

CHUROD ELECTRONICS



Relays for lighting and controls 2022

CHUROD ELECTRONICS



Monostable relays

FEATURES

- Outline dimension (18.2mm×10.2mm×14.9mm)
- 1 Form A (SPST) contact arrangement
- Designed to meet cULus,TUV,CQC requirements
- 4,000VAC dielectric strength between coil and contact
- Sensitive and standard coils available
- RoHS compliance
- REACH SvHC compliance
- Halogen-Free type available Glow
- Glow wire type

APPLICATION

Industrial Control Appliances

COIL PARAMETER

Coil voltage	3-48VDC	
Coil power	A1-LA/IA	200mW
	A1-DA/HA	450mW

COIL DATA @23°C

A1-LA/IA/IA2/IA2F(200mW). Sensitive				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
3	66.7	45	2.25	0.15
5	40.0	125	3.75	0.25
6	33.3	180	4.50	0.30
9	22.5	400	6.75	0.45
12	16.7	720	9.00	0.60
18	11.1	1,620	13.50	0.90
24	8.6	2,880	18.00	1.20

A1-DA/HA/HA2/HA2F(450mW). Standard				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
3	150.0	20	2.25	0.15
5	90.9	55	3.75	0.25
6	75.0	80	4.50	0.30
9	50.0	180	6.75	0.45
12	37.5	320	9.00	0.60
18	25.0	720	15.5	0.90
24	18.0	1,280	18.00	1.20
48	9.4	5,100	36.00	2.40



File NO. E341422



File NO. R50174892



File NO. CQC10002043606

CONTACT DATA

Contact arrangement	1 Form A (SPST)	
Contact material	Ag Alloy	
Initial contact resistance	100mΩ max.@6VDC,1A	
Max. switching voltage	250VAC/30VDC	
Max. switching current	3A(LA)/5A(DA)/8A(IA)/10A(HA)	
Max. switching power	750VA/90W(LA)	1250VA/150W(DA)
	2000VA/240W(IA)	2500VA/300W(HA)
Contact rating (Resistive Load)	A1-LA:	3A @ 250VAC
		3A @ 30VDC
	A1-DA:	5A @ 250VAC
		5A @ 30VDC
	A1-IA/IA2:	8A @ 250VAC
		8A @ 30VDC
A1-HA/HA2:	10A @ 250VAC	
	10A @ 30VDC	
Mechanical endurance	10,000,000 ops Min.(no load)	
Electrical endurance	100,000 ops Min(rated load)	
Minimum load (reference value)	100mA@5VDC	

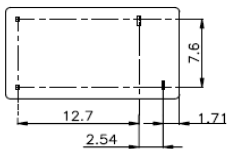
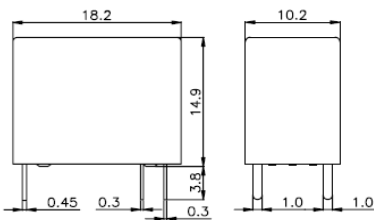
CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	5% of nominal voltage or more	
Operate time (At nominal voltage)	A1-LA/IA/IA2/IA2F	15ms max.
	A1-DA/HA/HA2/HA2F	10ms max.
Release time(At nominal voltage)	4ms max.	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contact	4,000 VAC, 50/60 Hz for 1 min
	Between open contacts	1,000 VAC, 50/60 Hz for 1 min
Surge voltage between coil and contacts	10,000V(1.2/50μs)	
Vibration resistance	Destruction	10 to 55 Hz, 1.5mm double amplitude
	Malfunction	10 to 55 Hz, 1.5mm double amplitude
Shock resistance	Destruction	1,000 m/s ² (100G approximately)
	Malfunction	100 m/s ² (10G approximately)
Ambient temperature	Operating: -30~+85°C or 105°C(H) (without icing or condensation)	
Ambient humidity	Operating: 20% to 85% RH	
Terminal	PCB terminals	
Enclosure (94V-0 Flammability Ratings)	V: Vented(Flux-tight, RTII)	
	S: Sealed(Wash-tight, RTIII)	
Weight	Approx. 6g	

ORDERING INFORMATION

	A1	-V	-1	12	H	A	2	F	,000
1.Product Family									
2.Enclosure									
V=Vented(Flux-tight, RTII) S=Sealed(Wash-tight, RTIII)									
3.Number of Poles									
1=1 pole									
4.Rated Coil Voltage									
03,05,06,09,12,18,24,48VDC									
5.Coil Power									
L&I =Sensitive(200mW) D&H =Standard(450mW)									
6.Contact Arrangement									
A = Form A(SPST)									
7.Contact Material									
Nil & 2=AgSnO ₂									
8.Insulation System									
Blank & F = Class(155°C)									
9.Additional numbers and /or letters									
000-999, AAA-ZZZ, aaa-zzz or blank, which does not represent electrical changes, only for specific customer requirements									

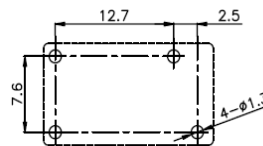
OUTLINE DIMENSION



WIRING DIAGRAMS (BOTTOM VIEWS)

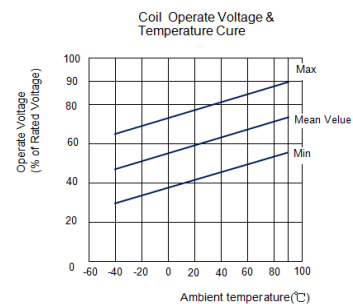
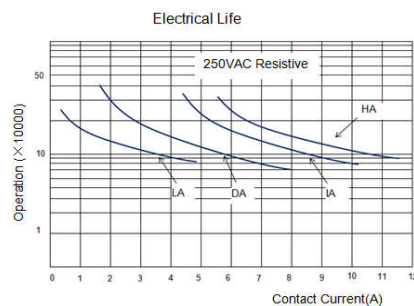
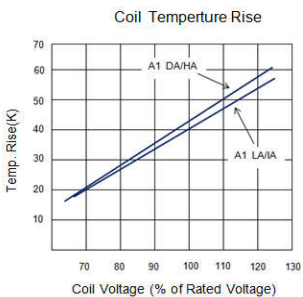


PC BOARD LAYOUTS (BOTTOM VIEWS)

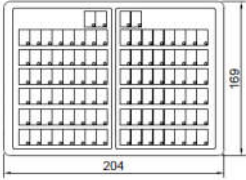


Remarks:

- The reference tolerance in outline dimension:
 - outline dimension ≤ 1 mm, reference tolerance is ± 0.2 mm;
 - outline dimension > 1 mm and ≤ 5 mm, reference tolerance is ± 0.3 mm;
 - outline dimension > 5 mm, reference tolerance is ± 0.5 mm.
- The reference tolerance for PC Board layout is ± 0.1 mm.

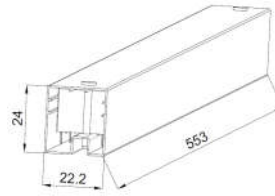


1.BOX



100 pcs inside a box
1000pcs inside a carton

2.TUBE



50 pcs inside a tube
2000 pcs inside a carton

Disclaimer:

The specification is for reference only,if you need more detail information,please contact Churod. We could not evaluate all the performance and all parameters for every possible application.And the user should be in a right position to choose the suitable product for their own application.If there is any new need,please contact Churod for the technical service.

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2020 Rev.00 Churod Electronics Co., Ltd.

FEATURES

- Outline dimension (20.0mm×10.0mm×15.2mm)
- 1 Form A (SPST) or 1 Form C (SPDT)contact arrangement
- Designed to meet cULus,TUV,CQC requirements
- 4,000VAC dielectric strenght between coil and contact
- Sensitive and standard coils available
- RoHS compliance
- REACH SvHC compliance
- Halogen-Free type available Glow
- Glow wire type



File NO. E341422



File NO. R50174892



File NO. CQC10002043606

APPLICATION

Air Conditioner, Washing Machine, Microwave Oven,
Power Meter, Industrial Control

COIL PARAMETER

Coil voltage	3-48VDC	
Coil power	Sensitive	200mW
	Standard	400mW

COIL DATA@23°C

A2-LA2/LC2(200mW).Sensitive				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
3	66.7	45	2.25	0.15
5	40.0	125	3.75	0.25
6	33.3	180	4.5	0.3
9	22.2	405	6.75	0.45
12	16.7	720	9	0.6
18	11.1	1620	13.5	0.9
24	8.3	2880	18	1.2
48	4.2	11520	36	2.4

A2-DA2/DC2(400mW).Standard				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
3	133.3	22.5	2.25	0.15
5	80.0	62.5	3.75	0.25
6	66.7	90	4.5	0.3
9	44.4	202.5	6.75	0.45
12	33.3	360	9	0.6
18	22.2	810	13.5	0.9
24	16.7	1440	18	1.2
48	8.3	5760	36	2.4

CONTACT DATA

Contact arrangement	1 Form A (SPST) / 1 Form C(SPDT)	
Contact material	Ag Alloy	
Initial contact resistance	100mΩ max.@6VDC,1A	
Max. switching voltage	277VAC/30VDC	
Max. switching current	7A(N.O)/5A(N.C)	
Max. switching power	1,939VA/150W(N.O)	
	830VA/90W(N.C)	
Contact rating (Resistive Load)	Form A	10A @ 125VAC
		5A @ 277VAC/30VDC
	Form C	H Type 7A @ 277VAC
		5A @ 277VAC/30VDC (N.O)
Form C	3A @ 277VAC/30VDC (N.C)	
	H Type	7A @ 277VAC (N.O)
		5A @ 277VAC (N.C)
Mechanical endurance	10,000,000 ops Min.(no load)	
Electrical endurance	100,000 ops Min(rated load)	
Minimum load (reference value)	100mA@5VDC	

CHARACTERISTICS

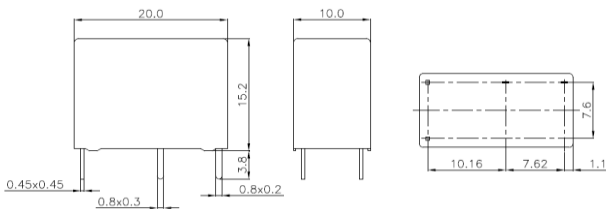
Operate voltage	75% of nominal voltage or less	
Release voltage	5% of nominal voltage or more	
Operate time (At nominal voltage)	Sensitive Coil	15ms max.
	Standard Coil	10ms max.
Release time(At nominal voltage)	5ms max.	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	4,000 VAC, 50/60 Hz for 1 min
	Between open contacts	1,000 VAC, 50/60 Hz for 1 min
Surge voltage between coil and contacts	8,000V(1.2/50μs)	
Vibration resistance	Destruction	10 to 55 Hz.,1.5mm double amplitude
	Malfunction	10 to 55 Hz.,1.5mm double amplitude
Shock resistance	Destruction	1,000 m/s2(100G approximately)
	Malfunction	100 m/s2(10G approximately)
Ambient temperature	Operating: -40~+85°C (without icing or condensation)	
Ambient humidity	Operating: 20% to 85% RH	
Terminal	PCB terminals	
Enclosure (94V-0 Flammability Ratings)	V: Vented(Flux-tight, RTII)	
	S: Sealed(Wash-tight, RTIII)	
Weight	Approx. 7g	

