JT105F-1 SUBMINIATURE HIGH POWER RELAY

c UL us
File No:E319069

File No:40038813

File No:13002100204

Features

- 40A switching capability
- 4kV directric strength(between coil and contacts)
- Heavy load up to 7200VA
- PCB coil terminals,ideal for heavy duty load
- Unenclosed,Plastic sealed and dust protected types available
- UL insulation system:Class F available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions:(32.2 x 27.0 x 20.1)mm

CONTACT DATA

Contact arrangement	1A	1B	1C(NO)	1C(NC)
Contact resistance	50mΩ max.(at 1A 24VDC)			
Contact material	$AgCdO,AgSnO_2$			
Max.switching capacity	7200VA/560W	3600VA/280W	4800VA/560W	2400VA/280W
Max.switching voltage	277VAC/28VDC			
Max.switching current	40A	15A	20A	10A
HF105F-1 rating	30A 240VAC 20A 28VDC	15A 240VAC 10A 28VDC	20A 240VAC 20A 28VDC	10A 240VAC 10A 28VAC
HF105F-1L rating	25A 240VAC 20A 28VDC	15A 240VAC 10A 28VDC	20A 240VAC 20A 28VDC	10A 240VAC 10A 28VAC
Mechanical endurance	1×10^7 OPS			
Electrical endurance	1H type(Non-plastic sealed):1×10^5 OPS (28A 277VAC,Resistive load, AgCdO,Room temp,1s on 9s off)			

CHARACTERISTICS

Insulation resistance		1000MΩ(at 500VDC)
Dielectirc strength	Between coil&contacts	2500VAC/4000VAC 1min
	Between open contacts	1500VAC 1min
Operate time(at nomi.volt.)		DC type:15ms max.
Release time(at nomi.volt.)		DC type:10ms max.
Ambient tenperature		DC:-55℃ to 85℃ AC:-55℃to 60℃
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 1.5mm DA
Humidity		5% to 85% RH
Termination		PCB
Unit weight		Approx.36g
Construction		Unenclosed(Only for DC coil) Plastic sealed, Flux proofed

Notes: 1) For plastic sealed type,the venting-hole should be opened in test.
2) The data shown above are intial values.
3) Please find coil temperature cerve in the characteristic curves below.
4) UL insulation system:Class F,Class B.

COIL

Coil power	DC type:Approx.900mW; AC type:Approx.2VA

SAFETY APPROVAL RATINGS

UL/CUL	1FormA		$AgSnO_2$ AgCdO	40A 277VAC 30A 277VAC 2HP 250VAC 1HP 125VAC
			AgCdO	30A 28VDC 277VAC(FLA=20)(LRA=60)
	1FormB		AgCdO	15A 277VAC 10A 28VDC 1/2HP 250VAC 1/4HP 125VAC 277VAC(FLA=10)(LRA=33)
	1FormC	NO	$AgSnO_2$ AgCdO	30A 277VAC 2HP 250VAC 1HP 125VAC
			AgCdO	20A 277VAC 20A 28VDC 277VAC(FLA=20)(LRA=60)
		NC	$AgSnO_2$ AgCdO	20A 277VAC 1/2HP 250VAC 1/4HP 125VAC
			AgCdO	10A 277VAC 10A 28VDC 277VAC(FLA=10)(LRA=33)

Notes: 1) All values unspecified are at room temperature.
2) Only typical loads are listed above.Other load specificationgs can be avaliable upon request.

COIL DATA

at 23℃

DC type

Nominal Voltage VDC	Pick-up Voltage VDC max.	Dorp-out Voltage VDC min.	Max. Voltage VDC*	Coil Resistance Ω
5	3.75	0.5	6.5	27 x (1±10%)
6	4.50	0.6	7.8	40 x (1±10%)
9	6.75	0.9	11.7	97 x (1±10%)
12	9.00	1.2	15.6	155 x (1±10%)
15	11.25	1.5	19.5	256 x (1±10%)
18	13.50	1.8	23.4	380 x (1±10%)
24	18.00	2.4	31.2	660 x (1±10%)
48	36.00	4.8	62.4	2560 x (1±10%)
70	52.50	7.0	91	5500 x (1±10%)
110	82.50	11	143	13450 x (1±10%)

