

➤ Features

- Size 0.12*0.06 inch /3.2*1.6 mm
- RoHS compliant, lead-free and halogen-free
- Fast response to fault current
- Low resistance
- Low-profile
- Compatible with high temperature solders

➤ Applications

- Computer, Mobile phones, Multimedia
- Automotive, Industrial controls, Telephony and broadband
- Game machines, Portable electronics, Battery

➤ Electrical Characteristics (25°C)

| Part Number | I_{hold} | I_{trip} | V_{max} | I_{max} | P_d | Time to trip | | R_{min} | R_{1max} |
|--------------------|------------|------------|-----------|-----------|-------|--------------|-------|--------------|--------------|
| | (A) | (A) | (V) | (A) | (W) | (A) | (Sec) | (Ω) | (Ω) |
| BSMD1206-005-30V | 0.05 | 0.15 | 30 | 40 | 0.4 | 0.25 | 1.50 | 3.60 | 50.0 |
| BSMD1206-005-60V | 0.05 | 0.15 | 60 | 40 | 0.4 | 0.25 | 1.50 | 3.60 | 50.0 |
| BSMD1206-010-30V | 0.10 | 0.25 | 30 | 40 | 0.4 | 0.50 | 1.00 | 1.60 | 15.0 |
| BSMD1206-010-60V | 0.10 | 0.25 | 60 | 40 | 0.4 | 0.50 | 1.00 | 1.60 | 15.0 |
| BSMD1206-012-60V | 0.12 | 0.29 | 60 | 40 | 0.4 | 0.50 | 1.00 | 1.60 | 13.0 |
| BSMD1206-016-33V | 0.16 | 0.37 | 33 | 40 | 0.4 | 1.00 | 0.30 | 1.00 | 6.00 |
| BSMD1206-020-24V | 0.20 | 0.46 | 24 | 40 | 0.6 | 8.00 | 0.10 | 0.35 | 2.70 |
| BSMD1206-020-30V | 0.20 | 0.46 | 30 | 40 | 0.6 | 8.00 | 0.10 | 0.35 | 2.70 |
| BSMD1206-025-16V | 0.25 | 0.50 | 16 | 40 | 0.6 | 8.00 | 0.10 | 0.35 | 2.50 |
| BSMD1206-025-24V | 0.25 | 0.50 | 24 | 40 | 0.6 | 8.00 | 0.10 | 0.35 | 2.50 |
| BSMD1206-025-30V | 0.25 | 0.50 | 30 | 40 | 0.6 | 8.00 | 0.10 | 0.35 | 2.50 |
| BSMD1206-035-6V | 0.35 | 0.75 | 6 | 40 | 0.6 | 8.00 | 0.10 | 0.25 | 1.50 |
| BSMD1206-035-16V | 0.35 | 0.75 | 16 | 40 | 0.6 | 8.00 | 0.10 | 0.25 | 1.50 |
| BSMD1206-035-30V | 0.35 | 0.75 | 30 | 40 | 0.6 | 8.00 | 0.10 | 0.25 | 1.50 |
| BSMD1206-050-6V | 0.50 | 1.00 | 6 | 100 | 0.6 | 8.00 | 0.10 | 0.15 | 0.70 |
| BSMD1206-050-13.2V | 0.50 | 1.00 | 13.2 | 100 | 0.6 | 8.00 | 0.10 | 0.15 | 0.70 |
| BSMD1206-050-16V | 0.50 | 1.00 | 16 | 100 | 0.6 | 8.00 | 0.10 | 0.15 | 0.70 |
| BSMD1206-050-24V | 0.50 | 1.00 | 24 | 40 | 0.6 | 8.00 | 0.10 | 0.15 | 0.70 |
| BSMD1206-050-30V | 0.50 | 1.00 | 30 | 40 | 0.6 | 8.00 | 0.10 | 0.15 | 0.70 |
| BSMD1206-075-6V | 0.75 | 1.50 | 6 | 100 | 0.6 | 8.00 | 0.20 | 0.09 | 0.50 |
| BSMD1206-075-13.2V | 0.75 | 1.50 | 13.2 | 100 | 0.6 | 8.00 | 0.20 | 0.09 | 0.50 |
| BSMD1206-075-16V | 0.75 | 1.50 | 16 | 100 | 0.6 | 8.00 | 0.20 | 0.09 | 0.50 |

