

## **BVS-M-R0003-1.0**

# **BVS Series SMD Resistor User Manual**

Model: BVS-M-R0003-1.0 (and variants)

## **1. PRODUCT OVERVIEW**

This manual provides essential information for the proper handling, installation, and understanding of the BVS Series Surface Mount Device (SMD) Resistors, specifically focusing on the BVS-M-R0003-1.0 model and its variants (BVS-M-R0005-1.0, BVS-M-R001-1.0). These resistors are designed for precise current sensing applications in various electronic circuits.



Figure 1: BVS Series SMD Resistors in their tape packaging. The image shows multiple resistors, each marked with "BVS" and resistance values, indicating their compact size and surface-mount design.

## 2. SPECIFICATIONS

Key technical specifications for the BVS Series SMD Resistors:

Characteristic	Value (BVS-M-R0003-1.0)	Notes
Resistance Value	0.5 mΩ (R0003)	Other variants available (R0005, R001)
Tolerance	±1%	High precision for current sensing
Package Size	3920 (EIA)	Equivalent to 9.9mm x 5.0mm
Type	SMD (Surface Mount Device)	Designed for automated assembly
Origin	Mainland China	

## 3. SETUP AND INSTALLATION

BVS Series SMD resistors are designed for surface mount technology (SMT) assembly processes. Proper handling and installation are crucial for optimal performance and reliability.

### 3.1. Handling Precautions

- Always handle components in an ESD-safe environment to prevent damage from static discharge.
- Use appropriate tools (e.g., vacuum pick-up tools, tweezers) to avoid physical damage to the resistor body or terminals.
- Store components in their original packaging in a dry, temperature-controlled environment until ready for use.

### 3.2. Soldering Guidelines

These resistors are compatible with standard reflow soldering processes. Adhere to the following general guidelines:

- Solder Paste:** Use a high-quality solder paste suitable for SMD components. Ensure proper stencil design for accurate paste deposition.
- Reflow Profile:** Follow the recommended reflow soldering profile for the specific solder paste and PCB material. Typical peak temperatures range from 230°C to 250°C, with a dwell time above liquidus of 30-90 seconds.
- Cooling:** Ensure a controlled cooling rate to prevent thermal shock and ensure proper solder joint formation.
- Rework:** If rework is necessary, use appropriate hot air or soldering iron techniques to minimize thermal stress on the component and surrounding PCB. Avoid excessive heat or prolonged exposure.

## 4. OPERATING PRINCIPLES

The BVS Series resistors function as precision current sensing elements. When current flows through the resistor, a voltage drop is created across its terminals, proportional to the current (Ohm's Law:  $V = I * R$ ). This voltage can then be measured and used by control circuitry to monitor or regulate current.

- Current Rating:** Ensure the operating current does not exceed the resistor's maximum power dissipation rating to prevent overheating and damage.
- Temperature Coefficient of Resistance (TCR):** Be aware that resistance values can slightly change with temperature. For critical applications, consider the TCR specified in the full datasheet.
- Inductance:** Low-value current sense resistors may have parasitic inductance. For high-frequency applications, consider the impact of this inductance.

## 5. MAINTENANCE

BVS Series SMD resistors are passive components and generally require no active maintenance once properly installed. However, ensuring the cleanliness and integrity of the PCB assembly is important for long-term reliability.

- **Environmental Control:** Operate the electronic assembly within its specified environmental conditions (temperature, humidity) to prevent component degradation.
- **Cleaning:** If cleaning the PCB is necessary, use approved electronic cleaning agents and methods that do not damage components or solder joints.
- **Inspection:** Periodically inspect solder joints for cracks, corrosion, or other signs of degradation in critical applications.

## 6. TROUBLESHOOTING

Issues related to resistors typically stem from improper installation, incorrect value selection, or exceeding operational limits. Common troubleshooting steps include:

- **Incorrect Resistance Reading:** Verify the component value against the circuit design. Check solder joints for opens or shorts. Measure resistance in-circuit (power off) or desolder for accurate measurement.
- **Overheating/Burnout:** This indicates excessive current or power dissipation. Re-evaluate the circuit design to ensure the resistor's power rating is sufficient for the application. Check for short circuits elsewhere in the circuit.
- **Intermittent Operation:** Could be due to a cold solder joint or physical damage. Inspect the component and its connections closely.

## 7. WARRANTY AND SUPPORT

As a passive electronic component, the BVS Series resistors are typically covered by a standard manufacturer's warranty against defects in materials and workmanship for a period of one year from the date of purchase. This warranty does not cover damage resulting from improper installation, misuse, or operation outside of specified parameters.

For technical support or inquiries, please contact your component distributor or the manufacturer directly. Provide the model number (BVS-M-R0003-1.0) and any relevant batch codes for faster assistance.



