

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


RoHS
COMPLIANT

APPLICATIONS

- Antennas
- Impedance matching circuits
- Medical
- RF
- 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		2 mNm to 25 mNm
Maximum axial thrust		2 N
Capacitance range (C _{min.} / C _{max.})		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_{max.} and is also subjected to the full test voltage.

DIMENSIONS in millimeters

FIG. 1

ROUND HEAD

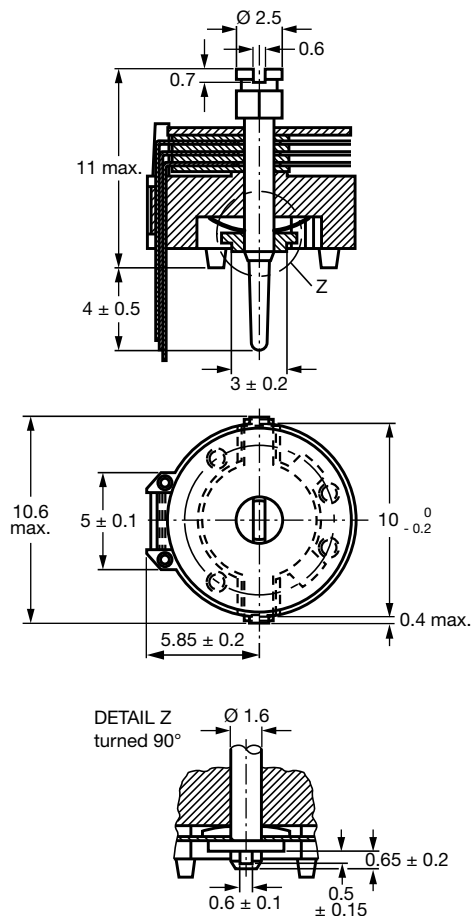
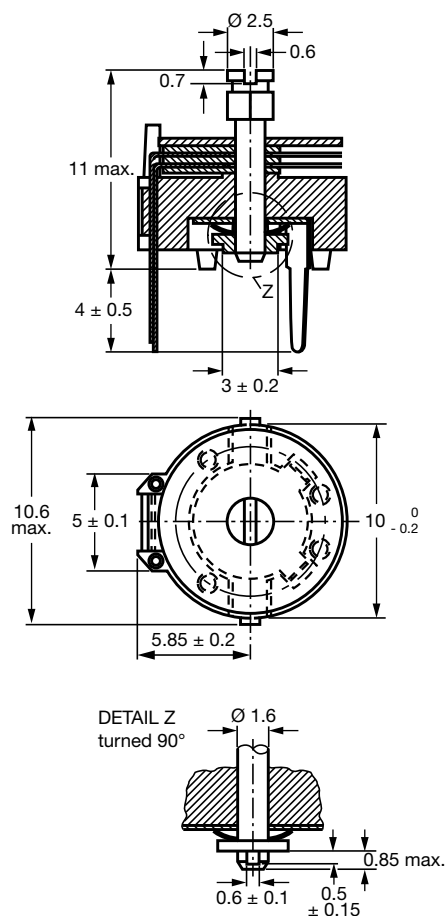
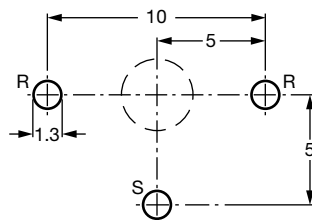


FIG. 2

ROUND HEAD

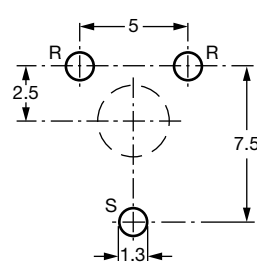


Trimmers BFC2 808 series



R = Rotor, S = Stator

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

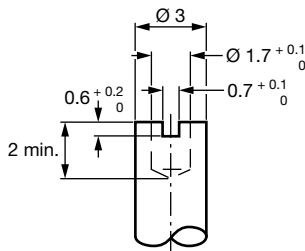


R = Rotor, S = Stator

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

ELECTRICAL DATA											
GUARANTEED MAX. C _{min.} / MIN. C _{max.} AT 200 kHz (pF)	SHAPE OF HEAD	FIG.	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	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

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	$\Delta C/C: \leq 4.5\%$ 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:		$\Delta C/C: \leq 3\%$ for $C_{max.} < 80\text{ pF}$; $\Delta C/C: \leq 6\%$ for $C_{max.} \geq 80\text{ pF}$
26.1	B	Dry heat	16 h at upper category temperature	$\tan \delta: \leq 15 \times 10^{-4}$ 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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