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

Pb-free

e3

RoHS COMPLIANT

APPLICATIONS

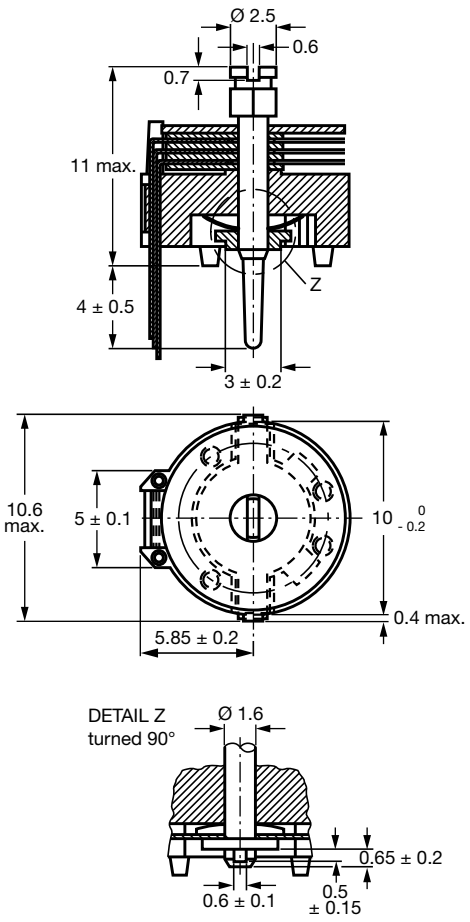
- Antennas
- Impedance matching circuits
- Medical
- RF
- For consumer and industrial equipment

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

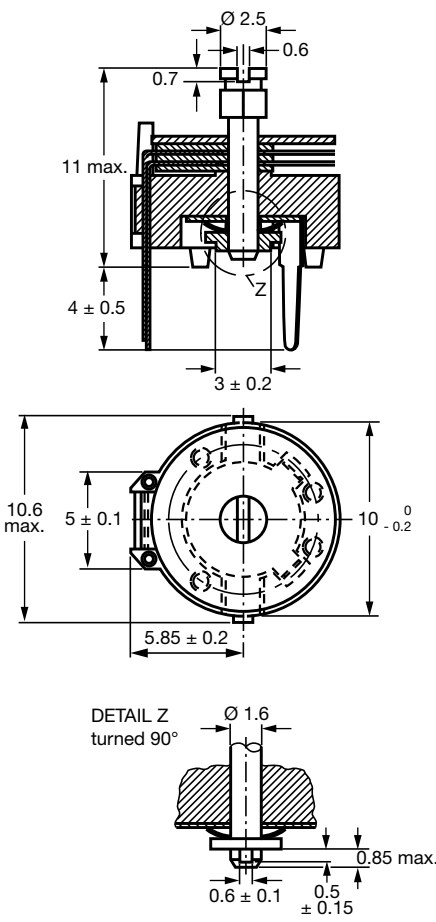
ROUND HEAD



DETAIL Z turned 90°

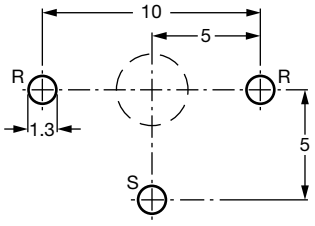
FIG. 2

ROUND HEAD



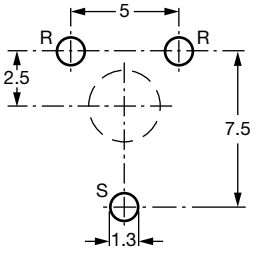
DETAIL Z turned 90°

Trimmers BFC2 808 ..... series



R = Rotor, S = Stator

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

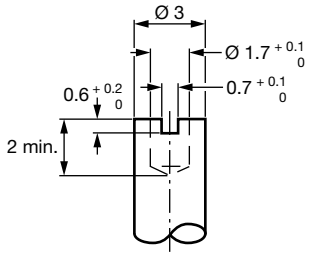


R = Rotor, S = Stator

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

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	SPQ	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	$\Delta C/C$: ≤ 4.5 % for $C_{max.}$ < 40 pF; $\Delta C/C$: ≤ 2.5 % for $C_{max.}$ ≥ 40 pF
19		Thrust	Axial thrust of 2 N	$\Delta C/C$: ≤ 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	$\Delta C/C$: ≤ 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 ± 10 bumps; 40 g; 6 ms	$\Delta C/C$: ≤ 0.4 %; no mechanical damage
25	Fc	Vibration	Frequency 10 Hz to 55 Hz; amplitude 0.35 mm; 1.5 h	$\Delta C/C$: ≤ 0.8 %; no mechanical damage
26		Climatic sequence:		$\Delta C/C$: ≤ 3 % for $C_{max.}$ < 80 pF; $\Delta C/C$: ≤ 6 % for $C_{max.}$ ≥ 80 pF
26.1	B	Dry heat	16 h at upper category temperature	tan δ: ≤ 15 x 10^{-4} for $C_{max.}$ < 80 pF; tan δ: ≤ 80 x 10^{-4} for $C_{max.}$ ≥ 80 pF $R_{ins.}$: ≥ 10 000 MΩ; rotor contact R: ≤ 10 Ω
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	$\Delta C/C$: ≤ 3 % for $C_{max.}$ < 100 pF; ≤ 3 % for $C_{max.}$ ≥ 100 pF tan δ: ≤ 20 x 10^{-4} for $C_{max.}$ < 80 pF; tan δ: ≤ 80 x 10^{-4} for $C_{max.}$ ≥ 80 pF $R_{ins.}$: ≥ 10 000 MΩ; rotor contact R: ≤ 10 mΩ 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)	$\Delta C/C$: ≤ 1 % $\Delta C/C$ after axial thrust: ≤ 0.4 %; rotor contact R: ≤ 10 mΩ Voltage proof: 300 V for 1 min Visual examination: no mechanical damage Operating torque: 1.5 mNm to 37 mNm

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