JTV7 AUTOMOTIVE RELAY

Features

- 70A switching capability
- Extended temp.range up to 125℃
- With transient suppression resistor available
- 1 Form A contact arrangement
- Plastic sealed and dust protected types available
- ROHS & ELV compliant

Typical Applications

Fog lamp & headlight control, Rear window defogger, Air-conditioning Power distribution, Fuel pump control, ABS, Traction control system, Cooling fan control, Heating control, Power supply management system, Battery disconnection device

CHARACTERISTICS

Contact arrangement	1A
Voltage drop(initial)	Typ.:30mV(at 10A) Max.:250mV(at 10A)
Max.continuous current[1)10)]	70A(at 23℃);50A(at 85℃)
Max.switching current[10)]	70A
Max.switching voltage	50VDC
Min.contact load	1A 6VDC
Electrical endurance	See"CONTACT DATA"
Mechanical endurance	1 x10^7ops(300ops/min)
Initial insulation resistance	100MΩ(at 500VDC)
Dielectric strength[3)]	500VAC
Operate time[10)]	Typ:6ms (at nomi.vol.) Max.:10ms (at nomi.vol.)
Release time[10)]	Typ.:4ms Max.:7ms
Ambient tenperature	-40℃ to 125℃
Vibration resistance[6)]	10Hz to 55Hz 3mm DA 55Hz to 500Hz 100m/s^2
Shock resistance[5)10)]	294m/s^2
Flammability[6)]	UL94-HB or better(meets FMVSS 302)

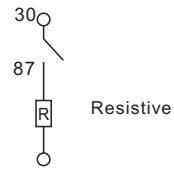
Termination	Qc[11)], PCB[7)]
Construction	Plastic sealed, Dust protected
Unit weight	Approx. 38g
Mechanical data[11)]	cover retention (pull&push):200N min terminal retention(pull&push):100N min terminal resistance to bending (front&side):10N min.[9)]

Notes: 1) For 70A type,measured when applying 100% rated votage on coil.
2) For 70A type,see"Load limit curv"for details.
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 paralleled with suppression circuit.
5) When energized,opening time of NO contacts shall not exceed 100μs.
6) FMVSS 302:Federal Motor Vehicle Safety Standard.
7) Since it is an environmental friendly product,please select lead-free solder when welding.The recommended soldering temperature and time is(250±3),(5±0.3)s.
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 0.3mm.
10) Only for the 12VDC coil voltage type.
11) Do NOT knock on relays with hard objects such as rubber rod and rubber hammer during mounting, which might lead to relay damage.

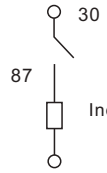
CONTACT DATA[4)]

Load voltage	Load type		Load current A	On/Off ratio On s	On/Off ratio Off s	Electrical endurance OPS	Contact material	Load wiring diagram[4)]	Ambient temp.
Standard 13.5VDC	Resistive	Make	70	2	2	1 x 10^5	$AgSnO_2$	see diagram 1	at 23℃
		Break	70						
	Inductive	Make[1)]	150	2	4	1 x 10^5	$AgSnO_2$	see diagram 2	See Ambient Temp. Curve
		Break	50						
	Lamp[2)]	Make	200	0.5	10	1 x 10^5	$AgSnO_2$	see diagram 3	
		Break	40						
Standard 27VDC	Resistive	Make	40	2	2	1 x 10^5	$AgSnO_2$	see diagram 1	at 23℃
		Break	40						

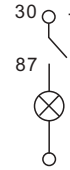
Notes: 1) Corresponds to the peak inrush current on intial actuation.
2) The load in the table excludes flasher.When applied in flasher,a special silver alloy($AgSnO_2$)contact material should be used used and the customer special code should be (170)as a suffix.Please heed the anode and cathode's request when wired, terminal 30 should connect with anode.
3) The load wiring diagrams are listed below:



