Film Dielectric Trimmers

TEST VOLTAGE (DC) FOR 1 MINUTE:

500 V

MAXIMUM CONTACT RESISTANCE:

5 mΩ

MINIMUM INSULATION RESISTANCE:

10 000 MΩ

CATEGORY TEMPERATURE RANGE:

- 40 to + 125 °C

CLIMATIC CATEGORY (IEC 60068):

40/125/21

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 to 25 mNm

MAXIMUM AXIAL THRUST:

2 N

FEATURES

- High temperature type
- Housing dimensions:
  10 mm x 11 mm x 11 mm
- For a basic grid of 2.54 mm
- Vertical version with a round head
- Top and bottom adjustment

APPLICATIONS

- For fine adjustment in professional applications

DESCRIPTION:

The trimmers consist of a polysulphone housing, brass rotor and plated brass stator with PTFE film as the dielectric. The stator plate tags are heat sealed to the housing.

The rotor contact surfaces are plated to ensure a long life and a stable contact even under severe climatic conditions. A colored dot indicates the maximum capacitance.

Flux absorption between the vanes is prevented.

Cleaning with solvents is not advised.

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.

C_{min}/C_{max}:

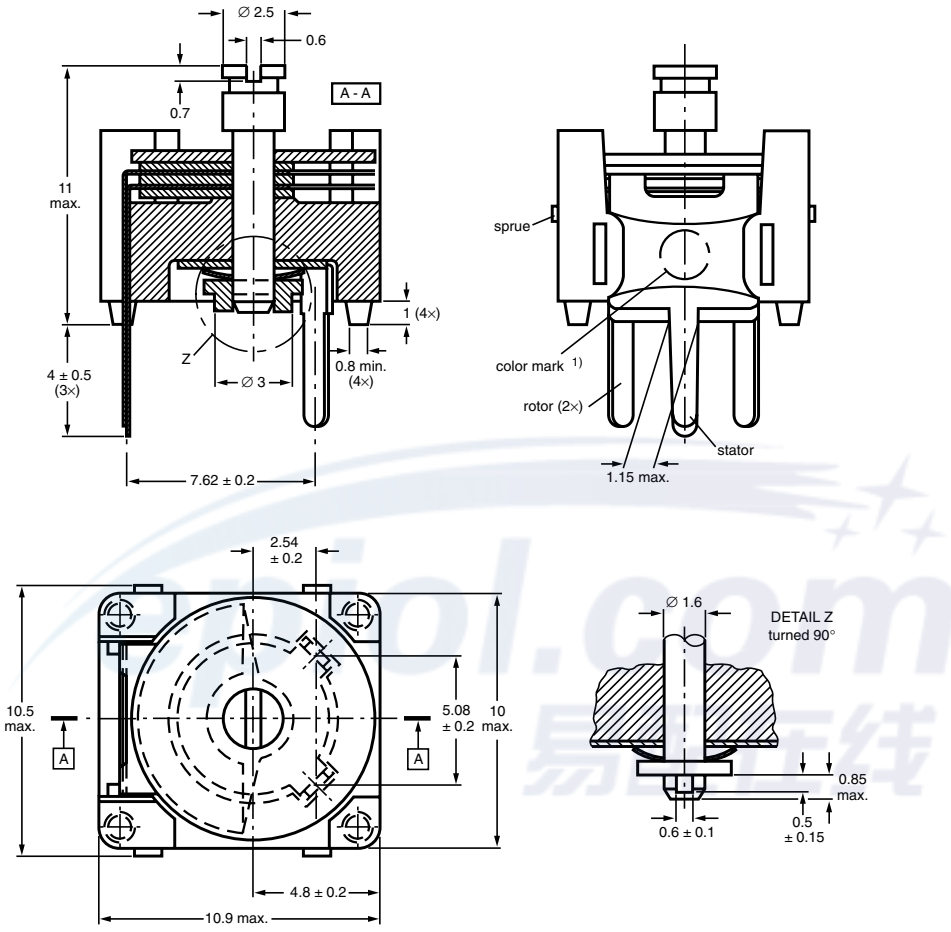
4/38 to 5/57 pF

RATED VOLTAGE (DC):

250 V

LIFE OF TRIMMER:

Maximum 10 cycles: rotation in 180° only (the electrical and mechanical performance is not guaranteed if rotated beyond 10 cycles)

