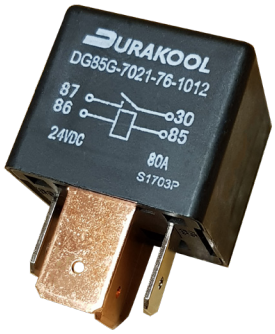
DG85G Series
Automotive / Industrial Relay



- General purpose automotive or industrial relays
- High continuous DC current capacity - 80A
- Optimised for 24VDC switching
- High inrush capabilities
- PCB Mounting option
- SPDT (Changeover) contacts available
- Ideal for DC Motor Control
- Industry standard size and footprint

RoHS Compliant ✓

Contacts

Contact arrangement		SPST-NO (1 Form A); SPDT (1 Form C)
Contact material		AgSnOInO
Max. switching voltage	DC	24VDC / 30VDC (current dependent - see fig.3)
Max. continuous current		SPST-NO 80A, SPDT (NO/NC) 80A/60A
Max. switching current[3] (AgSnOInO)	make	SPST-NO 240A, SPDT (NO/NC) 240A/180A
Max. switching current	break	SPST-NO 80A, SPDT (NO/NC) 80A/60A
Min. switching current (AgNi)		0.1A 12VDC
Contact gap		>0.5mm
Initial resistance		<100mΩ, max. at 0.1A/6VDC

Coil

Nominal voltage	DC	6...24V
Must release voltage		≥0.1Un
Operating range of supply voltage		See table 1
Rated power consumption	DC	2.3W; 2.5W with resistor

Insulation

Insulation resistance		100MΩ at 500VDC, 50%RH
Dielectric strength	coil to contact	500Vrms, 1min
	open contacts	500Vrms, 1min

General Data

Operating time	typ.	7ms
Release time	typ.	2ms
Electrical life[2]	ops.	1 x 10^5
Mechanical life	ops.	1 x 10^7

Environmental

Ambient temperature	operating	-40 to 125°C (Above 85°C - consult factory)
	storage	-40 to +155°C
Shock resistance	functional	20g, 11ms
	destructive	100g
Vibration resistance		DA1.27mm 10-40Hz / 40-70Hz: 5g
		DA0.5mm 100-500Hz: 10g
Dimensions	L x W x H	28.3 x 28.3 x 25.0 mm (excluding terminals)
Weight	approx.	40g depending on mounting

Ordering Code

D G 8 5 G - 7 0 2 1 - 9 6 - 1 0 2 4 - M 1 D R

Series

Contact material
70: AgSnOInO

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

Environmental protection
3: In cover, sealed (IP67)
7: In cover, dust cover (IP54)
9: Cover (IP54) with mounting bracket (integral plastic, unless optional metal bracket selected)

Coil code:
See table 1

Connection mode
5: for PCB
6: Flat blades
D: Double 87 flat blades (SPST-NO only)

Mounting & terminations
Blank: No options
M1: Metal bracket
M2: Bent metal bracket
S1: Skirted cover & metal bracket
S2: Skirted cover & bent metal bracket

Parallel component options
Blank: No option
R: Integral resistor
D: Integral diode +85/-86
DR: Integral diode reversed -85/+86 - standard

Order code examples
DG85G-7021-75-1012 = unsealed, pcb, no bracket
DG85G-7021-76-1012 = unsealed, no bracket (standard)
DG85G-7021-36-1012 = sealed, no bracket
DG85G-7021-36-1012-M1 = sealed, metal bracket
DG85G-7021-96-1012 = unsealed, plastic bracket
DG85G-7021-96-1012-M1 = unsealed, metal bracket

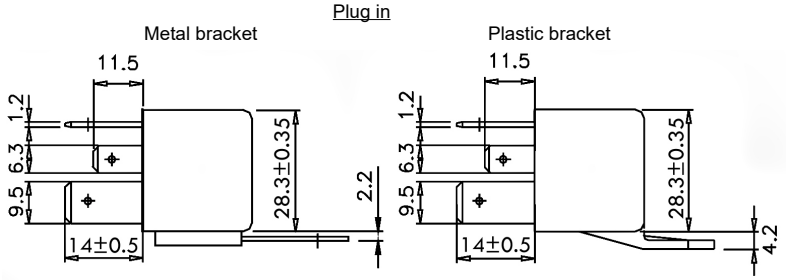
Coil Data — Table 1

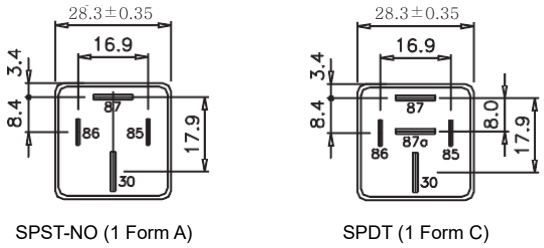
Coil code	Nominal voltage (VDC)	Coil resistance Ω ±10%	Must operate voltage max. (VDC)	Max. allowable voltage (VDC)*	Must release voltage min. (VDC)
1006	6	15.6	3.6	6.4	0.6
1012	12	62.5	7.2	14.8	1.2
1024	24	250	14.4	28.8	2.4

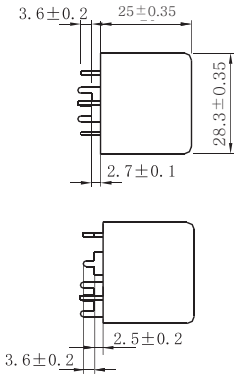
* At ambient temperature of 85°C and above, up to maximum ambient temperature of 125°C, maximum allowable voltage should be reduced by 28%.