Resistive
Diagram1



Inductive
Diagram2



Lamp
Diagram3

4) 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

at 23℃

	Rated Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	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℃
Standard	6	3.6	0.6	22.5	---	---	1.6	10	9
	6	3.6	0.6	22.5	180	20	1.8	9	9
	12	7.2	1.2	90	---	---	1.6	21	18
	12	7.2	1.2	90	680	79.5	1.8	18	18
	24	14.4	2.4	360	---	---	1.6	43	34
	24	14.4	2.4	360	2700	317.6	1.8	36	34
High power consumption	6	3.6	0.6	18	---	---	2.0	9	7
	6	3.6	0.6	18	180	16.4	2.2	9	7
	12	7.2	1.2	72	---	---	2.0	19	14
	12	7.2	1.2	72	680	65.1	2.2	18	14
	24	14.4	2.4	288	---	---	2.0	39	28
	24	14.4	2.4	288	2700	260.2	2.2	36	28

Notes: 1) Max.allowable overdrive voltage is stated with no load applied.

ORDERING INFORMATION

JTV7 / 012 - H 4 S P T M -R (L) (XXX)

Type	**JTV7:**QC **JTV7-P:**PCB
Coil voltage	006:6VDC 012:12VDC 024:24VDC
Contact arrangement	**H**: 1 From A
Version	**4**: Plastic Bracket **6**: Metal Bracket **Nil**: Dust protected
Construction[1]	**S**: Plastic sealed[2] **Nil**: Standard
Coil power	**P**: High power consumption **Nil**: Standard
Contact material	**T**: $AgSnO_2$
Length of terminal	**M**: Short terminal & QC type 14.5mm **Nil**: long terminal &QC type 17mm,or PCB type
Parallel coil components[3]	**R**: Parallel transient supression resistors **D**: Parallel transient supression diode,with anode connected to terminal#2 **D1**: Parallel transient supression diode,with anode connected to terminal#1 **Nill**: Without parallel components
Load type	**(L)**: Low load type 40A(Only for 12VDC and QC type) **Nil**: Standrad type 70A
Special code[4]	**XXX**: Customer special requirement **Nil**: Standrad

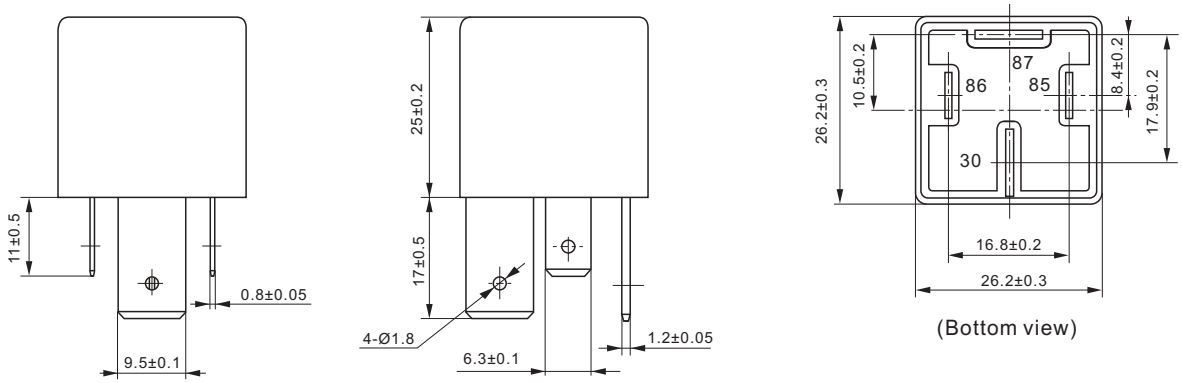
Notes: 1) Dust protected version is recommended.
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
3) If parallel diode,Zener Diode or other components are required,please contact Jintian for more technical supports.
4) The customer special requirement express as special code after evaluating by Jintian.