AC type

Nominal Voltage VAC	Pick-up Voltage VAC max.	Dorp-out Voltage VAC min.	Max. Voltage VAC*	Coil Resistance Ω
12	9.6	2.4	15.6	25 x (1±10%)
24	19.2	4.8	31.2	100 x (1±10%)
120	96.0	24.0	156	2500 x (1±10%)
208	166.4	41	270.4	11000 x (1±10%)
220	176	44	286	13490 x (1±10%)
240	192	48	286	13490 x (1±10%)
277	220	54	360.1	15000 x (1±10%)

Notes: 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.
2) *Maximum Voltage refers to the maximum voltage which relay coil could endure in a short period of time.

ORDERING INFORMATION

JT105F-1 / 012 D T -1H S T F (XXX)

Type
JT105-1:30A(Unenclosed,only for DC coil)
JT105-1L:25A(Unenclosed,only for DC coil)
JT105F-1:30A
JT105F-1L:25A

Coil voltage
DC:5VDC to 110VDC
AC:12VAC to 277VAC

Coil voltage from
D: DC **A**: AC

Termination
6:With Pin NO.6,Dielectric Strength Between Coil and Contact:2500VAC
T:Without Pin NO.6,Dielectric Strength Between Coil and Contact:4000VAC
Nil:Without Pin NO.6,Dielectric Strength Between Coil and Contact:2500VAC

Contact arrangement
1H:1Form A **1D**:1 Form B **Z**:1Form C

Construction [1)2)]
S:Plastic sealed
Nil:Dust protected(For JT105F-1,JT105F-1L)
Unenclosed(For JT105-1,JT105-1L)

Contact material
T:$AgSnO_2$ **Nil**:AgCdO

Insulation standard
F:Class F **Nil**:Class B

Special code [3)]
XXX:Customer special requirement **Nil**:Standrad

Notes: 1) We recommend dust protected types for a clean environment(free from contaminations like H_2S,SO_2 or NO_2 dust,ect.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment(with contaminations like H_2S,SO_2 or NO_2 dust,ect.).
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
3) The customer special requirement express as special code after evaluating by JINTIAN.