| Part Number | I_{hold} | I_{trip} | V_{max} | I_{max} | P_d | Time to trip | | R_i | R_{1max} |
|--------------------|------------|------------|-----------|-----------|-------|--------------|------|--------------|--------------|
| | (A) | (A) | (V) | (A) | (W) | (A) | (S) | (Ω) | (Ω) |
| BSMD1206-075-24V | 0.75 | 1.50 | 24 | 40 | 0.6 | 8.00 | 0.20 | 0.09 | 0.50 |
| BSMD1206-075-30V | 0.75 | 1.50 | 30 | 40 | 0.6 | 8.00 | 0.20 | 0.09 | 0.50 |
| BSMD1206-100-6V | 1.00 | 1.80 | 6 | 100 | 0.6 | 8.00 | 0.30 | 0.05 | 0.27 |
| BSMD1206-100-13.2V | 1.00 | 1.80 | 13.2 | 100 | 0.6 | 8.00 | 0.30 | 0.05 | 0.27 |
| BSMD1206-100-16V | 1.00 | 1.80 | 16 | 100 | 0.6 | 8.00 | 0.30 | 0.05 | 0.27 |
| BSMD1206-100-24V | 1.00 | 1.80 | 24 | 40 | 0.6 | 8.00 | 0.30 | 0.05 | 0.27 |
| BSMD1206-110-6V | 1.10 | 2.20 | 6 | 100 | 0.6 | 8.00 | 0.30 | 0.04 | 0.25 |
| BSMD1206-150-6V | 1.50 | 3.00 | 6 | 100 | 0.8 | 8.00 | 0.30 | 0.025 | 0.130 |
| BSMD1206-150-13.2V | 1.50 | 3.00 | 13.2 | 40 | 0.8 | 8.00 | 0.30 | 0.025 | 0.130 |
| BSMD1206-150-16V | 1.50 | 3.00 | 16 | 40 | 0.8 | 8.00 | 0.30 | 0.025 | 0.130 |
| BSMD1206-200-6V | 2.00 | 3.50 | 6 | 100 | 0.8 | 8.00 | 1.50 | 0.015 | 0.080 |
| BSMD1206-200-12V | 2.00 | 3.50 | 12 | 100 | 0.8 | 8.00 | 1.50 | 0.015 | 0.080 |
| BSMD1206-200-16V | 2.00 | 3.50 | 16 | 40 | 0.8 | 8.00 | 1.50 | 0.015 | 0.080 |
| BSMD1206-260-6V | 2.60 | 5.20 | 6 | 100 | 0.8 | 8.00 | 2.00 | 0.010 | 0.060 |
| BSMD1206-300-6V | 3.00 | 6.00 | 6 | 100 | 1.0 | 8.00 | 4.00 | 0.010 | 0.050 |
| BSMD1206-350-6V | 3.50 | 7.00 | 6 | 100 | 1.2 | 10.0 | 5.00 | 0.005 | 0.040 |

I_{hold} = Hold current: maximum current device will pass without tripping in 25°C still air.

I_{trip} = Trip current: minimum current at which the device will trip in 25°C still air.

V_{max} = Maximum voltage device can withstand without damage at rated current (I_{max})

I_{max} = Maximum fault current device can withstand without damage at rated voltage (V_{max})

$P_{d\ typ.}$ = Typical power dissipated from device when in the tripped state at 25°C still air.

R_{min} = Minimum resistance of device in initial (un-soldered) state.