OUTLINE DIMENSIONS,WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

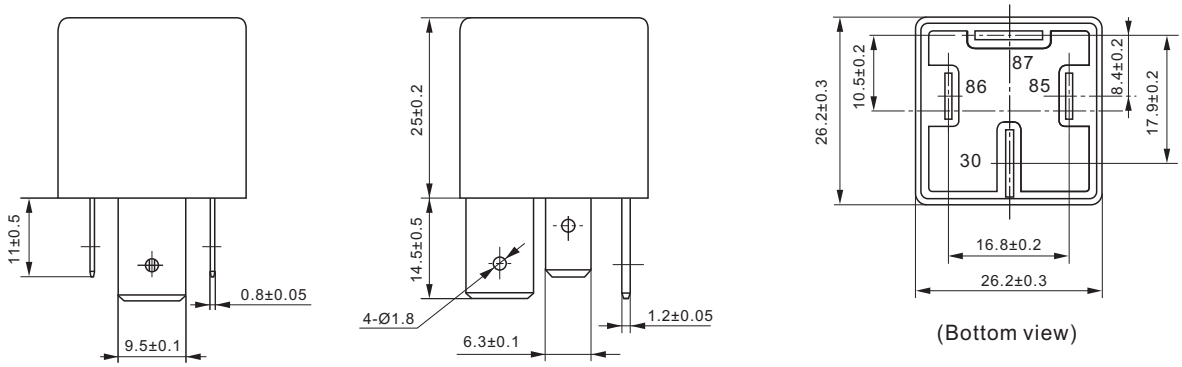
Outline Dimensions

JTV7/□□□-H□□□-□□(XXX)



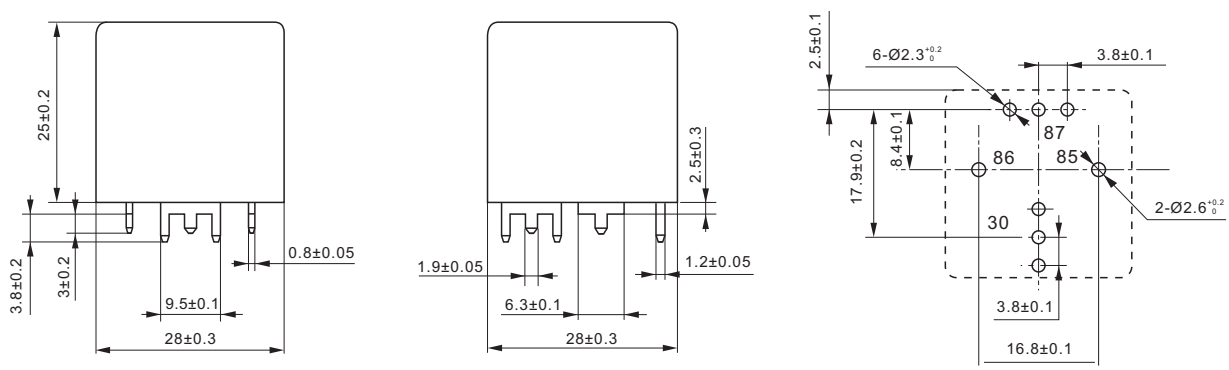
(Bottom view)

JTV7/□□□-H□□□M-□□(XXX)



(Bottom view)

JTV7-P/□□□-H□□□-□(XXX)



