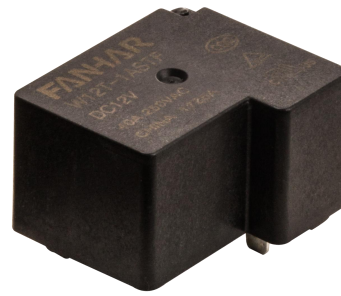


### Features

- 40A contact switching capability
- Breakdown voltage (between coil and contacts) :4KV
- We can provide the contact gap is 2.1mm , it meets the standard of VDE0126
- UL insulation system: Class F
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (31.6×27.2×18.8) mm
- Main application: Electric vehicles and charging piles、new energy and PV industry



**TV-10**  **US**

### CHARACTERISTICS

Specifications	Item		Standard	BG Type
Contact Data	Contact arrangement		1A	
	Contact resistance(initial)		≤100mΩ(6VDC 1A)	
	Contact material		AgSnO <sub>2</sub>	
Rated value	Rated load(Resistance load)		40A 250VAC 20A 30VDC	40A 250VAC 20A 48VDC
	Max.switching voltage		277VAC/30VDC	277VAC/48VDC
	Max.switching current		40A	
	Max.switching capacity		10000VA/600W	10000VA/960W
	Min.allowing load		5VDC 100mA	
Electrical performance	Insulation resistance(initial)		1000MΩ(500VDC)	
	Dielectric strength (initial)	Between open contacts	1500VAC,1min	2500VAC,1min
		Between coil&contacts	2500VAC(standard)/4000VAC,1min	
	Operate time		≤15ms	≤20ms
	Release time		≤10ms	≤15ms
Mechanical performance	Shock resistance	Functional	98m/s <sup>2</sup>	
		Destructive	980m/s <sup>2</sup>	
	Vibration resistance		10Hz~55Hz 1.5mm DA	
Endurance	Mechanical		5×10 <sup>6</sup> ops	
	Electrical	40A 250VAC 2×10 <sup>4</sup> ops(ON/OFF=1s/9s)	40A 250VAC 2×10 <sup>4</sup> ops (ON/OFF=1s/9s)	
		20A 30VDC 1×10 <sup>5</sup> ops (ON/OFF=1s/9s)	20A 48VDC 5×10 <sup>4</sup> ops (ON/OFF=1s/9s)	
Operate condition	Ambient temperature		-40℃~85℃	
	Humidity		5% to 90%	
Termination		PCB		
Unit weight		Approx.27g		
Construction		Plastic sealed,Flux proofed		

## COIL DATA(23°C)

### Standard Type

Nominal Voltage	Pick-up Voltage VDC	Drop-out Voltage VDC	Rated Current (±10%)	Coil Resistance (±10%)	Nominal Power	Max Voltage
DC 5V	≤3.75	≥0.25	180mA	27.8Ω	900 mW	DC 6.5V
DC 6V	≤4.50	≥0.30	150mA	40Ω		DC 7.8V
DC 9V	≤6.75	≥0.45	100mA	90Ω		DC 11.7V
DC 12V	≤9.00	≥0.60	75mA	160Ω		DC 15.6V
DC 15V	≤11.25	≥0.75	60mA	250Ω		DC 19.5V
DC 18V	≤13.50	≥0.90	50mA	360Ω		DC 23.4V
DC 24V	≤18.00	≥1.20	37.5mA	640Ω		DC 31.2V
DC 36V	≤27.00	≥1.80	25mA	1440Ω		DC 46.8V
DC 48V	≤36.00	≥2.40	18.75mA	2560Ω		DC 62.4V
DC 110V	≤82.50	≥5.50	8.19mA	13444.5Ω		DC 143V

### BG Type

Nominal Voltage	Pick-up Voltage VDC	Drop-out Voltage VDC	Rated Current (±10%)	Coil Resistance (±10%)	Nominal Power	Max Voltage
DC 5V	≤3.75	≥0.25	280mA	18Ω	1400 mW	DC 6.5V
DC 6V	≤4.50	≥0.30	233mA	26Ω		DC 7.8V
DC 9V	≤6.75	≥0.45	156mA	58Ω		DC 11.7V
DC 12V	≤9.00	≥0.60	116.7mA	103Ω		DC 15.6V
DC 15V	≤11.25	≥0.75	93.3mA	161Ω		DC 19.5V
DC 18V	≤13.50	≥0.90	77.3mA	231Ω		DC 23.4V
DC 24V	≤18.00	≥1.20	58.3mA	411Ω		DC 31.2V
DC 36V	≤27.00	≥1.80	38.9mA	926Ω		DC 46.8V
DC 48V	≤36.00	≥2.40	29.2mA	1646Ω		DC 62.4V
DC 110V	≤82.50	≥5.50	12.7mA	8663Ω		DC 143V

## ORDERING INFORMATION

W12T -BG -1A S T F -XXX DC12V

- ① Type
- ② Contact gap: Nil=Standard、BG=2.1mm contact gap
- ③ Contact arrangement: 1A=1 open contacts
- ④ Construction(1): Nil=Flux proofed, S=Plastic sealed
- ⑤ Contact material: T=AgSnO<sub>2</sub>
- ⑥ insulation system: F=Grade F
- ⑦ Customer special code: numbers or letters denote customer's requirements
- ⑧ Coil specification: DC5/6/9/12/15/18/24/36/48/110V

(1) When used in clean environment(excluding H<sub>2</sub>S、SO<sub>2</sub>、NO<sub>2</sub>、dust and other pollutants), it is recommended to choose the Flux proofed type;When used in unclean environment(contain H<sub>2</sub>S、SO<sub>2</sub>、NO<sub>2</sub>、dust and other pollutants), it is recommended to choose the Plastic sealed.

