

Common Mode for Power Line, SMD Type, SBS9080 Series

Overview

The KEMET SBS9080 coils are common mode chokes with a wide variety of characteristics. These SMD toroidal coils are suitable for noise countermeasure in DC power line circuits.

Applications

- Audio-visual equipment
- Office automation equipment
- Digital appliances
- Home appliances
- Power supplies

Benefits

- Nickel-Zinc (Ni-Zn) ferrite core
- Withstanding voltage: 125 VDC (one minute, between lines)
- Insulation resistance: more than 10 MΩ (100 VDC, between lines)
- SMD, available in Tape & Reel
- Operating temperature range from -25°C to +50°C
- UL94 V-0 flame retardant rated cap
- RoHS Compliant



Part Number System

| SBS | 9080- | 5 | 09T |
|--------|---------------|-------------------|-------------------------|
| Series | Size | Rated Current (A) | Inductance Code μ H |
| SBS | 9080 = 9x8 mm | 5 = 5 A | 09T = 0.9 μ H |

Dimensions – Millimeters

| Part Number | Dimensions - Millimeters | Circuit Diagram | Recommended Land Pattern - Millimeters |
|-------------|--|-----------------|---|
| SBS9080 | <p>Top view dimensions: 9.0±0.2, 9.7 max, 7.2, 1.5, 5.4 max, 1.5, 6.3, 8.0±0.2, 8.7 max.</p> | | <p>Land pattern dimensions: 4.0, 2.0, 4.0, 3.0, 3.0, 3.0.</p> |

Environmental Compliance

KEMET SBS9080 DC Line Filters comply with EU RoHS Directive 2011/65/EU and (EU) 2015/863. Products that fall under the exemptions listed in below table are also included.



| Series | RoHS Compliant | RoHS Exemption Code |
|---------|----------------|---------------------|
| SBS9080 | Yes | 7(a) |

| Code | Exemption |
|------|---|
| 7(a) | Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead) |

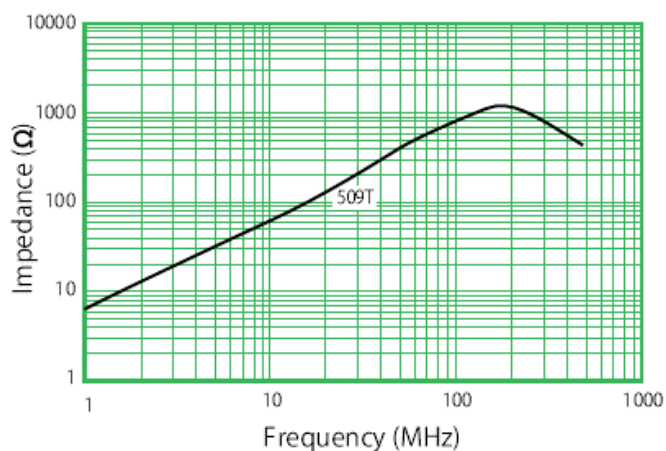
Performance Characteristics

| Item | Performance Characteristics |
|----------------------------------|--|
| Rated Voltage | 50 VDC |
| Withstanding Voltage | 125 VDC (1 minute, between lines) |
| Insulation Resistance | > 10 MΩ at 100 VDC (between lines) |
| Rated Current | 5 A |
| Rated Inductance Range | 0.9 μH |
| Inductance Measurement Condition | 100 kHz |
| Rated DC Resistance | 15 mΩ maximum |
| Operating Temperature | -25°C to +50°C (not including self-temperature rise) |

Table 1 – Ratings & Part Number Reference

| Part Number | Rated Voltage DC (V) | Rated Current DC (A) | Inductance (μH) Minimum | DC Resistance/Line (mΩ) Maximum | Weight (g) |
|--------------|----------------------|----------------------|-------------------------|---------------------------------|------------|
| SBS9080-509T | 50 | 5 | 0.9 | 15 | 0.9 |

Frequency Characteristics

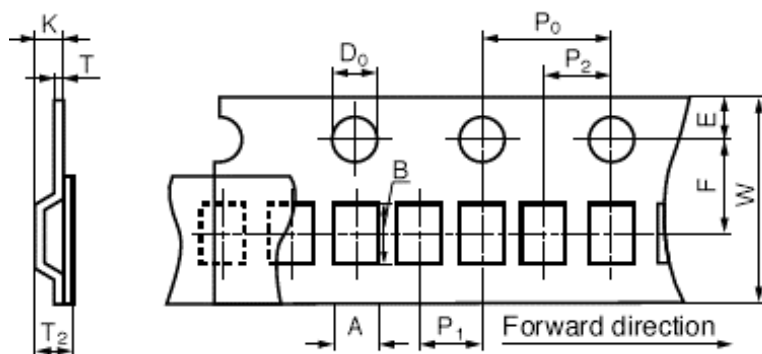


Packaging

| Part Type | Packaging Type | Pieces per Package | Pieces per Box |
|--------------|----------------|--------------------|----------------|
| SBS9080-509T | Tape & Reel | 1,000 | 2,000 |