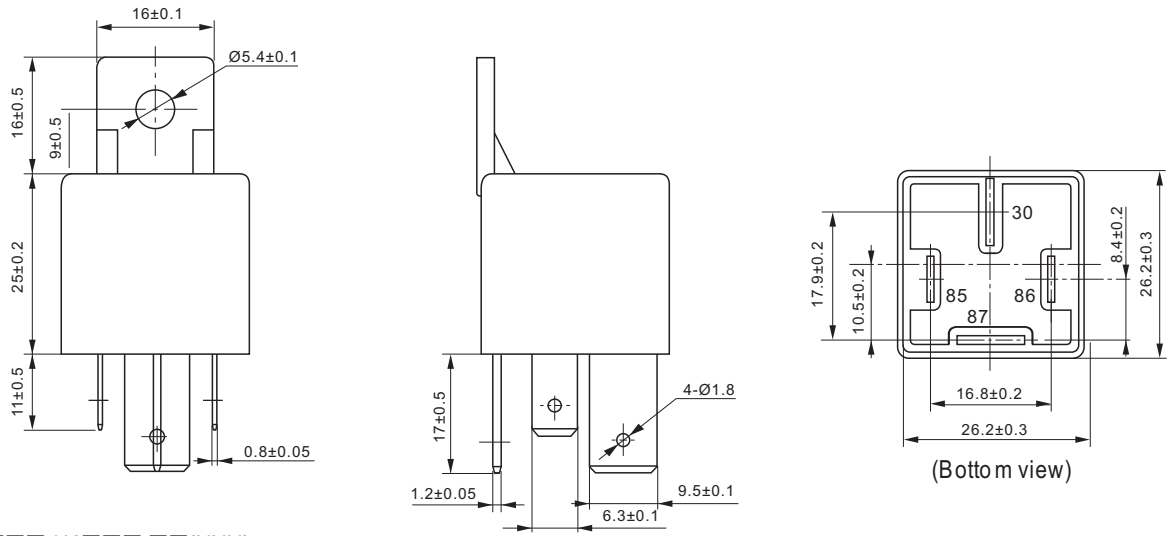
Layout(Bottom view)

OUTLINE DIMENSIONS,WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

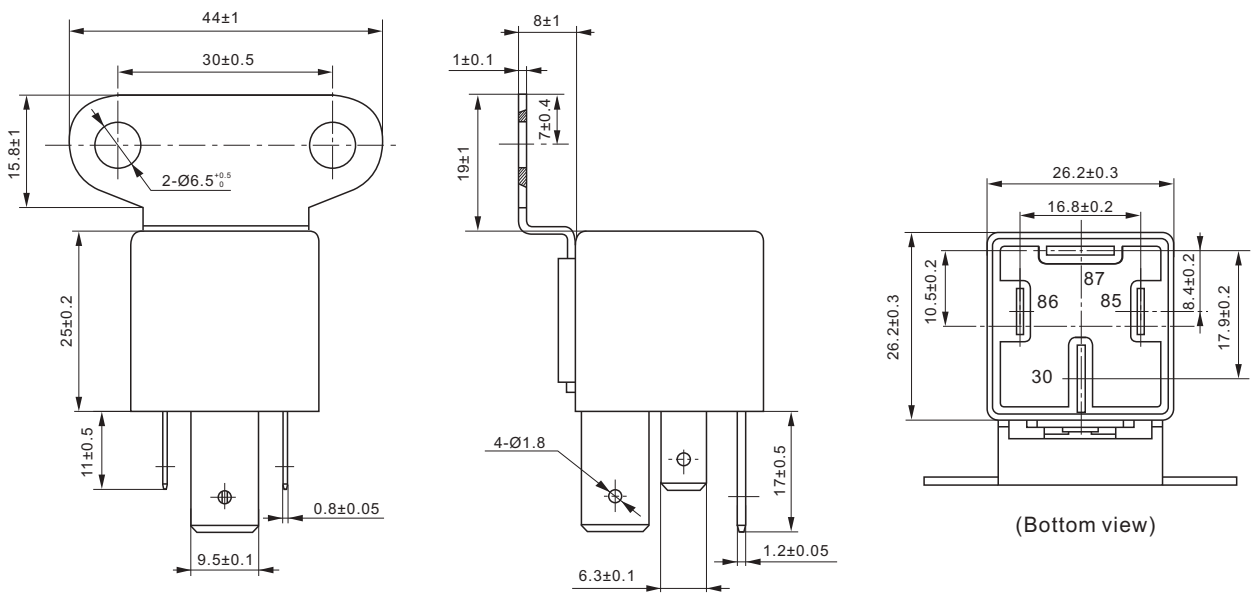
Outline Dimensions

JTV7/□□□-H4□□□-□□(XXX)



