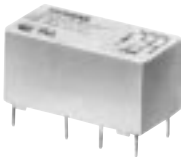


V23042 series

2 Pole, High Dielectric Polarized PC Board Relay

File E48393
File LR50227

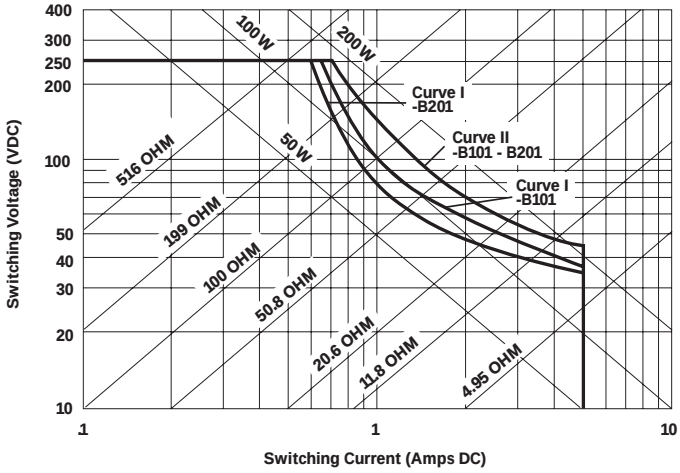
Features

- 5A switching capacity.
- Meets FCC Part 68 isolation.
- Temperature compensated over operating range.
- No magnetic interference between adjacent relays.
- 2 Form C contact arrangement.
- Standard 0.1" x 0.3" grid spacing in a DIP configuration.
- Standard or sensitive DC coils through 48 volts.
- Well suited for audio communications circuits, logic and process control, vending machines and office automation applications.
- Immersion cleanable, plastic sealed case.

Contact Data

Arrangement: Bifurcated cross bar in 2 Form C (DPDT).
Material: Stationary Contacts: B101: Silver, gold plated.
B201: Palladium-silver, gold plated.
Movable Contacts: Palladium-silver.
Ratings: Max. Switching Voltage: 250VDC, 220VAC.
Max. Switching Power:
DC (resistive load): 50-150W (see Figure 1 – Limiting Curve).
AC (resistive load): 250VA.
Max. Switching Current: 5A, DC or AC.
Min. Switching Current: 0.1mA, 10 mVDC.
Max. Carrying Current: 2A, DC or AC (@85°C).
Expected Mechanical Life: 20 million operations.
Expected Electrical Life: 300,000 ops. @ 5.0A, 12VDC, resistive.
2.5 million ops. @ 1.0A, 24VDC, resistive.
100,000 ops. @ 1.0A, 250VAC, resistive.
Initial Contact Resistance: 50 milliohms, max., @ 10mA, 20mV.
Note: Verify in application for suitability to environmental and expected reliability levels.

Figure 1 - Limiting Curve For DC Power Load



Curve I: Arc extinguishes before transit period.
Curve II: The burning time of the arc must not exceed 10 ms for 1000 operations.

Initial Dielectric Strength

Between Open Contacts: 1,000V rms, 60 Hz.
1,500V FCC Part 68 surge test.
Between Contact Sets: 1,500V rms, 60 Hz.
1,500V FCC Part 68 surge test.
Contact to Coil: Single Coil: 1,500V rms, 60 Hz.
1,500V FCC Part 68 surge test.
Dual Coil: 1,000V rms, 60 Hz.
1,500V FCC Part 68 surge test.
Between Dual Coils: 400V rms, 60 Hz.

Initial Insulation Resistance

Between Mutually Insulated Terminals: 10^9 ohms @ 500VDC.

Coil Data @ 20°C

Voltage: 3 through 48VDC.
Maximum Continuous Coil Power: 760 milliwatts.
Temperature Rise: 105°C per watt, typ.
Maximum Coil Temperature: 100°C.

Coil Data @ 20°C

Ultra-Sensitive ("150mW")						
	Non-Latching		Single Coil Latching		Dual Coil Latching	
Nom. Coil Voltage	Coil Res. ±10% (ohms)	Nom. Coil Power (mW)	Coil Res. ±10% (ohms)	Nom. Coil Power (mW)	Coil Res. ±10% (ohms)	Nom. Coil Power (mW)
3	60	150	120	75	60	150
5	165	150	330	75	167	150
6	240	150	480	75	240	150
9	540	150	1080	75	540	150
12	960	150	1,920	75	960	150
15	1,500	150	3,000	75	1,500	150
24	3,840	150	7,680	75	3,840	150

Sensitive ("200mW")						
	Non-Latching		Single Coil Latching		Dual Coil Latching	
Nom. Coil Voltage	Coil Res. ±10% (ohms)	Nom. Coil Power (mW)	Coil Res. ±10% (ohms)	Nom. Coil Power (mW)	Coil Res. ±10% (ohms)	Nom. Coil Power (mW)
3	45	200	90	100	45	200
5	125	200	250	100	125	200
6	180	200	360	100	180	200
9	405	200	810	100	375	200
12	720	200	1,440	100	720	200
15	1,125	200	2,200	100	1,125	200
24	2,880	200	4,000	144	2,040	280
48	11,520	200	N/A	N/A	N/A	N/A