OUTLINE DIMENSIONS,WIRING DIAGRAM AND PC BOARD LAYOUT

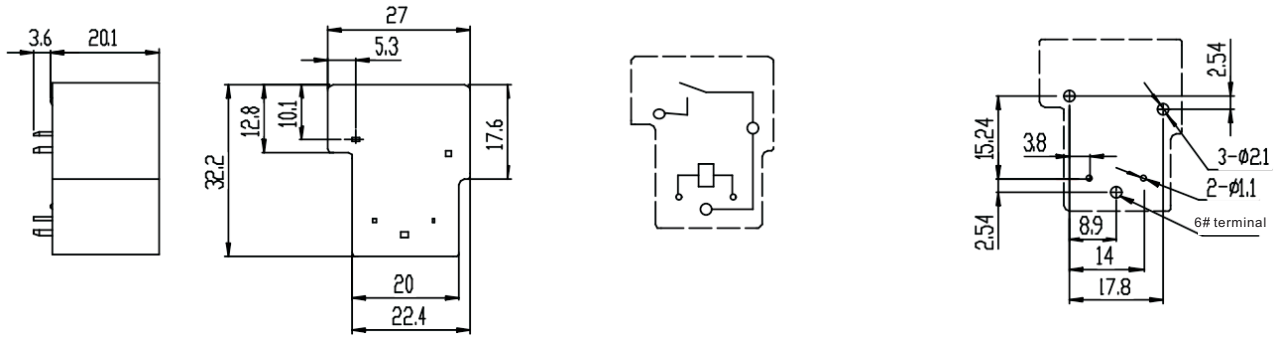
Unit: mm

JT105F-1

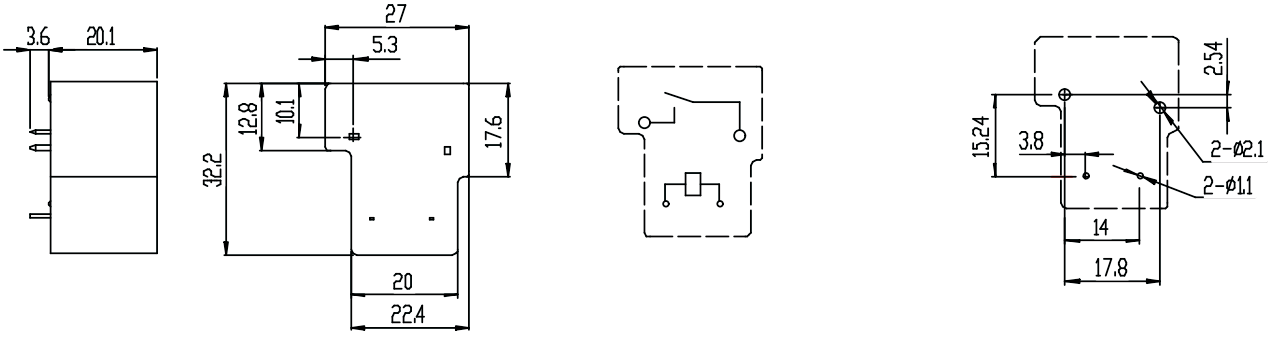
1 Form A

Outline Dimensions | Wiring Diagram (Bottom view) | PCB Layout (Bottom view)

