DG31 Series
Miniature PCB Power Relay

- Miniature - only 19.5 x 15.5 x 16mm
- 12A @ 120VAC / 10A @ 250VAC
- Cost effective

E305753 ROHS Compliant

Contacts

Contact arrangement		SPST-NO (1 Form A); SPDT (1 Form C)
Contact material		AgSnOInO, $AgSnO_2$ (standard), AgNi0.15
Max. switching voltage	AC/DC	250VAC, 28VDC
Min. switching current / voltage		100mA / 12VDC
Rated load	$AgSnO_2$	10A / 250VAC; 12A / 120VAC; 10A / 28VDC
	AgNi0.15	5A / 250VAC, 5A / 28VDC
	AgSnOInO	10A / 250VAC; 12A / 120VAC; 10A / 28VDC
Max. continuous current		12A
Max. switching current		12A
Max. switching power		2500VA / 280W
Initial resistance		<50mΩ at 0.1A/6VDC

Coil

Rated voltage	DC	3...48V
Must release voltage		≥0.1Un
Operating range		See table 1
Rated power consumption	DC	360mW

Insulation

Insulation resistance		100MΩ at 500VDC, 50%RH
Insulation category (creepage resistance)		CTI250
UL Insulation system		Class F (standard)
Dielectric strength	coil to contact	1800Vrms, 1min
	contact to contact	1100Vrms, 1min

General Data

Operating time	typ.	10ms
Release time	typ.	5ms
Electrical life	ops.	1 x 10^5
Mechanical life	ops.	1 x 10^7

Environmental

Ambient temperature	operating	-40 to +85°C
	storage	-40 to +85°C
Shock resistance	functional	10g 11ms
	destructive	100g
Vibration resistance		DA 1.5mm 10-55Hz
Dimensions	L x W x H	19.5 x 15.5 x 16mm
Weight	approx.	10g approx.

Ordering Code

D G 3 1 - 3 0 1 1 - 3 5 - 1 0 1 2

Series

Contact material
30: $AgSnO_2$
70: AgSnOInO
80: AgNi0.15

Contact arrangement
11: SPDT (1C/O, 1 form C)
21: SPST-NO

Environmental protection
2: In cover , flux tight - IP40
3: In cover, sealed - IP67

Mounting & terminations
5: For PCB

Coil code:
See table 1

** Standard options are in* **bold.**

Notes:
For AC loads this relay is designed for 50-60Hz standard industrial power and was tested according to AC1 category as defined by the IEC 60947-1 standard, covering low-frequency switchgear (typically 50-60 Hz). Operating at higher frequencies, places the component outside its certified utilisation category, invalidating all safety certifications (CE, UL, etc.) and manufacturer performance guarantees.

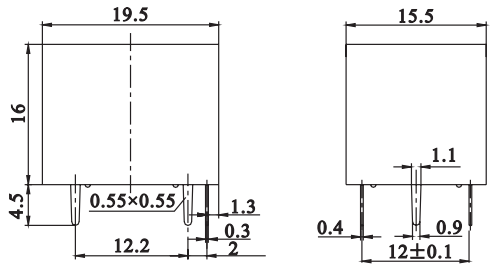
Coil Data

Table 1

Coil code	Nominal voltage (VDC)	Coil resistance Ω ±10%	Must operate voltage max. (VDC)	Must release voltage min. (VDC)	Max. allowable voltage (VDC)
1003	3.00	25.00	2.25	0.15	3.90
1005	5.00	69.00	3.75	0.25	6.50
1006	6.00	100.00	4.50	0.30	7.80
1009	9.00	225.00	6.75	0.45	11.70
1012	12.00	400.00	9.00	0.60	15.60
1024	24.00	1600.00	18.00	1.20	31.20
1048	48.00	6400.00	36.00	2.40	62.40

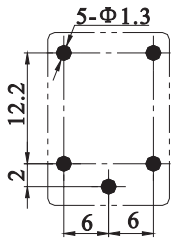
Dimensions mm

Fig. 1



PCB Mounting Dimensions mm

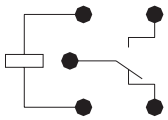
Fig. 2



Mounting Holes (Bottom View)

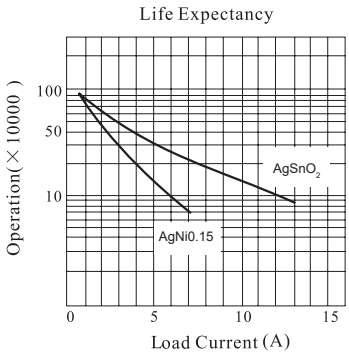
Wiring Diagrams (bottom view)

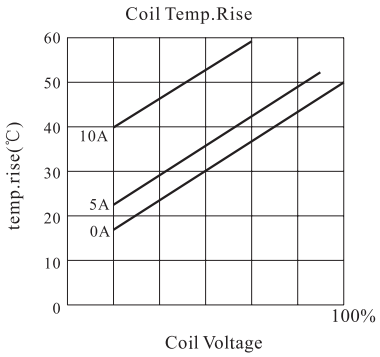
Fig. 3



Reference Curves

Fig. 4





Notes:
1: All parameters, unless otherwise specified, are measured at ambient temperature of 23℃.
2: Maximum make current refers to inrush current of motor load.
3: Electrical life is strongly dependent of switching frequency, On/Off ratio and environmental conditions.