ORDERING INFORMATION

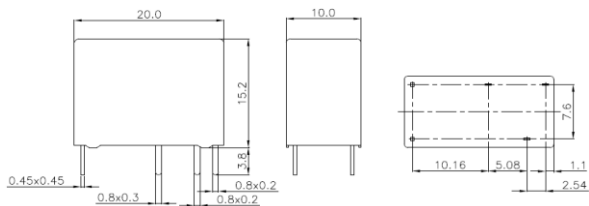
	A2	-V	-1	12	D	A	2	H	,000
1.Product Family									
2.Enclosure									
V=Vented(Flux-tight, RTII) S=Sealed(Wash-tight,									
3.Number of Poles									
1=1 pole									
4.Rated Coil Voltage									
03,05,06,09,12,18,24,48VDC									
5.Coil Power									
L = Sensitive(200mW) D = Standard(400mW)									
6.Contact Arrangement									
A = Form A(SPST) C = Form C(SPDT)									
7.Contact Material									
2 = AgSnO ₂									
8.Rated Current									
Blank = 5A H = 7A									
9.Additional numbers and /or letters									
000-999 , AAA-ZZZ , aaa-zzz or blank , which does not represent electrical changes, only for specific customer requirements									

OUTLINE DIMENSION

Form A

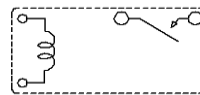


Form C

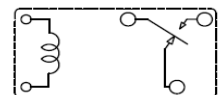


WIRING DIAGRAMS (BOTTOM VIEWS)

Form A

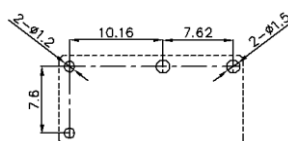


Form C

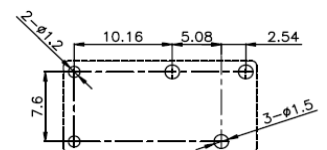


PC BOARD LAYOUTS (BOTTOM VIEWS)

Form A



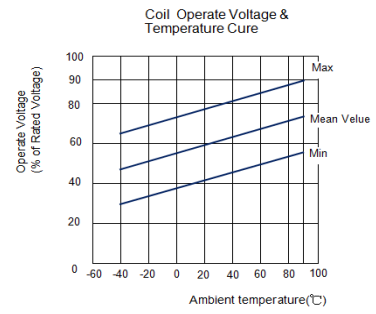
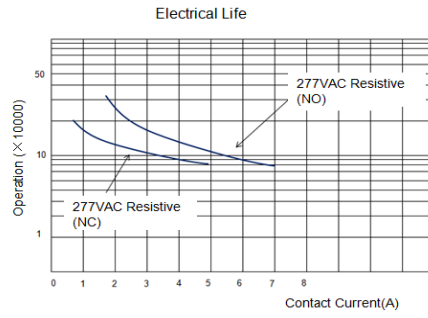
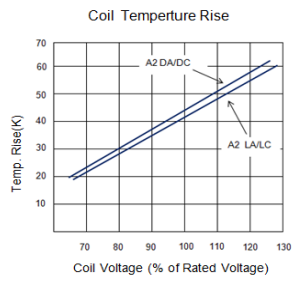
Form C



Remarks:

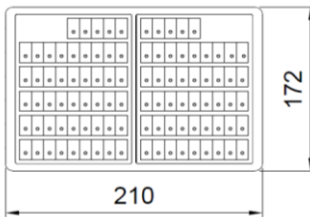
- The reference tolerance in outline dimension:
 - outline dimension $\leq 1\text{mm}$, reference tolerance is $\pm 0.2\text{mm}$;
 - outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, reference tolerance is $\pm 0.3\text{mm}$;
 - outline dimension $> 5\text{mm}$, reference tolerance is $\pm 0.5\text{mm}$.
- The reference tolerance for PC Board layout is $\pm 0.1\text{mm}$.

REFERENCE DATA



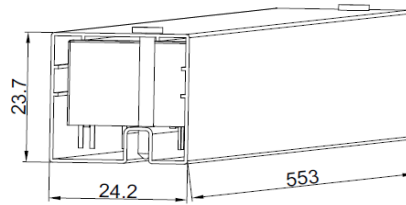
PACKAGING FIGURE

1.BOX



100 pcs inside a box
1000pcs inside a carton

2.TUBE



50 pcs inside a tube
2000 pcs inside a carton

Disclaimer :

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FEATURES

- Outline dimension (18.2mm×10.2mm×14.9mm)
- 1 Form A (SPST) contact arrangement
- Designed to meet cULus,TUV,CQC requirements
- 4,000VAC dielectric strength between coil and contact
- RoHS compliance
- REACH SvHC compliance
- Halogen-Free type available Glow
- Glow wire type



APPLICATION

Smart Socket, Home Appliance , Industrial Control Appliances

COIL PARAMETER

Coil voltage	3-48VDC
Coil power	400mW

COIL DATA @23°C

A16				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
3	13.3	23	2.25	0.15
5	80.0	63	3.75	0.25
9	44.4	203	6.75	0.45
12	33.3	360	9.00	0.60
18	22.2	810	13.50	0.90
24	16.7	1440	18.00	1.20
48	8.3	5760	36.00	2.40

CONTACT DATA

Contact arrangement	1 Form A (SPST)
Contact material	Ag Alloy
Initial contact resistance	100mΩ max.@6VDC,1A
Max. switching voltage	277VAC/30VDC
Max. switching current	16A
Max. switching power	4432VA/480W
Contact rating(Resistive Load)	16A 277/250/125VAC,Resistive Load
	1/6HP 250/125VAC,Motor TV-8 250/125VAC,TV Load
Mechanical endurance	10,000,000 ops Min.(no Load)
Minimum load(reference value)	100mA@5VDC

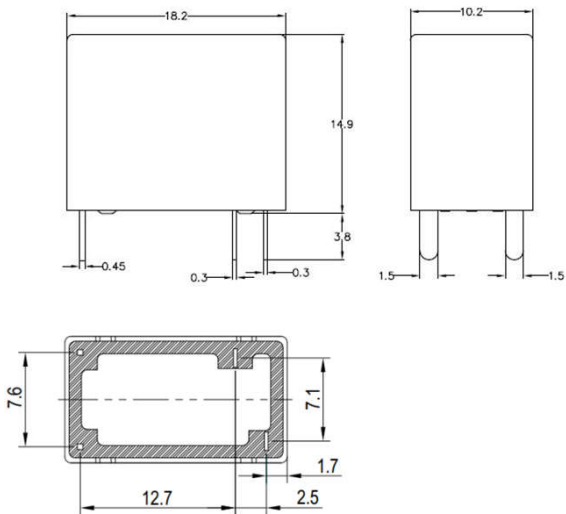
CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	5% of nominal voltage or more	
Operate time(At nominal voltage)	10ms max.	
Release time(At nominal voltage)	4ms max.	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	4,000 VAC, 50/60 Hz for 1 min
	Between open contacts	1,000 VAC, 50/60 Hz for 1 min
Surge voltage between coil and contacts	10,000V(1.2/50μs)	
Vibration resistance	Destruction	10 to 55 Hz, 1.5mm double amplitude
	Malfunction	10 to 55 Hz, 1.5mm double amplitude
Shock resistance	Destruction	1,000 m/s ² (100G approximately)
	Malfunction	100 m/s ² (10G approximately)
Ambient temperature	-40~ +85°C (without icing or condensation)	
Ambient humidity	20% to 85% RH	
Terminal	PCB terminals	
Enclosure (94V-0 Flammability Ratings)	V: Vented(Flux-tight, RTII)	
Weight	Approx. 6g	

ORDERING INFORMATION

	A16	-V	-1	12	D	A	2	F	,000
1.Product Family									
2.Enclosure									
V=Vented(Flux-tight, RTII)									
3.Number of Poles									
1=1 pole									
4.Rated Coil Voltage									
03,05,09,12,18,24,48VDC									
5.Coil Power									
D =Standard(400mW)									
6.Contact Arrangement									
A = Form A(SPST)									
7.Contact Material									
2=AgSnO ₂									
8.Insulation System									
F = Class F(155°C)									
9.Additional numbers and /or letters									
000-999 , AAA-ZZZ , aaa-zzz or blank , which does not represent electrical changes, only for specific customer requirements									

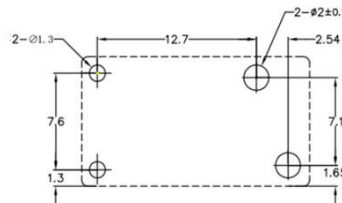
OUTLINE DIMENSION



WIRING DIAGRAMS (BOTTOM VIEWS)



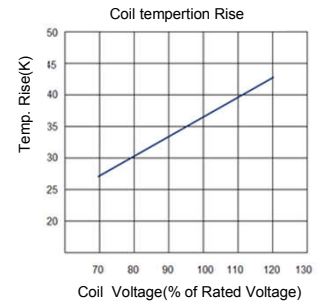
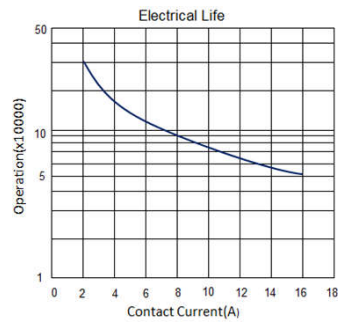
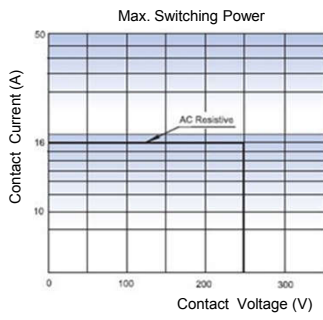
PC BOARD LAYOUTS (BOTTOM VIEWS)



Remarks:

- The reference tolerance in outline dimension:
outline dimension $\leq 1\text{mm}$, reference tolerance is $\pm 0.2\text{mm}$;
outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, reference tolerance is $\pm 0.3\text{mm}$;
outline dimension $> 5\text{mm}$, reference tolerance is $\pm 0.5\text{mm}$.
- The reference tolerance for PC Board layout is $\pm 0.1\text{mm}$.

Reference Date



Test Condition:

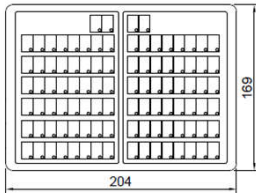
Resistive Load, 250VAC, $\cos \phi$
=0.75 85°C, 1s on/9s off

Test Condition: 85°C 16A

Mounting distance: 10mm

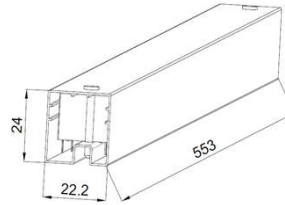
Packaging Figure

1.BOX



100 pcs inside a box
1000pcs inside a carton

2.TUBE



50 pcs inside a tube
2000 pcs inside a carton

Disclaimer :

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2020 Rev.00 Churod Electronics Co., Ltd.

FEATURES

- Outline dimension (19.2mm×15.5mm×15.3mm)
- 1 Form A (SPST) or 1 Form C (SPDT) contact arrangement
- Designed to meet cULus, TUV, CQC requirements
- Flux-tight and Wash-tight version available
- RoHS compliance
- REACH SvHC compliance
- Halogen-Free type available
- Glow wire type available



File NO. E341422



File NO. R50174892



File NO. CQC10002043606

APPLICATION

Appliances, Power Supplier, Industrial Control

COIL PARAMETER

Coil voltage	5-48VDC	
Coil power	Standard ver.	360mW

COIL DATA @23°C

CHW Standard				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance ($\Omega \pm 10\%$)	Operate Voltage (VDC)	Release Voltage (VDC)
5	72	69	3.75	0.25
6	60	100	4.5	0.3
9	40	225	6.75	0.45
12	30	400	9.0	0.6
18	20	900	13.5	0.9
24	15	1600	18.0	1.2
48	7.5	6400	36.0	2.4

CONTACT DATA

Contact arrangement	1 Form A (SPST) / 1 Form C (SPDT)	
Contact material	Ag Alloy	
Initial contact resistance	100m Ω max.(at 6VDC,1A)	
Max. switching voltage	277VAC	
Max. switching current	15A(NO) / 6A(NC)	
Max. switching power	NO: 4155VA/450W	
	NC: 1662VA/180W	
Contact rating	NO :	15A @250VAC
		10A @250VAC
	NC:	10A @ 30VDC
		2A FLA,14A LRA @ 277VAC
	6A @ 250VAC	
	6A @ 30VDC	
Mechanical endurance	10,000,000 ops Min.(no load)	
Electrical endurance (Resistive Load)	NO: 15A 250VAC, 30,000 ops	
	NO: 10A 250VAC, 100,000 ops	
	NC: 6A 250VAC, 50,000 ops	
Minimum load (reference value)	100mA @5VDC	

Note:

- The data shown above are initial values.
- For the Sealed type, the venting-hole should be opened in electrical endurance test.