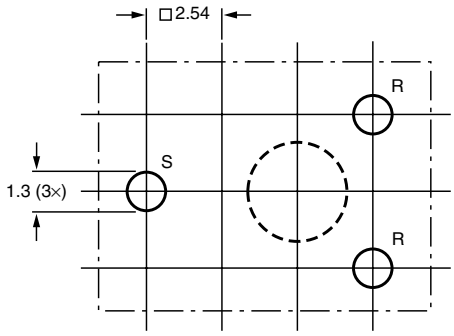


Trimmers BFC2 809 080.. series, with round heads

Dimensions in millimeters

ADJUSTMENT

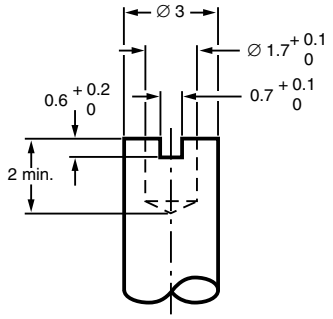
For top adjustment a screwdriver or trimming key can be used; for bottom adjustment a key is required as shown below



R = rotor, S = stator.

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

Hole pattern



Bottom adjustment key

MOUNTING

The trimmer can be mounted on printed-circuit boards with a grid of 2.54 mm and a minimum hole diameter of 1.25 mm.

PACKAGING

Blister packs of 70 units each. For smallest packaging quantity (SPQ) see Electrical Data Table.

ORDERING INFORMATION

C_{min}/C_{max} (pF)	CATALOG NUMBER BFC2 809 080..
	TOP AND BOTTOM ADJUSTMENT
4/38	02
5/57	03

ELECTRICAL DATA

GUARANTEED MAX. C_{min}/ MIN. C_{max} at 200 kHz (pF)	SHAPE OF HEAD	DIEL.	tan δ at C_{max} x 10^{-4}		TEMP. COEFF.[2] (10^{-6}/K)	MIN. f_{res} at C_{max} (MHz)	COL. OF DOT	SPQ	CATALOG NUMBER BFC2 ... .
			1 MHz	100 MHz					
4/38	round	PTFE[1]	≤ 10	≤ 25	- 200 ± 250	170	yellow	350	.... 809 08002
5/57	round					150	blue	350	.... 809 08003

Note:

1. PTFE = polytetrafluorethylene
2. C: 60 % to 80 % of C_{max}; T_{amb}: from + 20 °C to + 125 °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	ΔC/C: ≤ 2.0 %
19		thrust	axial thrust of 2 N	ΔC/C: ≤ 0.2 %
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 hours at lower and 0.5 hours 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: ≤ 0.5 %; no mechanical damage
25	Fc	vibration	frequency 10 to 55 Hz; amplitude 0.35 mm; 1.5 hours	ΔC/C: ≤ 0.2 %; no mechanical damage

IEC 60418-1 CLAUSE	IEC 60068 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
26		climatic sequence:		$\Delta C/C$: ≤ 2.5
26.1	B	dry heat	16 hours at upper category temperature	tan δ: ≤ 10 x 10^{-4} R_{ins}: ≥ 10 000 MΩ; rotor contact R: ≤ 5 mΩ
26.2	D	damp heat accelerated, first cycle	1 cycle; 24 hours; + 40 °C; 95 to 100 % RH	voltage proof: 500 V for 1 minute
26.3	Aa	cold	16 hours; - 40 °C	visual examination: no mechanical damage
26.5		damp heat accelerated, remaining cycles	1 cycle; 24 hours; + 40 °C; 95 to 100 % RH	operating torque: 1 to 25 mNm
27	Ca	damp heat steady state	21 days; + 40 °C; 90 to 95 % RH	$\Delta C/C$: ≤ 2.5 % tan δ: ≤ 10 x 10^{-4} R_{ins}: ≥ 10 000 MΩ; rotor contact R: ≤ 5 mΩ voltage proof: 500 V for 1 minute visual examination: no mechanical damage operating torque: 1 to 25 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)	$\Delta C/C$: ≤ 0.3 % $\Delta C/C$ after axial thrust: ≤ 0.3 %; rotor contact R: ≤ 5 mΩ voltage proof: 500 V for 1 minute visual examination: no mechanical damage operating torque: 1 to 25 mNm

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