

## 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		<p>Sampling and data evaluation for quality level in accordance with "MIL-STD-105D" and "IEC 60410":</p> <p>&lt; 0.15 % major defects &lt; 0.65 % minor defects</p> <p>Each capacitor is tested for minimum C<sub>max.</sub> and is also subjected to the full test voltage.</p>

**DIMENSIONS** in millimeters

FIG. 1

ROUND HEAD

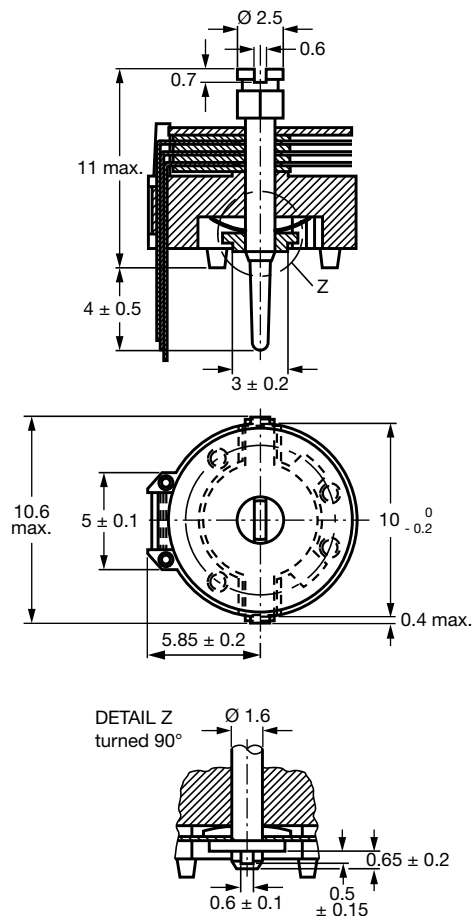
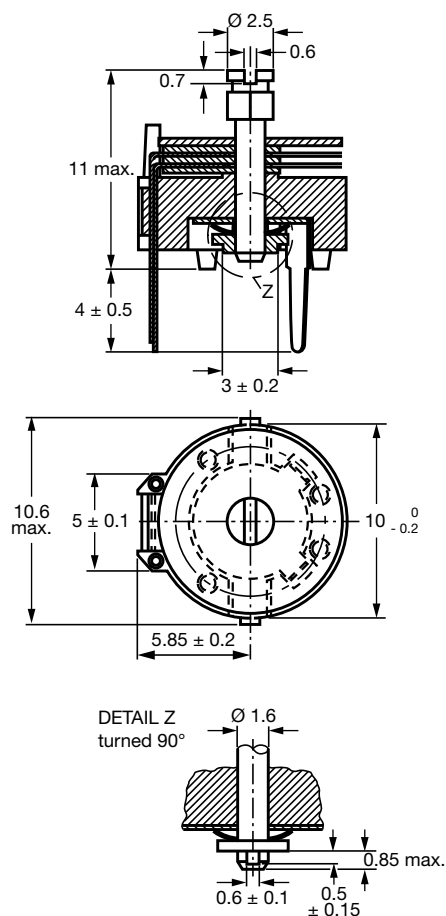
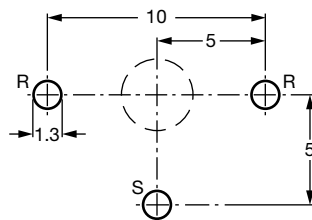


FIG. 2

ROUND HEAD

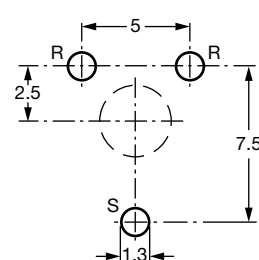


Trimmers BFC2 808 ..... series



R = Rotor, S = Stator

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

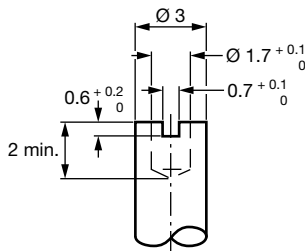


R = Rotor, S = Stator

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

$C_{min.}/C_{max.}$ (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

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 $\pm$ 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:		
26.1	B	Dry heat	16 h at upper category temperature	$\Delta C/C: \leq 3\%$ for $C_{max.} < 80\text{ pF}$ ; $\Delta C/C: \leq 6\%$ for $C_{max.} \geq 80\text{ pF}$ ;  $\tan \delta: \leq 15 \times 10^{-4}$ 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



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