With 6# terminal

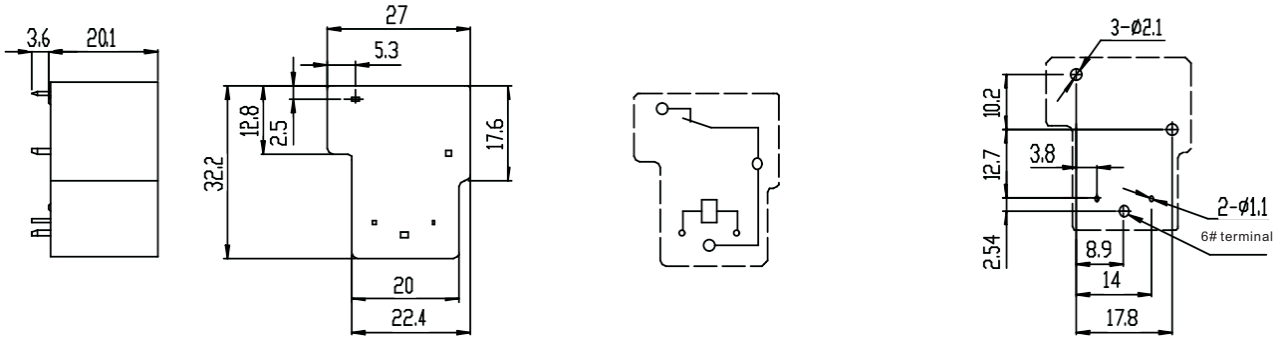


Without 6# terminal

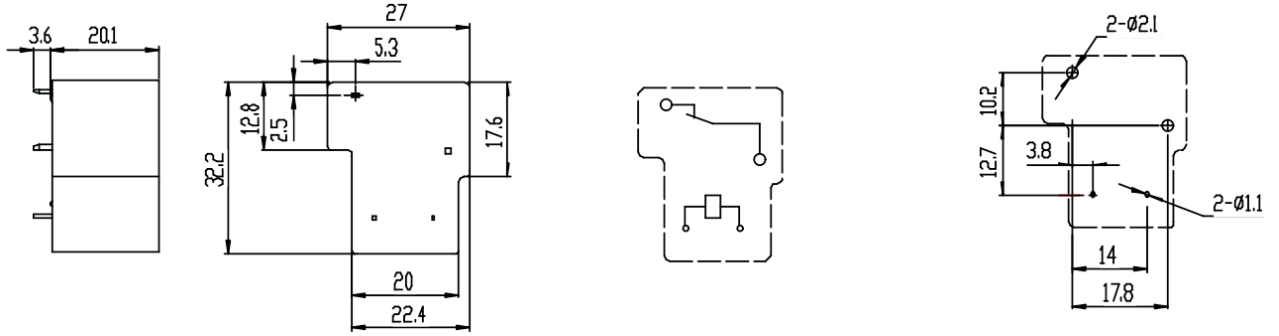


1 Form B

With 6# terminal



Without 6# terminal



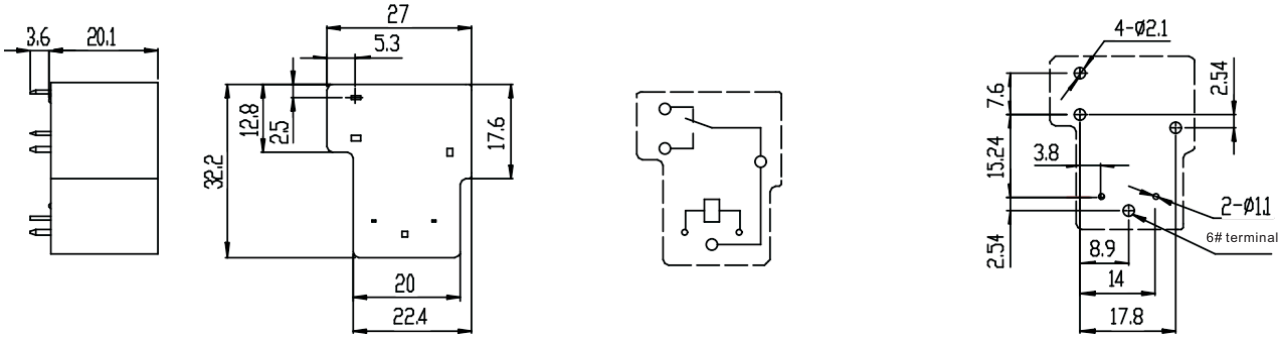
OUTLINE DIMENSIONS,WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

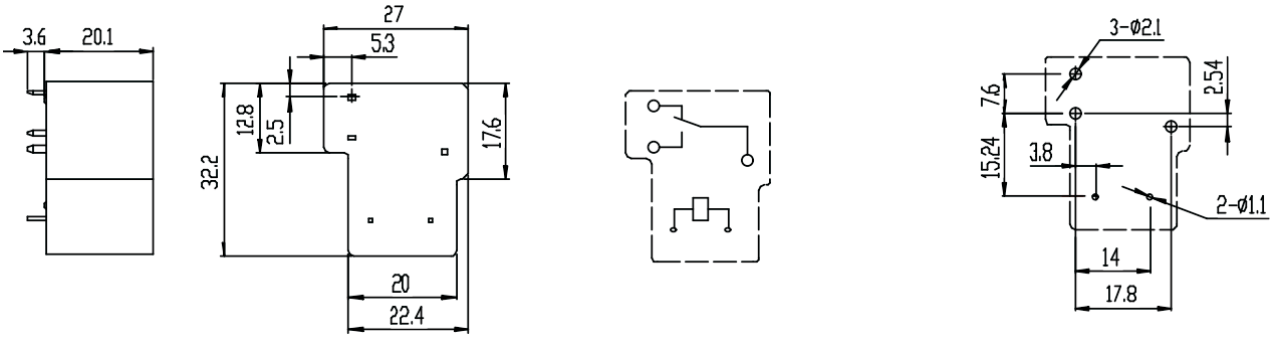
1 Form C

Outline Dimensions | Wiring Diagram (Bottom view) | PCB Layout (Bottom view)