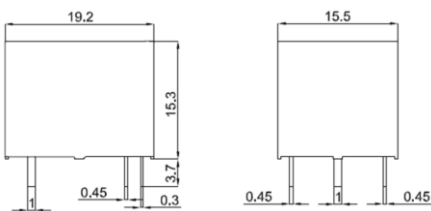
CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	5% of nominal voltage or more	
Operate time (At nominal voltage)	10ms max.	
Release time (At nominal voltage)	5ms max.	
Insulation resistance	1,000 M Ω min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	2,000 VAC, 50/60 Hz for 1 min
	Between open contacts	1,000 VAC, 50/60 Hz for 1 min
Surge voltage between coil and contacts	6,000V(1.2/50us)	
Vibration resistance	Destruction	10 to 55 Hz, 1.5mm double amplitude
	Malfunction	10 to 55 Hz, 1.5mm double amplitude
Shock resistance	Destruction	1,000m/S ² (100G approximately)
	Malfunction	1,00m/S ² (10G approximately)
Ambient temperature	-40~+85°C (without icing or condensation)	
Ambient humidity	20%~85% RH	
Termination	PCB terminals	
Enclosure (94V-0 Flammability Ratings)	V: Vented(Flux-tight, RTII)	
	S: Sealed(Wash-tight, RTIII)	
Unit Weight	Approx. 9g	

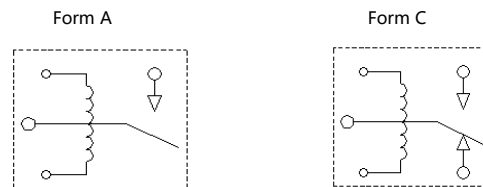
ORDERING INFORMATION

	CHW	-V	-1	12	D	A	2	--	,000
1. Product Family									
2. Enclosure	V = Vented (Flux-tight, RTII) S = Sealed (Wash-tight, RTIII)								
3. Number of Poles	1=1 pole								
4. Rated Coil Voltage	05,06,09,12,18,24,48VDC								
5.Coil Power	D = Standard (360mW)								
6. Contact Arrangement	A = Form A(SPST) C = Form C(SPDT)								
7.Contact material	2=AgSnO ₂								
8.Conact Capacity	Blank = 10/15A								
9. Additional numbers and /or letters	000-999, AAA-ZZZ, aaa-zzz or blank, which does not represent electrical changes, only for specific customer requirements,ex: (15A)=15A								

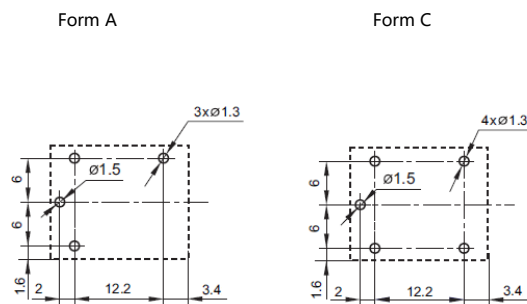
OUTLINE DIMENSION



WIRING DIAGRAMS (BOTTOM VIEWS)



PC BOARD LAYOUTS (BOTTOM VIEWS)



Remark:

- The reference tolerance in outline dimension:
 - outline dimension ≤ 1 mm, reference tolerance is ± 0.2 mm;
 - outline dimension > 1 mm and ≤ 5 mm, reference tolerance is ± 0.3 mm;
 - outline dimension > 5 mm, reference tolerance is ± 0.5 mm.
- The reference tolerance for PC Board layout is ± 0.1 mm.

FEATURES

- Outline dimension (20mm×15.5mm×20.2mm)
- 1 Form A (SPST) or 1 Form C (SPDT) contact arrangement
- Flux-tight and Wash-tight version available
- RoHS compliance
- REACH SvHC compliance
- Halogen-Free type available
- Glow wire type available



File NO. E341422



File NO. R50254542



File NO. CQC21002285907

APPLICATION

Appliances, Power Supplies, Industrial Control, Photo control

COIL PARAMETER

Coil voltage	5-48VDC	
Coil power	Standard ver.	360mW

COIL DATA @23°C

CHW Standard				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance ($\Omega \pm 10\%$)	Operate Voltage (VDC)	Release Voltage (VDC)
5	72	69	3.75	0.25
6	60	100	4.5	0.3
9	40	225	6.75	0.45
12	30	400	9.0	0.6
18	20	900	13.5	0.9
24	15	1600	18.0	1.2
48	7.5	6400	36.0	2.4

Note:

- The data shown above are initial values.
- For the Sealed type, the venting-hole should be opened in electrical endurance test.

CONTACT DATA

Contact arrangement	1 Form A (SPST) / 1 Form C (SPDT)	
Contact material	Ag Alloy	
Initial contact resistance	100m Ω max.(at 6VDC,1A)	
Max. switching voltage	277VAC	
Max. switching current	20A(NO) / 10A(NC)	
Max. switching power	NO : 5540VA	
	NC : 2770VA	
Contact rating	NO :	20A @277VAC, 30K ops, 85°C
		17A @277VAC, 30K ops, 105°C
		TV-8 @ 250VAC, 25K ops, 85°C
		1HP @ 250VAC, 100K ops, 85°C
	NC:	10A @ 277VAC, 50K ops, 85°C
Mechanical endurance	10,000,000 ops Min.(no load)	
Electrical endurance (Resistive Load)	NO: 20A 250VAC, 30,000 ops	
	NO: 17A 250VAC, 100,000 ops	
	NC: 10A 250VAC, 50,000 ops	
Minimum load (reference value)	100mA @5VDC	

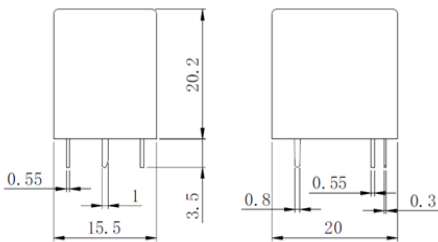
CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	5% of nominal voltage or more	
Operate time (At nominal voltage)	10ms max.	
Release time(At nominal voltage)	5ms max.	
Insulation resistance	1,000 M Ω min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	2,000 VAC, 50/60 Hz for 1 min
	Between open contacts	1,000 VAC, 50/60 Hz for 1 min
Surge voltage between coil and contacts	6,000V(1.2/50us)	
Vibration resistance	Destruction	10 to 55 Hz, 1.5mm double amplitude
	Malfunction	10 to 55 Hz, 1.5mm double amplitude
Shock resistance	Destruction	1,000m/S ² (100G approximately)
	Malfunction	1,00m/S ² (10G approximately)
Ambient temperature	17A: '-40~+105°C (without icing or condensation) 20A: '-40~+85°C (without icing or condensation)	
Ambient humidity	20%~85% RH	
Termination	PCB terminals	
Enclosure (94V-0 Flammability Ratings)	V: Vented(Flux-tight, RTII)	
	S: Sealed(Wash-tight, RTIII)	
Unit Weight	Approx. 11g	

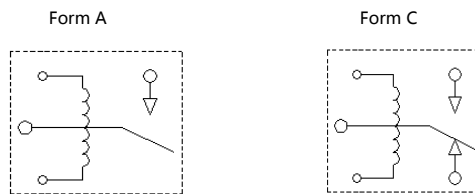
ORDERING INFORMATION

	CHW	-V	-1	12	D	A	2	H	,000
1. Product Family									
2. Enclosure	V = Vented (Flux-tight, RTII) S = Sealed (Wash-tight, RTIII)								
3. Number of Poles	1=1 pole								
4. Rated Coil Voltage	05,06,09,12,18,24,48VDC								
5. Coil Power	D = Standard (360mW)								
6. Contact Arrangement	A = Form A (SPST) C = Form C (SPDT)								
7. Contact material	2=AgSnO ₂								
8. Contact Capacity	H = 17/20A								
9. Additional numbers and /or letters	000-999, AAA-ZZZ, aaa-zzz or blank, which does not represent electrical changes, only for specific customer requirements, ex: (20A)=20A								

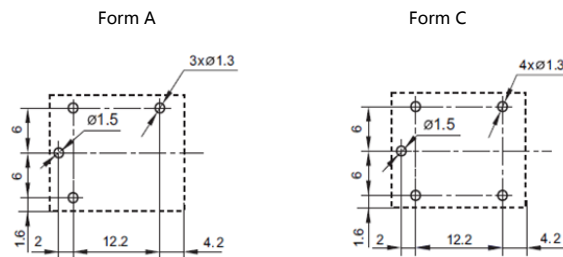
OUTLINE DIMENSION



WIRING DIAGRAMS (BOTTOM VIEWS)



PC BOARD LAYOUTS (BOTTOM VIEWS)



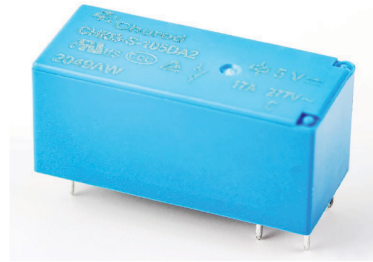
Remark:

- The reference tolerance in outline dimension:
 - outline dimension ≤ 1 mm, reference tolerance is ± 0.2 mm;
 - outline dimension > 1 mm and ≤ 5 mm, reference tolerance is ± 0.3 mm;
 - outline dimension > 5 mm, reference tolerance is ± 0.5 mm.
- The reference tolerance for PC Board layout is ± 0.1 mm.