Taping Specifications

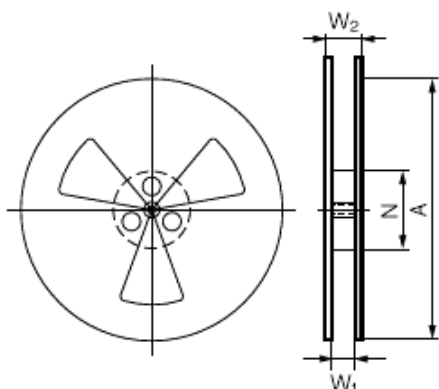
Dimensions of Indented Square Hole Plastic Tape - Millimeters



| A | B | W | F | E | P ₁ | P ₂ | P ₀ | D ₀ | T | T ₂ | K |
|------|-------|-------|------|------|----------------|----------------|----------------|----------------|------|----------------|------|
| ±0.3 | ±0.3 | ±0.3 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | +0.1, -0.0 | 0.6≥ | 7.2≥ | 7.0≥ |
| 9.50 | 10.30 | 16.00 | 7.50 | 1.75 | 12.00 | 2.00 | 4.00 | 1.50 | 0.60 | 7.20 | 7.00 |

Reel Specifications

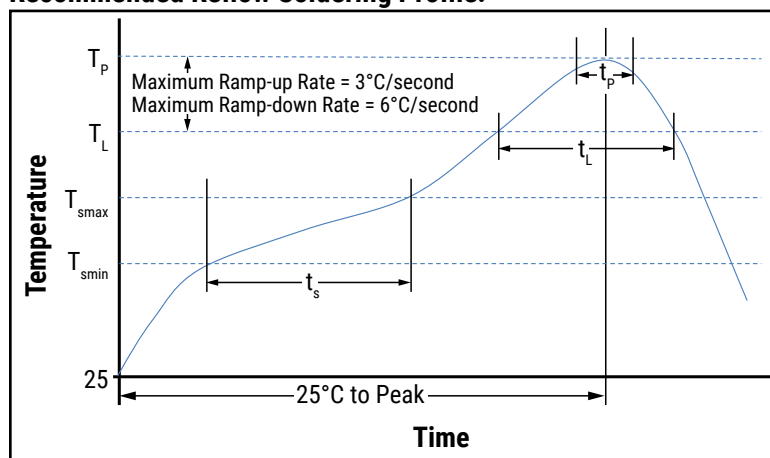
Reel Dimensions - Millimeters



| A | N | W ₁ +0.5 | W ₂ 25.0 ≥ |
|-------|-------|------------------------|--------------------------|
| 330.0 | 100.0 | 17.5 | 25.0 |

Soldering Process

Recommended Reflow Soldering Profile:



Reference ICP/JEDEC J-STD-020E

| Profile Feature | Pb-Free Assembly |
|---|--------------------|
| Preheat/Soak | |
| Temperature Minimum (T_{smm}) | 150°C |
| Temperature Maximum (T_{smax}) | 180°C |
| Time (t_s) from T_{smm} to T_{smax} | 80 – 120 seconds |
| Ramp-up Rate (T_L to T_p) | 3°C/second maximum |
| Liquidous Temperature (T_L) | 230°C |
| Time Above Liquidous (t_L) | 30 – 40 seconds |
| Peak Temperature (T_p) | 250°C |
| Time within 5°C of Maximum Peak Temperature (t_p) | 5 seconds maximum |
| Ramp-down Rate (T_p to T_L) | 6°C/second maximum |
| Time 25°C to Peak Temperature | 8 minutes maximum |

Handling Precautions

Precautions for product storage

DC Line Filters should be stored in normal working environments. While the chokes themselves are quite robust in other environments, solderability will be degraded by exposure to high temperatures, high humidity, corrosive atmospheres, and long term storage.

KEMET recommends that maximum storage temperature not exceed 40°C and maximum storage humidity not exceed 70% relative humidity. Atmospheres should be free of chlorine and sulfur bearing compounds. Temperature fluctuations should be minimized to avoid condensation on the parts. Do not store near strong magnetic fields, as this might magnetize the product.

For optimized solderability, DC line filter stock should be used promptly, preferably within six months of receipt.

Product temperature rise values

The values listed for temperature rise are the result of self-heating in wires when the rated current (commercial frequency) is applied. When using, check and evaluate the value of the core temperature rise under actual operating conditions.

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