

DG81

sub miniature automotive power relay

DURAKOOL



- Sub miniature - only 15.7 x 12.3 x 13.8mm
- Up to 60A 12VDC switching
- Special option for motor loads
- Cost effective
- RoHS Compliant

Contacts

Contact number & arrangement	SPST-NO (1 Form A); SPDT (1 Form C); SPST-NO-DM (1 Form U)	
Contact material	AgNi0.15; AgSnInO	
Max. switching voltage	DC	16VDC (consult factory for 24VDC)
Min. switching current / voltage	1mA/1VDC (AgNi0.15)	
Rated load	DC1	25A/12VDC; 2 x 10A (1 Form U)
Max. continuous current	DC1	35A (10 mins) / 25A (1hr) ; 2 x 10A (2 mins) 1 Form U
Max. switching current ² (AgSnInO)	Make	60A; 2 x 30A (1 Form U)
	Break	20A ; 2x 10A (1 Form U)
Initial resistance	100mΩ, max. at 0.1A/6VDC	

Coil

Rated voltage	DC	6...24V
Must release voltage	See Coil Tables 1 & 2	
Operating range of supply voltage	See Coil Tables 1 & 2	
Rated power consumption	DC	0.6W (Table 1) / 0.8W (Table 2) for increased contact gap version

Insulation

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

General Data

Operating time (typical)	ms	10
Release time (typical)	ms	5
Electrical Life ³	ops	1 x 10 ⁵
Mechanical life	ops	1 x 10 ⁷
Dimensions	L x W x H	15.7 x 12.3 x 13.8mm (excluding terminal pins)
Weight	6g approx.	
Ambient temperature	storage	-40 to 125°C
	operating	-30 to 85°C
Shock resistance	Functional: 10g 11ms; Destructive: 100g	
Vibration resistance	DA 1.5mm 10-55Hz	

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Coil Data (600mW - standard version)

Table 1

Coil Voltage Code	Nominal Voltage (VDC)	Coil Resistance (Ω) $\pm 10\%$	Must operate voltage max. (VDC)	Must release voltage min. (VDC)
S006	6	60	3.6	0.5
S009	9	135	5.4	0.6
S010	10	167	6.3	0.9
S012	12	240	7.3	1.2
S024	24	960	14.4	2.4

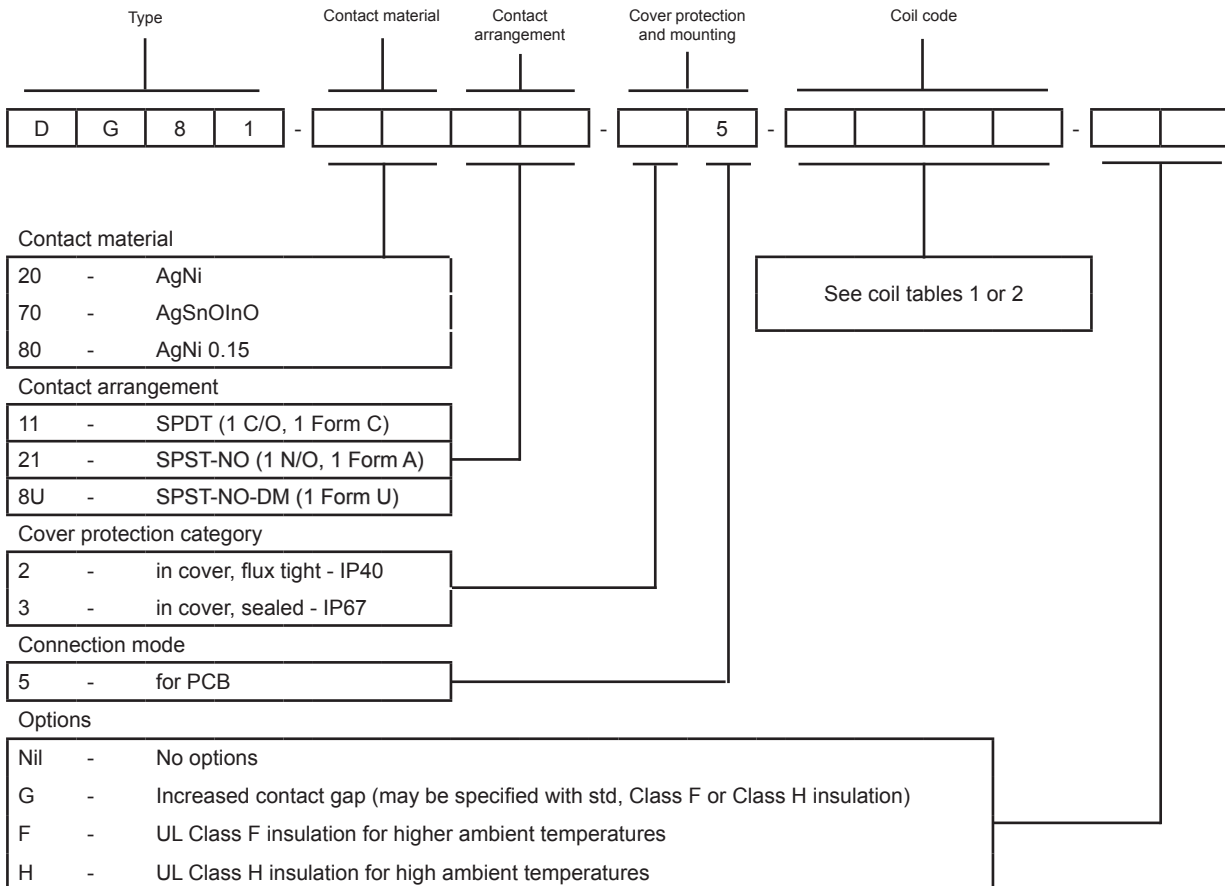
Coil Data (800mW - increased contact gap version)*

