HF167F-200 SOLAR REALY

File No.：E133481

File No.：R50374273

Features

- 200A current carrying capacity
- Applicable to inverter used for photovoltaic power generation systems
- contact gap（Main contact）：4mm
- A set of auxiliary contacts is optional: Detection of main contact welding makes it possible to construct a safety circuit
- Low coil holding voltage contributes to saving energy of equipment
- insulation system: Class F

RoHS compliant

CONTACT DATA

Contact arrangement	1A(Main contact)+1B(Auxiliary contact)
Contact resistance (initial)[1]	Main contact: 1mΩ max.（6Vd.c. 20A） Auxiliary contact: 100mΩ max.(6Vd.c. 1A)
Contact materail	Main contact: $AgSnO_2$ Auxiliary contact: AgNi
Contact rating (resistance)	Main contact: Making 55A,carrying 200A,breaking 55A,830VAC Auxiliary contact: 1A 12VDC
Max. switching voltage	Main contact: 830VAC Auxiliary contact: 12VDC
Max. switching current	Main contact: 55A Auxiliary contact: 1A
Max. switching power	Main contact: 45650VA Auxiliary contact: 12W
Min. switching load[2] (Auxiliary contact)	NC:100mA 12VDC NC(Gold plated):10mA 12VDC
Mechanical endurance[3]	H:1×10⁶ ops; HB：3×10⁵ ops
Electrical endurance	Main contact：≥3×10⁴ ops (85℃,1s on 9s off,Making 55A,carrying 200A,breaking 55A,830VAC, Resistive load,Open the vent) Auxiliary contact：≥3×10⁴ ops （85℃,1s on 9s off,1A,12VDC, Resistive load）

Notes: 1) The data shown above are initial values.
2) Min. contact load is just a reference value in normal temperature, normal humidity, normal pressure environment and with relay pin up, which will vary depending on the power-on and off frequency, environmental conditions, expected lifespan, and installation direction. Thus, please have confirmation tests with actual load before use. And it is recommended to avoid using the relay when the temperature is below 0°C.
3) No loading test, no mechanical damage after the test.

CHARACTERISTICS

Insulation resistance		1000 MΩ (500VDC)
Dielectric strength	Between open main contacts	2000VAC 1min
	Between coil & main contact	5000VAC 1min
	Between auxiliary contact & main contact	5000VAC 1min
	Between coil & auxiliary contact	1000VAC 1min
Surge Voltage (Between coil & main contact)		10kV(1.2/50μs)
Operate time (at nomi. volt.)		30ms max.
Release time (at nomi. volt.)		10ms max.
Temperature rise		70K max. (Contact load current 200A,Rated voltage is reduced to holding voltage after 100ms of excitation , at 85℃)
Shock resistance	Functional	Main contact: 98m/s²
	Destructive	Main contact: 980m/s²
Vibration resistance		Main contact：10Hz to 55Hz 1.0mm DA
Humidity		5 % to 85 % RH
Ambient temperature		-40℃ to 85℃ (Apply holding voltage to coil)
Termination		PCB
Unit weight		Approx. 215g
Construction		Flux proofed ;Plastic sealed

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

COIL DATA 23℃

Coil power	Approx. 3W
Holding voltage	40% to 100%Un(at 25℃) 50% to 60%Un(at 85℃)

Notes: 1) The coil holding voltage is the voltage applied to coil 100ms after the rated voltage.
2) To avoid overheating and burning, the coil can not be consistently applied to with voltage larger than maximum holding voltage.

COIL

H:

Nominal Voltage VDC	Pick-up Voltage VDC max.[1]	Drop-out Voltage VDC min.[1]	Max. Voltage VDC[2]	Coil Resistance Ω
6	4.2	0.6	7.2	12×(1±10%)
9	6.3	0.9	10.8	27×(1±10%)
12	8.4	1.2	14.4	48×(1±10%)
24	16.8	2.4	28.8	192×(1±10%)

HB:

Nominal Voltage VDC	Pick-up Voltage VDC max.[1]	Drop-out Voltage VDC min.[1]	Max. Voltage VDC[2]	Coil Resistance Ω
6	4.5	0.6	7.2	12×(1±10%)
9	6.75	0.9	10.8	27×(1±10%)
12	9	1.2	14.4	48×(1±10%)
24	18	2.4	28.8	192×(1±10%)

Notes: 1) The data shown above are initial values.
2) Maximun voltage refers to the maximun voltage which relay coil could endure in a short period of time.

