Miniature High Power Relay	CT-TMP

Features

- 40A switching capability
- Heavy load up to 7200VA
- PCB coil terminal, ideal for duty load
- Plastic sealed type
- UL insulation system: Class F, Class B

c UL us
(File No.:E134581)

1. COIL DATA (at 23°C)

1) DC Type

Nominal Voltage (VDC)	Pick-up Voltage (VDC)	Drop-out Voltage (VDC)	Max Allowable Voltage (VDC)	Coil Current (mA)(±10%)	Coil Resistance (Ω)	Coil Power (mW)
5	3.75	0.5	6.50	180	27 x (1±10%)	Approx. 900
6	4.50	0.6	7.80	150	40 x (1±10%)	
9	6.75	0.9	11.7	100	97 x (1±10%)	
12	9.00	1.2	15.6	75.0	155 x (1±10%)	
15	11.25	1.5	19.5	60.0	256 x (1±10%)	
18	13.50	1.8	23.4	50.0	380 x (1±10%)	
24	18.00	2.4	31.2	37.5	660 x (1±10%)	
48	36.00	4.8	62.4	18.8	2560 x (1±10%)	
70	52.50	7.0	91.0	12.9	5500 x (1±10%)	
110	82.50	11	143	8.18	13450 x (1±10%)	

2) AC Type

Nominal Voltage (VAC)	Pick-up Voltage (VAC)	Drop-out Voltage (VAC)	Max Allowable Voltage (VAC)	Coil Current (mA)(±10%)	Coil Resistance (Ω)	Coil Power (VA)
12	9.60	2.4	15.6	167	25 x (1±10%)	Approx. 2
24	19.2	4.8	31.2	83.3	100 x (1±10%)	
120	96.0	24	156.0	16.7	2500 x (1±10%)	
208	166.4	41	270.4	9.62	11000 x (1±10%)	
220	176	44	286.0	9.10	13490 x (1±10%)	
240	192	48	286.0	8.30	13490 x (1±10%)	
277	220	54	360.1	7.22	15000 x (1±10%)	

Note: 1) When requiring pick-up voltage <80% of nominal voltage, special order allowed.

2) The data shown above are initial values at 50Hz. When requiring 60Hz, special order allowed.

3) The data shown above are initial value.

4) The maximum allowable voltage refers to the maximum voltage which relay coil could endure in a short period of time.

2. CONTACT DATA

Contact Arrangement		1 Form A	1 Form C	
			NO	NC
Contact Resistance[1)]		50mΩ max. (at 1A 24VDC)		
Contact Material		$AgSnO_2$		
Max. Switching Voltage		277VAC / 28VDC		
Max. Switching Current		40A[2)]	20A	10A
Max. Continuous current		When PCB terminals carry current ≤ 30A		
		When PCB terminals do not carry current (only QC terminals carry current) ≤ 25A		
Max. Switching Power		7200VA / 560W	4800VA / 560W	2400VA / 280W
Contact rating		30A 240VAC 20A 28VDC	20A 240VAC 20A 28VDC	10A 240VAC 10A 28VDC
Life Expectancy	Electrical	100,000 operations		
	Mechanical	10,000,000 operations		

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

2) Long time current-carrying under 40A condition is prohibited.

3. CHARACTERISTICS

Insulation Resistance			1000MΩ (at 500VDC)
Dielectric Strength	Open Contacts		1500VAC 1min
	Coil and Contacts		2500VAC 1min
Operate Time (at nominal voltage)		DC type	15ms max.
Release Time (at nominal voltage)		DC type	10ms max.
Temperature Range		DC type	-55℃ ~ 85℃
		AC type	-55℃ ~ 60℃
Shock Resistance	Functional		$98m/s^2$
	Destructive		$980m/s^2$
Vibration Resistance			10 ~ 55Hz, 1.5mm DA
Humidity			5 ~ 85% RH
Termination			PCB & QC
Weight			Approx. 36g
Outline Dimension (L x W x H)			32.2 x 27.5 x 27.8mm

Note:

1) For plastic sealed type, the venting-hole should be opened in test.

2) The data shown above are initial values.