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*Disclaimer: Information in this manual is subject to change without notice.*

### Related Documents - BVS-M-R0003-1.0

	<p><a href="#">Aqua-Scope Ball Valve Servo BVSZWE01: Smart Z-Wave Water Control Manual</a></p> <p>This manual provides comprehensive information on the Aqua-Scope Ball Valve Servo (BVSZWE01), a Z-Wave enabled device for smart home water valve automation, leak detection, and remote control. Learn about installation, operation, and technical specifications.</p>
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	<p><a href="#"><b>MUSE M-10 CPK Dual Alarm Clock Radio User Manual</b></a></p> <p>Comprehensive user manual for the MUSE M-10 CPK dual alarm clock radio, covering setup, operation, alarm functions, radio listening, sleep timer, and safety instructions.</p>
	<p><a href="#"><b>Mirro Pressure Cooker Parts, Manuals, and Replacement Guides</b></a></p> <p>Comprehensive information on Mirro pressure cooker parts, model compatibility, and instructional resources. Find replacement components, overpressure plugs, and user manuals for various Mirro pressure cooker models.</p>
	<p><a href="#"><b>Bubblebee Sidekick Version 3 IFB In-Ear Monitor User Manual</b></a></p> <p>Comprehensive user manual for the Bubblebee Sidekick Version 3 IFB In-Ear Monitor, covering setup, care, technical specifications, warranty, and accessories. Learn how to use and maintain your invisible earpiece solution.</p>
	<p><a href="#"><b>Moxa ioLogik E4200 Series Quick Installation Guide</b></a></p> <p>A concise guide to installing and configuring the Moxa ioLogik E4200 Series Modular Ethernet Remote I/O Adapter, covering hardware setup, power connections, supported modules, and software download.</p>
	<p><a href="#"><b>DeVilbiss Compact-X Automatic Spray Gun Service and Operation Manual</b></a></p> <p>Comprehensive service and operation manual for the DeVilbiss Compact-X Automatic Spray Gun, covering specifications, parts, installation, maintenance, technology, and warranty.</p>

**BVS-M-R0003-1.0**

Image may be representation. See specs for product details.
Part Number: BVS-M-R0003-1.0
Manufacturer/Brand: ISABELL
Part Description: SMD, SMD
Part Status: New original, 200K on Stock Available.
Ship From: Hong Kong
Shipping Way: DHL/FedEx/UPS/EMS/FEDEX

**Specifications**

Part Number: BVS-M-R0003-1.0
Manufacturer: ISABELL
Description: SMD, SMD
Category: Integrated Circuits (ICs) & Specialized ICs
Part Status: 200K on Stock
Series: -
RoHS: -
Condition: New Original Stock
Lead Time: 100% Perfect Function
Payment: 30% Deposit, 70% Balance
Shipping by: DHL, FedEx, UPS
Port: Hong Kong
RFQ Email: <a href="mailto:YIC@YIC-Electronics.com">YIC@YIC-Electronics.com</a>

**You May Also Be Interested**

<b>BVS-M-R0003-1.0</b>	<b>BVS-M-R0003-1.0</b>	<b>BVS-M-R0003-1.0</b>	<b>BVS-M-R0003-1.0</b>
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BVS-M-R0003-1.0 SMD	BVS-M-R0003-1.0 Components	BVS-M-R0003-1.0 SMD	BVS-M-R0003-1.0 SMD
BVS-M-R0003-1.0 New	BVS-M-R0003-1.0 Original	BVS-M-R0003-1.0 New	BVS-M-R0003-1.0 Original

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**BVS-A-R001-1.0**

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Part Number: BVS-A-R001-1.0
Manufacturer/Brand: ISABELL
Part Description: SMD, SMD
Part Status: 240K on Stock
Series: -
RoHS: -
Condition: New Original Stock
Lead Time: 2-3 days after payment
Payment: DHL, FedEx, UPS
Shipping by: Hong Kong
Port: Hong Kong
RFQ Email: <a href="mailto:YIC@YIC-Electronics.com">YIC@YIC-Electronics.com</a>

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<b>BVS-A-R001-1.0</b>	<b>BVS-A-R001-1.0</b>	<b>BVS-A-R001-1.0</b>	<b>BVS-A-R001-1.0</b>
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BVS-A-R001-1.0 SMD	BVS-A-R001-1.0 Components	BVS-A-R001-1.0 SMD	BVS-A-R001-1.0 SMD
BVS-A-R001-1.0 New	BVS-A-R001-1.0 Original	BVS-A-R001-1.0 New	BVS-A-R001-1.0 Original

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**BVS-M-R0003-1.0** Details PDF Image may be representation. See specs for product details. Specifications Part Number Manufacturer Description Category Part Status Series RoHS Status Condition Warranty Lead Time Payment Shipping by Port RFQ Email **BVS-M-R0003-1.0** Manufacturer Part Number: Manufacturer...

lang:en **score:37** filesize: 55.16 K page\_count: 1 document date: 2023-03-21

**BVS-A-R001-1.0**

Image may be representation. See specs for product details.
Part Number: BVS-A-R001-1.0
Manufacturer/Brand: ISABELL
Part Description: SMD, SMD
Part Status: 240K on Stock
Series: -
RoHS: -
Condition: New Original Stock
Lead Time: 2-3 days after payment
Payment: DHL, FedEx, UPS
Shipping by: Hong Kong
Port: Hong Kong
RFQ Email: <a href="mailto:YIC@YIC-Electronics.com">YIC@YIC-Electronics.com</a>