With 6# terminal



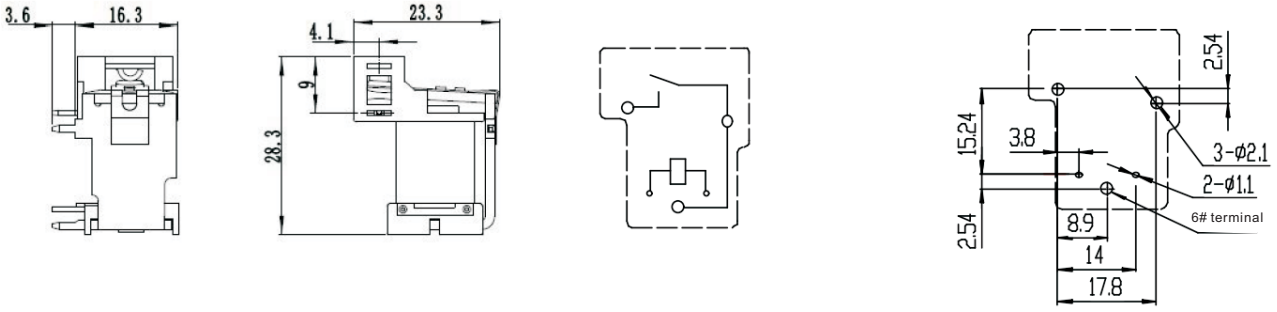
Without 6# terminal



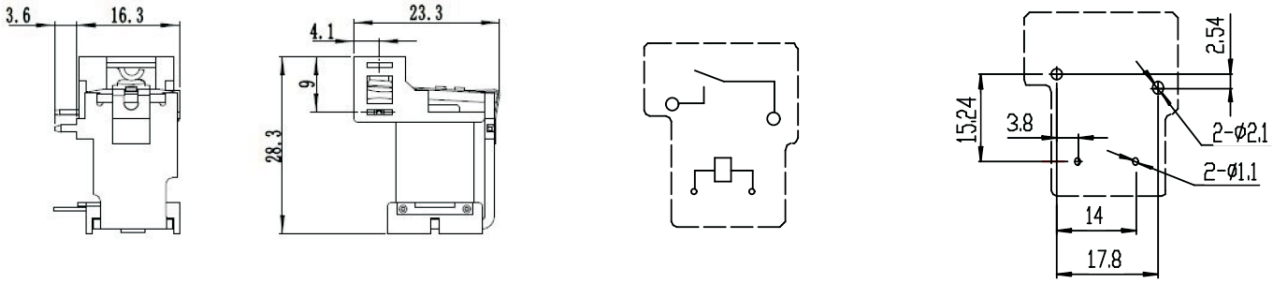
JT105-1

1 Form A

With 6# terminal



Without 6# terminal



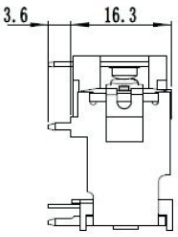
OUTLINE DIMENSIONS,WIRING DIAGRAM AND PC BOARD LAYOUT

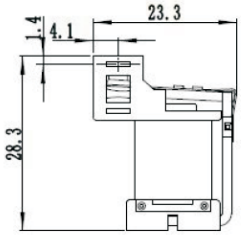
Unit: mm

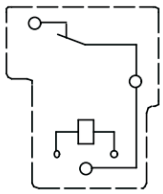
1 Form B

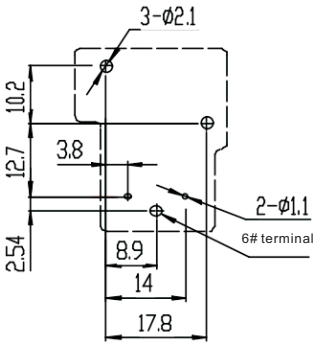
Outline Dimensions | Wiring Diagram (Bottom view) | PCB Layout (Bottom view)