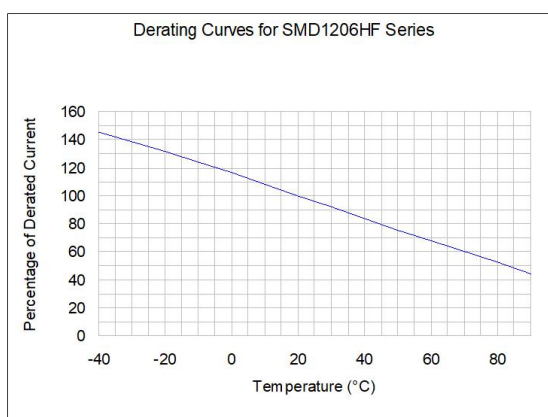
R_{1max} = Maximum resistance of device at 25°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

Caution: Operation beyond the specified ratings may result in damage and possible arcing and flame.

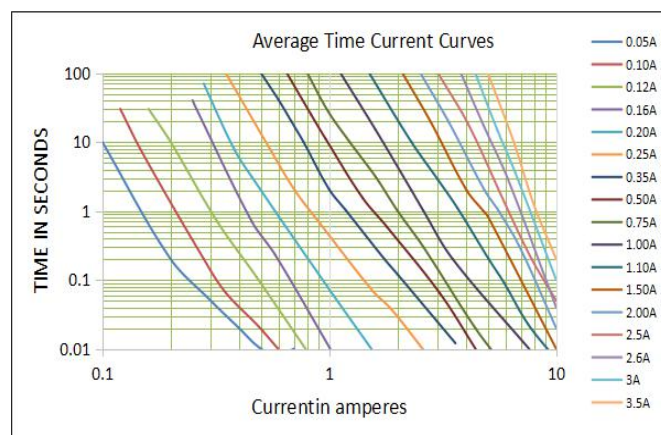
➤ **WARNING**

- Users shall independently assess the suitability of these devices for each of their applications.
- Operation of these devices beyond the stated maximum ratings could result in damage to the devices and lead to electrical arcing and/or fire.
- These devices are intended to protect against the effects of temporary over-current or over-temperature conditions and are not intended to perform as protective devices where such conditions are expected to be repetitive or prolonged in duration.
- Exposure to silicon-based oils, solvents, electrolytes, acids, and similar materials can adversely affect the performance of these PPTC devices.
- These devices undergo thermal expansion under fault conditions, and thus shall be provided with adequate space and be protected against mechanical stresses.
- Circuits with inductance may generate a voltage ($L di/dt$) above the rated voltage of the PPTC device.

