Ø 7.5 mm Film Dielectric Trimmers

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
- Mounting: Radial
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

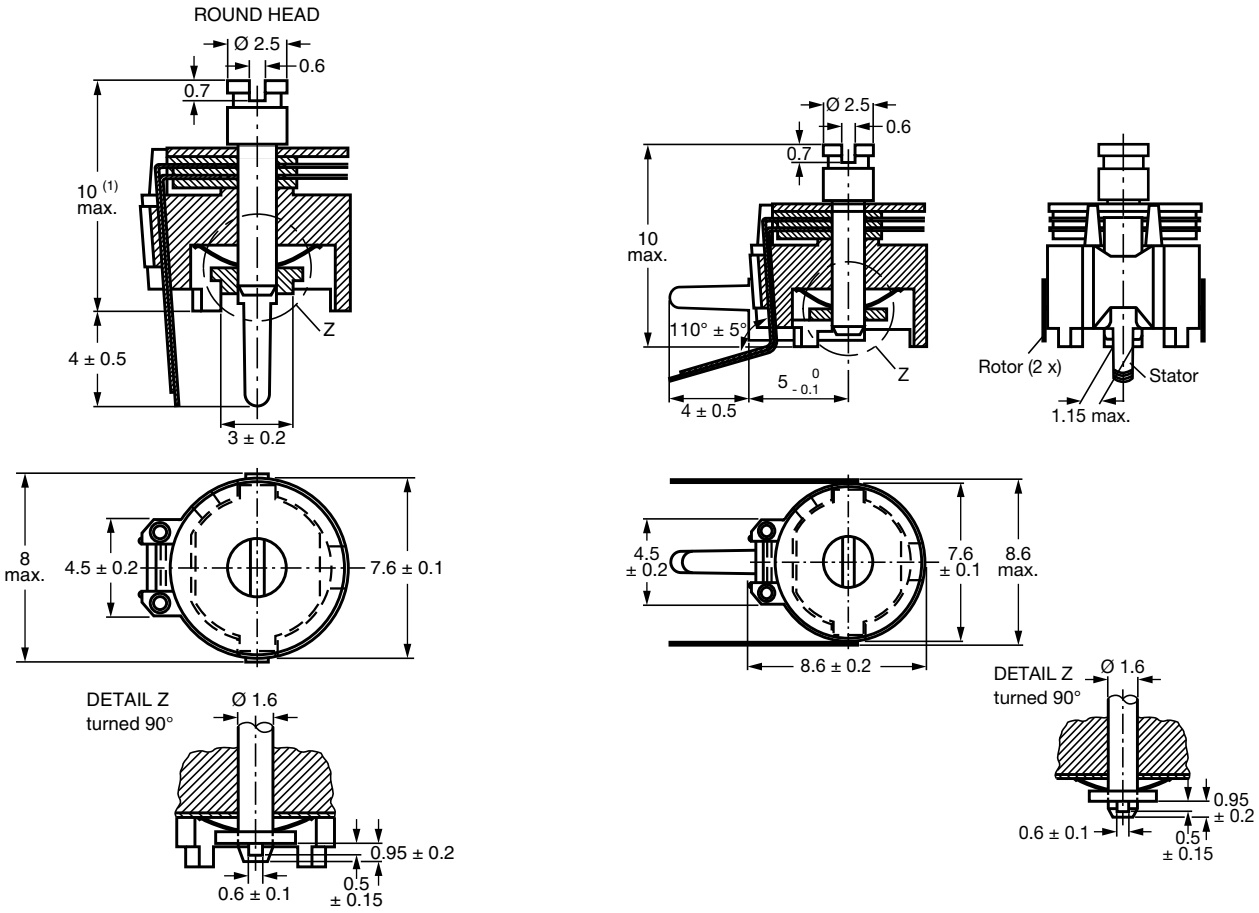
RoHS COMPLIANT

APPLICATIONS

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

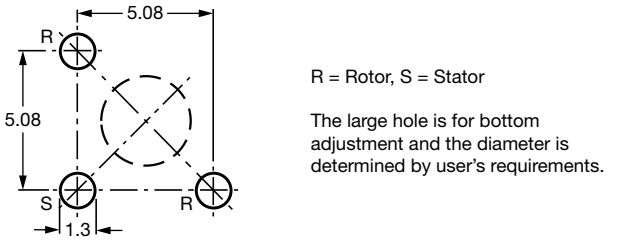
QUICK REFERENCE DATA		
Rated DC voltage		250 V_{DC}
Test DC voltage for 1 min		500 V_{DC}
Maximum contact resistance		10 mΩ
Minimum insulation resistance		10 000 MΩ
Category temperature range	PP	- 40 °C to + 70 °C
	PE, PTFE, PET	- 40 °C to + 85 °C
Climatic category (IEC 60068)	PP	40/070/21
	PE, PTFE, 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 mNm to 15 mNm
	$C_{max.}$ ≥ 33 pF	1 mNm to 25 mNm
Maximum axial thrust		2 N
Capacitance range ($C_{min.}/C_{max.}$)		1.4 pF/5.5 pF to 3 pF/33 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.