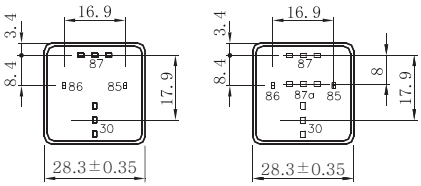
Dimensions mm — Fig. 1

Plug in



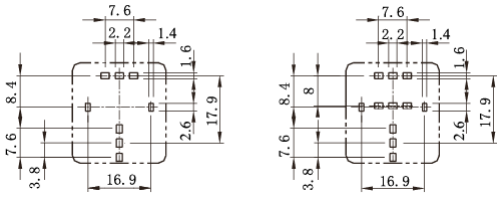






PCB mount including suggested hole dimensions

Bottom view

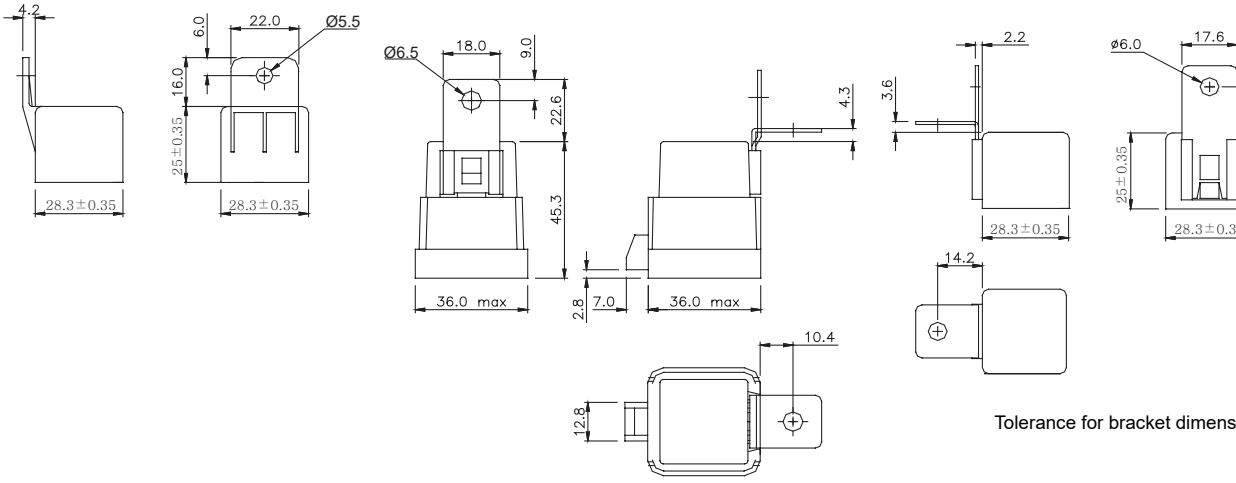


Plug in with optional brackets and skirts

9 – Molded Bracket

9S1 – Skirted Cover + Metal Bracket
9S2 – Skirted Cover + Bent Metal Bracket

9M1 – Metal Bracket
9M2 – Bent Metal Bracket

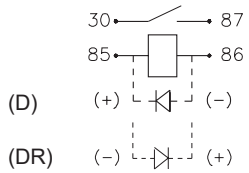


Tolerance for bracket dimensions = ±0.2mm

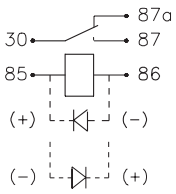
Wiring Diagrams

Fig. 2

SPST-NO

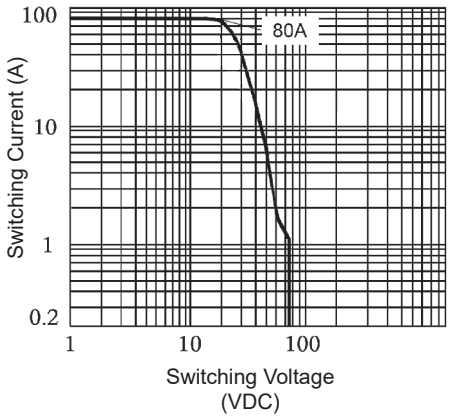


SPDT



Max. DC resistive load breaking capacity

Fig. 3



Notes:
1: All parameters, unless otherwise specified, are measured at ambient temperature of 23˚C.
2: Electrical life obtained at resistive or inductive load at 80A, 15VDC with suitable arc suppression circuit attached and with operating frequency of 1 op/sec.
3: Maximum make current refers to lamp load inrush current.