JTV4 AUTOMOTIVE RELAY

Features

- 40A switching capability
- 1 From A &1 Form C contact arrangement
- Plastic sealed and dust protected types available
- ROHS & ELV compliant

Typical Applications

Fog lamp&headlight control,Rear window defogger,
Air-conditioning,Fuel pump cintrol,Cooling fan control,
Battery disconnection device

CHARACTERISTICS

Contact arrangement	1A,1C
Voltage drop(initial)	NO:Typ.:20mV,Max:250mV(at 10A) NC:Typ.:30mV,Max:250mV(at 10A)
Max.continuous current[2)]	NO:60A(at 23℃) NC:40A(at 23℃)
Max.switching current[3)]	Make(NO):150A[2)] Break(NO): 40A(Resistive,13.5VDC)
Max.switching voltage	See"Load limit curve"
Min.contact load	1A 6VDC
Electrical endurance	See"CONTACT DATA"
Mechanical endurance	1 x10^{6}ops(300ops/min)
Initial insulation resistance	100MΩ(at 500VDC)
Dielectric strength[3)]	between contacts:500VAC between coil&contacts:500VAC
Operate time[10)]	Max.:7ms (at nomi.vol.)
Release time[10)]	max.:5ms[4)]
Ambient tenperature	-40℃ to 125℃
Vibration resistance[6)]	5Hz to 22.3Hz 10mm DA 22.3Hz to 500Hz 98m/s^2
Shock resistance[5)10)]	294m/s^2
Flammability[6)]	UL94-HB or better(meets FMVSS 302)

Termination	QC[7)]
Construction	Plastic sealed, Dust protected
Unit weight	Approx. 35g

Notes: 1) For NO contacts,measured when applying 100% rated votage on coil. For NC contacts,measured when applying zero votage on coil.
2) Inrush peak current under lamp load,at 13.5VDC.
3) 1min.leakage current less than 1 mA.
4) The value is measured when voltage drops suddenly from nominal voltage to 0VDC and coil is not parallelewith suppression circuit.
5) When energized,opening time of NO contacts shall not exceed 1ms,when non-energized,opening time of NC contacts shall not exceed 1ms,meantime,NO contacts shall not be closed.
6) FMVSS 302:Federal Motor Vehicle Safety Standard.
7) Do NOT knock on relays with hard objects such an rubber rod and rubber hammer during mounting,which might lead to relay damage.
8) Only valid for QC version.
9) Test point is at 2mm away from teminal end,and after removing testing force,the terminal transfiguration shall not exceed 0.5mm.
10) Only for the 12VDC coil voltage type.

CONTACT DATA

Load voltage	Load type		Load current A			On/Off ratio		Electrical endurance OPS	Contact material	Load wiring diagram[4)]	Ambient temp.
			1C		1A	On s	Off s				
			NO	NC	NO						
13.5VDC	Resistive	Make	40	30	40	2	2	1 x 10^5	$AgSnO_2$	see diagram 1	See Ambient Temp. Curve
		Break	40	30	40						
	Lamp[1)]	Make	150[2)]	---	150[2)]	2	2	1 x 10^5	$AgSnO_2$	see diagram 2	
		Break	30	---	30						
	Inductive	Make	80	---	80	2	2	1 x 10^5	$AgSnO_2$	see diagram 3	
		Break	33	---	33						
27VDC	Resistive	Make	20	10	20	3	3	1 x 10^5	$AgSnO_2$	see diagram 1	at 23℃
		Break	20	10	20						

Notes: 1) The load in the table excludes flasher.When applied in flasher,a special silver alloy($AgSnO_2$)contact material should be used used and the customer special code should be (170)as a suffix.Please heed the anode and cathode's request when wired, terminal 30 should connect with anode.
2) Corresponds to the peak inrush current on intial actuation (cold filament).
3) A low resistive or diode suppression device in parallel to the relay coil increases the release time and reduces the life time caused by increased erosion and/or higher risk of contact welding.
4) The load wiring diagrams are listed below (Ratings of NO,NC are tested based on different samples seperately):

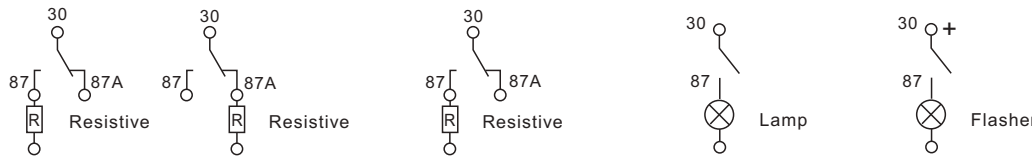


Diagram1 Diagram2 Diagram3 Diagram4

5) Loads mentioned in this chart is for relays with no parellel diode or Zener Diode.For those with parallel diode,Zener Diode or other components, please contact JINTIAN for more technical supports. Please also contact JINTIAN if the actual application load is different from what mentioned aboved.

