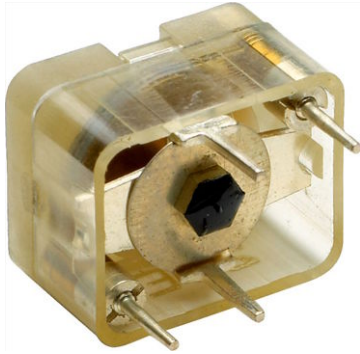


Film Dielectric Trimmers



FEATURES

- High temperature type
- Housing dimensions:
6 mm x 8 mm x 9 mm
- For a basic grid of 2.54 mm
- Top and bottom adjustment
- Round head
- Mounting: radial
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

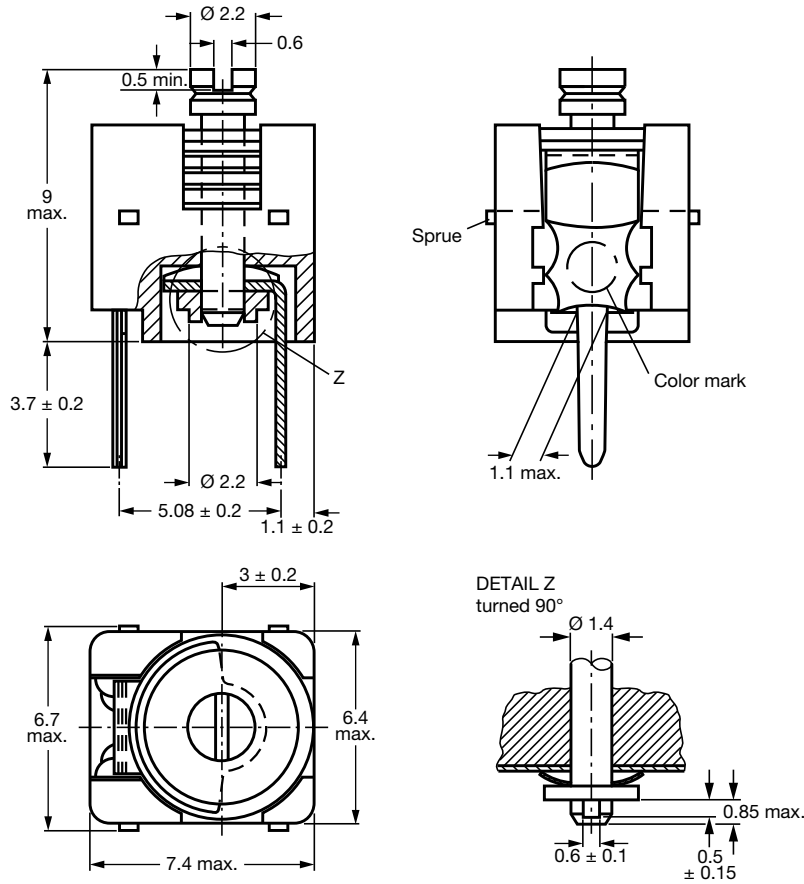

RoHS
COMPLIANT

APPLICATIONS

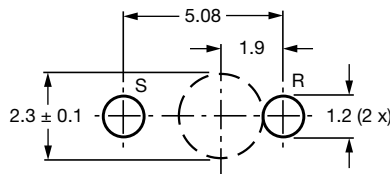
- Antennas
- Impedance matching circuits
- Medical
- RF
- For fine adjustment in professional applications

| QUICK REFERENCE DATA | | |
|--|---|-----------------|
| Rated DC voltage | 300 V _{DC} | |
| Test DC voltage for 1 min | 600 V _{DC} | |
| Maximum contact resistance | 5 mΩ | |
| Minimum insulation resistance between stator and rotor | 10 000 MΩ | |
| Category temperature range | -40 °C 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 | C _{max.} < 3.5 pF | 1 mNm to 15 mNm |
| | C _{max.} ≥ 3.5 pF | 1 mNm to 20 mNm |
| Maximum axial thrust | 2 N | |
| Capacitance range (C _{min.} / C _{max.}) | 1.2 pF / 3.5 pF to 2 pF / 18 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



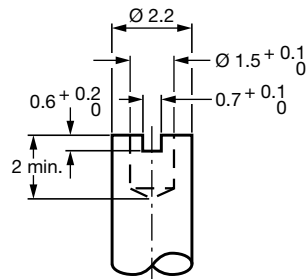
Trimmers BFC2 809 05... series, with round heads



