Miniature High Power Latching Relay	LC

Features

- Latching relay
- High capacity: 20A 277VAC
- High surge current capacity: 370A/1.2ms
- Short current capacity: 1500A (IEC 60947-5-1)
- TV capacity: TV-10 (250/240/120VAC)
- Dielectric strength (between coil and contact): ≥5000VAC
- Outline dimension: 29.0 x 12.7 x 15.7mm

c UL 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 Duration (ms)		Coil Resistance (Ω) (1±10%)	Coil Power (W)
				Typ	Min		
3	2.4	2.4	6	50	30	15	Approx. 0.6
5	4.0	4.0	10	50	30	41.7	
6	4.8	4.8	12	50	30	60	
9	7.2	7.2	18	50	30	135	
12	9.6	9.6	24	50	30	240	
15	12	12	30	50	30	375	
18	14.4	14.4	36	50	30	540	
24	19.2	19.2	48	50	30	960	
48	38.4	38.4	96	50	30	3840	

2) 2 coils latching

Nominal Voltage (VDC)	Pick-up Voltage (VDC) max.[1)]	Drop-out Voltage (VDC) max.[1)]	Max. Voltage (VDC)[2)]	Pulse Duration (ms)		Coil Resistance (Ω) (1±10%)	Coil Power (W)
				Typ	Min		
3	2.4	2.4	6	50	30	11.2	Approx. 0.8
5	4.0	4.0	10	50	30	31.2	
6	4.8	4.8	12	50	30	45	
9	7.2	7.2	18	50	30	101	
12	9.6	9.6	24	50	30	180	
15	12	12	30	50	30	281	
18	14.4	14.4	36	50	30	405	
24	19.2	19.2	48	50	30	720	
48	38.4	38.4	96	50	30	2880	

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		2 Form A
Contact Resistance[1)]		100mΩ max. (at 1A 6VDC)
Contact Material		$AgSnO_2$
Contact Ratings (Resistive load)		20A 277VAC
Max. Switching Voltage		277VAC
Max. Switching Current		20A
Max. Switching Power		5540VA
Life Expectancy	Electrical[2)]	20,000 operations
	Mechanical	1,000,000 operations

Notes: 1) The data shown above are initial values.

3. CHARACTERISTICS

Insulation Resistance		1000MΩ (at 500VDC)
Dielectric Strength	Open Contacts	1000VAC 1min
	Coil and Contacts	5000VAC 1min
	Contact Sets	2500VAC 1min
Surge Voltage	Coil and Contacts	8kV(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. 12.5g
Construction		Plastic sealed
Outline Dimension (L x W x H)		29.0 x 12.7 x 15.7mm

Notes: The data shown above are initial values.

4. SAFETY APPROVAL

UL / cUL	20/16/10A 277/250/220/125/120VAC Resistive load at 85℃ TV-10 250/240/120VAC at 85℃ 2500W 250VAC Tungsten 85℃ 2400W 240VAC Tungsten 85℃ 1200W 120VAC Tungsten 85℃ 8A 277/120VAC Electronic ballast 85℃ 1HP motor 277/250VAC 85℃ 0.5HP motor 125/120VAC 85℃