Table 2

Coil Voltage Code	Nominal Voltage (VDC)	Coil Resistance (Ω) $\pm 10\%$	Must operate voltage max. (VDC)	Must release voltage min. (VDC)
1006	6	45	3.6	0.5
1009	9	100	5.4	0.6
1010	10	123	6.3	0.9
1012	12	180	7.3	1.2
1024	24	720	14.4	2.4

* Contact gap increased to 0.45mm. Not available for SPST-NO-DM (1 Form U) contacts.

Ordering codes



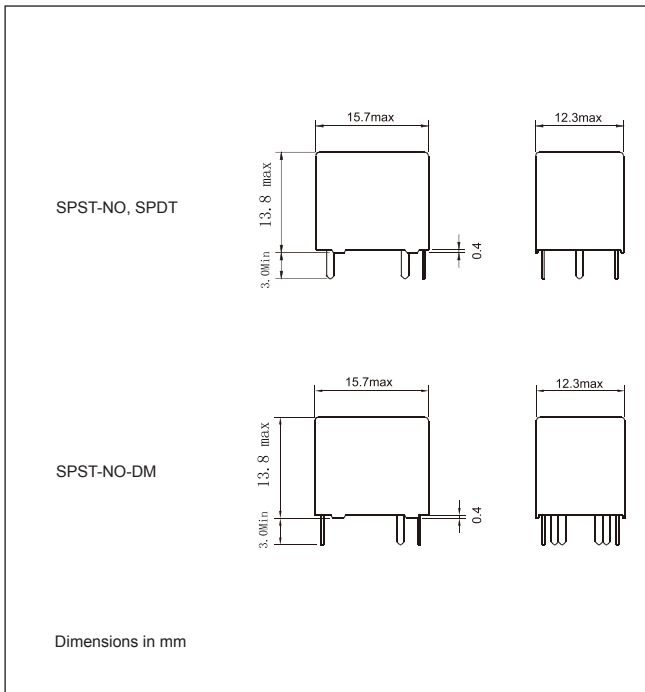
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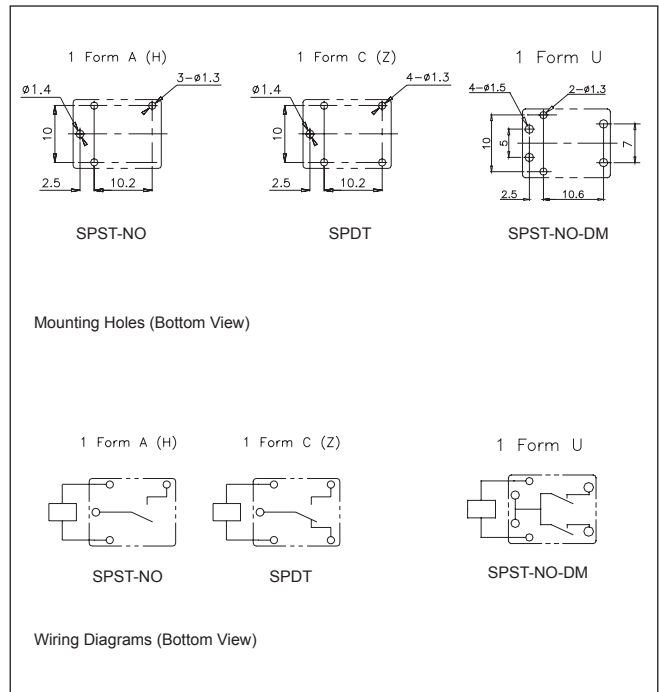
Overall Dimensions