3) Please find coil temperature curve in the characteristic curves below.

4) UL insulation system: Class F, Class B

4. ORDERING INFORMATION

CT ①	11 ②	TMP ③	-	D12 ④	S ⑤	F ⑥

① Relay Model	CT
② Contact Arrangement	11: 1 Form A (SPST-NO) 1: 1 Form C (SPDT)
③ Termination	TMP: PCB & QC, Dielectric strength Between Coil and Contact: 2500VAC
④ Coil Voltage	DC: D5=5VDC, D6=6VDC, D9=9VDC, D12=12VDC, D15=15VDC, D18=18VDC, D24=24VDC, D48=48VDC, D70=70VDC, D110=110VDC AC: A12=12VAC, A24=24VAC, A120=120VAC, A208=208VAC, A220=220VAC, A240=240VAC, A277=277VAC
⑤ Construction	S: Sealed type
⑥ Insulation Standard	Nil: Class B F: Class F

5. SAFETY APPROVAL RATINGS

UL/cUL	1 Form A		30A 277VAC 30A 240VAC 40A 277VAC 2HP 250VAC 1HP 125VAC
	1 Form C	NO	30A 277VAC 30A 240VAC 2HP 250VAC 1HP 125VAC
		NC	20A 277VAC 1/2HP 250VAC 1/4HP 125VAC

Notes:

1) All values unspecified are at room temperature.

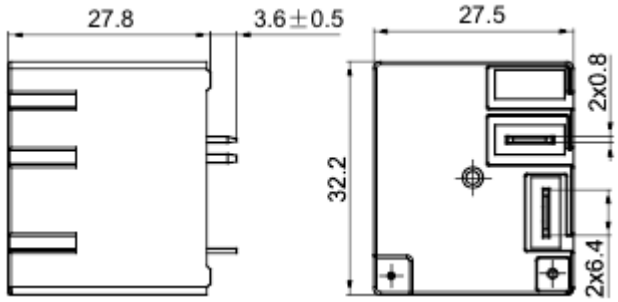
2) Only typical loads are listed above. Other load specifications can be available upon request.

3) The parameters in the table are for DC coil certification.
For AC coil certification, please contact us.

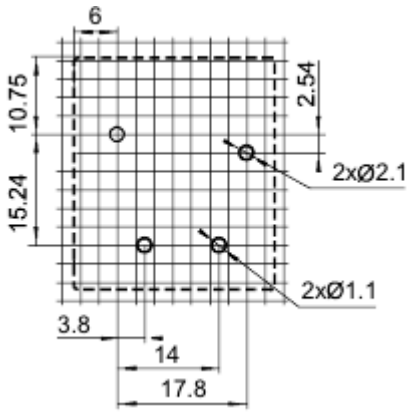
6. DIMENSIONS (Unit: mm)

1 Form A

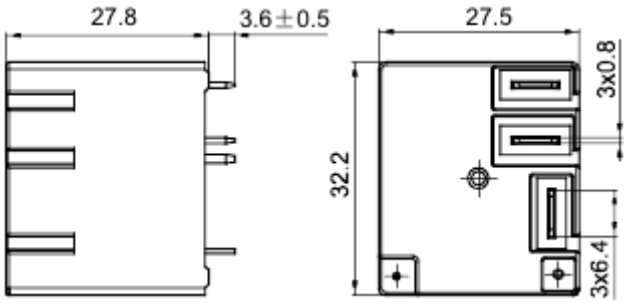
Outline Dimensions

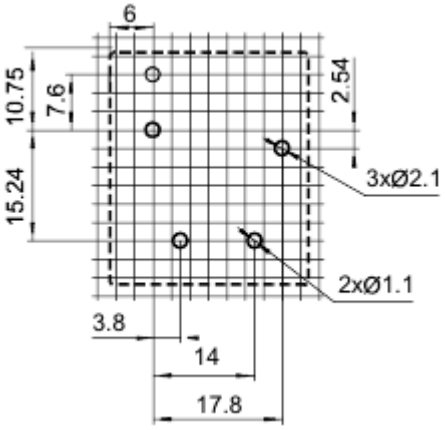


PCB Layout
(Bottom View)

