

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

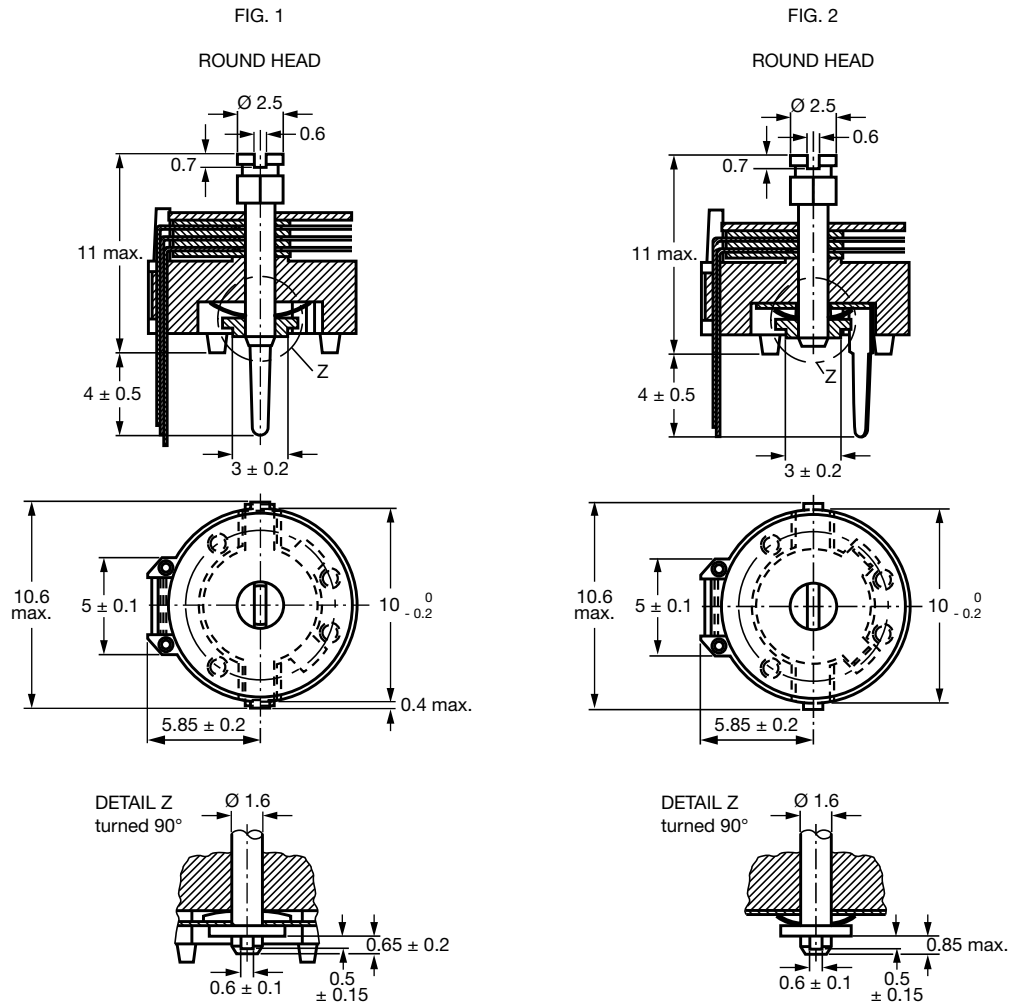

RoHS
COMPLIANT

APPLICATIONS

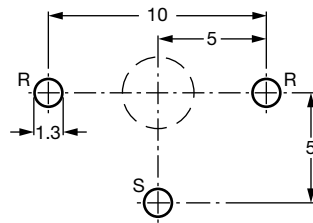
- Antennas
- Impedance matching circuits
- Medical
- RF
- For consumer and industrial equipment

| 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

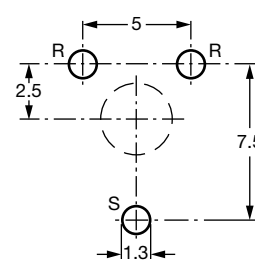


Trimmers BFC2 808 series



R = Rotor, S = Stator

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

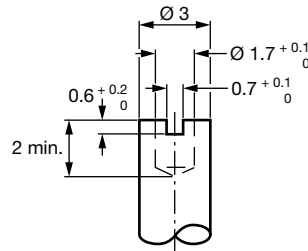


R = Rotor, S = Stator

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 | 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 ± 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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