Ø 5 mm Film Dielectric Trimmers

TEST VOLTAGE (DC) FOR 1 MINUTE:

300 V

MAXIMUM CONTACT RESISTANCE:

10 mΩ

MINIMUM INSULATION RESISTANCE:

10 000 MΩ

CATEGORY TEMPERATURE RANGE:

PP

- 40 to + 70 °C

PC, PTFE

- 40 to + 85 °C

CLIMATIC CATEGORY (IEC 60068):

PP

40/070/21

PC, 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 to 15 mNm

$C_{MAX} \geq$ 20 pF

1 to 25 mNm

MAXIMUM AXIAL THRUST:

2 N

FEATURES

- Housing diameter 5 mm
- Top and bottom or top adjustment
- Round head
- Vertical version

Pb-free

e3

RoHS
COMPLIANT

APPLICATIONS

- For consumer and industrial equipment

DESCRIPTION:

The vanes of the trimmer are stacked on a sturdy plastic base. The color of the base indicates the maximum capacitance (see Electrical Data Tables). The dielectric is a film of polypropylene (PP) or polytetrafluorethylene (PTFE) for the standard versions and polycarbonate (PC) for the economic and hexagonal head versions. The dielectric supports the vanes in such a way that good stability is ensured and no microphony can occur.

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}:

0.35/1.5 to 4/27 pF

RATED VOLTAGE (DC):

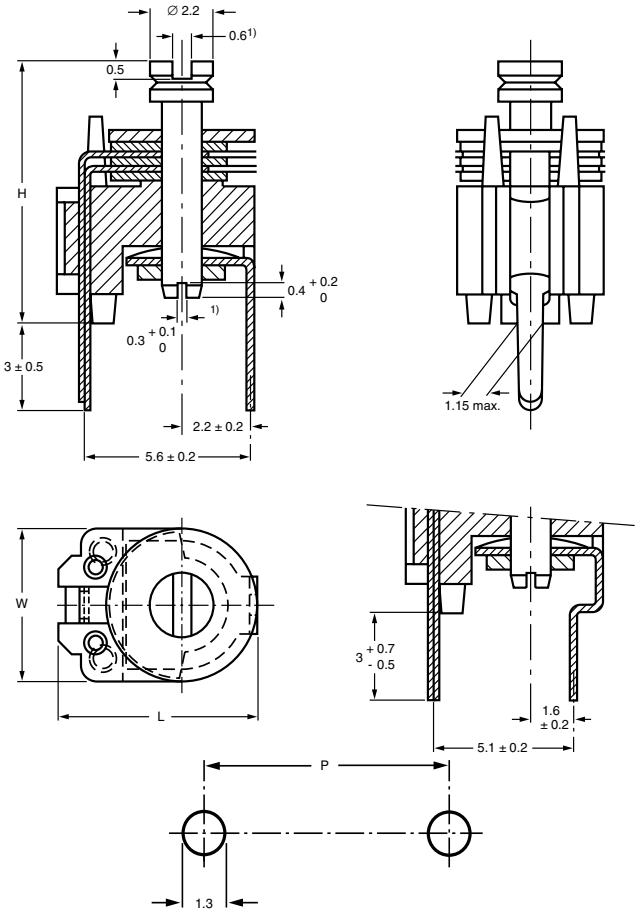
150 V

TEST VOLTAGE (DC) FOR 1 MINUTE:

300 V

LIFE OF TRIMMER:

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



Hole pattern

Trimmers BFC2 808 ..... series, with round head

Dimensions in millimeters

STANDARD VERSIONS; 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

ECONOMIC VERSIONS; RELEVANT PHYSICAL DIMENSIONS

TYPE OF HEAD	H_{max} (mm)	W_{max} (mm)	L_{max} (mm)
Round	7.7	5.5	7.3

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)
STANDARD VERSIONS: POLYTETRAFLUORETHYLENE, ROUND HEAD			
0.35/1.5	22158	-	-
STANDARD VERSIONS: POLYPROPYLENE, ROUND HEAD			
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
ECONOMIC VERSIONS: POLYCARBONATE, ROUND HEAD			
1.5/7	-	20126	-
1.6/15	-	20127	-
3/20	-	20123	-
3.5/27	-	20128	-

ELECTRICAL DATA STANDARD VERSIONS WITH ROUND HEAD

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)	COLOUR 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

ECONOMIC VERSIONS WITH ROUND HEAD

REFERENCE C_{min}/C_{max} (pF)	TAN δ AT C_{max} x 10^{-4} (1 MHz)	TEMP. COEFF. (10^{-6}/K)	COLOUR OF BASE	SMALLEST PACKAGING QUANTITY	CATALOG NUMBER BFC2 ... .
1.5/7	≤ 70	- 50 ± 550	grey	1000	.... 808 20126
1.6/15	≤ 70	- 50 ± 550	blue	1000	.... 808 20127
3/20	≤ 70	- 50 ± 550	green	1000	.... 808 20123
3.5/27	≤ 70	- 100 ± 400	red	1000	.... 808 20128

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
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: ≤ 1 %; no mechanical damage
25	Fc	vibration	frequency 10 to 55 Hz; amplitude 0.75 mm; 1.5 hours	ΔC/C: ≤ 1 %; no mechanical damage
26		climatic sequence:		ΔC/C: ≤ 4 %
26.1	B	dry heat	16 hours 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 hours; + 40 °C; 95 to 100 % RH	voltage proof: 300 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 20 mNm for C_{max} < 20 pF; 1 to 30 mNm for C_{max} ≥ 20 pF

IEC 60418-1 CLAUSE	IEC 60068 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
27	Ca	damp heat steady state	21 days; + 40 °C; 90 to 95 % RH	$\Delta C/C$: ≤ 3 % tan δ for PP and PTFE foil: ≤ 15×10^{-4}; tan δ for PC foil: ≤ 80×10^{-4} R_{ins}: ≥ 10 000 MΩ; rotor contact R: ≤ 10 mΩ voltage proof: 300 V for 1 minute visual examination: no mechanical damage operating torque: 1 to 20 mNm for C_{max} < 20 pF; 1 to 30 mNm for C_{max} ≥ 20 pF
29		mechanical endurance	10 cycles Maximum 10 cycles: rotation in 180° only. (The electrical and mechanical perfromance is not guaranteed if rotated beyond 10 cycles)	$\Delta C/C$: ≤ 3 % $\Delta C/C$ after axial thrust: ≤ 0.3 %; rotor contact R: ≤ 10 mΩ voltage proof: 300 V for 1 minute visual examination: no mechanical damage operating torque: 0.5 to 22.5 mNm for C_{max} < 20 pF; 0.5 to 30 mNm for C_{max} ≥ 20 pF

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