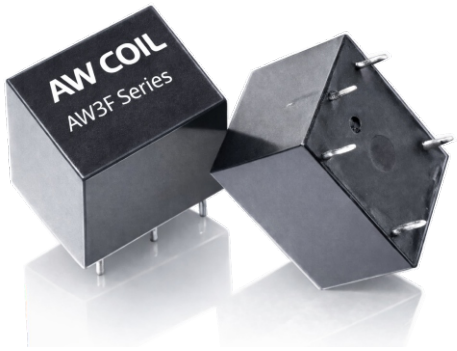
AW COIL
Advanced Wire Coil Technology LLC

Super Miniature Power Relay

AW3F



Key Features

- Up to15A switching capability(Resistive Load)
- Compact footprint with standard PCB terminals
- Flux-proof(SS) and Plastic sealed(SH) constructions available
- UL insulation system: Class F available
- Suitable for power supply, inverter, and industrial Control applications

Safety Certification

UL, TUV, CQC, VDE

Applications

Example	Power Supplies, Inverters, Motor Drives, Industrial Control, Smart Appliances

Contact Parameter

Contact Form		1A/ 1C/ 1B
Contact Resistance(1)		≤100mΩ (1A 6VDC)
Contact Material		Silver Alloy
Contact Rating (Res. Load)	10A 250VAC	NO: 10A 250VAC/ 28VDC NO/ NC: 7A/ 3A 250VAC
Max. Switching Voltage		277VAC/ 30VDC
Max. Switching Current	15A	10A
Max. Switching Power		2770VA/ 300W
Mechanical Endurance		1×10^7 OPS
Electrical Endurance		1×10^5 OPS (10A 250VAC, Resistive Load, Room Temp., 1S ON 9S OFF)

Note: (1) The above values are initial values;

Performance Parameter

Insulation Resistance		100MΩ (500VDC)
Dielectric Strength	Between Coil and Contacts	1500VAC 1min
	Between Open Contacts	750VAC 1min
Operating Time (at Rated Voltage)		≤10ms
Release Time (at Rated Voltage)		≤5ms
Shock Resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration Resistance		10Hz~ 55Hz 1.5mm Double Amplitude
Humidity		5%~ 85% RH
Ambient Operating Temperature		−40℃~ 105℃
Termination		PCB
Unit Weight		Approx. 10g
Construction		Plastic Sealed, Flux Proofed

Note:
(1) For the test of plastic sealed products, the porosity on the shell should be opened;
(2) The above values are initial values;
(3) The temperature rise of the coil is detailed in the performance curve diagram;
(4) UL Insulation System: Class F, Class B.

Coil Parameter

Rated Coil Power	High Power Type: 0.45W; Normal Form: 0.36W

Coil Specifications @ 23℃ (ambient)

High Power Type

Rated Voltage VDC	Operating Voltage VDC	Release Voltage VDC	Maximum Voltage VDC	Coil Resistance Ω
3	≤2.25	≥0.15	3.9	20×(1±10%)
5	≤3.75	≥0.25	6.5	56×(1±10%)
6	≤4.50	≥0.30	7.8	80×(1±10%)
9	≤6.75	≥0.45	11.7	180×(1±10%)
12	≤9.00	≥0.60	15.6	320×(1±10%)
18	≤13.50	≥0.90	23.4	720×(1±10%)
24	≤18.00	≥1.20	31.2	1280×(1±10%)
48	≤36.00	≥2.40	62.4	5120×(1±10%)

Normal Form

Rated Voltage VDC	Operating Voltage VDC	Release Voltage VDC	Maximum Voltage VDC	Coil Resistance Ω
3	≤2.25	≥0.15	3.9	25×(1±10%)
5	≤3.75	≥0.25	6.5	69×(1±10%)
6	≤4.50	≥0.30	7.8	100×(1±10%)
9	≤6.75	≥0.45	11.7	225×(1±10%)
12	≤9.00	≥0.60	15.6	400×(1±10%)
18	≤13.50	≥0.90	23.4	900×(1±10%)
24	≤18.00	≥1.20	31.2	1600×(1±10%)
48	≤36.00	≥2.40	62.4	6400×(1±10%)

Note: (1) The above values are initial values;
(2) The maximum voltage refers to the maximum voltage value that the relay coil can withstand in a short time.

