Miniature High Power Latching Relay	LD

Features

- Latching relay
- High capacity: 50A 277VAC
- High surge current capacity: 480A/2.1ms
- TV-20 250VAC capability
- Dielectric strength (between coil and contact): 5000VAC
- Outline dimension: 35 x 12 x 24mm
- UL insulation: Class F

c US
(File No.: E122258)

1. COIL DATA (at 23°C)

1) 1 coil latching

Nominal Voltage (VDC)	Pick-up Voltage (VDC) max.[1)]	Drop-out Voltage (VDC) max.[1)]	Max. Voltage (VDC)[2)]	Pulse Width (ms) min.		Coil Resistance (Ω) (1±10%)	Coil Power (W)
				Typ	Min		
3	2.4	2.4	6	50	30	7.5	Approx. 1.2
5	4.0	4.0	10	50	30	20.8	
6	4.8	4.8	12	50	30	30	
9	7.2	7.2	18	50	30	67.5	
12	9.6	9.6	24	50	30	120	
15	12	12	30	50	30	187.5	
18	14.4	14.4	36	50	30	270	
24	19.2	19.2	48	50	30	480	
48	38.4	38.4	96	50	30	1920	

2) 2 coils latching

Nominal Voltage (VDC)	Pick-up Voltage (VDC) max.[1)]	Drop-out Voltage (VDC) max.[1)]	Max. Voltage (VDC)[2)]	Pulse Width (ms) min.		Coil Resistance (Ω) (1±10%)	Coil Power (W)
				Typ	Min		
3	2.4	2.4	6	50	30	4.5	Approx. 2
5	4.0	4.0	10	50	30	12.5	
6	4.8	4.8	12	50	30	18	
9	7.2	7.2	18	50	30	40.5	
12	9.6	9.6	24	50	30	72	
15	12	12	30	50	30	112.5	
18	14.4	14.4	36	50	30	162	
24	19.2	19.2	48	50	30	288	
48	38.4	38.4	96	50	30	1152	

Notes:

1) The data shown above are initial values.

2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time(≤50ms).

2. CONTACT DATA

Contact Arrangement		1 Form A
Contact Resistance[1)]		100mΩ max. (at 1A 6VDC)
Contact Material		$AgSnO_2$
Contact Ratings (Resistive load)		50A 277VAC
Max. Switching Voltage		480VAC
Max. Switching Current		50A
Max. Switching Power		15360VA
Life Expectancy	Electrical[2)]	6,000 operations
	Mechanical	1,000,000 operations

Notes:

1) The data shown above are initial values.

2) For plastic sealed type, the venting-hole should be excised in electrical endurance test.

3. CHARACTERISTICS

Insulation Resistance		1000MΩ (at 500VDC)
Dielectric Strength	Open Contacts	1500VAC 1min
	Coil and Contacts	5000VAC 1min
Surge Voltage	Coil and Contacts	10kV(1.2/50μs)
Set Time (at nominal voltage)		15ms max.
Reset Time (at nominal voltage)		15ms max.
Temperature Range		-40℃ ~ 85℃
Shock Resistance	Functional	98m/s^2
	Destructive	980m/s^2
Vibration Resistance		10 ~ 55Hz 2mm DA
Humidity		5 ~ 85% RH
Termination		PCB
Weight		Approx. 22g
Construction		Plastic sealed
Outline Dimension (L x W x H)		35 x 12 x 24mm

Notes: The data shown above are initial values.

4. SAFETY APPROVAL

UL / cUL	50A 277/250/125/120VAC Resistive load at 85℃ 40A 277/250/125/120VAC Resistive load at 85℃ TV-20 250/240/120VAC at 40℃ 16A 277/120VAC Electronic ballast at 85℃

