

## Ø 7.5 mm Film Dielectric Trimmers

### TEST VOLTAGE (DC) FOR 1 MINUTE:

500 V

### MAXIMUM CONTACT RESISTANCE:

10 mΩ

### MINIMUM INSULATION RESISTANCE:

10 000 MΩ

### CATEGORY TEMPERATURE RANGE:

#### PP

- 40 to + 70 °C

#### PE, PC, PTFE, PET

- 40 to + 85 °C

### CLIMATIC CATEGORY (IEC 60068):

#### PP

40/070/21

#### PE, PC, PTFE, PET

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:

$C_{max} < 33$  pF

1 to 15 mNm

$C_{max} \geq 33$  pF

1 to 25 mNm

### MAXIMUM AXIAL THRUST:

2 N

### FEATURES

- Housing diameter 7.5 mm
- For a basic grid of 2.54 mm (0.1") or 2.50 mm
- Top and bottom or top adjustment
- Vertical and horizontal versions
- Round head



**RoHS**  
COMPLIANT

### APPLICATIONS

- For consumer and industrial equipment

### DESCRIPTION:

The vanes of the trimmer are stacked on a sturdy plastic base. The color of the base indicates the maximum capacitance (see Electrical Data Table). The dielectric is a film of polypropylene (PP), polyethylene (PE), polycarbonate (PC), polytetrafluorethylene (PTFE), or polyethyleneterephthalate (PET) which supports the vanes in such a way that good stability is ensured and no microphony can occur.

Flux absorption between the vanes is prevented.

Cleaning with solvents is not advised.

Versions are available with either a vertical spindle, or a horizontal spindle (see dimensional outlines). Both versions have top adjustment by means of a screwdriver or trimming key and bottom adjustment by means of a key.