Fig. 1



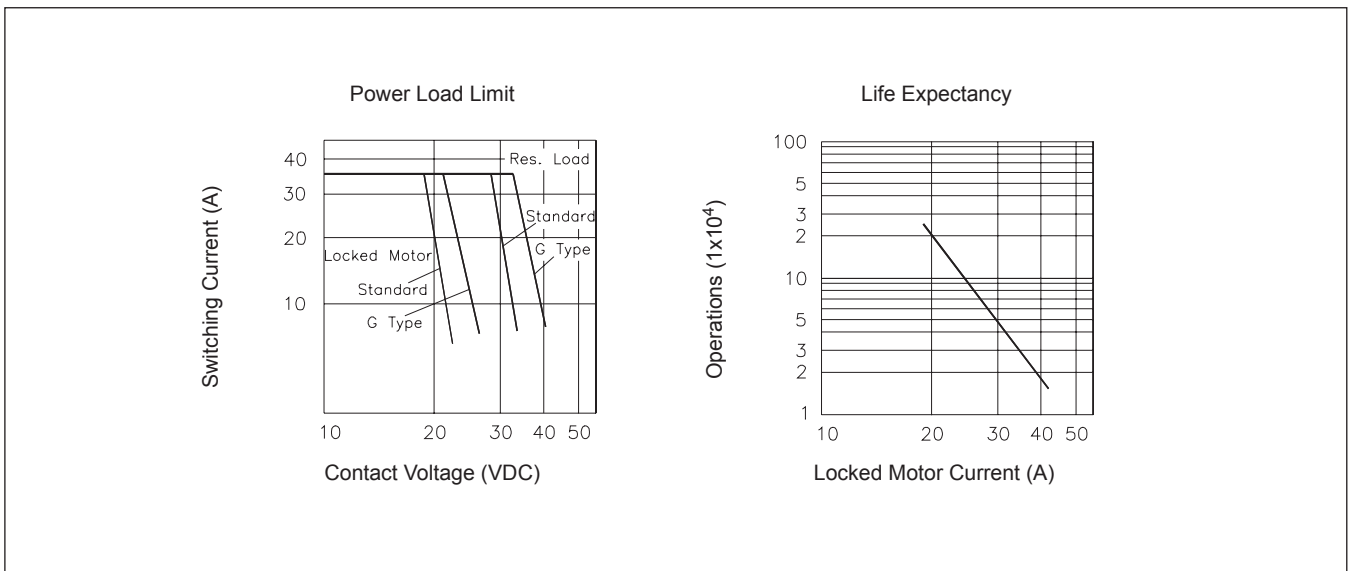
PCB Mounting Dimensions

Fig. 2



Reference Curves

Fig. 3



Notes:

- 1: All parameters, unless otherwise specified, are measured at ambient temperature of 23°C.
- 2: Maximum make current refers to inrush current of motor load.
- 3: Electrical life of SPST-NO & SPDT obtained at motor load of locked rotor at 20A, 14VDC or resistive load of 10A, 14VDC. SPST-NO-DM at 2 x 6A, 14VDC resistive, with operating frequency of 6 ops/min.
- 4: Electrical life is strongly dependent of switching frequency, On/Off ratio and environmental conditions.