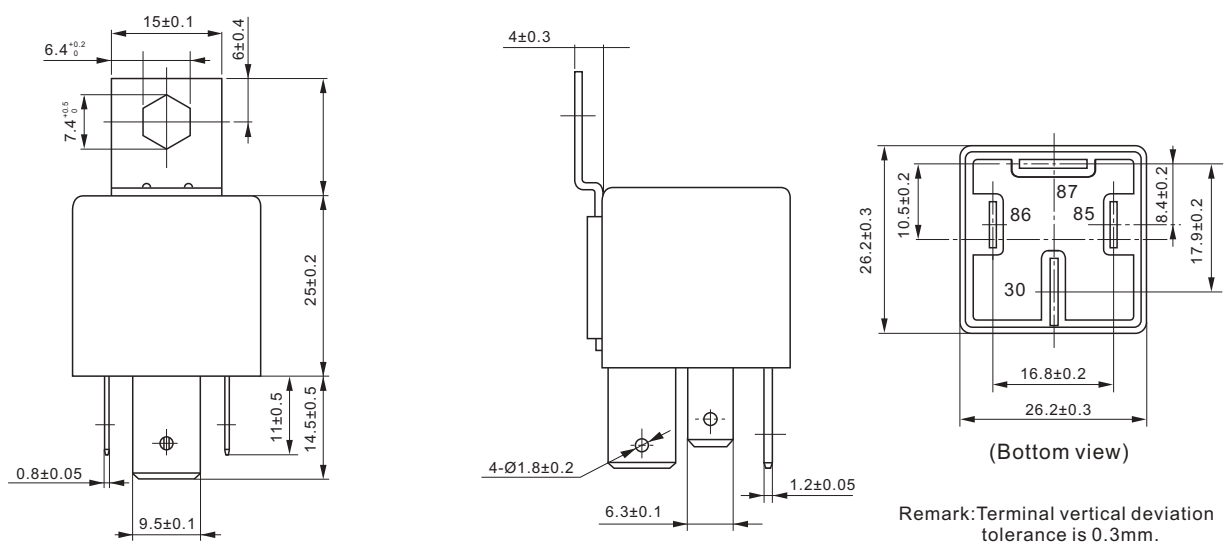
(Bottom view)

JTV7/□□□-H6□□□-□□(XXX)



(Bottom view)

JTV7/□□□-H6□□□M-□□(311)(XXX)



(Bottom view)

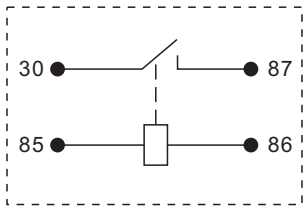
Remark:Terminal vertical deviation tolerance is 0.3mm.

WIRING DIAGRAM AND CHARACTERISTIC CURVES

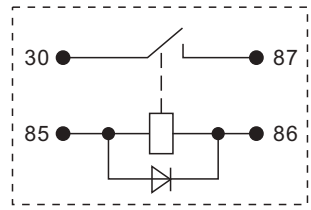
Unit: mm

Wiring Diagram

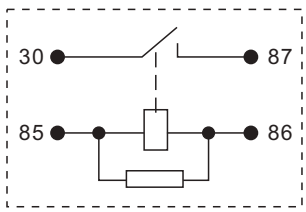
JTV7/□□□-H□□□□(XXX)