CHI03 SERIES 17A MINIATURE POWER RELAY

FEATURES

- Outline dimension(29.3×12.7×15.3)
- 1 Form A(SPST-NO) and 1 Form C(SPDT) contact arrangement
- Designed to meet UL/cUL,TUV,CQC requirements
- 5,000VAC dielectric strength between coil and contact
- F class Insulation System
- RoHS compliance
- REACH SvHC compliance
- Halogen-Free type available



File NO. E341422



File NO. R50384623



File NO. CQC17002177358

APPLICATION

Appliances, power supply, Industrial Control...etc

COIL PARAMETER

Coil voltage	3-110VDC
Coil power	400mW

COIL DATA@23°C

CHI03				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance ($\Omega \pm 10\%$)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
3	133.3	22.5	2.25	0.15
5	80.0	62.5	3.75	0.25
6	66.7	90	4.5	0.3
9	44.4	202.5	6.75	0.45
12	33.3	360	9	0.6
18	22.2	810	13.5	0.9
22	18.2	1210	16.5	1.1
24	16.7	1440	18	1.2
36	11.1	3240	27	1.8
48	8.3	5760	36	2.4
60	6.7	9000	45	3
110	3.6	30250	82.5	5.5

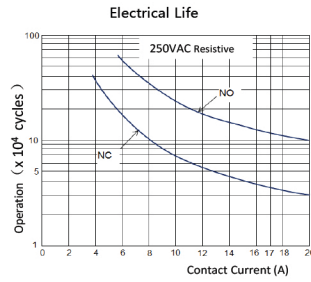
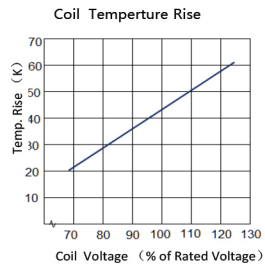
CONTACT DATA

Contact arrangement	1 Form A(SPST-NO), 1 Form C(SPDT), 1 Form B(SPST-NC)
Contact material	Ag Alloy
Initial contact resistance	100m Ω max.@6VDC,1A
Max. switching voltage	277VAC/30VDC
Max. switching current	20A
Max. switching power	5540VA / 600W
Contact rating	NO
	17A @277VAC/30VDC
	1HP @120/240/480VAC
	10FLA/60LRA @250VAC
	5A pilot duty @120VAC and 277VAC
	16A general purpose @120VAC and 277VAC
	20A @277VAC resistive, 30K cycles
	TV-8 @120VAC 25K cycles
	NC
	1HP @120/240/480VAC
10FLA/60LRA @250VAC	
5A pilot duty @120VAC and 277VAC , 30K cycles	
17A @277VAC/30VDC , 30K cycles	
16A general purpose @120VAC and 277VAC , 30K cycles	
Mechanical endurance	10,000,000 ops Min.(no load)
Electrical endurance	100,000 ops Min(rated load 1s on /9s off)
Minimum load(reference value)	100mA @5VDC

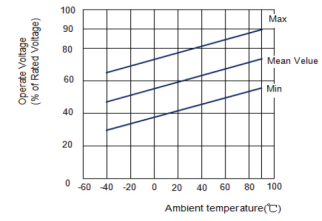
CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	5% of nominal voltage or more	
Operate time (At nominal voltage)	15ms max.	
Release time(At nominal voltage)	8ms max.	
Insulation resistance	1,000 M Ω min. (at 500 VDC)	
Insulation system	155 (F)	
Dielectric strength	Between coil and contacts	5,000 VAC, 50/60 Hz for 1 min
	Between open contacts	1,000 VAC, 50/60 Hz for 1 min
Surge voltage between coil and contacts	10,000V(1.2/50us)	
Vibration resistance	Destruction	10 to 55 Hz., 1.5mm double amplitude
	Malfunction	10 to 55 Hz., 1.5mm double amplitude
Shock resistance	Destruction	1,000m/S ² (100G approximately)
	Malfunction	100m/S ² (10G approximately)
Ambient temperature	-40°C~+105°C (without icing or condensation)	
Ambient humidity	20%~85% RH	
Terminal	PCB terminal	
Enclosure (94V-0 Flammability Ratings)	V: Vented(Flux-tight),plastic cover.(RT II)	
	S: Sealed,plastic cover.(RT III)	
Weight	Approx. 14g	

REFERENCE DATA

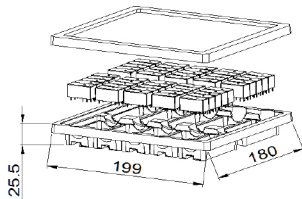


Coil Operate Voltage & Temperature Cure



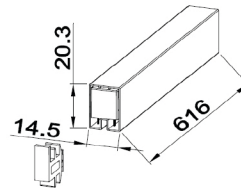
PACKAGING FIGURE

1.Box



50 pcs inside a box
500 pcs inside a carton

2.Tube



20 pcs inside a tube
1000 pcs inside a carton

Disclaimer:

The specification is for reference only, if you need more detail information, please contact Churod. We could not evaluate all the performance and all parameters for every possible application. And the user should be in a right position to choose the suitable product for their own application. If there is any new need, please contact Churod for the technical service.

[Http://www.churod.com](http://www.churod.com)

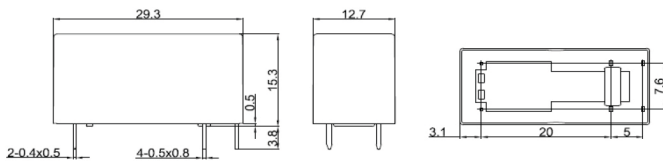
2020 Rev.01 Churod Electronics Co., Ltd.

ORDERING INFORMATION

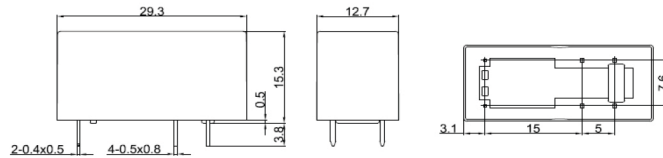
	CHI03	-V	-1	12	D	A	2	,000
1. Product Family								
2. Enclosure								
V = Vented(Flux-tight),plastic cover.(RT II)								
S = Sealed,plastic cover.(RT III)								
3. Number of Poles								
1 = 1 pole								
4. Rated Coil Voltage								
03,05,06,09,12,18,22,24,36,48,60,110VDC								
5. Coil Input								
D = Standard(400mW)								
6. Contact Arrangement								
A = Form A (SPST-NO) B = Form B (SPST-NC) C = Form C (SPDT)								
7. Contact material								
2 = AgSnO ₂								
8. Additional numbers and /or letters								
000-999, AAA-ZZZ, aaa-zzz or blank, which does not represent electrical changes, only for specific customer requirements								

OUTLINE DIMENSION

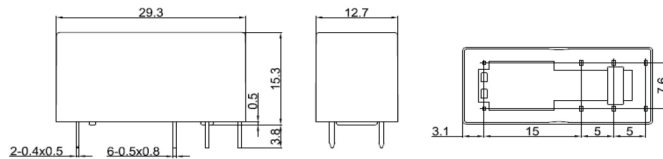
From A



From B

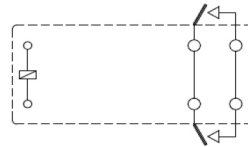


From C

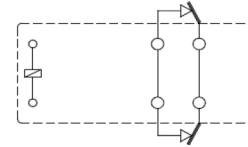


WIRING DIAGRAMS (BOTTOM VIEWS)

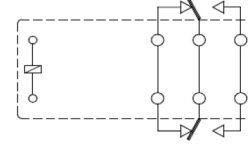
From A



From B



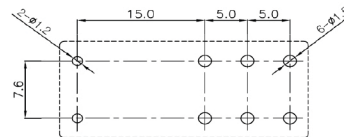
From C



PC BOARD LAYOUTS (BOTTOM VIEWS)

Remark:

- The reference tolerance in outline dimension:
 - outline dimension ≤ 1 mm, reference tolerance is ± 0.2 mm;
 - outline dimension > 1 mm and ≤ 5 mm, reference tolerance is ± 0.3 mm;
 - outline dimension > 5 mm, reference tolerance is ± 0.5 mm.
- The reference tolerance for PC Board layout is ± 0.1 mm.



FEATURES

- Outline dimension (29.2mm×12.8mm×20.9mm)
- 1 Form A (SPST) or 1 Form C (SPDT) contact arrangement
- Designed to meet cULus, TUV, CQC requirements
- 5,000VAC dielectric strength between coil and contact
- Sensitive and standard coils available
- Class F type
- RoHS compliance
- REACH SvHC compliance
- Halogen-Free type available Glow
- Glow wire type



File NO. E341422



File NO. R50174892



File NO. CQC10002043606

APPLICATION

Appliances, Power Supplier, Industrial Control

COIL PARAMETER

Coil voltage	5-48VDC	
Coil power	Sensitive	540mW
	Standard	720mW
	Low Power	120mW

COIL DATA @23°C

CHZ-LA2/LC2(540mW), Sensitive				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
5	103.1	48.5	3.75	0.25
6	88.2	68	4.50	0.30
9	58.1	155	6.75	0.45
12	44.4	270	9.00	0.6
18	30.0	600	13.50	0.90
24	21.8	1,100	18.00	1.20
48	10.9	4,400	36.00	2.40

CHZ-DA2/DC2(720mW), Standard				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
5	138.9	36	3.75	0.25
6	123.7	48.5	4.50	0.30
9	78.3	115	6.75	0.45
12	60.0	200	9.00	0.6
18	40.0	450	13.50	0.90
24	29.3	820	18.00	1.20
48	14.5	3,300	36.00	2.40

CHZ-HA2/HC2(120mW), Energy Saving Type				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
5	24.0	208	3.75	0.25
6	20.0	300	4.50	0.30
9	13.3	675	6.75	0.45
12	10.0	1,200	9.00	0.60
24	5.0	4,800	18.00	1.20

CONTACT DATA

Contact arrangement	1 Form A (SPST) / 1 Form C (SPDT)
Contact material	Ag Alloy
Initial contact resistance	100mΩ max.@6VDC, 1A
Max. switching voltage	250VAC/30V DC
Max. switching current	16A
Max. switching power	4,000VA/480W
Contact rating(Resistive Load)	16A(N.O)/8A(N.C)250VAC
	16A(N.O)/8A(N.C)30VDC
Mechanical endurance	10,000,000 ops Min.(no load)
Electrical endurance	100,000 ops Min.(rated load)
Minimum load (reference value)	100mA@5VDC

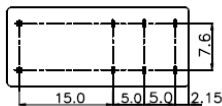
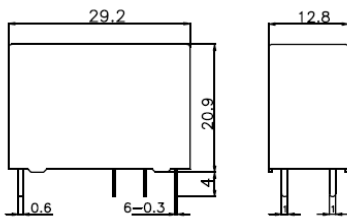
CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	5% of nominal voltage or more	
Operate time (At nominal voltage)	20ms max.	
Release time(At nominal voltage)	8ms max.	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	5,000 VAC, 50/60 Hz for 1 min
	Between open contacts	1,000 VAC, 50/60 Hz for 1 min
Surge voltage between coil and contacts	10,000V(1.2/50μs)	
Vibration resistance	Destructor	10 to 55 Hz., 1.5mm double amplitude
	Malfunction	10 to 55 Hz., 1.5mm double amplitude
Shock resistance	Destructor	1,000 m/s ² (100G approximately)
	Malfunction	100 m/s ² (10G approximately)
Ambient temperature	Operating: -40~+85 °C (without icing or condensation)	
Ambient humidity	Operating: 20% to 85% RH	
Terminal	PCB terminals	
Enclosure (94V-0 Flammability Ratings)	V: Vented(Flux-tight, RTII)	
	S: Sealed(Wash-tight, RTIII)	
Weight	Approx. 13g	

ORDERING INFORMATION

1.Product Family	CHZ03	-V	-1	12	D	A	2	F	000
2.Enclosure	V=Vented(Flux-tight, RTII) S=Sealed(Wash-tight, RTIII)								
3.Number of Poles	1=1 pole								
4.Rated Coil Voltage	05,06,09,12,18,24,48VDC								
5.Coil Power	D = Standard(720mW) L = Sensitive(540mW) H = Low Power(120mW)								
6.Contact Arrangement	A = Form A(SPST) C = Form C(SPDT)								
7.Contact Material	无 & 2=AgSnO ₂								
8.Insulation System	Blank & F = Class(155℃)								
9.Additional numbers and /or letters	000-999, AAA-ZZZ, aaa-zzz or blank, which does not represent electrical changes, only for specific customer requirements								

