

## Ø 5 mm Film Dielectric Trimmers



### FEATURES

- Housing diameter 5 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)

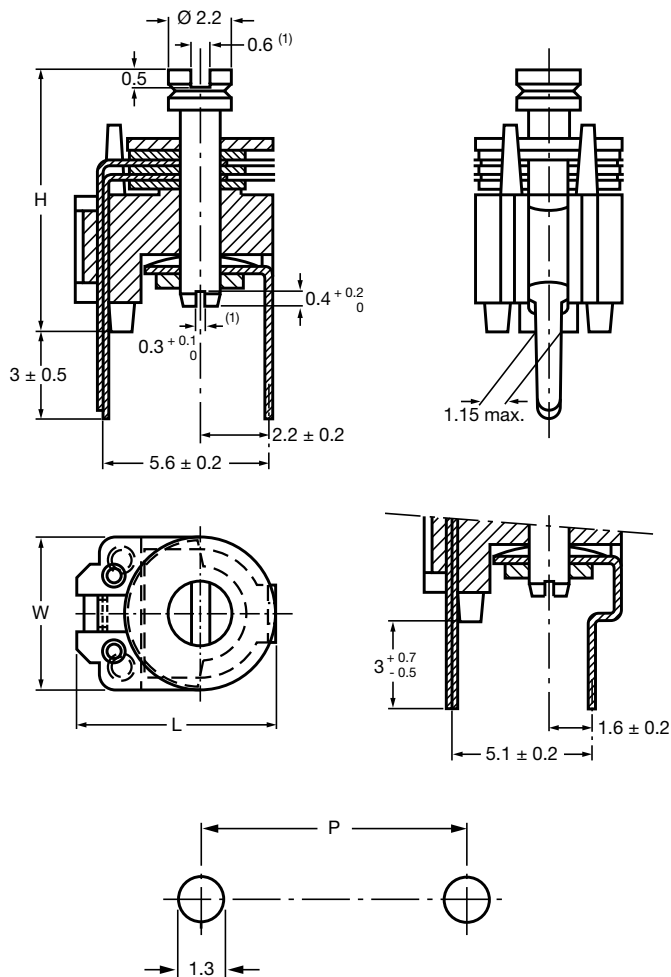

**RoHS**  
COMPLIANT

### APPLICATIONS

- Impedance matching circuits
- RF
- Medical
- 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	C <sub>max.</sub> < 20 pF	1 mNm to 15 mNm
	C <sub>max.</sub> ≥ 20 pF	1 mNm to 25 mNm
Maximum axial thrust		2 N
Capacitance range (C <sub>min.</sub> /C <sub>max.</sub> )		0.35 pF/1.5 pF to 4 pF/27 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


Hole pattern

Trimmers BFC2 808 ..... series, with round head

CAPACITANCE AND RELEVANT PHYSICAL DIMENSIONS			
$C_{\min.}/C_{\max.}$ (pF)	$H_{\max.}$ (mm)	$W_{\max.}$ (mm)	$L_{\max.}$ (mm)
0.35/1.5	7.0	5.5	7.3
1.5/5	7.0	5.5	7.3
3/10	7.0	5.5	7.3
3/15	8.8	5.5	7.3
4/20	8.8	5.5	7.3
4/27	9.0	6.2	7.8

**MOUNTING**

The trimmer has a lead pitch of 5.08 mm or 5.6 mm and can be mounted on printed-circuit boards with a minimum hole diameter of 1.25 mm.

**PACKAGING**

Bulk packaged in cardboard boxes lined with expanded plastic, 1000 units per box.

**ORDERING INFORMATION**

$C_{min.}/C_{max.}$ (pF)	CATALOG NUMBER BFC2 808 .....		
	TOP AND BOTTOM ADJUSTMENT (P = 5.6 mm)	TOP ADJUSTMENT ONLY (P = 5.6 mm)	TOP ADJUSTMENT ONLY (P = 5.08 mm)
<b>POLYTETRAFLUORETHYLENE</b>			
0.35/1.5	22158	-	-
<b>POLYPROPYLENE</b>			
1.2/5	-	24508	-
1.5/5	23508	-	20508
1.5/7	-	24708	-
3/10	23109	-	20109
3/15	23159	-	20159
4/20	23209	-	20209
4/27	23279	-	20279

