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

Pb-free

e3

RoHS COMPLIANT

APPLICATIONS

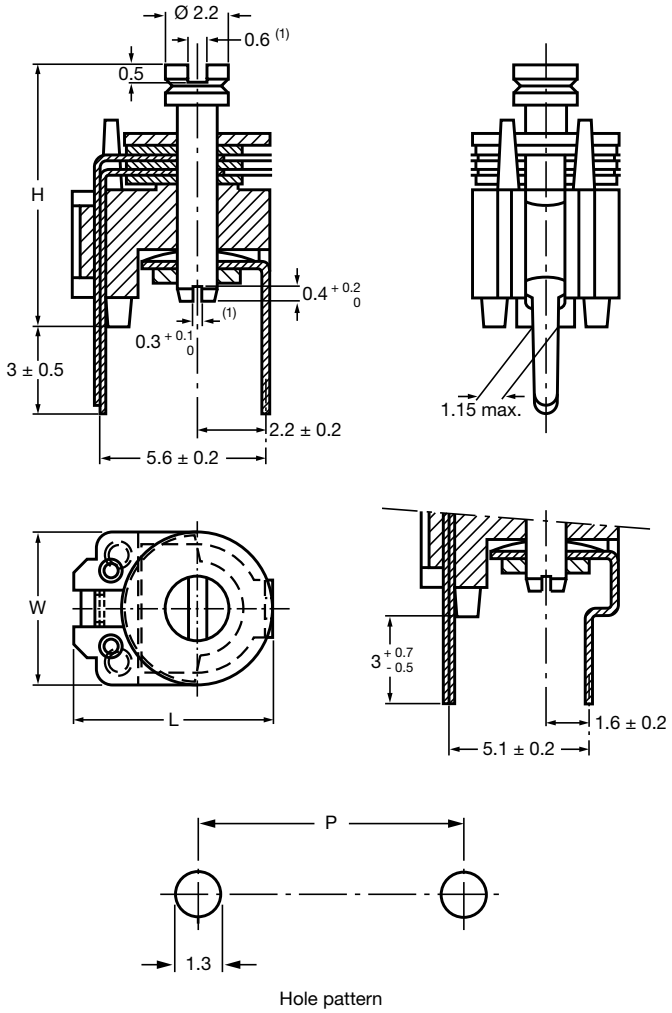
- Impedance matching circuits
- RF
- Medical
- For consumer and industrial equipment

QUICK REFERENCE DATA		
Rated DC voltage		150 V_{DC}
Test DC voltage for 1 min		300 V_{DC}
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	$C_{max.}$ < 20 pF	1 mNm to 15 mNm
	$C_{max.}$ ≥ 20 pF	1 mNm to 25 mNm
Maximum axial thrust		2 N
Capacitance range ($C_{min.}$ / $C_{max.}$)		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 $C_{max.}$ and is also subjected to the full test voltage.

For technical questions, contact: dc-film@vishay.com

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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

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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)
POLYTETRAFLUORETHYLENE			
0.35 / 1.5	22158	-	-
POLYPROPYLENE			
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 δ AT $C_{max.}$ x 10^{-4}		TEMP. COEFF. (1) (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	≤ 10	-	-450 ± 550	-	-	1000	.... 808 22158
1.2 / 5	≤ 10	-	-200 ± 550	-	Grey	1000	.... 808 24508
1.5 / 5	≤ 10	≤ 25	-200 ± 550	700	Grey	1000	.... 808 20508 .... 808 23508
1.5 / 7	≤ 10	-	-50 ± 550	-	Grey	1000	.... 808 24708
3 / 10	≤ 10	≤ 25	-250 ± 550	500	Yellow	1000	.... 808 20109 .... 808 23109
3 / 15	≤ 10	≤ 25	-250 ± 550	400	Blue	1000	.... 808 20159 .... 808 23159
4 / 20	≤ 10	≤ 25	-250 ± 400	300	Green	1000	.... 808 20209 .... 808 23209
4 / 27	≤ 10	≤ 25	-250 ± 400	300	Red	1000	.... 808 20279 .... 808 23279

Note

(1) C: 60 % to 80 % of $C_{max.}$; T_{amb}: from +20 °C to +70 °C

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

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

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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	ΔC/C: ≤ 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 ± 10 bumps; 40 g; 6 ms	ΔC/C: ≤ 1 %; no mechanical damage
25	Fc	Vibration	Frequency 10 Hz to 55 Hz; amplitude 0.75 mm; 1.5 h	ΔC/C: ≤ 1 %; no mechanical damage
26		Climatic sequence:		ΔC/C: ≤ 4 %
26.1	B	Dry heat	16 h at upper category temperature	tan δ or PP and PTFE foil: ≤ 15 x 10^{-4} tan δ for PC foil: ≤ 80 x 10^{-4} $R_{ins.}$: ≥ 10 000 MΩ Rotor contact R: ≤ 10 mΩ
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 $C_{max.}$ ≥ 20 pF
27	Ca	Damp heat steady state	21 days; +40 °C; 90 % to 95 % RH	ΔC/C: ≤ 3 % tan δ for PP and PTFE foil: ≤ 15 x 10^{-4}; tan δ for PC foil: ≤ 80 x 10^{-4} $R_{ins.}$: ≥ 10 000 MΩ; Rotor contact R: ≤ 10 mΩ 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 $C_{max.}$ ≥ 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)	ΔC/C: ≤ 3 % ΔC/C after axial thrust: ≤ 0.3 %; rotor contact R: ≤ 10 mΩ 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 $C_{max.}$ ≥ 20 pF

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