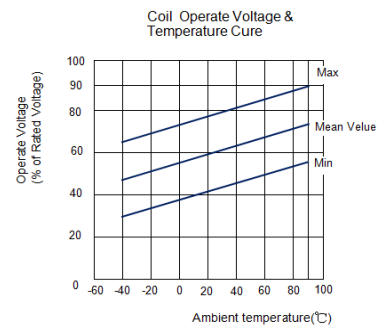
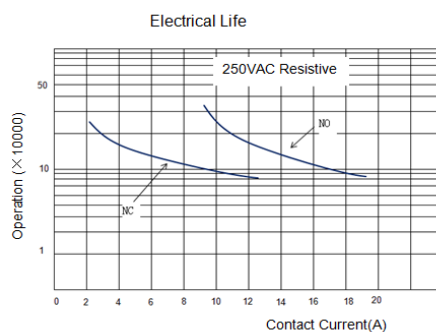
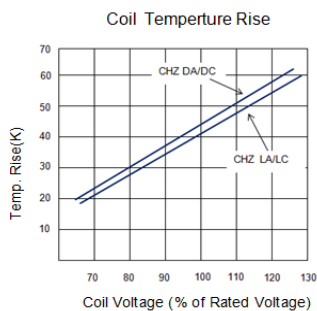
OUTLINE DIMENSION



Remarks:

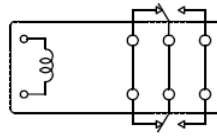
- The reference tolerance in outline dimen
outline dimension $\leq 1\text{mm}$, reference tolerance is \pm
outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, reference tolerance
outline dimension $> 5\text{mm}$, reference tolerance is \pm
- The reference tolerance for PC Board layout is \pm

Reference Date



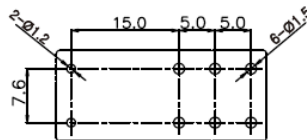
WIRING DIAGRAMS (BOTTOM VIEWS)

Unit:mm

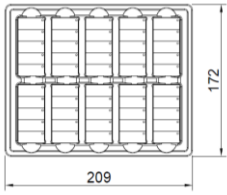


PC BOARD LAYOUTS (BOTTOM VIEWS)

Unit:mm

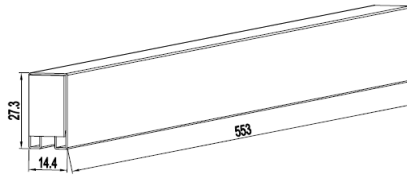


1.BOX



100 pcs inside a box
1000pcs inside a carton

2.TUBE



18 pcs inside a tube
1000 pcs inside a carton

Disclaimer:

The specification is for reference only, if you need more detail information, please contact Churod. We could not evaluate all the performance and all parameters for every possible application. And the user should be in a right position to choose the suitable product for their own application. If there is any new need, please contact Churod for the technical service.

[Http://www.churod.com](http://www.churod.com)

2020 Rev.00 Churod Electronics Co., Ltd.

FEATURES

- Outline dimension (29.2mm×12.8mm×20.9mm)
- 2 Form A (DPST) or 2 Form C (DPDT) contact arrangement
- Designed to meet cULus, TUV, CQC requirements
- 5,000VAC dielectric strength between coil and contact
- Sensitive and standard coils available
- Class F type
- RoHS compliance
- REACH SvHC compliance
- Halogen-Free type available Glow
- Glow wire type

APPLICATION

Appliances, Power Supplier, Industrial Control

COIL PARAMETER

Coil voltage	5-48VDC	
Coil power	Sensitive	540mW
	Standard	720mW

COIL DATA @23°C

CHZ-LA2/LC2(540mW), Sensitive				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
5	103.1	48.5	3.75	0.25
6	88.2	68	4.50	0.3
9	58.1	155	6.75	0.45
12	44.4	270	9.00	0.60
18	30.0	600	13.50	0.90
24	21.8	1,100	18.00	1.20
48	10.9	4,400	36.00	2.40

CHZ-DA2/DC2(720mW), Standard				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
5	138.9	36	3.75	0.25
6	123.7	48.5	4.50	0.3
9	78.3	115	6.75	0.45
12	60.0	200	9.00	0.60
18	40.0	450	13.50	0.90
24	29.3	820	18.00	1.20
48	14.5	3,300	36.00	2.40



File NO. E341422



File NO. R50174892



File NO. CQC10002043606

CONTACT DATA

Contact arrangement	2 Form A (DPST) / 2 Form C (DPDT)	
Contact material	Ag Alloy	
Initial contact resistance	100mΩ max.@6VDC,1A	
Max. switching voltage	250VAC/30V DC	
Max. switching current	8A	
Max. switching power	2,000VA/1240W	
Contact rating(Resistive Load)	250VAC	8A(N.O)/4A(N.C) @ 250VAC
	30VDC	8A(N.O)/4A(N.C) @ 30VDC
Mechanical endurance	10,000,000 ops Min.(no load)	
Electrical endurance	100,000 ops Min(rated load)	
Minimum load (reference value)	100mA@5VDC	

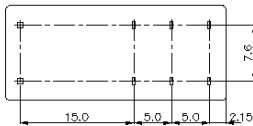
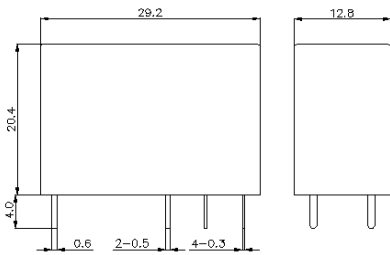
CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	5% of nominal voltage or more	
Operate time (At nominal voltage)	20ms max.	
Release time(At nominal voltage)	8ms max.	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	5,000 VAC, 50/60 Hz for 1 min
	Between open contacts	1,000 VAC, 50/60 Hz for 1 min
Surge voltage between coil and contacts	10,000V(1.2/50μs)	
Vibration resistance	Destructor	10 to 55 Hz., 1.5mm double amplitude
	Malfunction	10 to 55 Hz., 1.5mm double amplitude
Shock resistance	Destructor	1,000 m/s ² (100G approximately)
	Malfunction	100 m/s ² (10G approximately)
Ambient temperature	Operating: -40~+85°C (without icing or condensation)	
Ambient humidity	Operating: 20% to 85% RH	
Terminal	PCB terminals	
Enclosure (94V-0 Flammability Ratings)	V:	Vented(Flux-tight, RTII)
	S:	Sealed(Wash-tight, RTIII)
Weight	Approx. 13g	

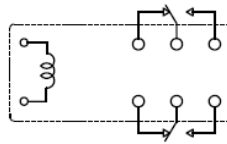
ORDERING INFORMATION

1.Product Family	CHZ05	-V	-2	12	D	A	2	F	000
2.Enclosure	V=Vented(Flux-tight, RTII) S=Sealed(Wash-tight)								
3.Number of Poles	2=2 pole								
4.Rated Coil Voltage	05,06,09,12,18,24,48VDC								
5.Coil Power	L&I = Sensitive(540mW) D&H = Standard(720mW)								
6.Contact Arrangement	A = 2 form A (DPST) C = 2 form C (DPDT)								
7.Contact Material	Nil & 2=AgSnO ₂								
8.Insulation System	Blank & F = Class F (155℃)								
9.Additional numbers and /or letters	000-999, AAA-ZZZ, aaa-zzz or blank, which does not represent electrical changes, only for specific customer requirements								

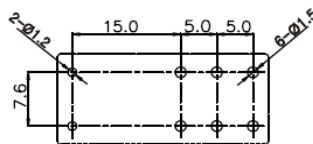
OUTLINE DIMENSION



WIRING DIAGRAMS (BOTTOM VIEWS)



PC BOARD LAYOUTS (BOTTOM VIEWS)

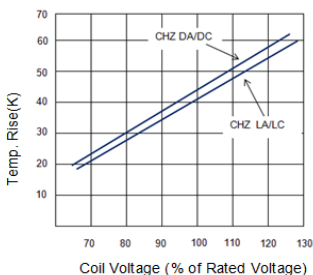


Remarks:

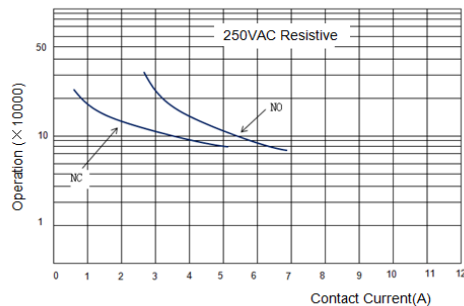
- The reference tolerance in outline dimension:
 - outline dimension ≤ 1 mm, reference tolerance is ± 0.2 mm;
 - outline dimension > 1 mm and ≤ 5 mm, reference tolerance is ± 0.3
 - outline dimension > 5 mm, reference tolerance is ± 0.5 mm
- The reference tolerance for PC Board layout is ± 0.1 mm.

Reference Date

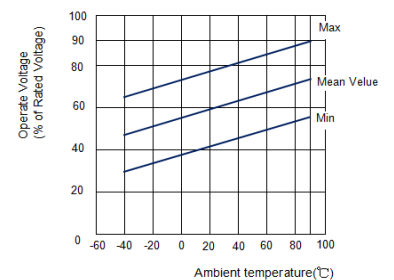
Coil Temperature Rise



Electrical Life

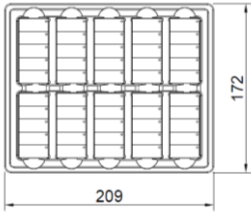


Coil Operate Voltage & Temperature Cure



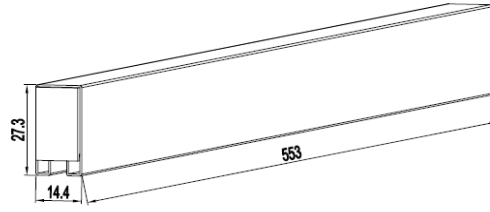
Packaging Figure

1.BOX



50 pcs inside a box

2.TUBE



18 pcs inside a tube

Disclaimer:

The specification is for reference only,if you need more detail information,please contact Churod. We could not evaluate all the performance and all parameters for every possible application.And the user should be in a right position to choose the suitable product for their own application.If there is any new need,please contact Churod for the technical service.

[Http://www.churod.com](http://www.churod.com)

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FEATURES

- CHS01: Outline dimension (32.1mm×27.05mm×20.2mm)
- CHS02: Outline dimension (32.5mm×27.3mm×19.9mm)
- 1 Form A or 1 Form B and 1 Form C contact arrangement
- Designed to meet cULus,TUV,CQC requirements
- Flux-tight and Wash-tight version available
- RoHS REACH SvHC compliance
- Halogen-Free type available
- Glow wire type available



File NO. E341422



File NO. R50271657



File NO. CQC13002102346

APPLICATION

Appliances, Power Supplier, Industrial Control

COIL PARAMETER

Coil voltage	5-110VDC	
Coil power	Standard ver.	900mW

COIL DATA @23°C

CHS-L				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance ($\Omega \pm 10\%$)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
5	180	27.8	3.75	0.25
6	150	40	4.5	0.3
9	100	90	6.75	0.45
12	75	160	9	0.6
15	60	250	11.25	0.75
18	50	360	13.5	0.9
22	40.9	537.8	16.5	1.1
24	37.5	640	18	1.2
36	25	1440	27	1.8
48	18.8	2560	36	2.4
60	15	4000	45	3
110	8.2	13444	82.5	5.5

Note:

- The data shown above are initial values.

