-200 ± 400	170	Yellow	800	.... 808 01029
		2								800	.... 808 01006
5.5 / 65	Round	2	Top	PP	≤ 10	≤ 25	-200 ± 500	170	Yellow	800	.... 808 01001
	Round	1	Top + bottom							800	.... 808 31659
	Round	2								800	.... 808 32659

**SOLDERING CONDITIONS**

For general soldering conditions and wave soldering profile, we refer to the application note “Soldering Guidelines for Film Capacitors”: [www.vishay.com/doc?28171](http://www.vishay.com/doc?28171)

TEST PROCEDURES AND REQUIREMENTS				
IEC 60418-1 CLAUSE	IEC 60068 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
4.2		Method of mounting	Method A	
14		Capacitance drift	After TC measurement	$\Delta C/C: \leq 4.5\%$ for $C_{max.} < 40\text{ pF}$ ; $\Delta C/C: \leq 2.5\%$ for $C_{max.} \geq 40\text{ pF}$
19		Thrust	Axial thrust of 2 N	$\Delta C/C: \leq 0.3\%$
21		Robustness of terminations:		
21.1	Ua	Tensile	1 N	No damage
21.2	Ub	Bending	1 cycle	No damage
22	Na	Rapid change of temperature	1 cycle; 0.5 h at lower and 0.5 h at upper category temperature	$\Delta C/C: \leq 1.5\%$
23	T	Soldering:		
	Ta	Solderability	Solder bath immersion 3 mm; 235 °C; 2 s	Good wetting, no mechanical damage
	Tb	Resistance to heat	Solder bath: 260 °C; 10 s	No mechanical damage
24	Eb	Impact bump	4000 ± 10 bumps; 40 g; 6 ms	$\Delta C/C: \leq 0.4\%$ ; no mechanical damage
25	Fc	Vibration	Frequency 10 Hz to 55 Hz; amplitude 0.35 mm; 1.5 h	$\Delta C/C: \leq 0.8\%$ ; no mechanical damage
26		Climatic sequence:		$\Delta C/C: \leq 3\%$ for $C_{max.} < 80\text{ pF}$ ; $\Delta C/C: \leq 6\%$ for $C_{max.} \geq 80\text{ pF}$
26.1	B	Dry heat	16 h at upper category temperature	$\tan \delta: \leq 15 \times 10^{-4}$ for $C_{max.} < 80\text{ pF}$ ; $\tan \delta: \leq 80 \times 10^{-4}$ for $C_{max.} \geq 80\text{ pF}$  $R_{ins.}: \geq 10\,000\text{ M}\Omega$ ; rotor contact R: $\leq 10\ \Omega$
26.2	D	Damp heat accelerated, first cycle	1 cycle; 24 h; +40 °C; 95 % to 100 % RH	Voltage proof: 300 V for 1 min
26.3	Aa	Cold	16 h; -40 °C	Visual examination: no mechanical damage
26.5		Damp heat accelerated, remaining cycles	1 cycle; 24 h; +40 °C; 95 % to 100 % RH	Operating torque: 2 mNm to 35 mNm
27	Ca	Damp heat steady state	21 days; +40 °C; 90 % to 95 % RH	$\Delta C/C:$ $\leq 3\%$ for $C_{max.} < 100\text{ pF}$ ; $\leq 3\%$ for $C_{max.} \geq 100\text{ pF}$  $\tan \delta: \leq 20 \times 10^{-4}$ for $C_{max.} < 80\text{ pF}$ ; $\tan \delta: \leq 80 \times 10^{-4}$ for $C_{max.} \geq 80\text{ pF}$  $R_{ins.}: \geq 10\,000\text{ M}\Omega$ ; rotor contact R: $\leq 10\text{ m}\Omega$  Voltage proof: 300 V for 1 min  Visual examination: no mechanical damage  Operating torque: 2 mNm to 35 mNm
29		Mechanical endurance	10 cycles  Maximum 10 cycles: rotation in 180° only (the electrical and mechanical performance is not guaranteed if rotated beyond 10 cycles)	$\Delta C/C: \leq 1\%$  $\Delta C/C$ after axial thrust: $\leq 0.4\%$ ; rotor contact R: $\leq 10\text{ m}\Omega$  Voltage proof: 300 V for 1 min  Visual examination: no mechanical damage  Operating torque: 1.5 mNm to 37 mNm



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**