SAFETY APPROVAL RATINGS

UL/CUL	Main contact：Making 55A,carrying 200A, breaking 55A,830VAC,Resistive,85℃ Auxiliary contact：1A 12VDC at 85℃ Resistive
TUV	Main contact：Making 55A,carrying 200A,breaking 55A,830VAC,Resistive,85℃ Auxiliary contact：1A 12VDC at 85℃ Resistive

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

ORDERING INFORMATION

HF167F-200/ 12 -H B S T F（XXX）

Type	
Coil voltage	6,9,12,24VDC
Main contact arrangement	**H:** 1 Form A
Auxiliary contact arrangement	**B**：1 Form B (Only plastic sealed type can selection） **Nil**：Without auxiliary contact
Construction	**S**：Plastic sealed **Nil**：Flux proofed
Main contact material	**T**：$AgSnO_2$ **3**：AgNi（Only flux proofed type can selection）
Insulation standard	**F**：Class F
Special code	**XXX**：Customer special requirement **Nil**：Standard **991**：Auxiliary contact gold plated **239**：Plastic sealed structure with opened vent hole

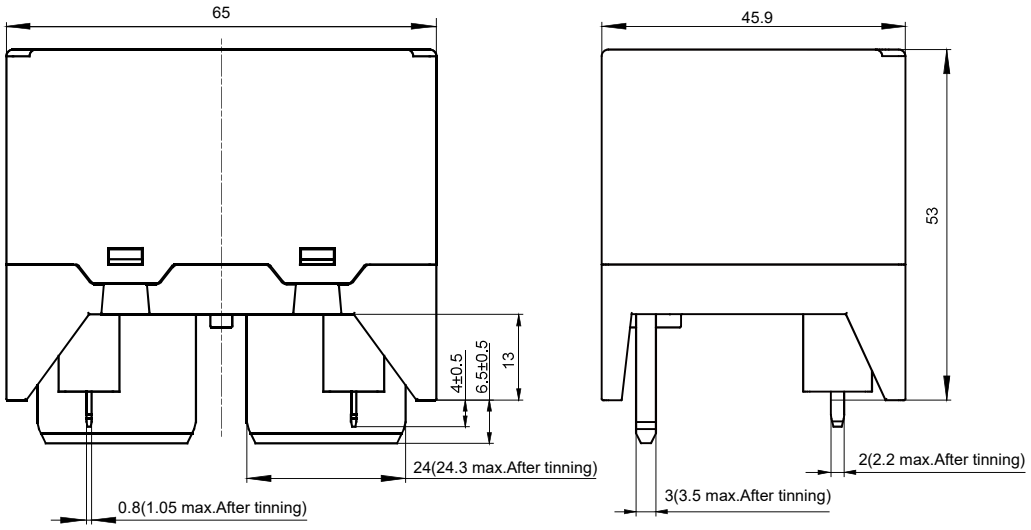
Notes: 1) Please avoid using the relay in an environment containing organic silicon,otherwise the entry of organic silicon into the relay may acceleration contact failure.If there are harmful substances and elements such as water vapor,H_2S,SO_2,NO_2,Cl,P,dust,etc.， as well as unknown harmful substances and elements,In the use of environmental gases,it may lead to increased contact resistance and poor contact during the use of relays.In the above situations,please control the materials that produce harmful substances and elements or use plastic sealed type， and arrange relevant tests to confirm that it meet the requirements for actual use.
2) Water clearing or surface process is not suggested after the flux-proofed relays are assembled on PCB.
3) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions

Flux proofed
H:



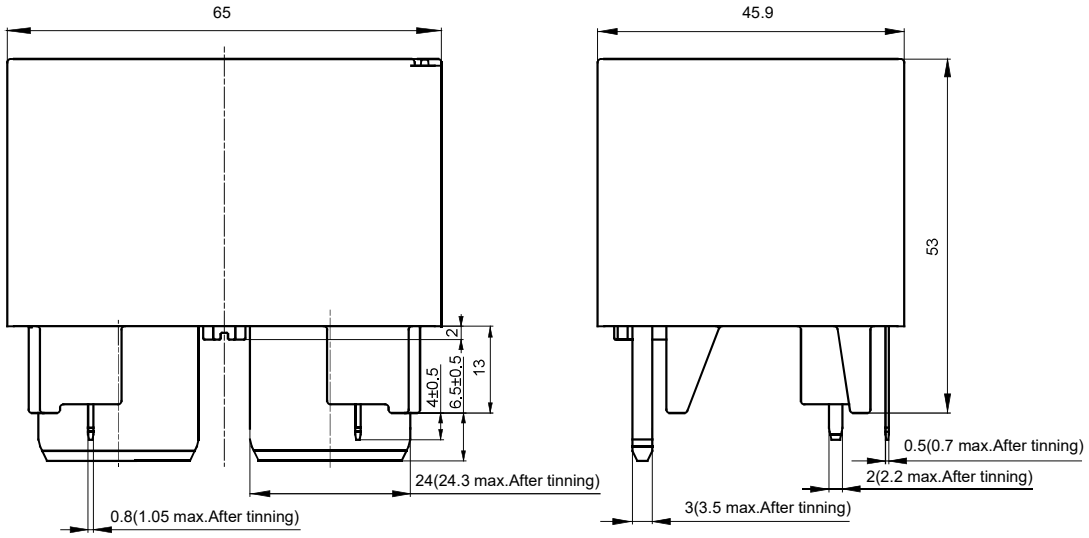
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