CONTACT DATA

Contact arrangement	1 Form A (SPST) / 1 Form B (SPST) / 1 Form C (SPDT)		
Contact material	Ag Alloy		
Initial contact resistance	100m Ω max.(at 6VDC,1A)		
Max. switching voltage	277VAC/30VDC		
Max. current	Switching	40A(NO) / 30A(NC)	
	Carrying	60A(NO) / 30A(NC)	
Max. power	Switching	NO : 11,080VA / NC : 8310VA	
	Carrying	NO : 16,620VA / NC : 8310VA	
Contact rating	Form A	LA/LA2	30A @ 277VAC
			40A @ 277VAC
			2HP @ 250VAC
	Form C	LC	15A-50A-15A @ 250VAC, Make-Carry-Break
			15A-60A-15A @ 250VAC, Make-Carry-Break
			20A(N.O)/10A(N.C) @ 277VAC
Form B	LC2	40A(N.O)/25A(N.C) @ 277VAC	
		40A(N.O)/30A(N.C) @ 277VAC	
Form B	30A @ 277VAC		
Mechanical endurance	1,000,000 ops Min.(no load)		
Electrical endurance (Resistive Load)	NO: 15A-60A/50A-15A @ 250VAC, Make-Carry-Break ,30,000 ops T85		
	NO: 40A 250VAC,30,000 ops T85		
	NO: 30A 250VAC,100,000 ops T85		
	NC: 30A 250VAC,10,000 ops T85		
Minimum load (reference value)	100mA @5VDC		

CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	5% of nominal voltage or more	
Operate time (At nominal voltage)	15ms max.	
Release time(At nominal voltage)	15ms max.	
Insulation resistance	1,000 M Ω min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	2,500 VAC, 50/60 Hz for 1 min
	Between open contacts	1,500 VAC, 50/60 Hz for 1 min
Surge voltage between coil and contacts	6,000V(1.2/50us)	
Vibration resistance	Destruction	10 to 55 Hz.,1.5mm double amplitude
	Malfunction	10 to 55 Hz.,1.5mm double amplitude
Shock resistance	Destruction	1,000m/S ² (100G approximately)
	Malfunction	1,00m/S ² (10G approximately)
Ambient temperature	-40~ +85°C (without icing or condensation)	
Ambient humidity	20%~85% RH	
Termination	PCB terminals	
Enclosure (94V-0 Flammability Ratings)	V: Vented(Flux-tight, RTII)	
	S: Sealed(Wash-tight, RTIII)	
Unit Weight	Approx. 26g(CHS01), Approx. 32g(CHS02)	

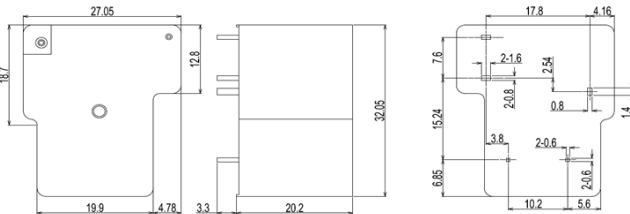
ORDERING INFORMATION

	CHS01	-V	-1	12	L	A	2	(60A)	,000
1. Product Family CHS01:PCB terminal CHS02:PCB & 250QC terminal									
2. Enclosure V = Vented (Flux-tight, RTII) S = Sealed (Wash-tight, RTIII) (only 40A and blow)									
3. Number of Poles 1=1 pole									
4. Rated Coil Voltage 05,06,09,12,18,22,24,48,60,110VDC									
5.Coil Power L = Standard (900mW)									
6. Contact Arrangement A = Form A(SPST) B = Form B(SPST) C = Form C(SPDT)									
7.Contact material Blank = AgCdO(40A and down) 2 = AgSnO2									
8. Rated Current (40A)=40A (50A)=50A (60A)=60A									
9. Additional numbers and /or letters 000-999 , AAA-ZZZ , aaa-zzz or blank , only for specific customer requirements,ex:(30A)=30A,(50A)=50A,(60A)=60A ...									

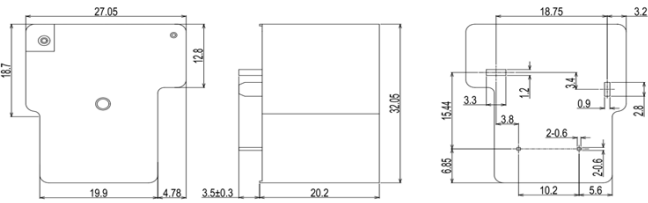
OUTLINE DIMENSION

Unit: mm

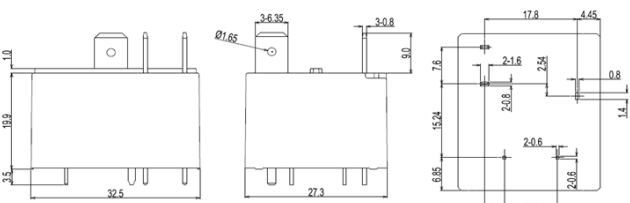
CHS01 (Rated Current ≤ 40A)



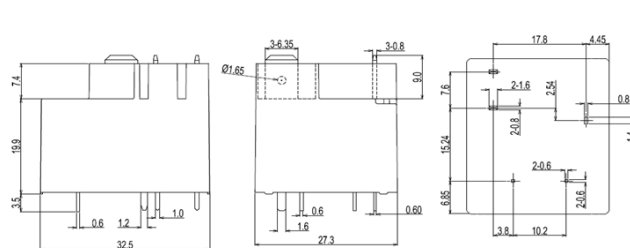
CHS01 (Rated Current > 40A)



CHS02

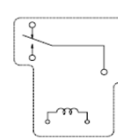


CHS02 (G Series)

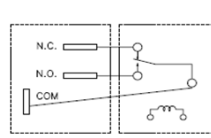


WIRING DIAGRAMS (BOTTOM VIEWS)

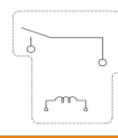
CHS01 Form C



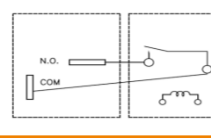
CHS02/CHS02(G Series) Form C



CHS01 Form A

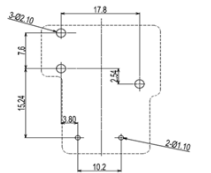


CHS02/CHS02(G Series) Form A

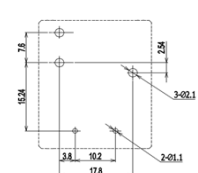


PC BOARD LAYOUTS (BOTTOM VIEWS)

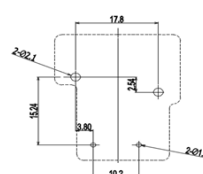
CHS01 (≤40A) Form C



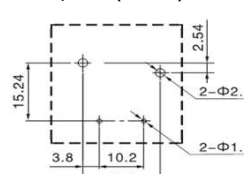
CHS02/CHS02(G Series) Form C



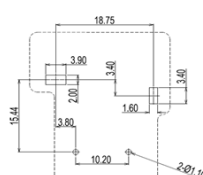
CHS01 (≤40A) Form A



CHS02/CHS02(G Series) Form A



CHS01 (>40A) Form A

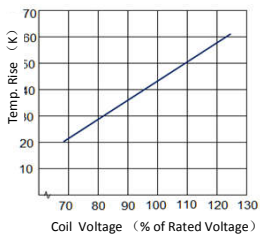


Remark:

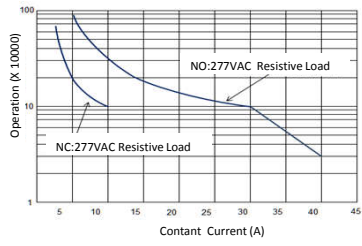
- 1)The reference tolerance in outline dimension:
 outline dimension ≤ 1mm, reference tolerance is ±0.2mm;
 reference tolerance is ±0.2mm;
 outline dimension > 1mm and ≤ 5mm,
 reference tolerance is ±0.3mm;
 outline dimension > 5mm,
 reference tolerance is ±0.5mm.
- 2)The reference tolerance for PC Board layout is ±0.1mm.

REFERENCE DATA

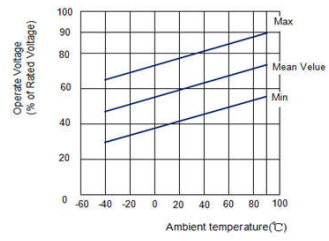
Coil Temperature Rise



Electrical Life

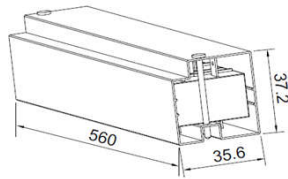
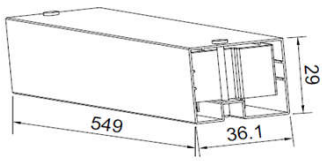


Coil Operate/Release Voltage & Temperature Cure



PACKAGING FIGURE

Tube



20 pcs inside a tube

500 pcs inside a carton

Disclaimer :

The specification is for reference only,if you need more detail information,please contact Churod. We could not evaluate all the performance and all parameters for every possible application.

And the user should be in a right position to choose the suitable product for their own application.If there is any new need,please contact Churod for the technical service.

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FEATURES

- Outline dimension(47.6mm×40.0mm×45.1mm)
- 1 Form X arrangement
- Contact gap,3.6mm Min.
- Designed to meet UL/cUL,TUV requirements
- PCB terminal for the mounting
- RoHS compliance
- REACH SvHC compliance



cULus
File NO. E341422

TUV
File NO. R50316974

APPLICATION

Solar inverter,
Industrial Control
Inverter precharge circuit control

COIL PARAMETER

Coil voltage	12VDC,24VDC,48VDC
Coil power	3.2W

CONTACT DATA

Type	CHAR-A60	CHAR-A80	CHAR-A100 CHAR-A100T	CHAR-A130	CHAR-A150	CHAR-A160
Contact arrangement	1 Form X					
Contact material	Ag Alloy					
Initial contact resistance	100mΩ max.@6VDC,1A					
Max. switching voltage	690VAC	690VAC	690VAC	690VAC	690VAC	690VAC
Max. switching current	60A	80A	100A	130A	150A	160A
Max. switching power	41,400VA	55,200VA	69,000VA	89,700VA	103,500VA	110,400VA
Contact rating	60A	Make 60A, Carry 60A, Break 60A 277VAC				
		Make 30A, Carry 60A, Break 30A 690VAC				
	80A	Make 60A, Carry 80A, Break 60A 277VAC				
		Make 30A, Carry 80A, Break 30A 690VAC				
	100A	Make 60A, Carry 100A, Break 60A 277VAC				
		Make 30A, Carry 100A, Break 30A 690VAC				
	130A	Make 60A, Carry 130A, Break 60A 277VAC				
		Make 40A, Carry 130A, Break 40A 690VAC				
	150A	Make 60A, Carry 150A, Break 60A 277VAC				
		Make 30A, Carry 150A, Break 30A 690VAC				
	160A	Make 45A, Carry 160A, Break 45A 690VAC				
	Mechanical endurance	1,000,000 ops Min.(no load)				
Electrical endurance	30,000 ops(Resistive load)					
Minimum load (reference value)	100mA @48VAC					

COIL DATA @23°C

CHAR				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
12	267	45	9	0.6
24	133	180	18	1.2
48	67	720	36	2.4

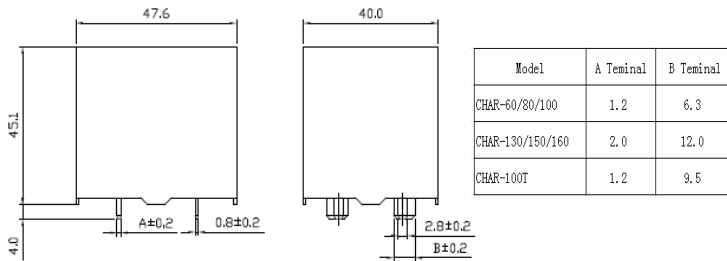
CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	5% of nominal voltage or more	
Operate time (At nominal voltage)	30ms max.	
Release time(At nominal voltage)	30ms max.	
Insulation resistance	1,000MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	4,000 VAC, 50/60Hz (1min)
	Between open contacts	1,300 VAC, 50/60Hz (1min)
Surge voltage between coil and contacts	6,000V(1.2/50μs)	
Vibration resistance	Destruction	10 to 55 Hz,1.5mm double amplitude
	Malfunction	10 to 55 Hz,1.5mm double amplitude
Shock resistance	Destruction	1,000 m/s ² (100G approximately)
	Malfunction	100 m/s ² (10G approximately)
Ambient temperature	Operating: -40~+85°C (without icing or condensation) (Remark: For AC690V load, operated voltage with rated coil voltage for 100ms and then reduced to 50~70% of rated coil voltage for steady-state conditions.)	
Ambient humidity	Operating: 20% to 85% RH	
Terminal	PCB terminals	
Enclosure (94V-0 Flammability Ratings)	V: Vented(Flux-tight),plastic cover.(RT II)	
Weight	Approx. 165g	

