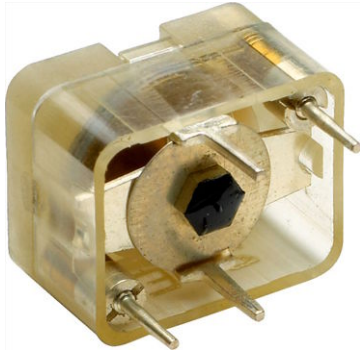


Film Dielectric Trimmers



FEATURES

- High temperature type
- Housing dimensions:
11 mm x 14 mm x 9 mm
- For a basic grid of 2.54 mm
- Top adjustment
- Mounting: radial
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



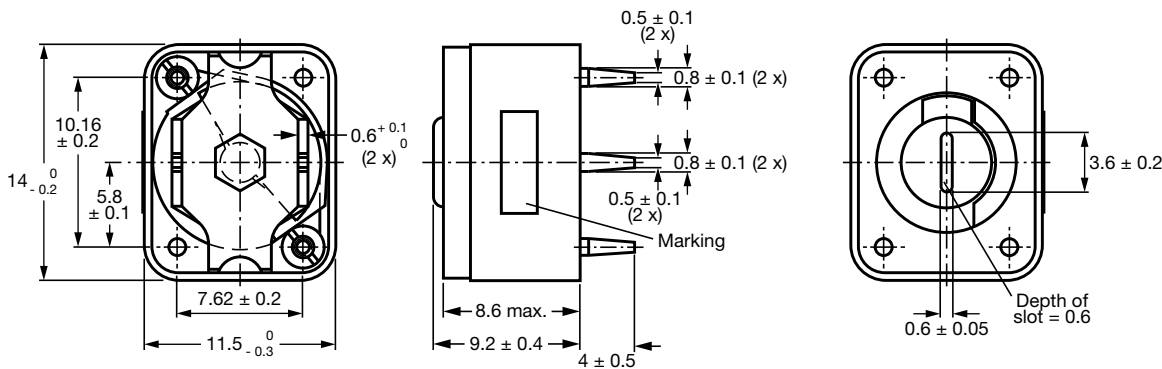
APPLICATIONS

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

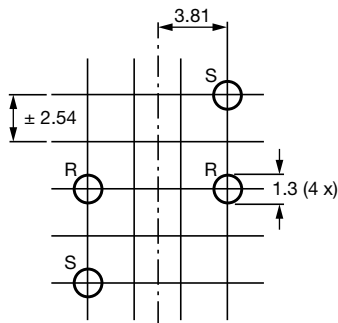
| QUICK REFERENCE DATA | | |
|---|---|-----------------------------|
| Rated DC voltage | 200 V _{DC} | |
| Test DC voltage for 1 min | 400 V _{DC} | |
| Maximum contact resistance | 5 mΩ | |
| Minimum insulation resistance between stator and rotor | 10 000 MΩ | |
| Category temperature range | -40 °C 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 | 1.5 mNm to 25 mNm | |
| Maximum axial thrust | 2 N | |
| Capacitance range (C _{min.} /C _{max.}) | Single stator type | 2.5 pF/20 pF to 7 pF/100 pF |
| | Differential type | 2 pF/12 pF to 7 pF/100 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 809 070.. series



R = Rotor, S = Stator

Hole pattern

ADJUSTMENT

The trimmers can be adjusted with a screwdriver or trimming key. Capacitance increase is obtained with clockwise rotation.

MARKING

The trimmers are marked with the capacitance value in pF, followed by the letter "E" (single-stator type) or the letter "D" (differential type).