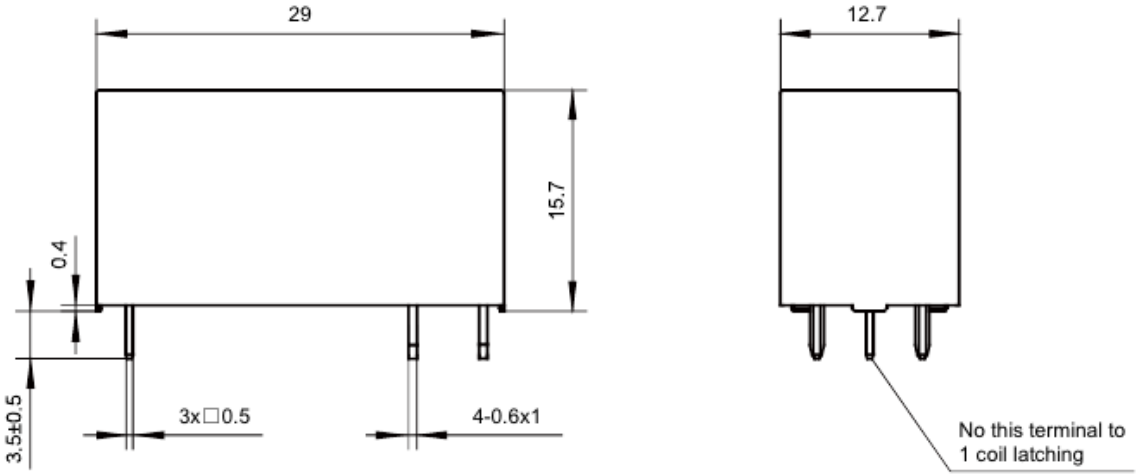
5. ORDERING INFORMATION

LC ①	22 ②	-	12 ③	S ④	L1 ⑤	T ⑥	F ⑦

① Relay Model	LC
② Contact Arrangement	22: 2 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	S: Sealed type
⑤ Sort	L1: 1 coil latching L2: 2 coils latching
⑥ Contact Material	T: $AgSnO_2$
⑦ Insulation Standard	F: Class F

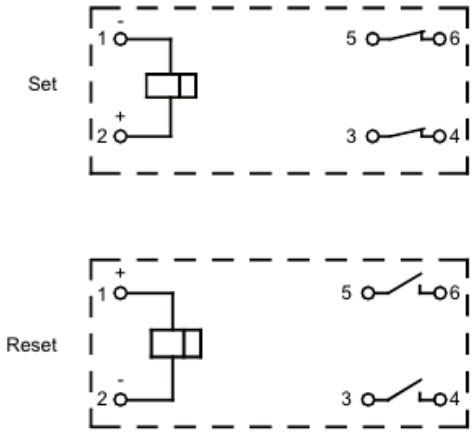
6. DIMENSIONS (Unit: mm)

Outline Dimensions

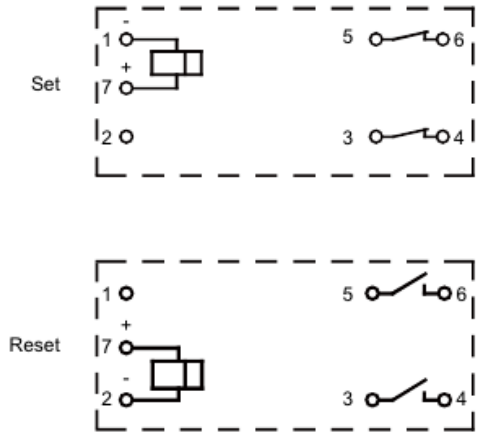


Wiring Diagram (Bottom view)

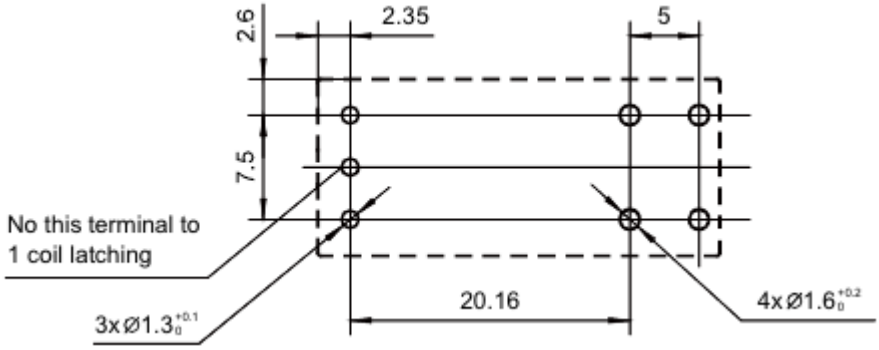
1 coil latching



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.