### 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  $C_{max}$  and is also subjected to the full test voltage.

### $C_{min} / C_{max}$ :

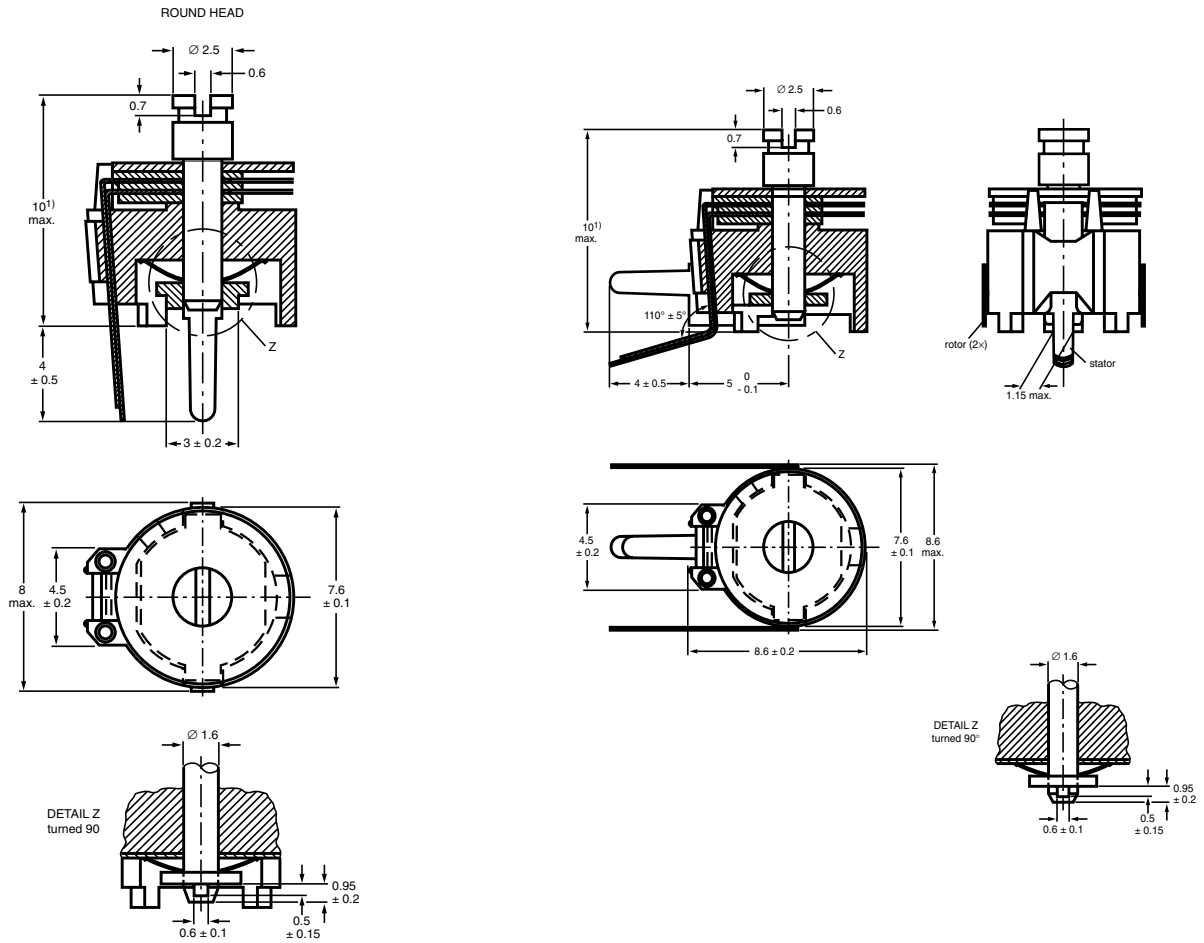
1.4/5.5 to 3/50 pF

### RATED VOLTAGE (DC):

250 V

### LIFE OF TRIMMER:

Maximum 10 cycles: rotation in 180° only (the electrical and mechanical performance is not guaranteed if rotated beyond 10 cycles)



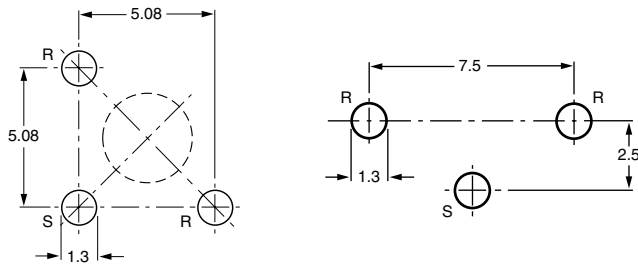
Trimmers BFC2 808 ..... series, vertical version

Trimmers BFC2 808 ..... series, horizontal version

Dimensions in millimeters

**ADJUSTMENT**

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

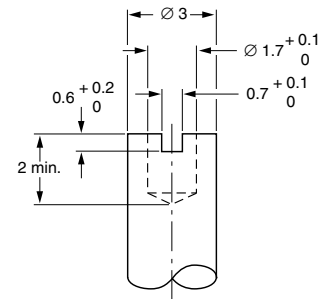


R = rotor, S = stator

R = rotor, S = stator

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

Hole pattern



Bottom adjustment key

**ORDERING INFORMATION**

C <sub>min</sub> /C <sub>max</sub> (pF)	CATALOG NUMBER BFC2 808 .....		
	VERTICAL VERSION		HORIZONTAL VERSION
	ROUND HEAD		
	TOP AND BOTTOM ADJUSTMENT	TOP ADJUSTMENT ONLY	TOP AND BOTTOM ADJUSTMENT
1.4/5.5	11558	00004	51558
2/9	00018	-	-
2/10	11109	00005	51109
2/10	-	11004	-
2/15	11159	-	-
2/18	00016	-	-
2.5/20	-	11006	-
2.5/22	11229	00006	51229
2.5/27	11279	-	51279
3/33	11339	-	-
3/40	11409	-	51409
3/50	11509	-	51509