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 809 070.. | |
| | TOP AND BOTTOM ADJUSTMENT | |
| | SINGLE STATOR TYPE | DIFFERENTIAL TYPE |
| 2/12 | - | 018 |
| 2.5/20 | 004 | 006 |
| 4/40 | 008 | 009 |
| 5/60 | 011 | 012 |
| 6/80 | 013 | 014 |
| 7/100 | 015 | 016 |



| ELECTRICAL DATA | | | | | | | |
|--|---------------|---------------------|--|---------|---|-----|----------------------------------|
| GUARANTEED MAX. C _{min.} / MIN. C _{max.} AT 200 kHz (pF) | TYPE | DIEL. | tan δ AT C _{max.} x 10 ⁻⁴ | | TEMP. COEFF. ⁽²⁾ (10 ⁻⁶ /K) | SPQ | CATALOG NUMBER BFC2 |
| | | | 1 MHz | 100 MHz | | | |
| 2/12 | Differential | PTFE ⁽¹⁾ | ≤ 10 | ≤ 17 | 0 ± 200 | 350 | 809 07018 |
| 2.5/20 | Single stator | PTFE | ≤ 10 | ≤ 17 | 0 ± 200 | 350 | 809 07004 |
| | Differential | | | | | 350 | 809 07006 |
| 4/40 | Single stator | PTFE | ≤ 10 | ≤ 17 | 0 ± 200 | 350 | 809 07008 |
| | Differential | | | | | 350 | 809 07009 |
| 5/60 | Single stator | PTFE | ≤ 10 | ≤ 25 | 0 ± 200 | 350 | 809 07011 |
| | Differential | | | | | 350 | 809 07012 |
| 6/80 | Single stator | PTFE | ≤ 10 | ≤ 25 | 0 ± 200 | 350 | 809 07013 |
| | Differential | | | | | 350 | 809 07014 |
| 7/100 | Single stator | PTFE | ≤ 10 | ≤ 25 | 0 ± 200 | 350 | 809 07015 |
| | Differential | | | | | 350 | 809 07016 |

Notes

- ⁽¹⁾ PTFE = Polytetrafluorethylene
- ⁽²⁾ 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: ≤ 1 % |
| 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 | | Bending not allowed |
| 22 | Na | Rapid change of temperature | 1 cycle; 0.5 h at lower and 0.5 h at upper category temperature | ΔC/C: ≤ 1 % |
| 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: ≤ 0.2 %; no mechanical damage |
| 25 | Fc | Vibration | Frequency 10 Hz to 55 Hz; amplitude 0.35 mm; 1.5 h | ΔC/C: ≤ 0.25 %; no mechanical damage |



| TEST PROCEDURES AND REQUIREMENTS | | | | |
|---|------------------------------|---|---|--|
| IEC 60418-1 CLAUSE | IEC 60068 TEST METHOD | TEST | PROCEDURE | REQUIREMENTS |
| 26 | | Climatic sequence: | | $\Delta C/C: \leq 3$ |
| 26.1 | B | Dry heat | 16 h at upper category temperature | $\tan \delta: \leq 10 \times 10^{-4}$ $R_{ins}: \geq 10\,000\,M\Omega$; rotor contact R: $\leq 10\,m\Omega$ |
| 26.2 | D | Damp heat accelerated, first cycle | 1 cycle; 24 h; +40 °C; 95 % to 100 % RH | Voltage proof: 400 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: 1.5 mNm to 35 mNm |
| 27 | Ca | Damp heat steady state | 21 days; +40 °C; 90 % to 95 % RH | $\Delta C/C: \leq 3\%$ $\tan \delta: \leq 10 \times 10^{-4}$ $R_{ins}: \geq 10\,000\,M\Omega$; rotor contact R: $\leq 10\,m\Omega$ Voltage proof: 400 V for 1 min Visual examination: no mechanical damage Operating torque: 1.5 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) | $\Delta C/C: \leq 0.3\%$ $\Delta C/C$ after axial thrust: $\leq 0.3\%$; rotor contact R: $\leq 10\,m\Omega$ Voltage proof: 400 V for 1 min Visual examination: no mechanical damage Operating torque: 1 mNm to 50 mNm |



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