➤ **Thermal Derating Curve**



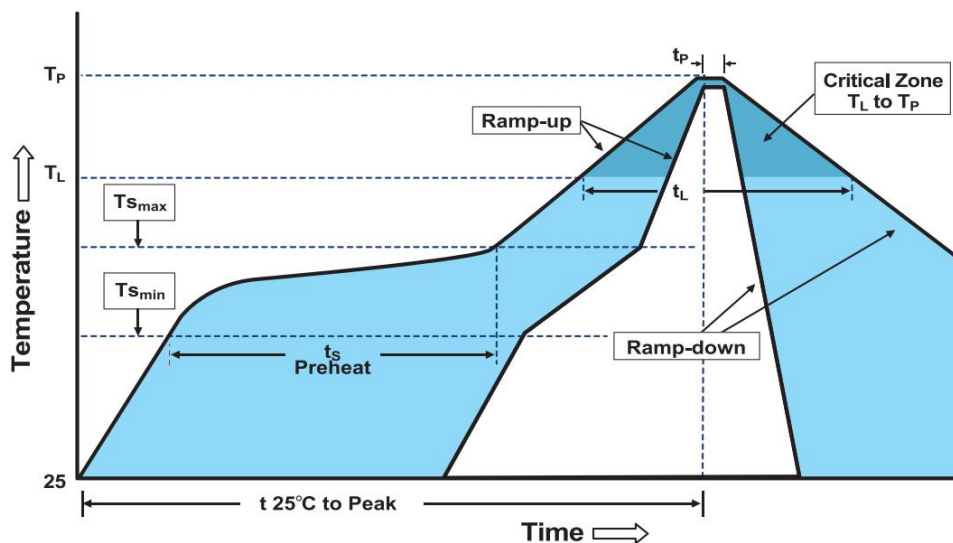
➤ **Typical Time-to-Trip At 25°C**



➤ Thermal Derating Chart

| Part Number | Ambient operating temperature hold current(I_{hold}) | | | | | | | | |
|--------------|--|-------|-------|-------|-------|-------|-------|-------|-------|
| | -40°C | -20°C | 0°C | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| BSMD1206-005 | 0.074 | 0.066 | 0.056 | 0.050 | 0.042 | 0.037 | 0.035 | 0.030 | 0.027 |
| BSMD1206-010 | 0.148 | 0.132 | 0.116 | 0.100 | 0.085 | 0.075 | 0.070 | 0.060 | 0.055 |
| BSMD1206-012 | 0.18 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 | 0.07 | 0.06 |
| BSMD1206-016 | 0.24 | 0.21 | 0.18 | 0.16 | 0.14 | 0.13 | 0.12 | 0.11 | 0.10 |
| BSMD1206-020 | 0.30 | 0.26 | 0.23 | 0.20 | 0.17 | 0.15 | 0.14 | 0.12 | 0.11 |
| BSMD1206-025 | 0.37 | 0.33 | 0.29 | 0.25 | 0.22 | 0.20 | 0.17 | 0.15 | 0.12 |
| BSMD1206-035 | 0.50 | 0.45 | 0.40 | 0.35 | 0.30 | 0.27 | 0.24 | 0.21 | 0.15 |
| BSMD1206-050 | 0.71 | 0.64 | 0.57 | 0.50 | 0.42 | 0.39 | 0.35 | 0.31 | 0.25 |
| BSMD1206-075 | 1.14 | 1.01 | 0.88 | 0.75 | 0.65 | 0.59 | 0.54 | 0.49 | 0.41 |
| BSMD1206-100 | 1.45 | 1.31 | 1.15 | 1.00 | 0.84 | 0.77 | 0.69 | 0.61 | 0.48 |
| BSMD1206-110 | 1.60 | 1.45 | 1.30 | 1.10 | 0.95 | 0.80 | 0.72 | 0.66 | 0.55 |
| BSMD1206-150 | 2.18 | 1.94 | 1.72 | 1.50 | 1.28 | 1.17 | 1.06 | 0.96 | 0.77 |
| BSMD1206-200 | 2.88 | 2.63 | 2.34 | 2.00 | 1.74 | 1.58 | 1.42 | 1.17 | 0.93 |
| BSMD1206-260 | 3.43 | 3.22 | 2.93 | 2.60 | 2.23 | 2.03 | 1.87 | 1.57 | 1.35 |
| BSMD1206-300 | 4.05 | 3.66 | 3.36 | 3.00 | 2.50 | 2.28 | 2.00 | 1.62 | 1.38 |
| BSMD1206-350 | 4.65 | 4.22 | 3.92 | 3.50 | 2.92 | 2.68 | 2.35 | 1.91 | 1.42 |

➤ **Soldering Parameters**



| | |
|--|--------------------|
| Profile Feature | Pb-Free Assembly |
| Average Ramp-Up Rate(T_{smax} to T_p) | 3°C/second max |
| Preheat | |
| -Temperature Min(T _{smin}) | 150°C |
| -Temperature Max(T _{smax}) | 200°C |
| -Time(T _{smin} to T _{smax}) | 60~180 seconds |
| Time maintained above: | |
| -Temperature(T _L) | 217°C |
| -Time(t _L) | 60~150 seconds |
| Peak Temperature(T_p) | 260°C |
| Ramp-Down Rate | 6°C/second max |
| Time 25°C to Peak Temperature | 8 minutes max |
| Storage Condition | 0°C~30°C,30%-60%RH |