COIL DATA

at 23℃

Rated Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Coil Resistance x(1±10%)Ω	Parallel Resistance x(1±5%)Ω	Equivalent resistance Ω	Power consumption W	Max.allowable overdrive Voltage[1] VDC	
							at 23℃	at 85℃
6	≤3.9	≥0.6	22	---	---	1.6	10.1	7.9
6	≤3.9	≥0.6	22	180	19.6	1.8	10.1	7.9
12	≤7.8	≥1.2	85	---	---	1.7	20.2	15.7
12	≤7.8	≥1.2	85	680	75.6	1.9	20.2	15.7
24	≤15.6	≥2.4	350	---	---	1.6	40.5	31.5
24	≤15.6	≥2.4	350	2700	309.8	1.9	40.5	31.5

Notes: 1) Max.allowable overdrive voltage is stated with no load applied and minimum coil resistance.
2) Illustrated with the type with parallel resistor(680Ω,12V),(2700Ω,24V).

ORDERING INFORMATION

JTV4 / 012 -1H 1 S G R (XXX)

Type	
Coil voltage	**006**: 6VDC **012**: 12VDC **024**: 24VDC
Contact arrangement	**1H**: 1Form A **1Z**: 1Form C
Version	**1**: QC Terminal
Construction[1]	**S**: Plastic sealed **Nil**: Dust protected
Contact material	**G**: $AgSnO_2$
Parallel coil components[2]	**3**: Parallel transient supression resistors(680Ω,12V)(2700Ω,24V) **R1**: Parallel transient supression resistors(560Ω,12V)(1200Ω,24V) **R2**: Parallel transient supression resistors(470Ω,12V)(1000Ω,24V) **D1**: Parallel transient supression diode,with anode connected to terminal#86 **D1**: Parallel transient supression diode,with anode connected to terminal#85 **Nill**: Without parallel components
Special code[3]	**XXX**: Customer special requirement **Nil**: Standard

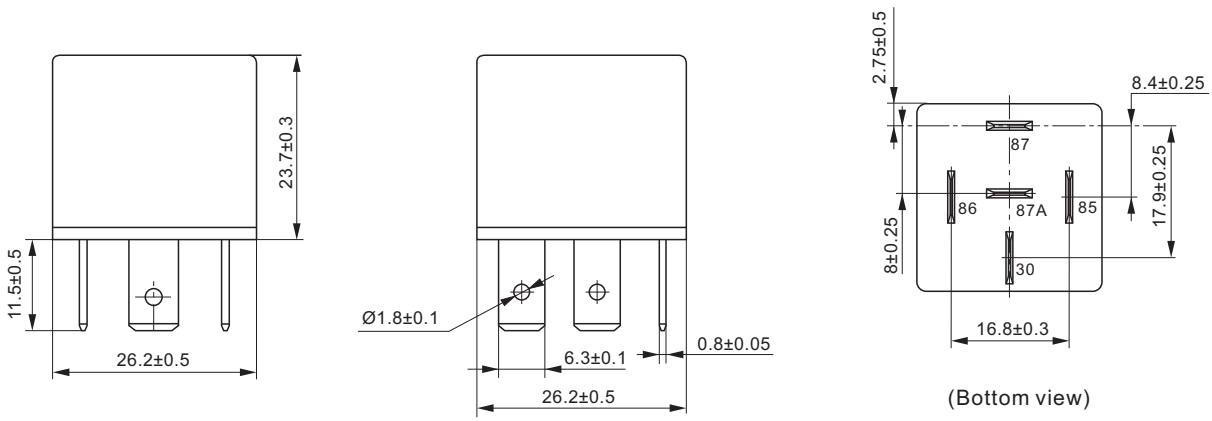
Notes: 1) Dust protected version is recommended.
2) If the switch-off peak voltage of coil is required to be smaller than 100V,R1 or R2 shall be used(measured voltage of 12V is 13.5V,that of 24V is 27V);If parallel diode,zener Diode or other components are required,please contact JINTIAN for more technical supports.
3) The customer special requirement express as special code after evaluating by JINTIAN).