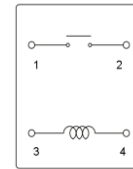
ORDERING INFORMATION

CHAR	-1	12	A100	000
1. Product Family				
CHAR Series				
2. Number of Poles				
1=1 pole				
3. Rated Coil Voltage				
12 =12VDC, 24 =24VDC, 48 =48VDC				
4. Current Rating				
A60=AC 60A, A80=AC 80A, A100=AC 100A, A100T=AC 100A				
A130=AC 130A, A150=AC 150A, A160=AC 160A				
5. Additional numbers and /or letters				
000-999, AAA-ZZZ, aaa-zzz or blank, which does not represent electrical changes, only for specific customer requirements				

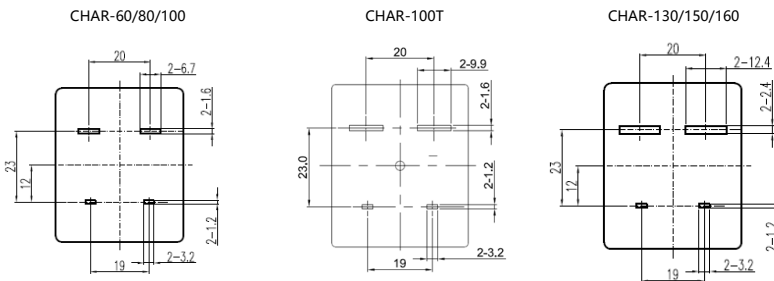
OUTLINE DIMENSION



WIRING DIAGRAMS (BOTTOM VIEWS)



PC BOARD LAYOUTS (BOTTOM VIEWS)



Remark: 1) The reference tolerance in outline dimension:

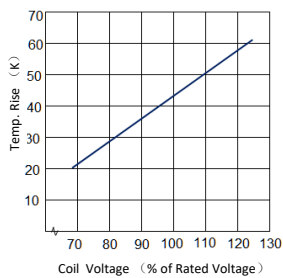
outline dimension $\leq 1\text{mm}$, reference tolerance is $\pm 0.2\text{mm}$;

outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, reference tolerance is $\pm 0.3\text{mm}$;

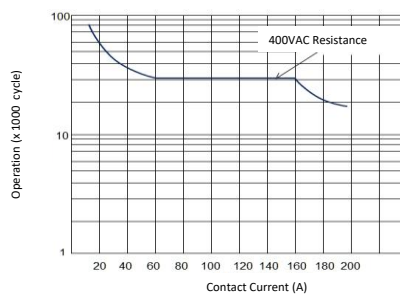
outline dimension $> 5\text{mm}$, reference tolerance is $\pm 0.5\text{mm}$.

Reference Date

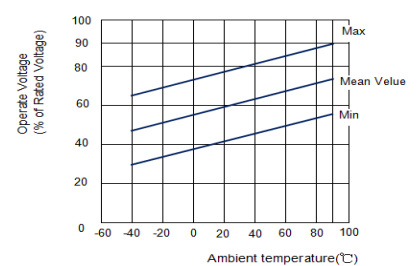
Coil Temperature Rise



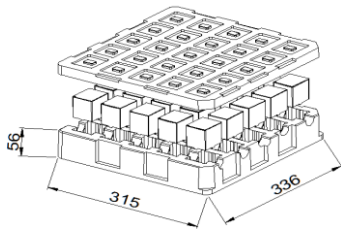
Electrical Life



Coil Operate Voltage & Temperature Cure



PACKAGING FIGURE



25 pcs inside a box

50 pcs inside a carton

Disclaimer:

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And the user should be in a right position to choose the suitable product for their own application.If there is any new need,please contact Churod for the technical service.

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CHAR-C Series 75A Photovoltaic Relay

Product FEATURES

- Outline Dimension: 38 mm×33 mm×39.5 mm
- 1 Form X arrangement, GAP≥4.0 mm
- Designed to meet GB21711.1, IEC61810, UL60947-1, RoHS, REACH SVHC requirements
- Environmental protection category RTII
- Contact switching capability with 75A
- Applied to the inverter in solar photovoltaic field
- To reduce power loss, a small coil holding-voltage has been used for working coil
- Insulation class: F class



File NO. E341422



File NO. R50499133



File NO. CQC21002285874

APPLICATION

- Circuit Control of Inverter

COIL PARAMETERS

Rated voltage (VDC)	Rated power (W)	Rated current (mA)	Coil resistance ($\Omega \pm 10\%$)	Operate voltage (VDC)	Release voltage (VDC)
6	1.92	320	18.75	≤ 4.5	≥ 0.6
9	1.92	213	42.2	≤ 6.75	≥ 0.9
12	1.92	160	75	≤ 9	≥ 1.2
24	1.92	80	300	≤ 18	≥ 2.4
48	1.92	40	1200	≤ 36	≥ 4.8

Notes:

- The above values are the initial at 23°C.

HOLD VOLTAGE

Rated voltage (VDC)	Hold voltage of coil (VDC)
6	3.3~6
9	4.95~9
12	6.6~12
24	13.2~24
48	26.4~48

Notes:

- The above values are only the reference values at 23°C. Please contact the company for details.

CONTACT PARAMETERS

Contact configuration	1 Form X
Contact material	Ag Alloy
Initial contact resistance	$\leq 5 \text{ m}\Omega$ (6 VDC 20 A)
Rated current	75 A
Contact rating	Making 30 A; Carry 90 A; Break 30 A
Rated switching voltage	1000 VAC
Max. breaking current	83 A
Max. switching power	83000 VA
Electrical endurance	$\geq 3 \times 10^4$ cycles (at 85 °C, 1 s ON/9 s OFF)
Mechanical endurance	1 Million cycles, Coil:0.2 s ON / 0.2 s OFF

Notes:

- The life expectancy will be lower when a diode is used in parallel with the coil.

OTHER PARAMETERS

Dielectric strength	between open contacts	2500 VAC. 50/60 Hz 1 min
	between coil to contacts	5000 VAC. 50/60 Hz 1 min
Insulation resistance		100 M Ω (1000 VDC)
Operate time (Rated voltage)		$\leq 35 \text{ ms}$ (at 85 °C)
Release time (Rated voltage)		$\leq 10 \text{ ms}$
Vibration resistance	Between coil and contacts	10 Hz~ 55 Hz, 1.5 mm
	Malfunction	10 Hz~ 500 Hz, 49 m/s ²
Shock resistance	Between coil and contacts	981 m/s ²
	Malfunction	98.1 m/s ²
Operating temperature		-40 °C~85 °C (Without condensation and freezing)
Operating humidity		20% RH ~85% RH
Terminal style		PCB terminal
Category of protection		RT II (Flux proof)
Weight		About 89.5 g

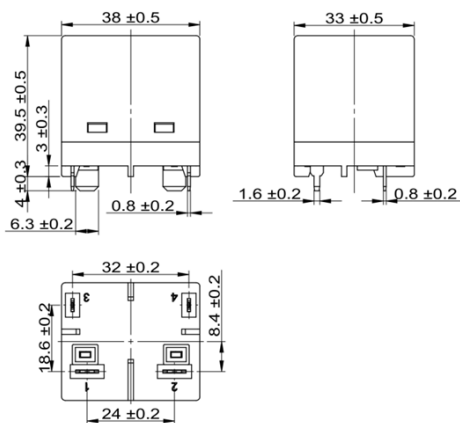
Notes:

- Unless otherwise specified, the above values are the initial at 23°C.

ORDERING INFORMATON

	CHAR	-1	12	A75	C	,XXX
1.Product Family	CHAR series					
2.Contact form	1=1 Form A (SPDM)					
3.Coil rated voltage	06 =06 VDC 09 =09 VDC 12 =12 VDC 24 =24 VDC 48 =48 VDC					
4.Rated switching current	A75= 75 A					
5.Product code	C series					
6.Additional numbers and letters	000-999, AAA-ZZZ, aaa-zzz or blank, which does not represent electrical changes, only for specific customer requirements					

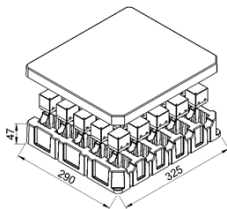
OUTLINE DIMENSION



Notes:

- 1) Unmarked geometric tolentance are as follows:
 - outline dimension $\leq 1\text{mm}$, reference tolerance is $\pm 0.2\text{mm}$;
 - outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, reference tolerance is $\pm 0.3\text{mm}$;
 - outline dimension $> 10\text{mm}$, reference tolerance is $\pm 0.5\text{mm}$;

PACKAGING FIGURE



25 pcs inside a box
100 pcs inside a carton

Disclaimer:

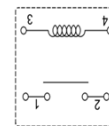
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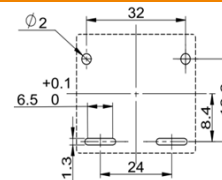
WIRING DIAGRAMS



Notes:

- 1) The schematic of wiring diagrams is the bottom view in the above.

PCB BOARD LAYOUTS



Notes:

- 1) The schematic of assembling with PCB is the bottom view in the above.

CHAR-C Series 90A Photovoltaic Relay

Product FEATURES

- Outline Dimension: 38 mm×33 mm×39.5 mm
- Contact Arrangement: 1 Form X, GAP > 4.0 mm
- Designed to meet GB21711.1, IEC61810, UL60947-1, RoHS, REACH SVHC requirements
- Environmental protection category RTII
- Contact switching capability with 90A
- Applied to the inverter in solar photovoltaic field
- To reduce power loss, a small coil holding-voltage has been used for working coil
- Insulation class: F class



File NO. E341422



File NO. R50499133



File NO. CQC21002285874

APPLICATION

- Circuit Control of Inverter

COIL PARAMETERS

Rated voltage (VDC)	Rated power (W)	Rated current (mA)	Coil resistance ($\Omega \pm 10\%$)	Operate voltage (VDC)	Release voltage (VDC)
6	1.92	320	18.75	≤ 4.5	≥ 0.6
9	1.92	213	42.2	≤ 6.75	≥ 0.9
12	1.92	160	75	≤ 9	≥ 1.2
24	1.92	80	300	≤ 18	≥ 2.4
48	1.92	40	1200	≤ 36	≥ 4.8

Notes:

- The above values are the initial at 23°C.

HOLD VOLTAGE

Rated voltage (VDC)	Hold voltage of coil (VDC)
6	3.3~6
9	4.95~9
12	6.6~12
24	13.2~24
48	26.4~48

Notes:

- The above values are only the reference values at 23°C. Please contact the company for details.

CONTACT PARAMETERS

Contact configuration	1 Form X
Contact material	Ag Alloy
Initial contact resistance	$\leq 5 \text{ m}\Omega$ (6 VDC 20 A)
Rated current	90 A
Contact rating	Making 30 A; Carry 90 A; Break 30 A
Rated switching voltage	1000 VAC
Max. breaking current	100 A
Max. switching power	100000 VA
Electrical endurance	$\geq 3 \times 10^4$ cycles (at 85 °C, 1 s ON/9 s OFF)
Mechanical endurance	1 Million cycles, Coil: 0.2 s ON / 0.2 s OFF

Notes:

- The life expectancy will be lower when a diode is used in parallel with the coil.