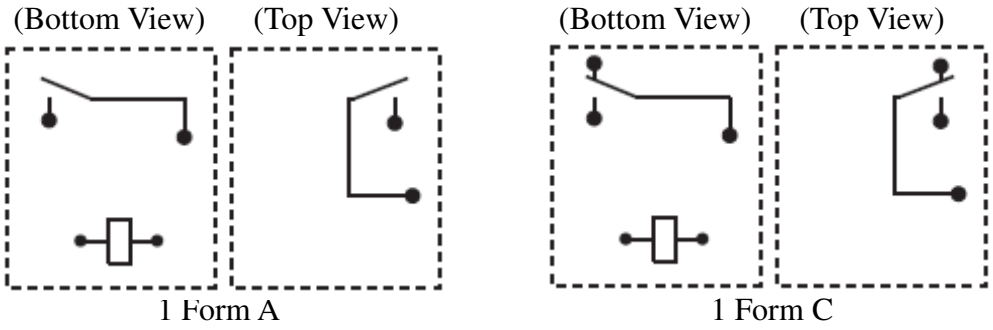


1 Form C





Wiring Diagram (Bottom View)

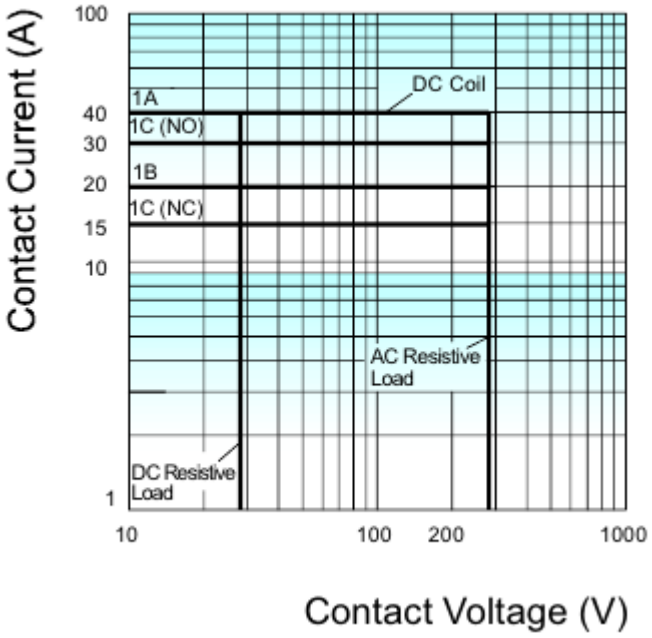


Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

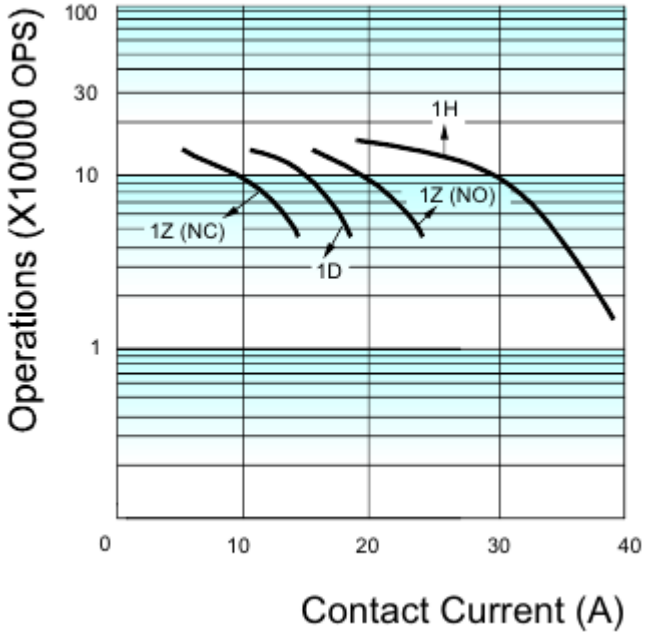
2) The tolerance without indicating for PCB layout is always ±0.1mm

7. CHARACTERISTIC CURVES

Maximum Switching Power



Endurance Curve



Coil Temperature Rise