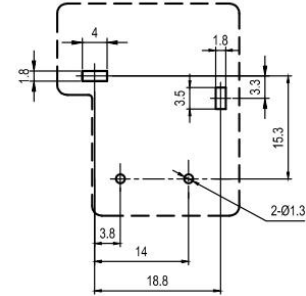
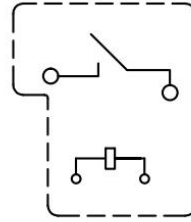
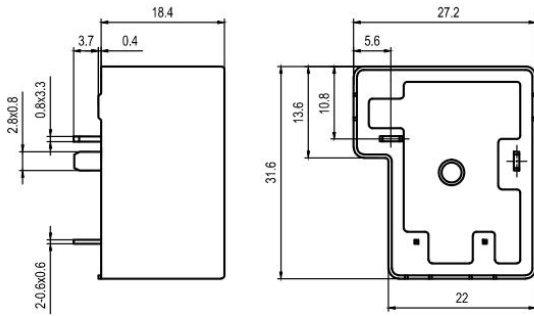
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT (Unit: mm)

1A

Outline Dimensions

Wiring Diagram  
(Bottom view)

PCB Layout  
(Bottom view)



Remark: (1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $< 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $\geq 5\text{mm}$ , tolerance should be  $\pm 0.5\text{mm}$ .

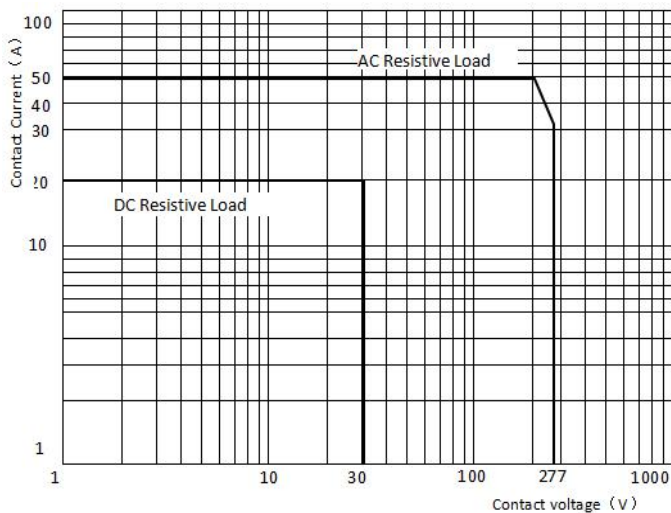
(2) The tolerance without indicating for PCB layout is always  $\pm 0.1\text{mm}$ .

## SAFETY APPROVAL RATINGS

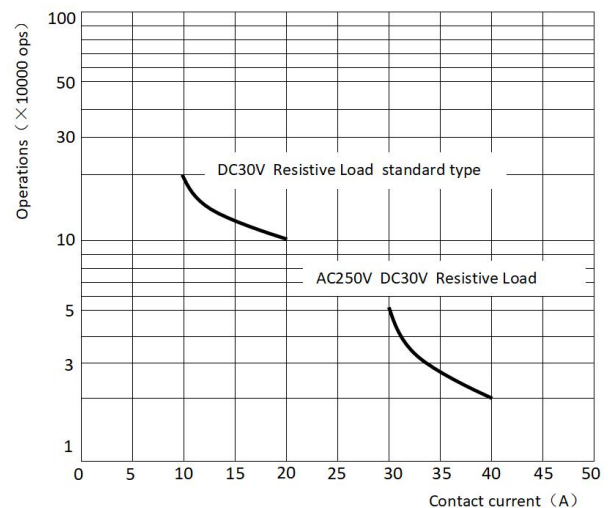
Approval	File No.	Contact arrangement	Contact material	Approved ratings		
UL/C-UL	E475405	1A(NO)	AgSnO <sub>2</sub>	20A	30VDC	85°C
				40A	250/125 VAC	85°C
				2HP	250VAC	85°C
				20A	250/125VAC(PF=0.6)	85°C
TUV	R 50338930	1A(NO)	AgSnO <sub>2</sub>	TV-10	125VAC	85°C
				20A	48VDC	85°C
CQC	CQC16002140939	1A(NO)	AgSnO <sub>2</sub>	40A	250VAC	85°C
				20A	30VDC	85°C

## PERFORMANCE CURVES

MAXIMUM SWITCHING POWER



ENDURANCE CURVE



## ■ NOTICE

- ① In order to maintain the initial performance parameters of the relay, please be careful not to drop the product;
- ② The specification is for reference only.Specifications subject to change without notice.