**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 quantity (SPQ) see Electrical Data Table.

**ELECTRICAL DATA**

GUARANTEED MAX. C <sub>min</sub> / MIN. C <sub>max</sub> AT 200 kHz (pF)	SPINDLE	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	SPQ	CATALOG NUMBER BFC2 ... ..
						1 MHz	100 MHz					
1.4/5.5	vertical	round	1	top + bottom	PE	≤ 10	≤ 25	- 250 ± 350	850	grey	1400	.... 808 11558
			1	top							1400	.... 808 00004
	horizontal	round	2	top + bottom							1200	.... 808 51558
2/9	vertical	round	1	top + bottom	PTFE	≤ 10	≤ 15	- 150 ± 800	400	yellow	1400	.... 808 00018
2/10	vertical	round	1	top + bottom	PP	≤ 10	≤ 25	- 250 ± 800	480	yellow	1400	.... 808 11109
			1	top							1400	.... 808 00005
	horizontal	round	2	top + bottom							1200	.... 808 51109
	vertical	round	1	top	PC	≤ 70	≤ 100	- 150 ± 800	250	yellow	1000	.... 808 11004
2/15	vertical	round	1	top + bottom	PP	≤ 10	≤ 25	- 250 ± 600	450	blue	1400	.... 808 11159
2/18	vertical	round	1	top + bottom	PTFE	≤ 10	≤ 15	- 250 ± 350	350	green	1400	.... 808 00016
2.5/20	vertical	round	1	top	PET	≤ 160	-	0 ± 1100	250	green	1000	.... 808 11006
2.5/22	vertical	round	1	top + bottom	PP	≤ 10	≤ 25	- 200 ± 500	350	green	1400	.... 808 11229
			1	top							1400	.... 808 00006
	horizontal	round	2	top + bottom							1200	.... 808 51229
2.5/27	vertical	round	1	top + bottom	PC	≤ 70	-	- 50 ± 500	350	red	1400	.... 808 11279
	horizontal	round	2	top + bottom							1200	.... 808 51279
3/33	vertical	round	1	top + bottom	PP	≤ 10	-	- 250 ± 350	300	brown	1400	.... 808 11339
3/40	vertical	round	1	top + bottom	PC	≤ 70	-	- 50 ± 400	300	violet	1400	.... 808 11409
	horizontal	round	2	top + bottom							1200	.... 808 51409
3/50	vertical	round	1	top + bottom	PC	≤ 70	-	- 50 ± 500	250	black	1400	.... 808 11509
	horizontal	round	2	top + bottom							1200	.... 808 51509

**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	$\Delta C/C: \leq 1\%$ for $C_{max} < 40$ pF; $\Delta C/C: \leq 2.5\%$ for $C_{max} \geq 40$ 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 hours at lower and 0.5 hours at upper category temperature	$\Delta C/C: \leq 2\%$
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	$\Delta C/C: \leq 0.6\%$ ; no mechanical damage
25	Fc	vibration	frequency 10 to 55 Hz; amplitude 0.35 mm; 1.5 hours	$\Delta C/C: \leq 0.6\%$ ; no mechanical damage
26		climatic sequence:		
26.1	B	dry heat	16 hours at upper category temperature	$\Delta C/C: \leq 4$ $\tan \delta: \leq 10 \times 10^{-4}$ for $C_{max} < 27$ pF; $\tan \delta: \leq 70 \times 10^{-4}$ for $C_{max} \geq 27$ pF; $\tan \delta: \leq 80 \times 10^{-4}$ for $C_{max} \geq 40$ pF $R_{ins}: \geq 10\,000$ MΩ; rotor contact R: ≤ 10 mΩ
26.2	D	damp heat accelerated, first cycle	1 cycle; 24 hours; + 40 °C; 95 to 100 % RH	voltage proof: 500 V for 1 minute
26.3	Aa	cold	16 hours; - 40 °C	visual examination: no mechanical damage
26.5		damp heat accelerated, remaining cycles	1 cycle; 24 hours; + 40 °C; 95 to 100 % RH	operating torque: 1 to 15 mNm for $C_{max} < 33$ pF; 1 to 25 mNm for $C_{max} \geq 33$ pF
27	Ca	damp heat steady state	21 days; + 40 °C; 90 to 95 % RH	$\Delta C/C: \leq 5\%$ $\tan \delta: \leq 30 \times 10^{-4}$ for $C_{max} < 27$ pF; $\tan \delta: \leq 70 \times 10^{-4}$ for $C_{max} \geq 27$ pF; $\tan \delta: \leq 80 \times 10^{-4}$ for $C_{max} \geq 40$ pF $R_{ins}: \geq 10\,000$ MΩ; rotor contact R: ≤ 10 mΩ voltage proof: 500 V for 1 minute visual examination: no mechanical damage operating torque: 1 to 15 mNm for $C_{max} < 33$ pF; 1 to 25 mNm for $C_{max} \geq 33$ pF
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)	$\Delta C/C: \leq 1.5\%$ $\Delta C/C$ after axial thrust: ≤ 0.3 %; rotor contact R: ≤ 10 mΩ voltage proof: 500 V for 1 minute visual examination: no mechanical damage operating torque: 1 to 15 mNm for $C_{max} < 33$ pF; 1 to 25 mNm for $C_{max} \geq 33$ pF



## 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.**



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.