OUTLINE DIMENSIONS,WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions

JTV4/□□□-1□1□□□(XXX)



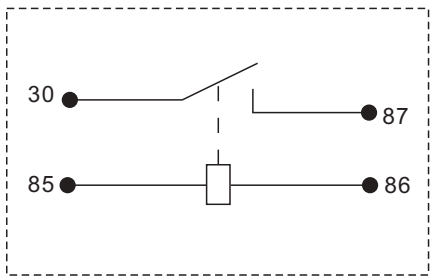
Remark:1) Terminal vertical deviation tolerance is 0.3mm.

OUTLINE DIMENSIONS,WIRING DIAGRAM AND PC BOARD LAYOUT

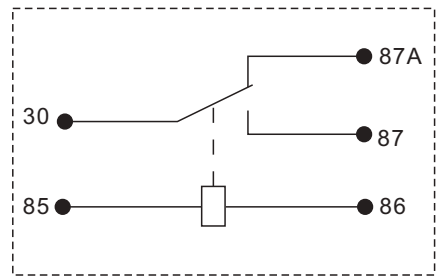
Unit: mm

Wiring Diagram

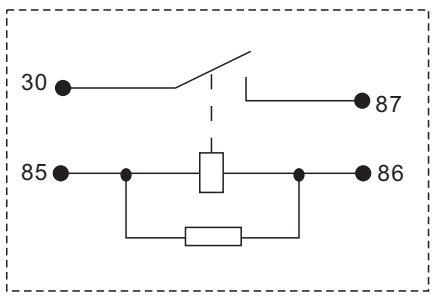
JTV4/□□□-1H□□□(XXX)



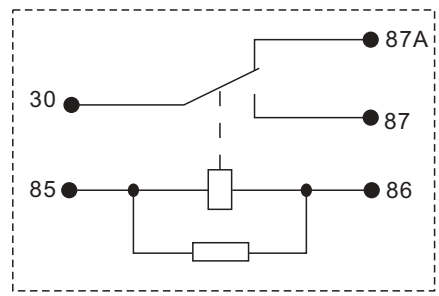
JTV4/□□□-1Z□□□(XXX)



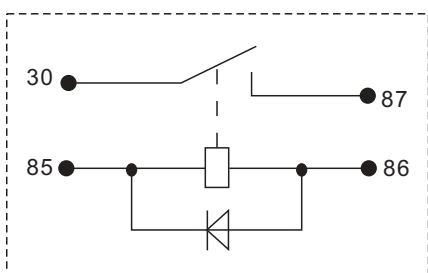
JTV4/□□□-1H□□□R(XXX)



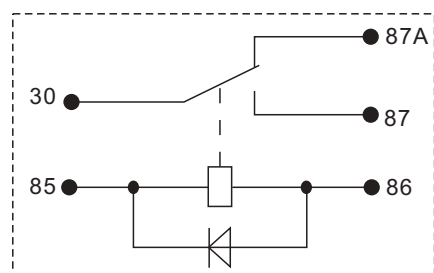
JTV4/□□□-1Z□□□R(XXX)



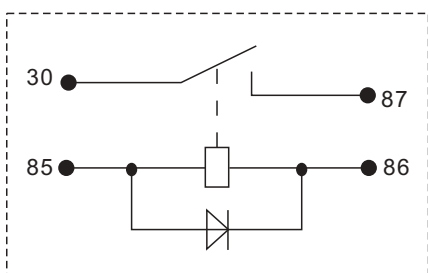
JTV4/□□□-1H□□□D1(XXX)



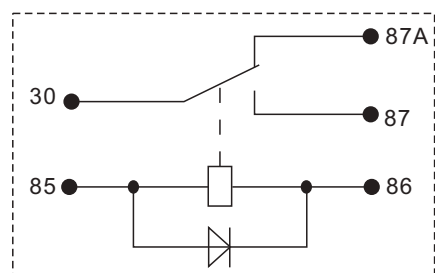
JTV4/□□□-1Z□□□D1(XXX)