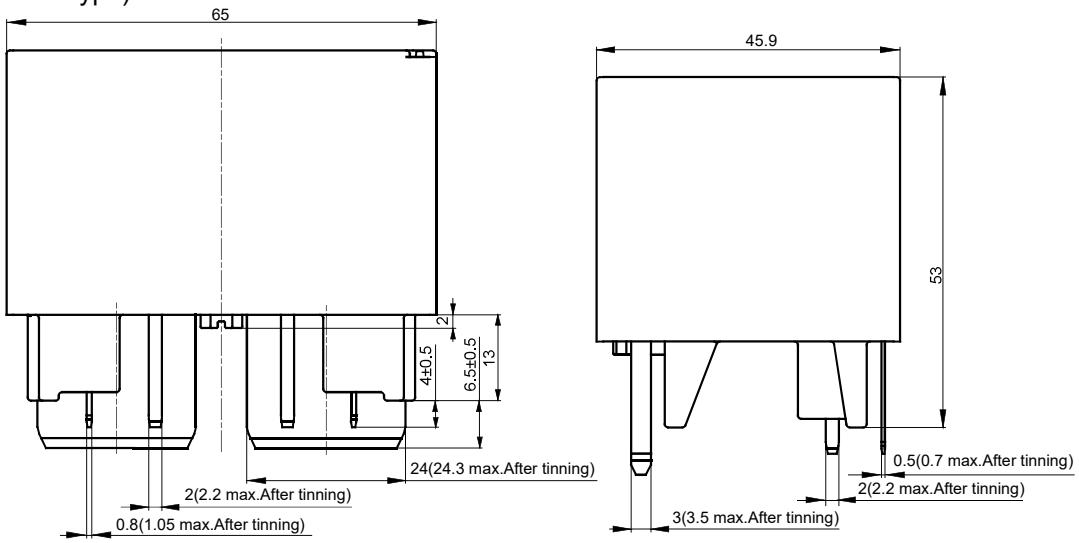
Outline Dimensions

Plastic sealed

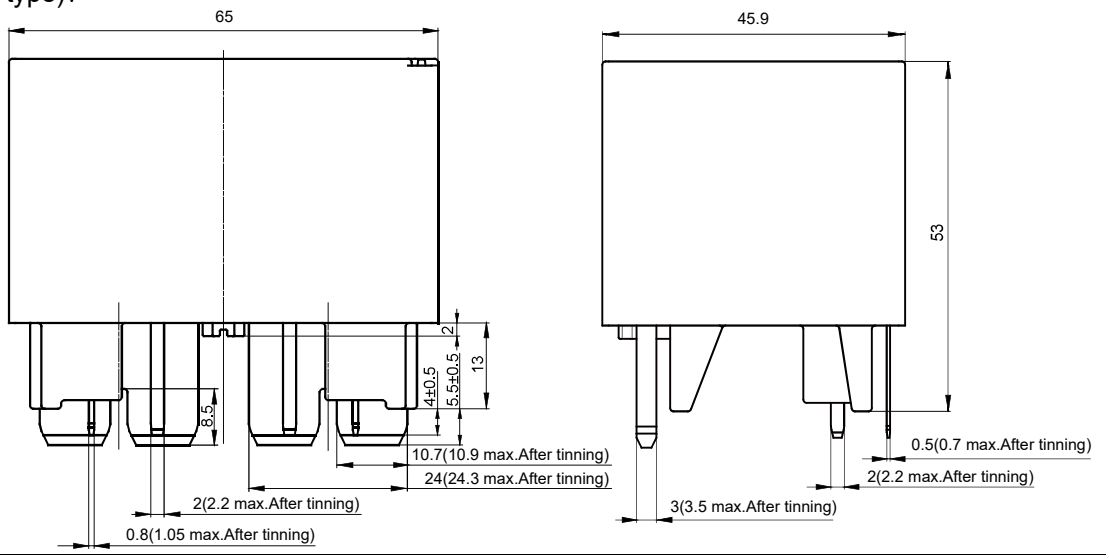
H:



HB(Standard type):



HB(717 type):

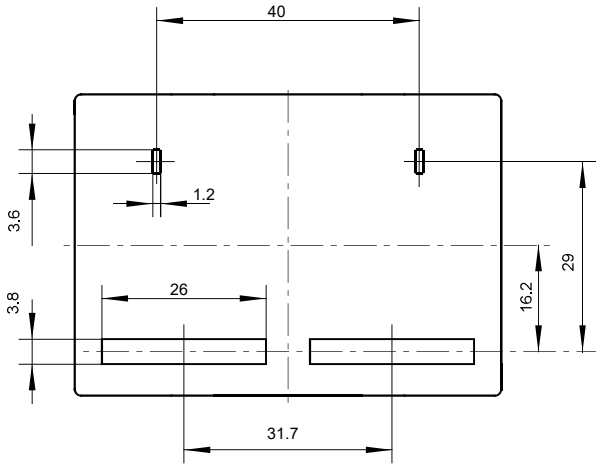


OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

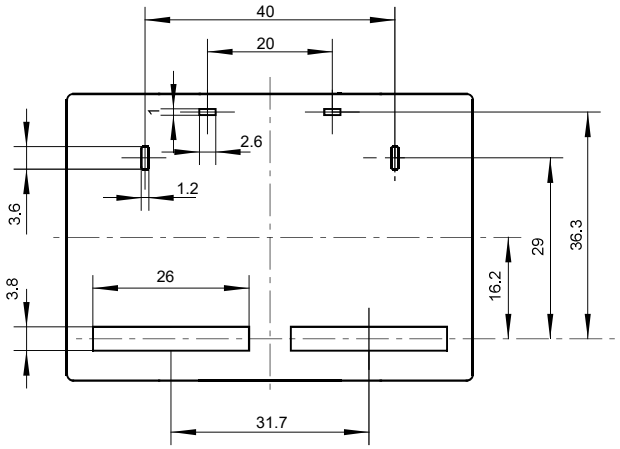
Unit: mm

PCB Layout (Bottom view)

H：

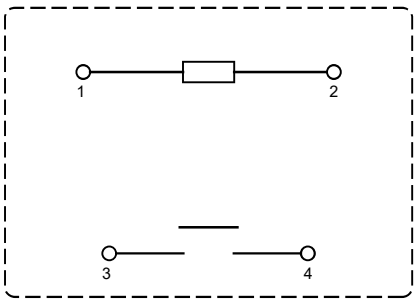


HB：

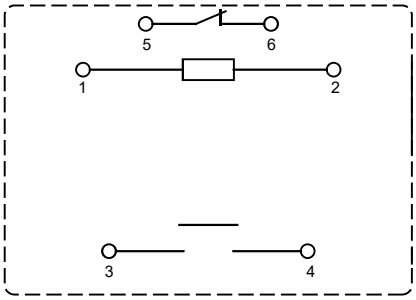


Wiring Diagram (Bottom view)

H：



HB：



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.

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 Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.