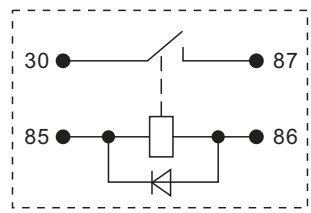
JTV7/□□□-H□□□□-D(XXX)



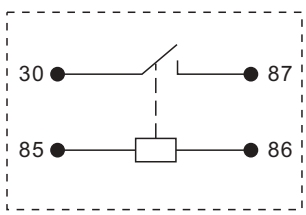
JTV7/□□□-H□□□□-R(XXX)



JTV7/□□□-H□□□□-D1(XXX)

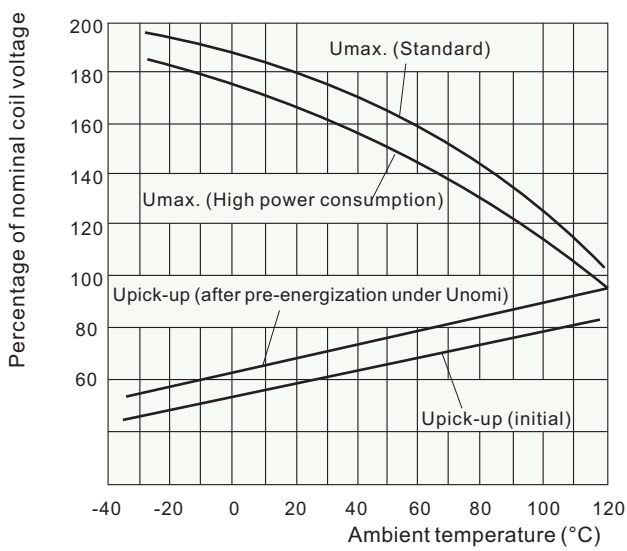


JTV7/□□□-H6□□□-□□(311)(XXX)



CHARACTERISTIC CURVES

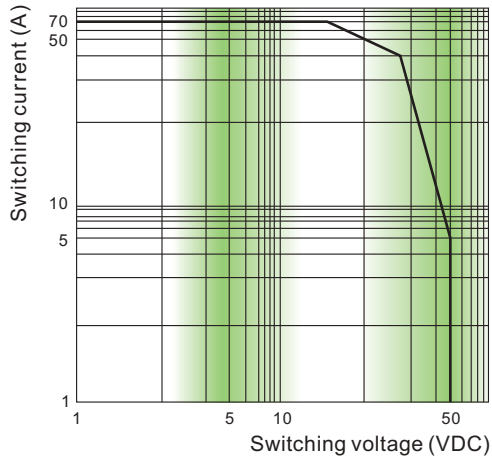
1.Coil operaying voltage range



1)There should be no contact load applied when maximum continuous operation voltage is applied on coil.
2)The operating voltage is connected with coilpre-energiced time and voltage.After pre-energized,the operating voltage will increase.
3) The maximum allowable coil temperature is 180℃. For 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.

CHARACTERISTIC CURVES

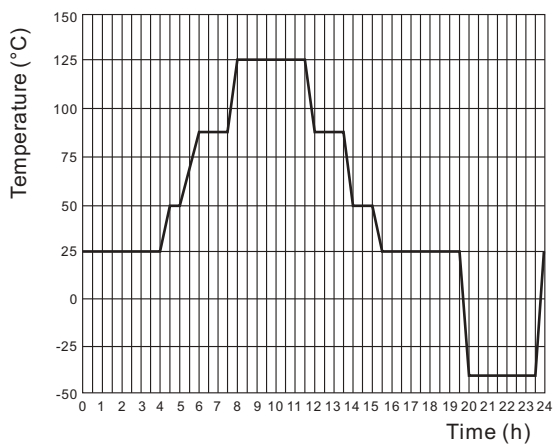
2.Load limit curve



1) The contact load is resistive.
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) This chart takes 70A load as example.

3.Ambient temperature curve of the electrical endurance test

Ambient temp. curve (one cycle)



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.