JTV4/□□□-1H□□□D2(XXX)

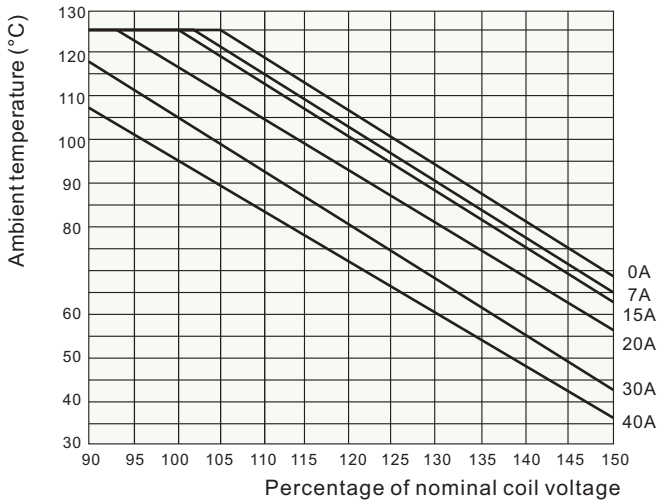


JTV4/□□□-1Z□□□D2(XXX)



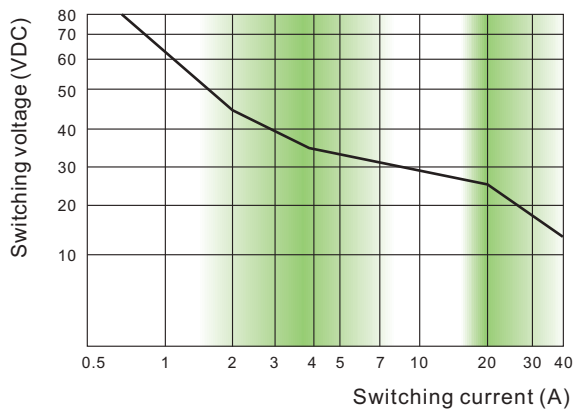
CHARACTERISTIC CURVES

1.Coil operaying voltage range



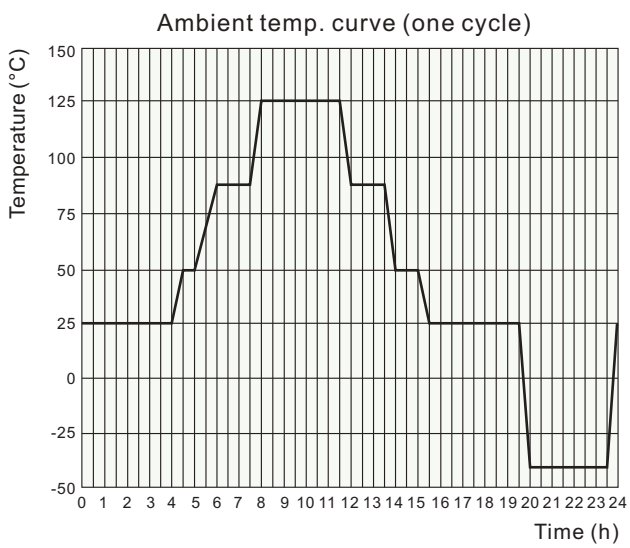
1) There should be no contact load applied when maximum continuous operation voltage is applied on coil.
2) This chart takes dust protected,12VDC coil voltage version as example.
3) The maximum allowable coil temperature is 180℃. Considering the coil temperature rise which is measured by resistance is average value,we recommend the coil temperature should be below 170℃ under the different application ambient, different coil voltage and different load etc.
4) If the actual operating coil voltage is out of the specified range,please contact JINTIAN for futher details.

2.Load limit curve(at 23℃)



1) There should be no contact load applied when maximum continuous operation voltage is applied on coil.
2) The load and electrical endurance tests are made according to “CONTACT DATA”parameters’ table. If actual load voltage,current,operate frequency is different from “CONTACT DATA”table,please arrange corresponding tests for confirmation.

3.Ambient temperature curve of the electrical endurance test



1) The minimum temperature is -40℃.
2) The maximum temperature is 125℃.

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.