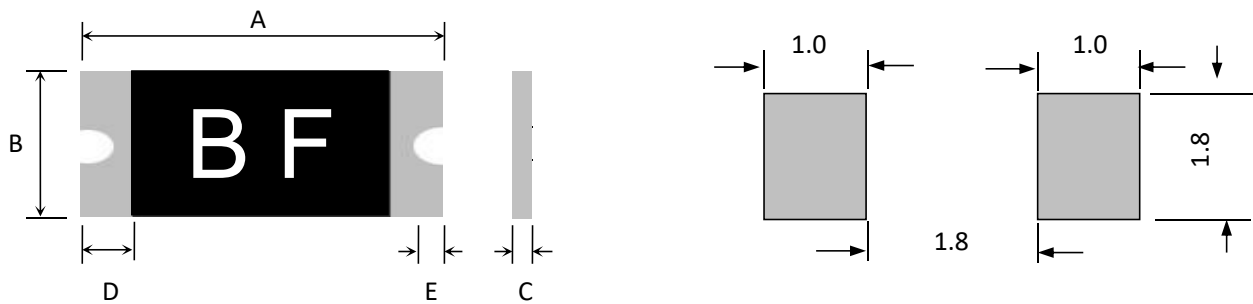
- Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free.
- Recommended maximum paste thickness is 0.25mm.
- Devices can be cleaned using standard industry methods and solvents.

Note 1: All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

➤ **Environmental Specifications**

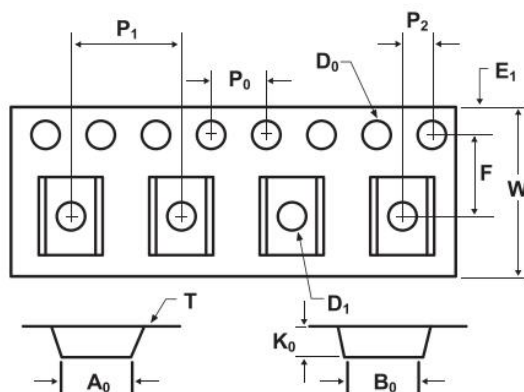
| Test | Conditions | Resistance change |
|---|-----------------------------|-------------------|
| Passive aging | +85°C, 1000 hrs. | ±5% typical |
| Humidity aging | +85°C, 85% R.H. , 168 hours | ±5% typical |
| Thermal shock | +85°C to -40°C, 20 times | ±33% typical |
| Resistance to solvent | MIL-STD-202,Method 215 | No change |
| Vibration | MIL-STD-202,Method 201 | No change |
| Ambient operating conditions : - 40 °C to +85 °C | | |
| Maximum surface temperature of the device in the tripped state is 125 °C | | |

➤ Physical Dimensions & Recommended Pad Layout (mm)


| Part Number | Marking | Quantity | A | | B | | C | | D | E |
|--------------------|---------|----------|------|------|------|------|------|------|------|------|
| | | | Min | Max | Min | Max | Min | Max | Min | Min |
| BSMD1206-005-30V | BZ | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.60 | 1.20 | 0.15 | 0.10 |
| BSMD1206-005-60V | BZ | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.60 | 1.20 | 0.15 | 0.10 |
| BSMD1206-010-30V | BN | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.60 | 1.20 | 0.15 | 0.10 |
| BSMD1206-010-60V | BN | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.60 | 1.20 | 0.15 | 0.10 |
| BSMD1206-012-60V | BN | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.60 | 1.20 | 0.15 | 0.10 |
| BSMD1206-016-33V | BT | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-020-24V | BA | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-020-30V | BA | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-025-16V | BA | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-025-24V | BA | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-025-30V | BA | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-035-6V | BB | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-035-16V | BB | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-035-30V | BB | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-050-6V | BF | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-050-13.2V | BF | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-050-16V | BF | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-050-24V | BF | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-050-30V | BF | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.40 | 1.00 | 0.15 | 0.10 |
| BSMD1206-075-6V | BG | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.50 | 1.00 | 0.15 | 0.10 |
| BSMD1206-075-13.2V | BG | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.50 | 1.00 | 0.15 | 0.10 |
| BSMD1206-075-16V | BG | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.50 | 1.00 | 0.15 | 0.10 |
| BSMD1206-075-24V | BG | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.50 | 1.00 | 0.15 | 0.10 |
| BSMD1206-075-30V | BG | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.50 | 1.00 | 0.15 | 0.10 |
| BSMD1206-100-6V | BH | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.50 | 1.00 | 0.15 | 0.10 |
| BSMD1206-100-13.2V | BH | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.50 | 1.00 | 0.15 | 0.10 |