Safety Certification

Safety Standard	File NO.
UL	E341498
TUV	R 50197243
CQC	CQC11002056154
VDE	40060451

Note:
(1) For loads whose temperature is not indicated in the table, the ambient temperature is room temperature;
(2) The detailed test conditions of each load are different, so the electrical durability times are not the same. If you need details, please contact us.

Ordering Information

AW3F -SS -1 12 D M F -XX

Type	
Construction	SS-Flux proofed, SH-Plastic sealed
Number of Contact Groups	1-A Set of Contacts
Coil Voltage	03, 05, 06, 09, 12, 18, 24, 48 VDC
Contact Power	D-0.36W, H-0.45W
Contact Form	M-Form A, B-Form B, Nil-Form C
Insulation Class	F-Class F, Nil-Class B
Customized Code	Nil-Standard Type, XXX-Customer Special Requirement

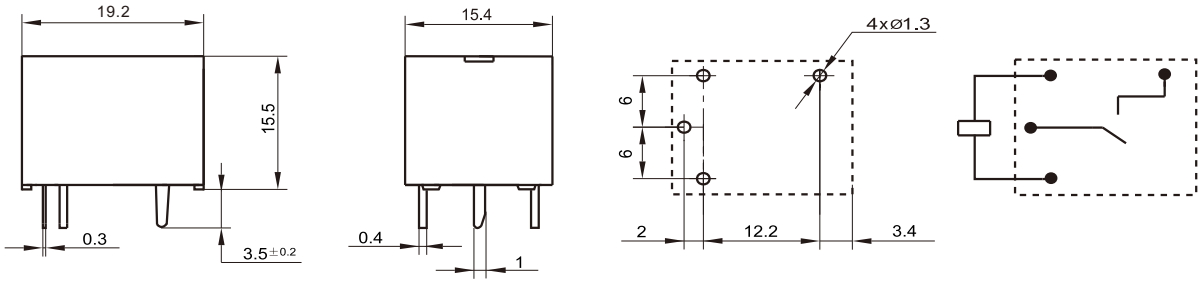
Note:
(1) When used in a clean environment (without H_2S, So_2, No_2, dust and other pollutants), it is recommended to use flux proofed type; When used in a polluted environment (containing a certain amount of H_2S, So_2, No_2, dust and other pollutants), it is recommended to use plastic sealed type, and please confirm in actual use;
(2) When the relay is loaded into the PCB board and welded, if it is necessary to conduct overall cleaning or surface treatment, please contact our company to agree on suitable welding conditions and suitable product specifications;
(3) After the special requirements of customers are reviewed by our company, they are identified in the form of Customized Code.