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 809 05... | | |
| | TOP AND BOTTOM ADJUSTMENT | | |
| | ROUND HEAD | ROUND HEAD AND FLUX GUARD | |
| 1.2 / 3.5 | 215 | 001 | |
| 1.8 / 10 | 216 | 002 | |
| 2 / 18 | 217 | 003 | |

MOUNTING

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

PACKAGING

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

| ELECTRICAL DATA | | | | | | | | | |
|--|------------------|------|--|---------|---|--|-------------------|-----|----------------------------------|
| GUARANTEED MAX. C _{min.} / MIN. C _{max.} AT 200 kHz (pF) | SHAPE OF HEAD | FIG. | tan δ AT C _{max.} x 10 ⁻⁴ | | TEMP. COEFF. ⁽¹⁾ (10 ⁻⁶ /K) | MIN. f _{res} AT C _{max.} (MHz) | COL. OF DOT | SPQ | CATALOG NUMBER BFC2 |
| | | | 1 MHz | 100 MHz | | | | | |
| 1.2 / 3.5 | Round | 1 | ≤ 10 | ≤ 20 | -250 ± 350 | 850 | Orange | 700 | 809 05001 |
| | | | | | | | | 700 | 809 05215 |
| 1.8 / 10 | Round | 1 | ≤ 10 | ≤ 20 | -250 ± 350 | 1200 | None | 700 | 809 05002 |
| | | | | | | | | 580 | 809 05216 |
| 2 / 18 | Round | 1 | ≤ 10 | ≤ 25 | -250 ± 350 | 360 | Red | 700 | 809 05217 |
| | | | | | | | | 700 | 809 05003 |

Note

⁽¹⁾ C: 60 % to 80 % of C_{max.}; T_{amb.}: from +20 °C to +125 °C

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 | ΔC/C: ≤ 2.5 %; 4 % for 2 pF |
| 19 | | Thrust | Axial thrust of 2 N | ΔC/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 | 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 |



| TEST PROCEDURES AND REQUIREMENTS | | | | | |
|---|------------------------------|---|---|---|---|
| IEC 60418-1 CLAUSE | IEC 60068 TEST METHOD | TEST | PROCEDURE | REQUIREMENTS | |
| 24 | Eb | Impact bump | 4000 ± 10 bumps; 40 g; 6 ms | $\Delta C/C: \leq 0.6 \%$; no mechanical damage | |
| 25 | Fc | Vibration | Frequency 10 Hz to 55 Hz; amplitude 0.35 mm; 1.5 h | $\Delta C/C: \leq 0.6 \%$; no mechanical damage | |
| 26 | B | Climatic sequence: | | $\Delta C/C: \leq 2.5$ | |
| 26.1 | | Dry heat | 16 h at upper category temperature | $\tan \delta: \leq 10 \times 10^{-4}$ for $C_{max} < 18 \text{ pF}$; $\tan \delta: \leq 40 \times 10^{-4}$ for $C_{max} \geq 18 \text{ pF}$ $R_{ins.}: \geq 10\,000 \text{ M}\Omega$; rotor contact R: $\leq 5 \text{ m}\Omega$ | |
| 26.2 | | Damp heat accelerated, first cycle | 1 cycle; 24 h; +40 °C; 95 % to 100 % RH | Voltage proof: 600 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: 1 mNm to 20 mNm | |
| 27 | Ca | Damp heat steady state | 21 days; +40 °C; 90 % to 95 % RH | $\Delta C/C: \leq 2.5 \%$ $\tan \delta: \leq 10 \times 10^{-4}$ for $C_{max} < 18 \text{ pF}$; $\tan \delta: \leq 25 \times 10^{-4}$ for $C_{max} \geq 18 \text{ pF}$ $R_{ins.}: \geq 10\,000 \text{ M}\Omega$; rotor contact R: $\leq 5 \text{ m}\Omega$ Voltage proof: 600 V for 1 min Visual examination: no mechanical damage Operating torque: 1 mNm to 20 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) | $\Delta C/C: \leq 0.3 \%$; $\leq 2.5 \%$ for 2 pF $\Delta C/C$ after axial thrust: $\leq 0.3 \%$; rotor contact R: $\leq 5 \text{ m}\Omega$ Voltage proof: 600 V for 1 min Visual examination: no mechanical damage Operating torque: 1 mNm to 20 mNm | |



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