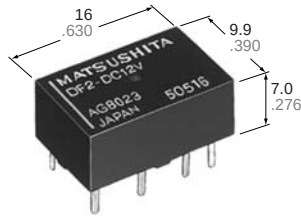


Discontinued

DF

Panasonic
ideas for life

**HIGHLY SENSITIVE DIP
MINIATURE RELAY**
DF-RELAYS


mm inch

UL File No.: E43149

CSA File No.: LR26550

- Smaller than most of 2 Form C relays
Header area: 80% of DS2 relay
Cubic measure: 57% of DS2 relay
- High sensitivity — 100 mW nominal power for 1 coil latching type
- DIP - matching 14 pin IC socket

SPECIFICATIONS

Contact

Arrangement			2 Form C
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)			50 mΩ
Contact material			Gold-clad silver
Nominal switching capacity			1A 30 VDC 0.5A 30 VAC
Rating (resistive)	Max. switching power		30 W, 30 V A
	Max. switching voltage		60 V DC, 125 V AC
	Max. switching current		1 A
	Min. switching capacity		1 mA 1 V DC
UL/CSA rating			1 A 30 V DC 0.3 A 125 V AC 0.3 A 110 V DC
Expected life (min. operations)	Mechanical (at 180 cpm)	Single side stable	5×10 ⁶
		1 coil & 2 coil latching	10 ⁶
	Electrical (at 20 cpm)	1 A 30 V DC resistive	10 ⁵
		0.5 A 30 V AC resistive	10 ⁵

Coil (Polarized) (at 25°C 77°F)

	Nominal	Minimum
Single side stable	200 mW	100 mW
1 coil latching	100 mW	65 mW
2 coil latching	200 mW	130 mW

Remarks

*¹ Measurement at same location as "Initial breakdown voltage" section*² Detection current: 10mA*³ Excluding contact bounce time*⁴ Half-wave pulse of sine wave: 6ms; detection time: 10μs

Characteristics

Max. operating speed		60 cpm
Initial insulation resistance* ¹		Min. 1,000 MΩ (at 500 V DC)
Initial breakdown voltage* ²	Between open contacts	500 Vrms for 1 min.
	Between contact sets	500 Vrms for 1 min.
Operate time* ³ (at nominal voltage)	Between contacts and coil	1,000 Vrms for 1 min.
		Max. 5 ms (Approx. 2.5 ms)
Release time(without diode)* ³ (at nominal voltage)		Max. 3 ms (Approx. 1 ms)
Set time* ³ (latching) (at nominal voltage)		Max. 5 ms (Approx. 2.5 ms)
Reset time* ³ (latching) (at nominal voltage)		Max. 3 ms (Approx. 2.5 ms)
Temperature rise (at 20°C)		Max. 65°C with nominal voltage across coil and at nominal switching capacity
Shock resistance	Functional* ⁴	Min. 294 m/s ² {30 G}
	Destructive* ⁵	Min. 980 m/s ² {100 G}
Vibration resistance	Functional* ⁶	89.6 m/s ² {9 G}, 10 to 55 Hz at double amplitude of 1.5 mm
	Destructive	89.6 m/s ² {9 G}, 10 to 55 Hz at double amplitude of 1.5 mm
Conditions for operation, transport and storage* ⁷ (Not freezing and condens- ing at low temperature)	Ambient temperature	−40°C to +70°C −40°F to +158°F
	Humidity	5 to 85%R.H.
Unit weight		Approx. 2.4 g .085 oz

*⁵ Half-wave pulse of sine wave: 6ms*⁶ Detection time: 10μs*⁷ Refer to 5. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT (Page 49)

TYPICAL APPLICATIONS

Signal transmission application requiring high sensitivity and low profile miniature size

- Audio visual equipment
- Telecommunication equipment
- Computer peripherals

ORDERING INFORMATION

Ex. DF2 — L — DC5V

Operating function	Coil voltage
Nil: Single side stable L: 1 coil latching L2: 2 coil latching	DC 1.5, 3, 5, 6, 9, 12, 24 V

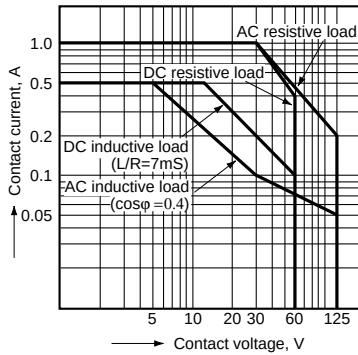
(Notes) 1. For UL/CSA recognized type, add suffix UL/CSA.