Outline Dimensions, Wiring Diagram and PCB Board Layout

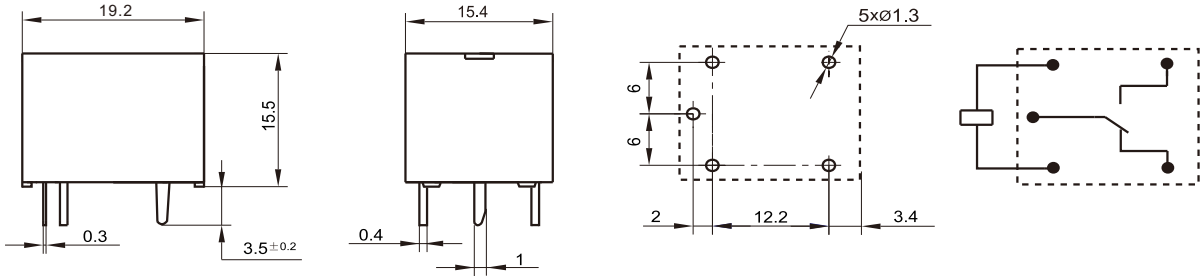
Unit: mm

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

AW3F-□-1□□M
1 Form A



AW3F-□-1□H/AW3F-□-1□D
1 Form C

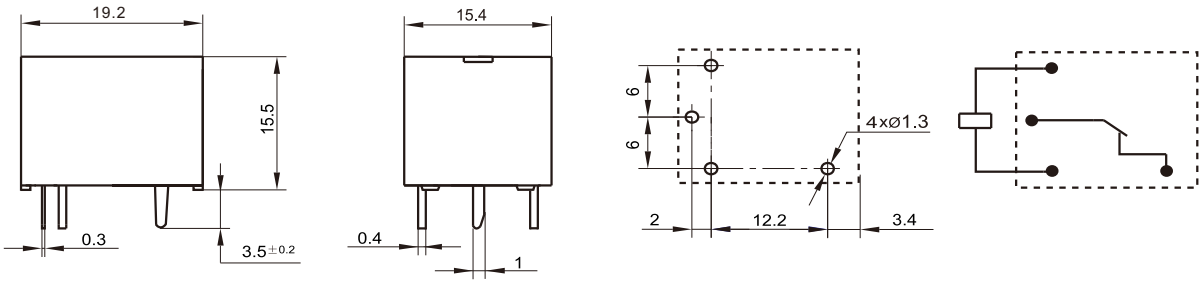


Note: (1) The pin marking size of the product outline diagram is the tin stick (it will be larger after tin), and the installation dead size is the design size of the recommended PCB hole. The specific PCB hole design size can be mapped and adjusted according to the actual product;
(2) No dimensional tolerance is noted in the outline size of the product part, when the outline size is less than 1mm, the tolerance is ±0.2mm; When the overall size is between 1~5mm, the tolerance is ±0.3mm; When overall dimension>5mm, the tolerance is ±0.4mm;
(3) The size tolerance of the mounting hole is ±0.1mm.

Outline Dimensions, Wiring Diagram and PCB Board Layout

Unit: mm

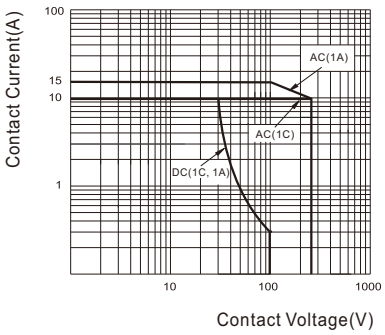
AW3F-□-1□□B
1 Form B



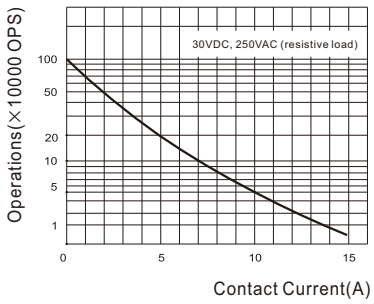
Note: (1) The pin marking size of the product outline diagram is the tin stick (it will be larger after tin), and the installation dead size is the design size of the recommended PCB hole. The specific PCB hole design size can be mapped and adjusted according to the actual product;
(2) No dimensional tolerance is noted in the outline size of the product part, when the outline size is less than 1mm, the tolerance is ±0.2mm; When the overall size is between 1~5mm, the tolerance is ±0.3mm; When overall dimension>5mm, the tolerance is ±0.4mm;
(3) The size tolerance of the mounting hole is ±0.1mm.

Performance Curve

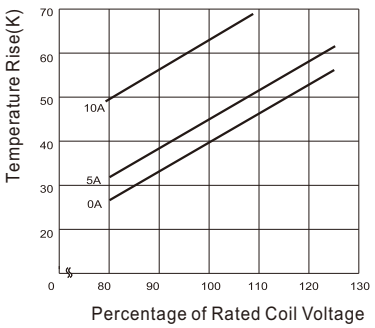
Maximum Switching Power



Endurance Curve



Coil Temperature Rise



Statement:

This product specification is for the customer's reference only, which does not clearly specify the requirements of the conditions, see "Terms and Guides" to know details. Subject to change without prior notice. For Yuanze, it is not possible to assess all the performance parameters of the relay in each specific application field, so customers should choose the product that matches it according to the specific conditions of use, if in doubt, please contact Yuanze for more technical support. However, the product selection responsibility is solely the customer's responsibility.

