

# 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 $\mu$ H
SBS	9080 = 9x8 mm	5 = 5 A	09T = 0.9 $\mu$ 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>Side view dimensions: 0.5, 1.5, 6.3, 8.0±0.2, 8.7 max.</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)

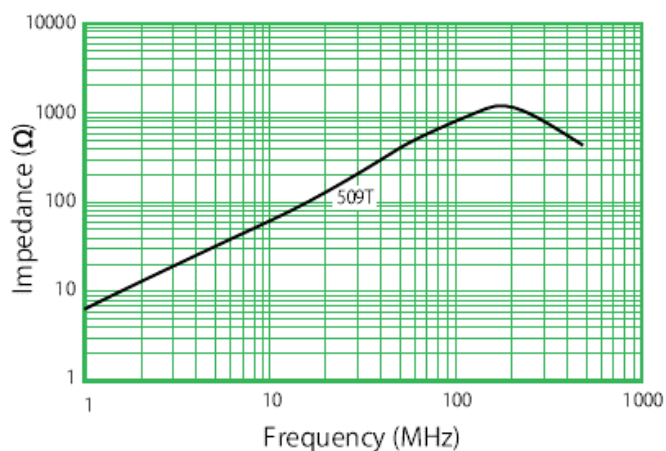
## Performance Characteristics

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

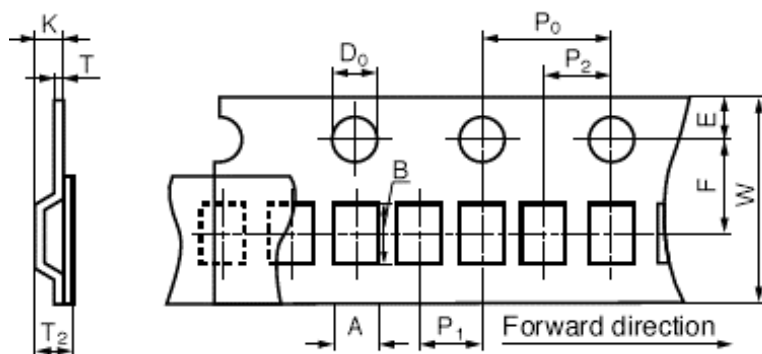


## Packaging

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

## Taping Specifications

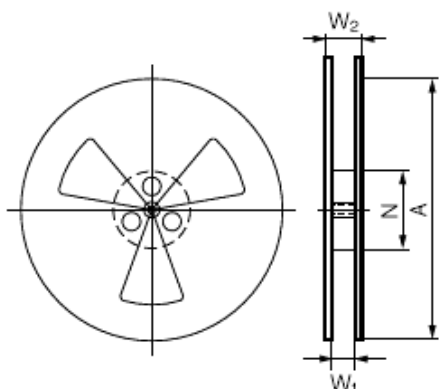
Dimensions of Indented Square Hole Plastic Tape - Millimeters



A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	T	T <sub>2</sub>	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

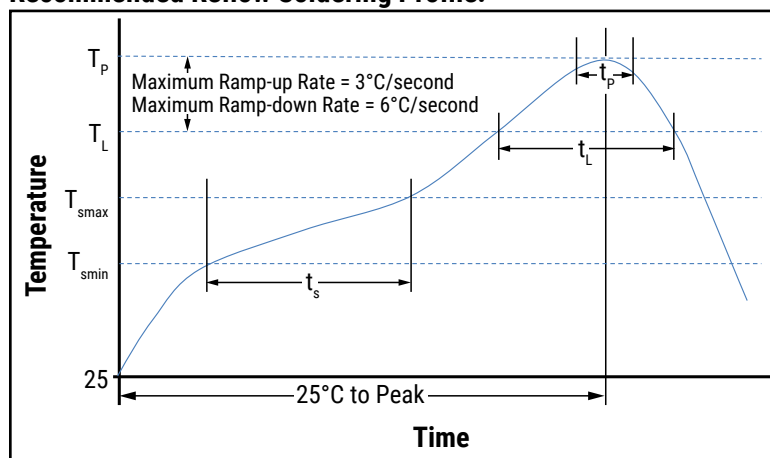
Reel Dimensions - Millimeters



A	N	W <sub>1</sub> +0.5	W <sub>2</sub> 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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