2. Standard packing: Carton: 50 pcs. Case: 500 pcs.

REFERENCE DATA

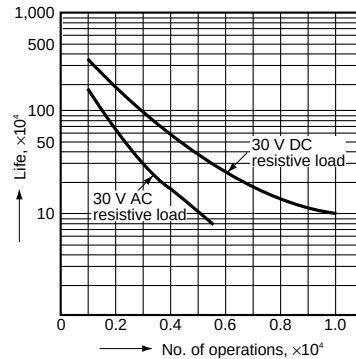
1. Maximum switching power

Tested sample: DF2-DC12V



2. Life curve

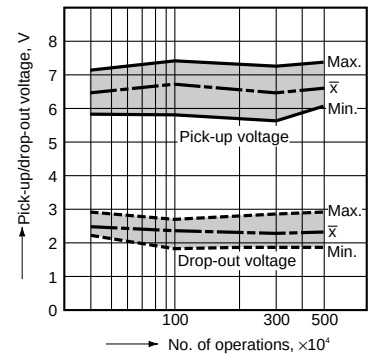
Tested sample: DF2-DC12V



3. Mechanical life

Tested sample: DF2-DC12V, 12 pcs.

Ambient temperature: 15°C to 25°C 59°F to 77°F



4. Electrical life

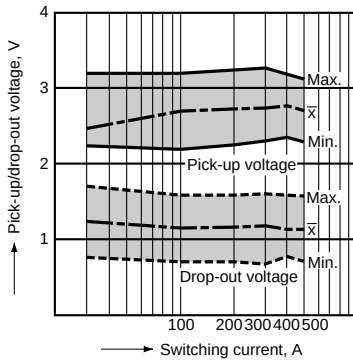
Change of pick-up and drop-out voltage

Tested sample: DF2-DC5V, 8 pcs.

Condition: 1 mA 1 V DC resistive load

Switching frequency: 10 Hz

Ambient temperature: 20°C to 25°C 68°F to 77°F



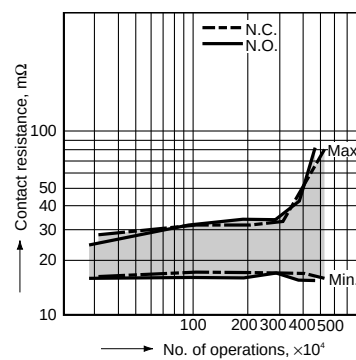
Change of contact resistance

Tested sample: DF2-DC5V, 8 pcs.

Condition: 1 mA 1 V DC resistive load

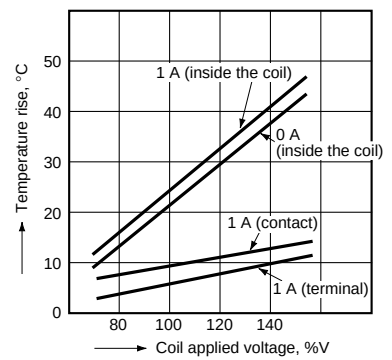
Switching frequency: 10 Hz

Ambient temperature: 20°C to 25°C 68°F to 77°F



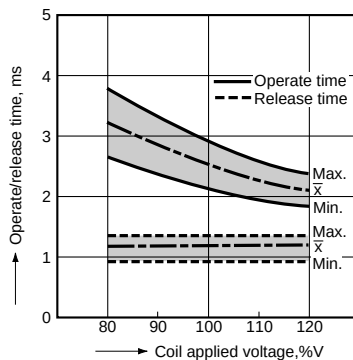
5. Coil temperature rise

Tested sample: DF2-DC12V, 5 pcs.



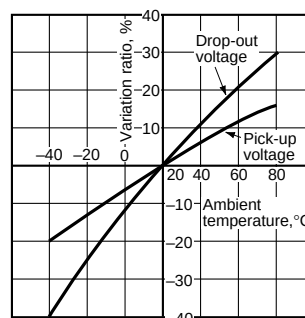
6. Operate/release time characteristics

Tested sample: DF2-DC12V



7. Ambient temperature characteristics

Tested sample: DF2-DC12V

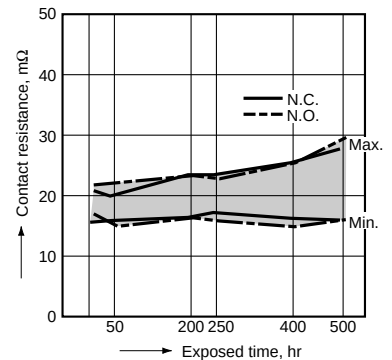


8. H₂S gas test

Gas density: 2 to 5 p.p.m.

Ambient temperature: 20°C to 26°C 68°F to 79°F

Humidity: 35 to 85% R.H.



NOTE

Soldering

When soldering through hole terminals, soldering should be done at 245°C 473°F within 10 s.