Relay Ordering Data

Coil Characteristics - PCB Terminals							
Rated Voltage (VDC)	Coil Resistance (Ω ±10%)	Rated Current (mA)	Operate Voltage	Release Voltage	Permissible Voltage	Coil Power (W)	Order Number
5	69.4	72	75% MAX of rated voltage	5% MIN of rated voltage	130% MAX of rated voltage	0.36	AW3F-SS-105DM AW3F-SH-105DM AW3F-SS-105DB AW3F-SH-105DB AW3F-SS-105D AW3F-SH-105D
6	100	60					AW3F-SS-106DM AW3F-SH-106DM AW3F-SS-106DB AW3F-SH-106DB AW3F-SS-106D AW3F-SH-106D
9	225	40					AW3F-SS-109DM AW3F-SH-109DM AW3F-SS-109DB AW3F-SH-109DB AW3F-SS-109D AW3F-SH-109D
12	400	30					AW3F-SS-112DM AW3F-SH-112DM AW3F-SS-112DB AW3F-SH-112DB AW3F-SS-112D AW3F-SH-112D
15	625	24					AW3F-SS-115DM AW3F-SH-115DM AW3F-SS-115DB AW3F-SH-115DB AW3F-SS-115D AW3F-SH-115D
18	900	20					AW3F-SS-118DM AW3F-SH-118DM AW3F-SS-118DB AW3F-SH-118DB AW3F-SS-118D AW3F-SH-118D
24	1600	15					AW3F-SS-124DM AW3F-SH-124DM AW3F-SS-124DB AW3F-SH-124DB AW3F-SS-124D AW3F-SH-124D
36	3600	10					AW3F-SS-136DM AW3F-SH-136DM AW3F-SS-136DB AW3F-SH-136DB AW3F-SS-136D AW3F-SH-136D
48	6400	7.5					AW3F-SS-148DM AW3F-SH-148DM AW3F-SS-148DB AW3F-SH-148DB AW3F-SS-148D AW3F-SH-148D

Relay Ordering Data

Coil Characteristics - PCB Terminals							
Rated Voltage (VDC)	Coil Resistance (Ω ±10%)	Rated Current (mA)	Operate Voltage	Release Voltage	Permissible Voltage	Coil Power (W)	Order Number
5	55.6	90	75% MAX of rated voltage	5% MIN of rated voltage	130% MAX of rated voltage	0.45	AW3F-SS-105HM AW3F-SH-105HM AW3F-SS-105HB AW3F-SH-105HB AW3F-SS-105H AW3F-SH-105H
6	80	75					AW3F-SS-106HM AW3F-SH-106HM AW3F-SS-106HB AW3F-SH-106HB AW3F-SS-106H AW3F-SH-106H
9	180	50					AW3F-SS-109HM AW3F-SH-109HM AW3F-SS-109HB AW3F-SH-109HB AW3F-SS-109H AW3F-SH-109H
12	320	37.5					AW3F-SS-112HM AW3F-SH-112HM AW3F-SS-112HB AW3F-SH-112HB AW3F-SS-112H AW3F-SH-112H
15	500	30					AW3F-SS-115HM AW3F-SH-115HM AW3F-SS-115HB AW3F-SH-115HB AW3F-SS-115H AW3F-SH-115H
18	720	25					AW3F-SS-118HM AW3F-SH-118HM AW3F-SS-118HB AW3F-SH-118HB AW3F-SS-118H AW3F-SH-118H
24	1280	18.75					AW3F-SS-124HM AW3F-SH-124HM AW3F-SS-124HB AW3F-SH-124HB AW3F-SS-124H AW3F-SH-124H
36	2880	12.5					AW3F-SS-136HM AW3F-SH-136HM AW3F-SS-136HB AW3F-SH-136HB AW3F-SS-136H AW3F-SH-136H
48	5120	11.25					AW3F-SS-148HM AW3F-SH-148HM AW3F-SS-148HB AW3F-SH-148HB AW3F-SS-148H AW3F-SH-148H

Cross Reference

Omron: G5SB
TE: PCH
Panasonic: JQ
Fujitsu: JY
AZ:
HongFa: HF33F
SongChuan: 892
Zettler: AZ943

Notes

Cross references are for form-factor and rating comparison only.