DIMENSIONS in millimeters



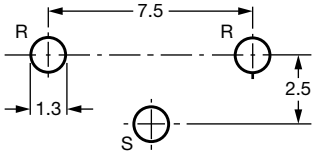
Trimmers BFC2 808 ..... series, vertical version

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



R = Rotor, S = Stator

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

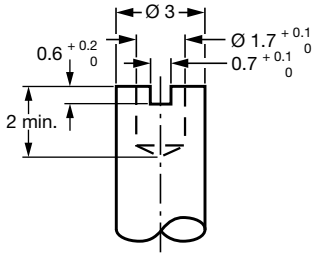


R = Rotor, S = Stator

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		
	VERTICAL VERSION		HORIZONTAL VERSION
	ROUND HEAD		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
3/33	11339	-	-

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. $C_{min.}$/ MIN. $C_{max.}$ AT 200 kHz (pF)	SPINDLE	SHAPE OF HEAD	ADJ. MODE	DIEL.	tan δ AT $C_{max.}$ x 10^{-4}		TEMP. COEFF. (10^{-6}/K)	MIN. f_{res} AT $C_{max.}$ (MHz)	COL. OF BASE	SPQ	CATALOG NUMBER BFC2 ... .
					1 MHz	100 MHz					
1.4/5.5	Vertical	Round	Top + bottom	PE	≤ 10	≤ 25	- 250 ± 350	850	Grey	1400	.... 808 11558
			Top							1400	.... 808 00004
	Horizontal	Round	Top + bottom							1200	.... 808 51558
2/9	Vertical	Round	Top + bottom	PTFE	≤ 10	≤ 15	- 150 ± 800	400	Yellow	1400	.... 808 00018
2/10	Vertical	Round	Top + bottom	PP	≤ 10	≤ 25	- 250 ± 800	480	Yellow	1400	.... 808 11109
			Top							1400	.... 808 00005
	Horizontal	Round	Top + bottom							1200	.... 808 51109
2/15	Vertical	Round	Top + bottom	PP	≤ 10	≤ 25	- 250 ± 600	450	Blue	1400	.... 808 11159
2/18	Vertical	Round	Top + bottom	PTFE	≤ 10	≤ 15	- 250 ± 350	350	Green	1400	.... 808 00016
2.5/20	Vertical	Round	Top	PET	≤ 160	-	0 ± 1100	250	Green	1000	.... 808 11006
2.5/22	Vertical	Round	Top + bottom	PP	≤ 10	≤ 25	- 200 ± 500	350	Green	1400	.... 808 11229
			Top							1400	.... 808 00006
	Horizontal	Round	Top + bottom							1200	.... 808 51229
3/33	Vertical	Round	Top + bottom	PP	≤ 10	-	- 250 ± 350	300	Brown	1400	.... 808 11339

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: ≤ 1 % for $C_{max.}$ < 40 pF; ΔC/C: ≤ 2.5 % for $C_{max.}$ ≥ 40 pF
19		Thrust	Axial thrust of 2 N	ΔC/C: ≤ 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	ΔC/C: ≤ 2 %

TEST PROCEDURES AND REQUIREMENTS				
IEC 60418-1 CLAUSE	**IEC 60068 TEST METHOD**	**TEST**	**PROCEDURE**	**REQUIREMENTS**
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	$\Delta C/C$: ≤ 0.6 %; no mechanical damage
25	Fc	Vibration	Frequency 10 Hz to 55 Hz; amplitude 0.35 mm; 1.5 h	$\Delta C/C$: ≤ 0.6 %; no mechanical damage
26		Climatic sequence:		$\Delta C/C$: ≤ 4 %
26.1	B	Dry heat	16 h at upper category temperature	tan δ: ≤ 10 x 10^{-4} for $C_{max.}$ < 27 pF; tan δ: ≤ 70 x 10^{-4} for $C_{max.}$ ≥ 27 pF; tan δ: ≤ 80 x 10^{-4} for $C_{max.}$ ≥ 40 pF $R_{ins.}$: ≥ 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: 500 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 15 mNm for $C_{max.}$ < 33 pF; 1 mNm to 25 mNm for $C_{max.}$ ≥ 33 pF
27	Ca	Damp heat steady state	21 days; + 40 °C; 90 % to 95 % RH	$\Delta C/C$: ≤ 5 % tan δ: ≤ 30 x 10^{-4} for $C_{max.}$ < 27 pF; tan δ: ≤ 70 x 10^{-4} for $C_{max.}$ ≥ 27 pF; tan δ: ≤ 80 x 10^{-4} for $C_{max.}$ ≥ 40 pF $R_{ins.}$: ≥ 10 000 MΩ; rotor contact R: ≤ 10 mΩ Voltage proof: 500 V for 1 min Visual examination: No mechanical damage Operating torque: 1 mNm to 15 mNm for $C_{max.}$ < 33 pF; 1 mNm to 25 mNm for $C_{max.}$ ≥ 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)	$\Delta C/C$: ≤ 1.5 % $\Delta C/C$ after axial thrust: ≤ 0.3 %; rotor contact R: ≤ 10 mΩ Voltage proof: 500 V for 1 min Visual examination: No mechanical damage Operating torque: 1 mNm to 15 mNm for $C_{max.}$ < 33 pF; 1 mNm to 25 mNm for $C_{max.}$ ≥ 33 pF

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