# BFC2 808 .....

RoHS



**Vishay BCcomponents** 

# 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
- Mounting. rulati
  COMPLIANT
  Material categorization: for definitions of
  compliance please see <u>www.vishay.com/doc?99912</u>

### **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			
	PP	-40 °C to +70 °C			
Category temperature range	PTFE	-40 °C to +85 °C			
	PP	40/070/21			
Climatic category (IEC 60068)	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 $C_{\mbox{max.}}$ and is also subjected to the full test voltage.			

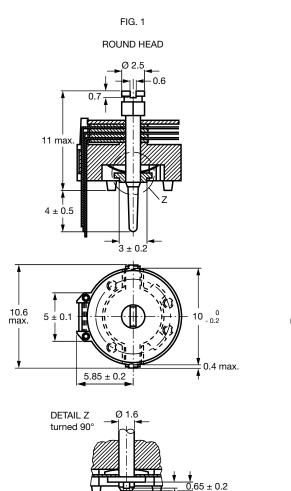
1

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### **DIMENSIONS** in millimeters



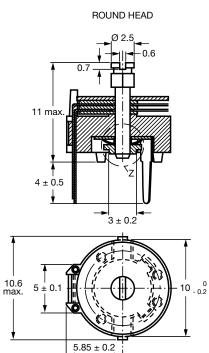
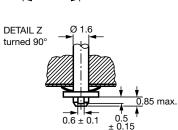
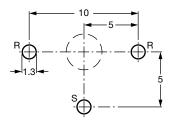


FIG. 2



Trimmers BFC2 808 ..... series



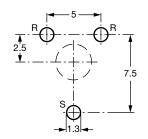
 $0.6 \pm 0.1$ 

R = Rotor, S = Stator

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

0.5 ± 0.15

Hole pattern



R = Rotor, S = Stator

2

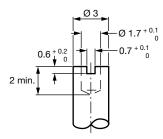
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## ADJUSTMENT

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							
	CATALOG NUMBER BFC2 808						
C <sub>min.</sub> / C <sub>max.</sub> (pF)	HOLE PATTERN 5 mm x 10 mm	ATTERN x 5 mm					
(pr)	ROUND HEAD	ROUND HEAD	ROUND HEAD				
	TOP AND BOTTO	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																			
		НАРЕ			tan δ AT C <sub>max.</sub> x 10 <sup>-4</sup>		TEMP.	MIN. f <sub>res</sub>	COL.	SP	CATALOG								
MIN. C <sub>max.</sub> OF AT 200 kHz HEAD (pF)	OF HEAD	FIG.	ADJ. MODE	DIEL.	1 MHz	100 MHz	COEFF. (10 <sup>-6</sup> /K)	AT C <sub>max.</sub> (MHz)	OF BASE	Q	NUMBER BFC2								
2.5 / 15	Round	nd 1	Top + bottom	PP	< 10	≤ 25	-200 ± 700	420	Blue	800	808 31159								
2.57 15	nounu	2	TOP + DOLLOIN		<u> </u>	<u>≤</u> 25	-200 ± 700	420	Dide	800	808 32159								
3 / 22.5	Round	1	Top + bottom	PP	< 10	≤ 25	-200 ± 700	200	Green	800	808 31229								
5722.5	nounu	nound	nound	nounu	nouna	riouna	nouna	riound	2	2	Top T Bottom		_ 10	_ 20	200 ± 700	200	Green	800	808 32229
5.5 / 40	Round	1	Top + bottom Pl	PP	≤ 10	≤ 25	-200 ± 400	200	Grey	800	808 31409								
5.5740	nounu	2	TOP + DOLLOIN	ГГ	≤ 10	≥ 25	-200 ± 400	200	Grey	800	808 32409								
5.5 / 50	Round	1	Top + bottom	PTFE		< 05	-200 ± 400	170	Yellow	800	808 01029								
5.57 50	nouria	2	TOP + DOLLOIN	PIFE	FIFE		$PTFE \leq 10 \qquad \leq 25$	$-200 \pm 400$	170	reliow	800	808 01006							
	Round	2	Тор							800	808 01001								
5.5 / 65	Round	1	Top   bottom	PP	≤ 10	≤ 25	-200 ± 500	170	Yellow	800	808 31659								
	Round	2	Top + bottom								800	808 32659							

### **SOLDERING CONDITIONS**

For general soldering conditions and wave soldering profile, we refer to the application note "Soldering Guidelines for Film Capacitors": <u>www.vishay.com/doc?28171</u>

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TEST PF	ROCEDUR	ES AND REQUIREMENT	<u>s</u>	
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 <sub>max.</sub> $<$ 40 pF; $\Delta$ C/C: $\leq$ 2.5 % for C <sub>max.</sub> $\geq$ 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 h at lower and 0.5 h	∆C/C: ≤ 1.5 %
23	Т	Soldering:	at upper category temperature	
	Та	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:		$\begin{array}{l} \Delta C/C:\leq 3 \ \% \ for \ C_{max.} < 80 \ pF; \\ \Delta C/C:\leq 6 \ \% \ for \ C_{max.} \geq 80 \ pF \end{array}$
26.1	В	Dry heat	16 h at upper category temperature	$\begin{array}{l} \mbox{tan } \delta : \leq 15 \mbox{ x } 10^{-4} \mbox{ for } C_{max.} < 80 \mbox{ pF}; \\ \mbox{tan } \delta : \leq 80 \mbox{ x } 10^{-4} \mbox{ for } C_{max.} \geq 80 \mbox{ pF} \end{array}$
				$\begin{array}{l} R_{ins.}: \geq 10 \; 000 \; M\Omega; \\ rotor \; contact \; R: \leq 10 \; \Omega \end{array}$
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	$ \begin{array}{l} \Delta C/C: \\ \leq 3 \ \% \ for \ C_{max.} < 100 \ pF; \\ \leq 3 \ \% \ for \ C_{max.} \geq 100 \ pF \end{array} $
			tan $\delta$ : $\leq$ 20 x 10^{-4} for $C_{max.}$ $<$ 80 pF; tan $\delta$ : $\leq$ 80 x 10^{-4} for $C_{max.}$ $\geq$ 80 pF	
			$\begin{array}{l} R_{ins.}:\geq 10\;000\;M\Omega;\\ rotor\;contact\;R:\leq 10\;m\Omega \end{array}$	
				Voltage proof: 300 V for 1 min
				Visual examination: no mechanical damage
29		Mechanical endurance	10 cycles	Operating torque: 2 mNm to 35 mNm $\Delta$ C/C: $\leq$ 1 %
			Maximum 10 cycles: rotation in 180° only (the electrical and	$\Delta$ C/C after axial thrust: $\leq$ 0.4 %; rotor contact R: $\leq$ 10 m $\Omega$
			mechanical performance is not guaranteed if rotated beyond 10 cycles)	Voltage proof: 300 V for 1 min
				Visual examination: no mechanical damage
				Operating torque: 1.5 mNm to 37 mNr

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