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BVS-A-R001-1.0 SMD	BVS-A-R001-1.0 Components	BVS-A-R001-1.0 SMD	BVS-A-R001-1.0 SMD
BVS-A-R001-1.0 New	BVS-A-R001-1.0 Original	BVS-A-R001-1.0 New	BVS-A-R001-1.0 Original

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Image may be representation. See specs for product details. Specifications Part Number Manufacturer ... 05-1.0 ISABELL BVS-Z-0R0002-1 BVS BVS SMD BVS-A-R002-1.0 BVS BVS SMD BVS-150Y-HT Original 1206 **BVS-M-R0003-1.0** ISA-WEL ISA-WEL SMD BVS-A-R003-1.0 ISABELL ISABELL SMD BVS-A-R003-5.0 BVS BVS SMD ...

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**BVS-A-R003-1.0**

Manufacturer Part Number: BVS-A-R003-1.0  
Manufacturer Name: ISABELL  
Part Description: SMD  
Part Status: New original, L1N, No Stock Available.  
Stock Status: New original, L1N, No Stock Available.  
Ship From: Hong Kong  
Shipment Way: DHL/FedEx/TNT/UPS/EMS

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**Specifications**

Part Number	BVS-A-R003-1.0
Manufacturer	ISABELL
Description	SMD
Category	Integrated Circuits (ICs) & Specialized ICs
Part Status	L1N, No Stock
Stock Status	New original, L1N, No Stock Available.
Condition	New Original Stock
Markets	100% Perfect Functions
Lead Time	2-3 days after payment
Payment	PayPal / Telegraph Transfer / Western Union
Shipping by	DHL, FedEx, UPS
Port	Hong Kong
EMC Emissions	YIC Electronics.com

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**BVS-A-R003-1.0 Related keyword:**

BVS-A-R003-1.0  
BVS-A-R003-1.0 SMD  
BVS-A-R003-1.0 Components  
BVS-A-R003-1.0 Datasheet  
BVS-A-R003-1.0 Image  
BVS-A-R003-1.0 Part  
BVS-A-R003-1.0 Parameter  
BVS-A-R003-1.0 Price  
BVS-A-R003-1.0 Supplier  
BVS-A-R003-1.0 Stock  
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**BVS-M-R001-1.0**

Manufacturer Part Number: BVS-M-R001-1.0  
Manufacturer Name: ISABELL  
Part Description: SMD  
Part Status: New original, L1N, No Stock Available.  
Stock Status: New original, L1N, No Stock Available.  
Ship From: Hong Kong  
Shipment Way: DHL/FedEx/TNT/UPS/EMS

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**Specifications**

Part Number	BVS-M-R001-1.0
Manufacturer	ISABELL
Description	SMD
Category	Integrated Circuits (ICs) & Specialized ICs
Part Status	4000, No Stock
Stock Status	New original, L1N, No Stock Available.
Condition	New Original Stock
Markets	100% Perfect Functions
Lead Time	2-3 days after payment
Payment	PayPal / Telegraph Transfer / Western Union
Shipping by	DHL, FedEx, UPS
Port	Hong Kong
EMC Emissions	YIC Electronics.com

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**BVS-M-R001-1.0 Related keyword:**

BVS-M-R001-1.0  
BVS-M-R001-1.0 SMD  
BVS-M-R001-1.0 Components  
BVS-M-R001-1.0 Datasheet  
BVS-M-R001-1.0 Image  
BVS-M-R001-1.0 Part  
BVS-M-R001-1.0 Parameter  
BVS-M-R001-1.0 Price  
BVS-M-R001-1.0 Supplier  
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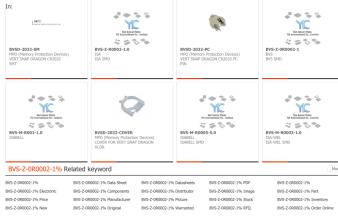
BVS-Z-0R0002-1%	
Manufacturer	YIC
Part Number	BVS-Z-0R0002-1%
Part Description	Memory Protection Devices
Part Status	001 (New)
Stock Status	New original, 1% in Stock Available.
Ship From	Hong Kong
Shipment Way	DHL/FedEx/TNT/UPS/EMS

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## Specifications

Part Number	BVS-Z-0R0002-1%
Manufacturer	YIC
Category	Memory Protection Devices
Part Status	001 (New)
Stock Status	New original, 1% in Stock Available.
Ship From	Hong Kong
Shipment Way	DHL/FedEx/TNT/UPS/EMS
YIC Email	info@yic-electronics.com

## You May Also Be Interested



BVS-2002-1% Related Keyword			
BVS-200001-1%	BVS-200001-Data Sheet	BVS-200001-0% Dataviews	BVS-200001-0% ASP
BVS-200001-1% Electronic	BVS-200001-1% Components	BVS-200001-0% Datablocks	BVS-200001-0% Image
BVS-200001-1% Photo	BVS-200001-1% Photos	BVS-200001-0% Datasheets	BVS-200001-0% Part
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