**ELECTRICAL DATA**

GUARANTEED MAX. $C_{min.}/$ MIN. $C_{max.}$ AT 200 kHz (pF)	$\tan \delta$ AT $C_{max.} \times 10^{-4}$		TEMP. COEFF. <sup>(1)</sup> ( $10^{-6}/K$ )	MIN. $f_{res}$ AT $C_{max.}$ (MHz)	COLOR OF BASE	SMALLEST PACKAGING QUANTITY	CATALOG NUMBER BFC2 ... ..
	1 MHz	100 MHz					
0.35/1.5	$\leq 10$	-	$-450 \pm 550$	-	-	1000	.... 808 22158
1.2/5	$\leq 10$	-	$-200 \pm 550$	-	Grey	1000	.... 808 24508
1.5/5	$\leq 10$	$\leq 25$	$-200 \pm 550$	700	Grey	1000	.... 808 20508 .... 808 23508
1.5/7	$\leq 10$	-	$-50 \pm 550$	-	Grey	1000	.... 808 24708
3/10	$\leq 10$	$\leq 25$	$-250 \pm 550$	500	Yellow	1000	.... 808 20109 .... 808 23109
3/15	$\leq 10$	$\leq 25$	$-250 \pm 550$	400	Blue	1000	.... 808 20159 .... 808 23159
4/20	$\leq 10$	$\leq 25$	$-250 \pm 400$	300	Green	1000	.... 808 20209 .... 808 23209
4/27	$\leq 10$	$\leq 25$	$-250 \pm 400$	300	Red	1000	.... 808 20279 .... 808 23279

**Note**

<sup>(1)</sup> C: 60 % to 80 % of  $C_{max.}$ ;  $T_{amb}$ : From + 20 °C to + 70 °C

**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	$\Delta C/C: \leq 3\%$ for $C_{max.} \leq 10$ pF $\Delta C/C: \leq 2\%$ for $C_{max.} > 10$ pF
19		Thrust	Axial thrust of 2 N	$\Delta C/C: \leq 0.4\%$
21		Robustness of terminations:		
21.1	Ua	Tensile	1 N	No damage
21.2	Ub	Bending	1 cycle	No damage

**TEST PROCEDURES AND REQUIREMENTS**

IEC 60418-1 CLAUSE	IEC 60068 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
22	Na	Rapid change of temperature	1 cycle; 0.5 h at lower and 0.5 h at upper category temperature	$\Delta C/C: \leq 2.5 \%$
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	$\Delta C/C: \leq 1 \%$ ; no mechanical damage
25	Fc	Vibration	Frequency 10 Hz to 55 Hz; amplitude 0.75 mm; 1.5 h	$\Delta C/C: \leq 1 \%$ ; no mechanical damage
26		Climatic sequence:		$\Delta C/C: \leq 4 \%$
26.1	B	Dry heat	16 h at upper category temperature	$\tan \delta$ or PP and PTFE foil: $\leq 15 \times 10^{-4}$ $\tan \delta$ for PC foil: $\leq 80 \times 10^{-4}$  $R_{ins.}: \geq 10\,000\,M\Omega$ Rotor contact R: $\leq 10\,m\Omega$
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: 1 mNm to 20 mNm for $C_{max.} < 20\,pF$ ; 1 mNm to 30 mNm for $C_{max.} \geq 20\,pF$
27	Ca	Damp heat steady state	21 days; + 40 °C; 90 % to 95 % RH	$\Delta C/C: \leq 3 \%$  $\tan \delta$ for PP and PTFE foil: $\leq 15 \times 10^{-4}$ ; $\tan \delta$ for PC foil: $\leq 80 \times 10^{-4}$  $R_{ins.}: \geq 10\,000\,M\Omega$ ; Rotor contact R: $\leq 10\,m\Omega$  Voltage proof: 300 V for 1 min  Visual examination: No mechanical damage  Operating torque: 1 mNm to 20 mNm for $C_{max.} < 20\,pF$ ; 1 mNm to 30 mNm for $C_{max.} \geq 20\,pF$
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)	$\Delta C/C: \leq 3 \%$  $\Delta C/C$ after axial thrust: $\leq 0.3 \%$ ; rotor contact R: $\leq 10\,m\Omega$  Voltage proof: 300 V for 1 min  Visual examination: No mechanical damage  Operating torque: 0.5 mNm to 22.5 mNm for $C_{max.} < 20\,pF$ ; 0.5 mNm to 30 mNm for $C_{max.} \geq 20\,pF$



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