Intermediate Sensitivity ("260mW")						
	Non-Latching		Single Coil Latching		Dual Coil Latching	
Nom. Coil Voltage	Coil Res. ±10% (ohms)	Nom. Coil Power (mW)	Coil Res. ±10% (ohms)	Nom. Coil Power (mW)	Coil Res. ±10% (ohms)	Nom. Coil Power (mW)
3	36	250	N/A	N/A	N/A	N/A
5	95	260	N/A	N/A	N/A	N/A
6	135	260	N/A	N/A	N/A	N/A
9	300	270	N/A	N/A	N/A	N/A
12	600	240	N/A	N/A	N/A	N/A
15	860	260	N/A	N/A	N/A	N/A
24	2,210	260	N/A	N/A	N/A	N/A
48	6,330	360	N/A	N/A	N/A	N/A

Operate Data @ 20°C

Must Operate Voltage:
Intermediate sensitivity: 70% of nominal voltage or less.
Sensitive: 75% of nominal voltage or less.
Ultra-sensitive: 80% of nominal coil voltage or less.
Must Release Voltage (non-latching): 10% of nominal voltage or more.
Operate Time (Excluding Bounce)†: 5 ms, max. (3 ms, typical).
Release Time (Excluding Bounce)†: 3 ms, max. (2 ms, typical).
Reset Time (Latching)†: 5 ms, max. (3 ms, typical).
Bounce Time†: 3 ms, max.
† At or from Nominal Coil Voltage

Environmental Data

Temperature Range: -40°C to +85°C (see Figure 2 – Temp. vs. Voltage).
Vibration: Operational: 50g from 10-500 Hz.; 10g from 500-2,000 Hz.
Shock: Operational: 50g at 11 ms 1/2 sinusoidal impulse.

Mechanical Data

Termination: Printed circuit terminals on 0.1" (2.54mm) centers.
Enclosure: Sealed plastic case.
Weight: 0.18 oz. (5g) approximately.

Ordering Information

	Typical Part Number ►	V23042	A2	00	1	B101

1. Basic Series:
V23042 = Miniature, PC board relay.

2. Functional Type:

Non-Latching	Dual Coil Latching	Single Coil Latching
A2	**B2**	**C2**

3. Coil Sensitivity:

00 = Non-latching, 260mW	20 = Dual coil latching, 200mW	10 = Single coil latching, 100mW
30 = Non-latching, 200mW	35 = Dual coil latching, 150mW	15 = Single coil latching, 75mW
60 = Non-latching, 150mW		

4. Coil Voltage:

1 = 5VDC	3 = 12VDC	5 = 24VDC	7 = 48VDC*
2 = 6VDC	4 = 15VDC	6 = 9VDC	8 = 3VDC

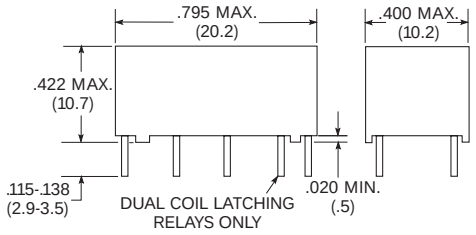
5. Contact Type:
B101 = Bifurcated, 2 Form C, silver, gold plated to palladium silver. (Standard stock)
B201 = Bifurcated, 2 Form C; palladium silver, gold-plated to palladium silver. (Special)

* Non-latching only.

Stock Items – The following items are normally maintained in stock for immediate delivery.

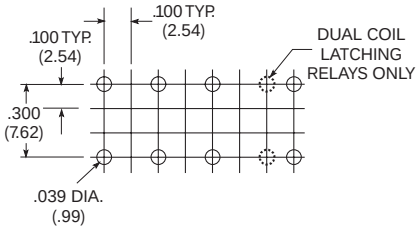
V23042A2001B101	V23042A2007B101	V23042A2305B101	V23042A2603B101	V23042B2205B101	V23042B2355B101
V23042A2003B101	V23042A2301B101	V23042A2307B101	V23042A2601B101	V23042B2201B101	V23042B2351B101
V23042A2005B101	V23042A2303B101	V23042A2601B101	V23042B2203B101	V23042B2353B101	

Outline Dimensions



Coil Terminals: 0.015" (.38mm) dia. typical.
Contact Terminals: 0.020" (.5mm) x .010" (.25mm) typical.
(0.020" dimension is measured in the direction of the .795" dimension of the relay.)

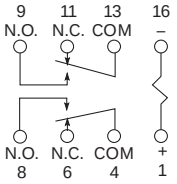
PC Board Layout (Bottom View)



Tolerance: ±.004 (.10)

Wiring Diagrams (Bottom Views)

Single Coil Non-Latching & Single Coil Latching



For non-latching versions, coil polarity must be observed.

For single coil latching versions, polarity shown results in "set" condition. Reverse polarity results in "reset" condition.

Diagram indicates de-energized position for non-latching and "reset" position for single coil latch.

Dual Coil Latching

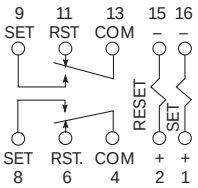


Diagram indicates relay in the "reset" position, with terminals 2 and 15 most recently energized. Energizing terminals 1 and 16 will transfer the contacts.

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