With 6# terminal

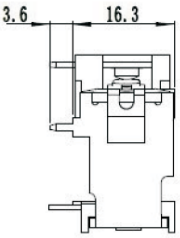


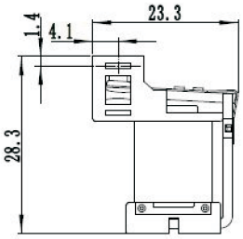


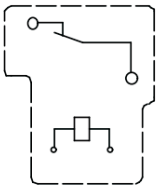


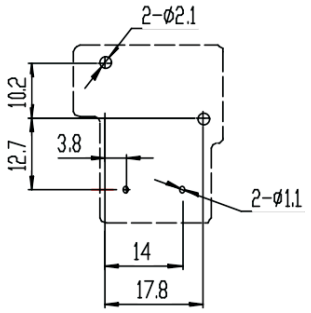


Without 6# terminal



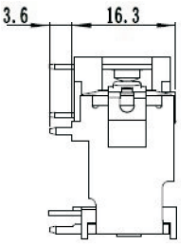


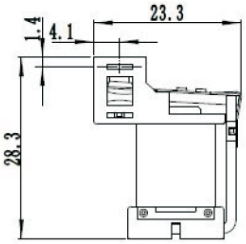


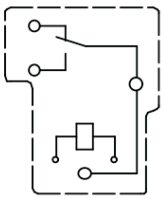


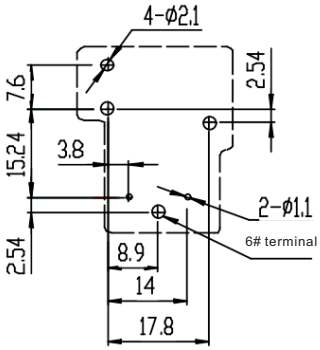
1 Form C

With 6# terminal

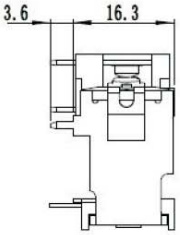


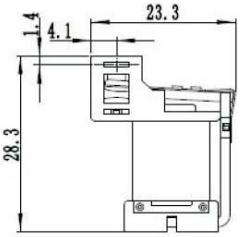


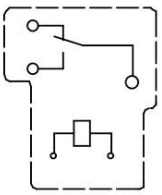


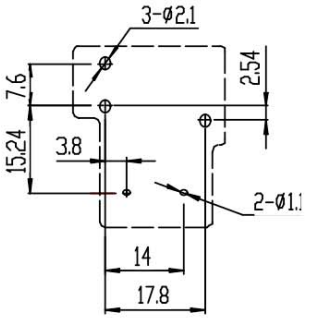


Without 6# terminal





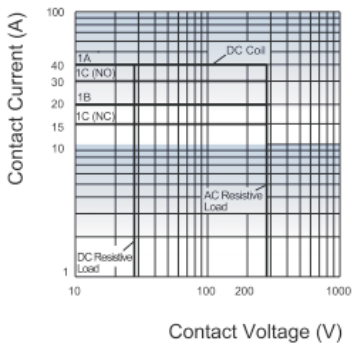




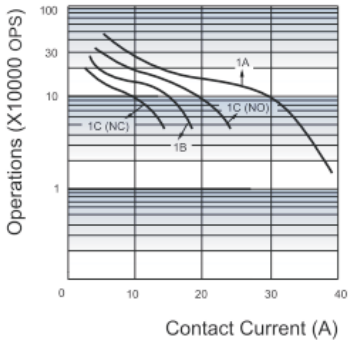
Remark:1) In case of no tolerance shown in outline dimension:outline dimension ≤1mm,tolerance should be ±0.2mm;outline dimension>1mm and≤5mm,tolerance should be±0.3mm;outline dimension>5mm,tolerance should be±0.4mm.
2) The tolerance without indicating for PCB layout is always±0.1mm.

CHARACTERISTIC CURVES

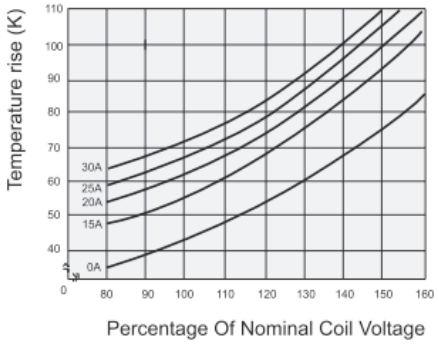
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



Test conditions:
Resistive load, Dust protected,
AgCdO, Room temp., 1s on 9s off.

Disclaimer
The specification is for reference only.See to “Terminology and Guidelines”for more information.Specifications subject to change without notice.We could not evaluate all the performance and all the parameters for every possible application.Thus the user should be in a right position to choose the suitable product for their own application.If there is any query,please contact JINTIAN for the technical service.However,it is the user’s responsibility to determine which product should be used only.