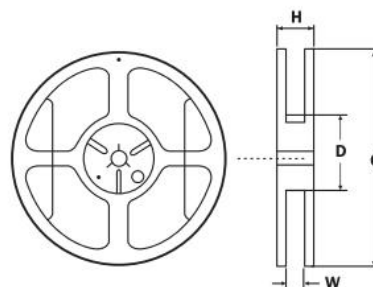
| Part Number | Marking | Quantity | A | | B | | C | | D | E |
|--------------------|---------|----------|------|------|------|------|------|------|------|------|
| | | | Min | Max | Min | Max | Min | Max | Min | Min |
| BSMD1206-100-16V | BH | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.50 | 1.00 | 0.15 | 0.10 |
| BSMD1206-100-24V | BH | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.50 | 1.00 | 0.15 | 0.10 |
| BSMD1206-110-6V | BH | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.50 | 1.00 | 0.15 | 0.10 |
| BSMD1206-150-6V | BI | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.50 | 1.00 | 0.15 | 0.10 |
| BSMD1206-150-13.2V | BI | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.80 | 1.60 | 0.15 | 0.10 |
| BSMD1206-200-6V | BK | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.70 | 1.30 | 0.15 | 0.10 |
| BSMD1206-200-12V | BK | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.70 | 1.30 | 0.15 | 0.10 |
| BSMD1206-200-16V | BK | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 0.70 | 1.60 | 0.15 | 0.10 |
| BSMD1206-260-6V | BP | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 1.00 | 1.60 | 0.15 | 0.10 |
| BSMD1206-300-6V | BP | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 1.00 | 1.60 | 0.15 | 0.10 |
| BSMD1206-350-6V | BV | 3500 | 3.00 | 3.60 | 1.50 | 1.90 | 1.00 | 1.60 | 0.15 | 0.10 |

➤ **Tape And Reel Specifications (mm)**



| Governing Specifications | BSMD1206-005-30V~ BSMD1206-050-16V | BSMD1206-050-24V~ BSMD1206-075-33V | BSMD1206-100-6V~ BSMD1206-350-6V |
|--------------------------|---------------------------------------|---------------------------------------|-------------------------------------|
| W | 8.0 ± 0.3 | 8.0 ± 0.3 | 8.0 ± 0.3 |
| F | 3.5 ± 0.05 | 3.5 ± 0.05 | 3.5 ± 0.05 |
| E1 | 1.75 ± 0.1 | 1.75 ± 0.1 | 1.75 ± 0.1 |
| D0 | 1.55 ± 0.05 | 1.55 ± 0.05 | 1.55 ± 0.05 |
| D1 | 1.0 ± 0.1 | 1.0 ± 0.1 | 1.0 ± 0.1 |
| P0 | 4.0 ± 0.1 | 4.0 ± 0.1 | 4.0 ± 0.1 |
| P1 | 4.0 ± 0.1 | 4.0 ± 0.1 | 4.0 ± 0.1 |
| P2 | 2.0 ± 0.05 | 2.0 ± 0.05 | 2.0 ± 0.05 |
| A0 | 1.95 ± 0.1 | 1.95 ± 0.1 | 1.95 ± 0.1 |
| B0 | 3.65 ± 0.1 | 3.65 ± 0.1 | 3.65 ± 0.1 |
| T | 0.2 ± 0.1 | 0.2 ± 0.1 | 0.2 ± 0.1 |
| K0 | 0.74 ± 0.1 | 1.04 ± 0.1 | 1.35 ± 0.1 |
| Leader min | 390 | 390 | 390 |
| Trailer min | 160 | 160 | 160 |

| Reel Dimensions | |
|-----------------|-------------|
| C | φ178 ± 1.0 |
| D | φ60.2 ± 0.5 |
| H | 11.0 ± 0.5 |
| W | 9.0 ± 1.5 |



➤ **Contact information**

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