

Slim 1a, 10A high isolation structure relay

Features

- High noise immunity due to the partition wall structure
- High insulation resistance between contacts and coil: 10,000V
creepage and clearances distance: 6mm
- High inrush current capability strength
- Universal foot print in AV equipment
- Conforms to various safety standard
- Space-saving slim type



Approvals

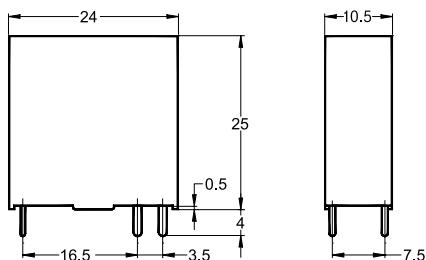
- UL
- CUL
- TUV

Applications

- Home appliance, Industrial control

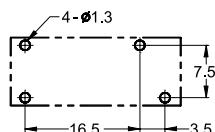
Dimensions (mm)

To convert into inches, multiply by 0.03937



PC Board Layout

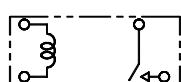
Copper-side view



Schematic

Copper-side view

1 Form A (SPST)



Contact data

Arrangement	1 Form A (SPST)
Contact material	Ag Alloy
Initial contact resistance	100mΩ max.
Rated load, resistive	10A 30VDC 10A 250VAC TV-5
Maximum carry current	10A
Maximum switching capacity	with DC voltage: with AC voltage:
Maximum switching voltage	110VDC 250VAC
Minimum switching rating ¹⁾	100mA 5VDC

¹⁾Min. Switching Load mentioned above are reference values. Therefore it is recommended to perform the confirmation test with the actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

Coil data

Nominal voltage	5VDC to 48VDC
Nominal power consumption ²⁾	530mW
Operate voltage ³⁾	75% of nominal voltage
Release voltage ⁴⁾	10% of nominal voltage

^{2), 3), 4)} The values depend on coil voltage, see Part selection chart

General data

Operate time	15ms max. at nominal voltage
Release time	5ms max. at nominal voltage
Initial insulation resistance	1,000 MΩ min. (500VDC)
Dielectric strength	Between open contacts: Between contacts and coil:
	1,000VAC _{rms} for 1 minute 4,000VAC _{rms} for 1 minute
Surge strength	Between contacts and coil:
	10,000V
Expected life	Mechanical: Electrical:
	More than 10,000,000 operations More than 100,000 operations at rated load
Vibration resistance	Functional: Destuctive:
	10 ~ 55Hz dual amplitude: 1.5mm 10 ~ 55Hz dual amplitude: 1.5mm
Shock resistance	Functional: Destuctive:
	10G min. 100G min.
Ambient temperature	– 30°C to +70°C (with no icing)
Humidity	45% to 80% RH
Weight	11g approx.

Note: The above figures are initial values

Part number description



HR-CR7

Coil Voltage

DC05: 5VDC	DC12: 12VDC
DC06: 6VDC	DC18: 18VDC
DC09: 9VDC	DC24: 24VDC
DC48: 48VDC	

Part number description is provided for reference, part number can not be arbitrarily composed. Refer to the part numbers shown in the table below. Special designs to customer specifications are possible; please contact HR.

Part selection

Part number	Nominal voltage (VDC)	Coil resistance ($\Omega \pm 10\%$)	Nominal current (mA)	Must operate voltage (VDC)	Must release voltage (VDC)	Max voltage (VDC)	Nominal power (mW)
HR-CR7DC05	5	47	106	3.75	0.5	6.5	530
HR-CR7DC06	6	68	88	4.5	0.6	7.8	
HR-CR7DC09	9	153	59	6.75	0.9	11.7	
HR-CR7DC12	12	273	44	9	1.2	15.6	
HR-CR7DC18	18	620	29	13.5	1.8	23.4	
HR-CR7DC24	24	1,085	22.1	18	2.4	31.2	
HR-CR7DC48	48	4,350	11.0	36	4.8	62.4	

Note: All values in the chart are measured at 23°C