



PB series

10 Amp, PC Board Miniature Relay

File E214025

File 4570-4940-0042

Users should thoroughly review the technical data before selecting a product part number. It is recommended that user also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

Features

- Small size for high density PC board mounting.
- 1 Form A and 1 Form C contact arrangements.
- Creepage/clearance to VDE 0435 and VDE 0700.
- 2,500Vrms dielectric strength between contact and coil.
- UL Class F approved insulation system.
- Low-complexity design for enhanced reliability.
- High-temperature version available.

Contact Data

Arrangements: 1 Form A (SPST-NO) and 1 Form C (SPDT).
Material: Silver nickel 90/10.

Max. Switching Rate: 6,000 ops./min. (minimum load).
600 ops./min. (rated load).

Expected Mechanical Life: 5 million operations.

Expected Electrical Life :

- PB1 & PB3 @85°C:** 100,000 operations @ 6A, 240VAC (NO).
25,000 operations @ 10A, 240VAC (NO).
25,000 operations @ 10A/3A, 240VAC (NO/NC).
1,000 operations @ 10A/10A, 240VAC (NO/NC).
- PBH @105°C:** 250,000 operations @ 2A, 240VAC (NO).
150,000 operations @ 5A, 240VAC (NO).
100,000 operations @ 6A/6A, 240VAC (NO/NC).

Maximum Contact Rating: **PB1 & PB3:** NO (Make) 10A / NC (Break) 3A.
PBH: 6A (mtg. space 3mm); 4A (dense pack).

Maximum Switching Voltage: **PB1 & PB3:** 250VAC, 100 VDC.
PBH: 250VAC

Maximum Make Current (All): 15A (max. 4 sec at 10% duty cycle.)

Maximum Breaking Capacity:

- PB1 & PB3:** 750VA (NC contact) / 2,500VA (NO contact).
PBH: 1,500VA.

Initial Dielectric Strength

- Between Open Contacts:** 1,000Vrms.
Between Coil and Contacts: 2,500Vrms.
Surge Voltage Resistance Between Coil and Contacts: 4,000Vrms.
Clearance / Creepage Distance: 3 mm / 4 mm.

Initial Insulation Resistance

- Between Mutually Insulated Elements:** 10⁸ ohms.
Tracking Resistance of Relay Base: **PB1:** CTI 250
PB3: CTI 300
Insulation to VDE 0110b (2/79): Category C / Reference Voltage 250.

Coil Data @ 20°C

- Voltage:** 5, 6, 9, 12, 24 and 36VDC.
Nominal Coil Power: 360mW.
Operate Coil Power: 200mW.

Coil Data @ 20°C

Rated Coil Voltage (VDC)	Coil Resistance ±10% (ohms)	Must Operate Voltage (VDC)	Must Release Voltage (VDC)	Coil Current (mA)
5	70	3.75	0.5	72.0
6	100	4.5	0.6	60.0
9	225	6.75	0.9	40.0
12	400	9.0	1.2	30.0
24	1,600	18.0	2.4	15.0
36	3,600	27.0	3.6	60.0

Operate Data @ 20°C

- Operate/Release Time:** 20 ms, max. (excluding bounce).
Bounce Time: 15 ms, max.
Operate Coil Power: 200mW.

Environmental Data

Temperature Range (Operating): **PB1 or PB3:** -40°C to +85°C.
PBH: -20°C to +105°C.

Vibration: 30 to 400 Hz., 4g's, min.

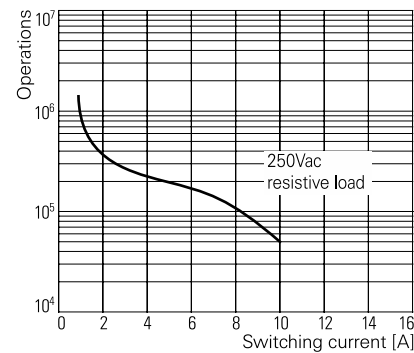
Shock: Mechanical (Destruction): 30g min.

Protection Category: IP 54

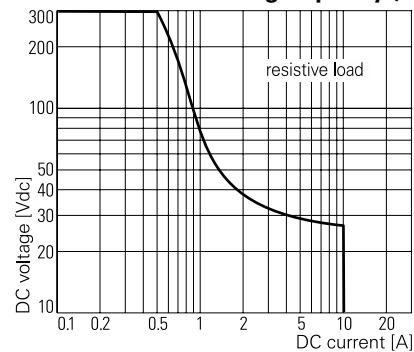
Mechanical Data

- Termination:** Printed circuit board.
Enclosure: Splash-resistant (unsealed) plastic case (UL Flammability Class V-0).
Weight: 0.2 oz. (5.4g).

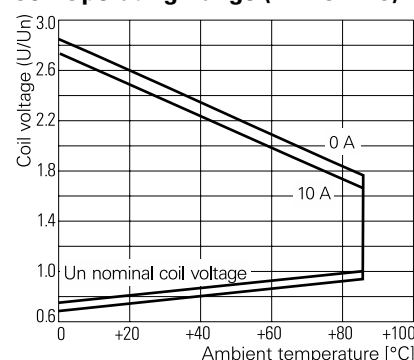
Contact Life (PB1 & PB3)



Max. DC Load Breaking Capacity (PB1 & PB3)



Coil Operating Range (PB1 & PB3)



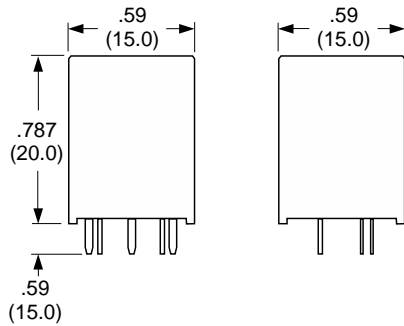
Ordering Information

Typical Part Number ▶						PB	1	3	4	012
1. Basic Series: PB = Miniature, 10A PC board relay.										
2. Version: 1 = Standard version, CTI 250 3 = High CTI version, CTI 300 H = High Temperature (105°C) version, CTI 250										
3. Contact Arrangement: 1 = 1 Form C (SPDT) 3 = 1 Form A (SPST-NO)										
4. Contact Material: 4 = AgNi 90/10										
4. Coil Input: 005 = 5VDC 006 = 6VDC 009 = 9VDC 012 = 12 VDC 024 = 24VDC 036 = 36VDC (Other voltages available as special order)										

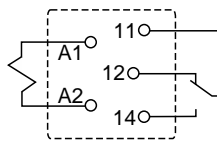
Our authorized distributors are more likely to maintain the following items in stock for immediate delivery.

PB114012
PB114024

Outline Dimensions



Wiring Diagram (Bottom View)



Suggested PC Board Layout (Bottom View)