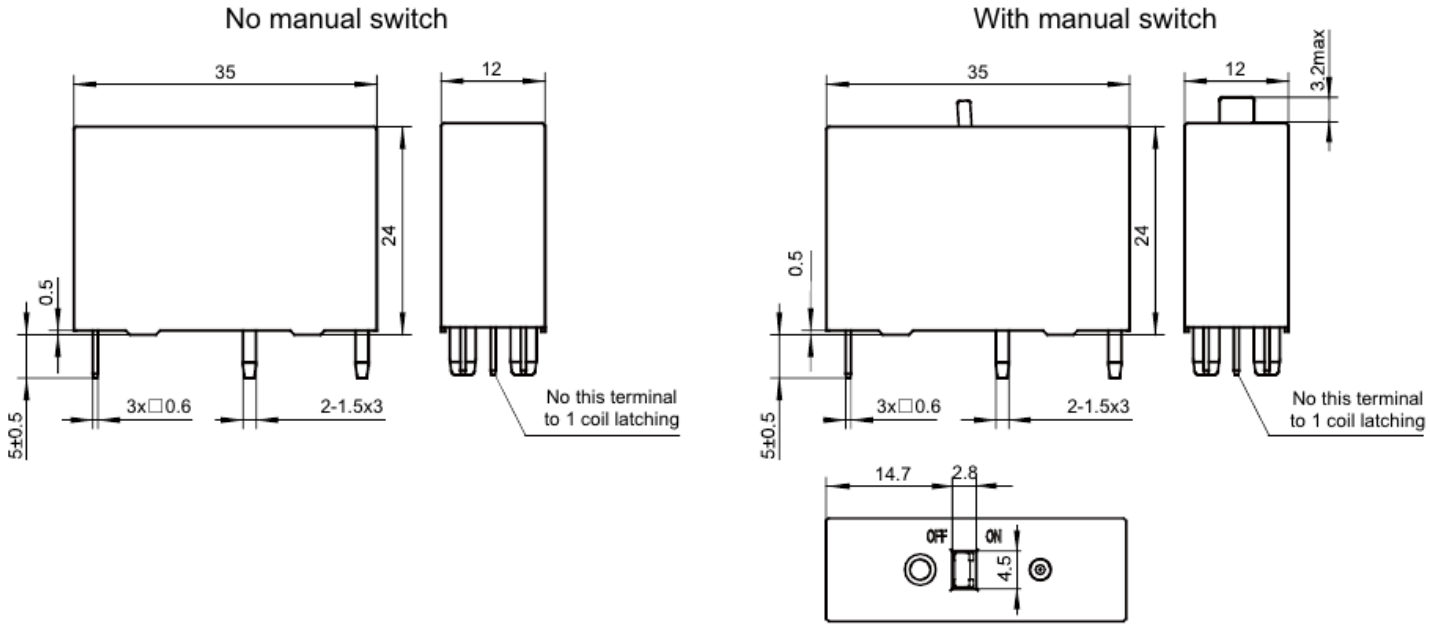
5. ORDERING INFORMATION

LD ①	11 ②	-	12 ③	S ④	L1 ⑤	M ⑥	T ⑦	F ⑧

① Relay Model	LD
② Contact Arrangement	11: 1 Form A
③ Coil Voltage	3=3VDC, 5=5VDC, 6=6VDC, 9=9VDC, 12=12VDC, 15=15VDC, 18=18VDC, 24=24VDC, 48=48VDC
④ Construction	Nil: Flux proofed S: Plastic sealed type (no manual switch)
⑤ Sort	L1: 1 coil latching L2: 2 coils latching
⑥ Manual switch	Nil: No manual switch M: With manual switch
⑦ Contact Material	T: $AgSnO_2$
⑧ Insulation Standard	F: Class F

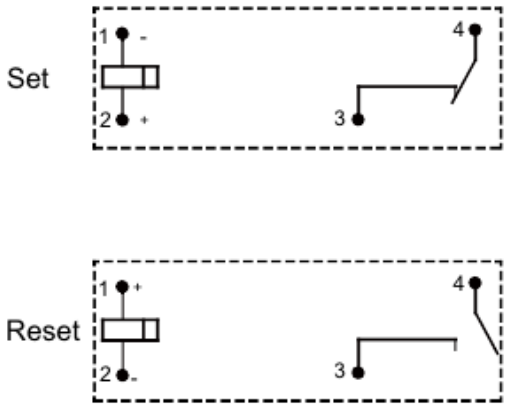
6. DIMENSIONS (Unit: mm)

Outline Dimensions

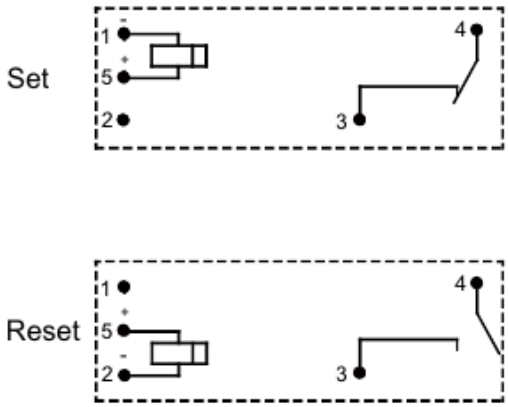


Wiring Diagram (Bottom view)

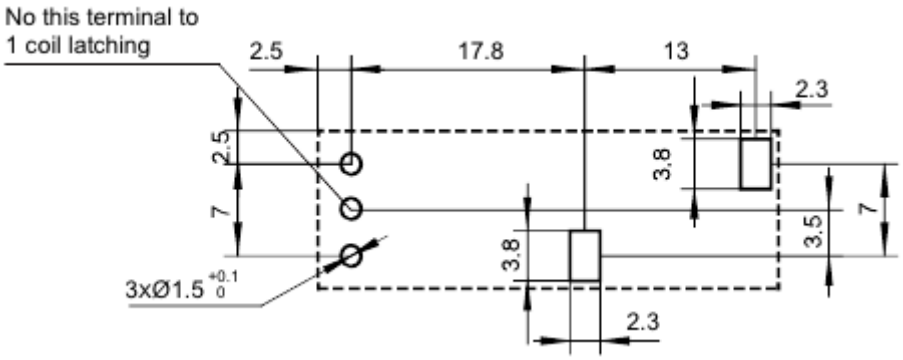
1 coil latching



2 coils latching



PCB Layout (Bottom view)



Dimensional tolerance is not marked for product boundary dimensions		Dimensional tolerance is not marked for PCB board
Boundary dimensions	Dimensional tolerance	
≤1	±0.2	±0.1
>1~5	±0.3	
>5	±0.4	

Remark:

1) The pin dimension of the product outline drawing is the size before tinning (It will become larger after tinning), and the mounting hole size is the recommended design size of the PCB board hole. The specific PCB board hole design size can be mapped and adjusted according to the actual product.

2) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

3) The tolerance without indicating for PCB layout is always ±0.1mm

Notice:

1. Relay is on the “reset” status when being released from stock, with the consideration of shock risen from transit and relay mounting, relay would be changed to “set” or “reset” status, therefore, when application (connecting the power supply), please reset the relay to “set” or “reset” status on request.
2. In order to maintain “set” or “reset” status, energized voltage to coil should reach the rated voltage, impulse width should be 5 times more than “set” or “reset” time. Do not energized voltage to “set” coil and “reset” coil simultaneously. And also long energized time (more than 1 min) should be avoided.
3. Keep the product away from strong magnetic field during transportation, storage and application, to avoid change of set/reset voltage.