OTHER PARAMETERS

Dielectric strength	between open contacts	2500 VAC. 50/60 Hz 1 min
	between coil to contacts	5000 VAC. 50/60 Hz 1 min
Insulation resistance		100 M Ω (1000 VDC)
Operate time (Rated voltage)		$\leq 35 \text{ ms}$ (at 85 °C)
Release time (Rated voltage)		$\leq 10 \text{ ms}$
Vibration resistance	Between coil and contacts	10 Hz~ 55 Hz, 1.5 mm
	Malfunction	10 Hz~ 500 Hz, 49 m/s ²
Shock resistance	Between coil and contacts	981 m/s ²
	Malfunction	98.1 m/s ²
Operating temperature		-40 °C~85 °C (Without condensation and freezing)
Operating humidity		20% RH ~85% RH
Terminal style		PCB terminal
Category of protection		RT II (Flux proof)
Weight		About 89.5 g

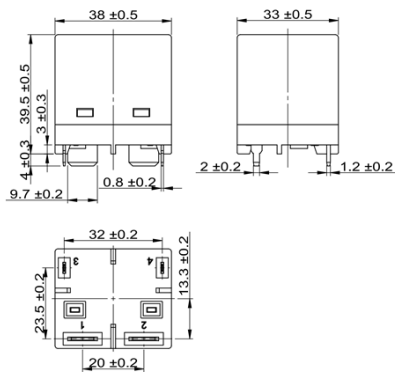
Notes:

- Unless otherwise specified, the above values are the initial at 23°C.

ORDERING INFORMATON

	CHAR	-1	12	A90	C	,XXX
1.Product Family	CHAR series					
2.Contact form	1=1 Form A (SPDM)					
3.Coil rated voltage	06 =06 VDC 09 =09 VDC 12 =12 VDC 24 =24 VDC 48 =48 VDC					
4.Rated switching current	A90=90 A					
5.Product code	C series					
6.Additional numbers and letters	000-999, AAA-ZZZ, aaa-zzz or blank, which does not represent electrical changes, only for specific customer requirements					

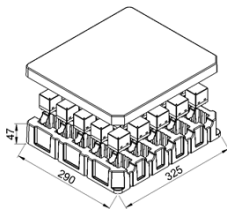
OUTLINE DIMENSION



Notes:

- 1) Unmarked geometric tolerance are as follows:
outline dimension $\leq 1\text{mm}$, reference tolerance is $\pm 0.2\text{mm}$;
outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, reference tolerance is $\pm 0.3\text{mm}$;
outline dimension $> 10\text{mm}$, reference tolerance is $\pm 0.5\text{mm}$;

PACKAGING FIGURE



25 pcs inside a box
100 pcs inside a carton

Disclaimer:

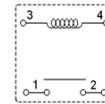
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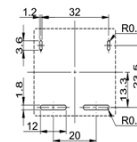
WIRING DIAGRAMS



Notes:

- 1) The schematic of wiring diagrams is the bottom view in the above.

PCB BOARD LAYOUTS



Notes:

- 1) The schematic of assembling with PCB is the bottom view in the above.

CHAR-C Series 200A~270A Photovoltaic Relay

PRODUCT FEATURES

- Outline dimension : Normalized form : 62.7 mm×44.4 mm×55 mm
Radiating form : 62.7 mm×54.4 mm×55 mm
- 1 Form X arrangement , GAP≥4.0 mm
- Designed to meet GB21711.1, IEC61810, UL60947-1, RoHS, REACH SVHC requirements
- Environmental protection category RTII
- Contact switching capability with 200 A/250A /270A
- Applied to the inverter in solar photovoltaic field
- To reduce power loss, a small coil holding-voltage has been used for working coil
- Insulation class: F class



File NO. E341422



File NO. R50499133



File NO. CQC21002285874

APPLICATION

- Circuit Control of Inverter

COIL PARAMETERS

Rated voltage (VDC)	Rated power (W)	Rated current (mA)	Coil resistance ($\Omega \pm 10\%$)	Operate voltage (VDC)	Release voltage (VDC)
6	4	666	9	≤4.5	≥0.6
9	4	444	20.25	≤6.75	≥0.9
12	4	333	36	≤9	≥1.2
24	4	166.6	144	≤18	≥2.4
48	4	83.3	576	≤36	≥4.8

Notes :

- The above values are the initial at 23°C.

HOLD VOLTAGE

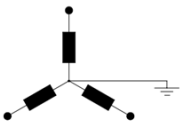
Rated voltage (VDC)	Hold voltage of coil (VDC)
6	3.3~6
9	4.95~9
12	6.6~12
24	13.2~24
48	26.4~48

Notes :

- The above values are only the reference values at 23°C. Please contact the company for details.

APPLICATION ENVIRONMENT

When the product is applied at 830VAC, the power supply system is star connected, as shown in the figure.



CONTACT PARAMETERS

Shape	Normalized form			Radiating form		
	200A	250A	270A	200A	250A	270A
Type						
Contact arrangement	1 Form X					
Contact material	Ag Alloy					
Contact resistance	≤1 m Ω (6 VDC 20 A)					
Contact rating	Making: 55 A , Carry: Rated current , Break: 55 A					
Max. breaking current	220	275		220	275	
Rated switching voltage	1000 VAC			830 VAC		
Max. switching power	220000	275000		182600	228250	
Electrical endurance	≥3×10 ⁴ 次 (at 85 °C , 1 s ON/9 s OFF)					
Minimum load	1 Million cycles, Coil: 0.2 s ON / 0.2 s OFF					

Notes :

- The life expectancy will be lower when a diode is used in parallel with the coil.

OTHER PARAMETERS

Dielectric strength	between open contacts	2500 VAC. 50/60 Hz 1 min	
	between coil to contacts	5000 VAC. 50/60 Hz 1 min	
Insulation resistance	100 M Ω (1000 VDC)		
Operate time (Rated voltage)	≤45 ms (at 85 °C)		
Release time (Rated voltage)	≤10 ms		
Vibration resistance	Between coil and contacts	10 Hz~ 55 Hz , 1.5 mm	
	Malfunction	10 Hz~ 500 Hz , 49 m/s ²	
Shock resistance	Between coil and contacts	981 m/s ²	
	Malfunction	98.1 m/s ²	
Operating temperature	-40 °C~85 °C (Without condensation and freezing)		
Operating humidity	20% RH ~85% RH		
Terminal style	PCB terminal		
Category of protection	RT II (Flux proof)		
Weight	Normalized form	200A	Approx.215 g
		250A	Approx.225 g
		270A	Approx.225 g
	Radiating form	200A	Approx.225 g
		250A	Approx.235 g
		270A	Approx.235 g

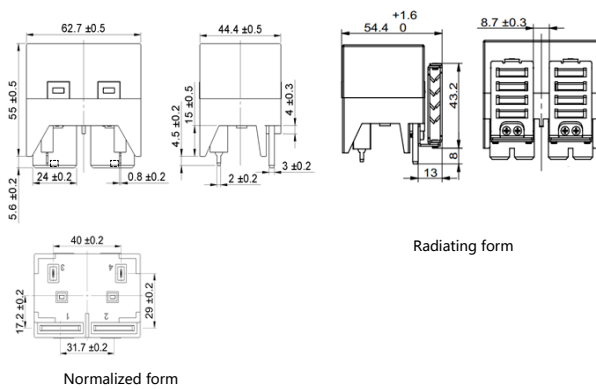
Notes :

- Unless otherwise specified, the above values are the initial at 23°C.

ORDERING INFORMATION

	CHAR	-1	12	A270	C	C	,XXX
1.Product Family							
CHAR series							
2.Contact form							
1=1 Form A (SPDM)							
3.Coil rated voltage							
06 =06 VDC , 09 =09 VDC , 12 =12 VDC , 24 =24 VDC , 48 =48 VDC							
4.Rated switching current							
A200= 200A , A250= 250A , A270= 270A							
5.Product code							
C series							
6. Terminal type							
Not have : Normalized form C : Radiating form							
7.Additional numbers and letters							
000-999 , AAA-ZZZ, aaa-zzz or blank , which does not represent electrical changes, only for specific customer requirements							

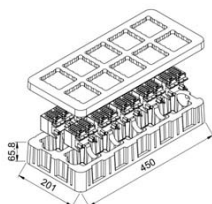
OUTLINE DIMENSION



Notes :

- 1) Unmarked geometric tolerance are as follows:
 outline dimension $\leq 1\text{mm}$, reference tolerance is $\pm 0.2\text{mm}$;
 outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, reference tolerance is $\pm 0.3\text{mm}$;
 outline dimension $> 10\text{mm}$, reference tolerance is $\pm 0.5\text{mm}$.
- 2) Since the Radiating works with electricity as a whole, it is specified that any metal parts or components shall not be installed within 12mm of the five surfaces around the Radiating.
- 3) There is on slot at the bottom of main terminal.
 There is a slot at the bottom of main terminal.

PACKAGING FIGURE



10 pcs inside a box
 20 pcs inside a carton

Disclaimer :

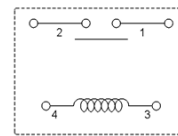
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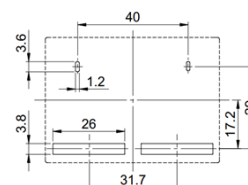
WIRING DIAGRAMS



Notes :

- 1) The schematic of wiring diagrams is the bottom view in the above.

PCB BOARD LAYOUTS



Notes :

- 1) The schematic of assembling with PCB is the bottom view in the above.

CHUROD ELECTRONICS



Latching relays

FEATURES

- Outline dimension (29.3mm×12.7mm×15.3mm)
- Latching relay
- 1 Form A (SPST) or 1 Form C (SPDT) contact arrangement
- Designed to meet cULus, TUV, CQC requirements
- Flux-tight and Wash-tight version available
- RoHS compliance
- REACH SvHC compliance
- Halogen-Free type available
- Glow wire type available



File NO. E341422



File NO. R50422926



File NO. CQC18002208792

APPLICATION

Appliances, Power Supplier, Industrial Control

COIL PARAMETER

Coil voltage	3-48VDC	
Coil power	1 Coil latching	400mW
	2 Coil latching	600mW

COIL DATA @23°C

D type--1 Coil latching type (at 23°C)				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Max.)
3	133.3	22.5	2.25	2.25
5	80	62.5	3.75	3.75
6	66.7	90	4.5	4.5
9	44.4	202.5	6.75	6.75
12	33.3	360	9	9
18	22.2	810	13.5	13.5
24	16.7	1440	18	18
36	11.1	3240	27	27
48	8.3	5760	36	36

H type--2 Coil latching type (at 23°C)				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Max.)
3	200	15	2.25	2.25
5	120	41.7	3.75	3.75
6	100	60	4.5	4.5
9	66.7	135	6.75	6.75
12	50	240	9	9
18	33.3	540	13.5	13.5
24	25	960	18	18
36	16.7	2160	27	27
48	12.5	3840	36	36

Note:

- The data shown above are initial values.

CONTACT DATA

Contact arrangement	1 Form A (SPST) / 1 Form C (SPDT)	
Contact material	Ag Alloy	
Initial contact resistance	100mΩ max.(at 6VDC,1A)	
Max. switching voltage	277VAC	
Max. switching current	20A(NO) / 5A(NC)	
Max. switching power	NO: 5540VA	
	NC: 1385VA	
Contact rating	NO :	12A @ 277VAC
		17A @ 277VAC
		20A @ 277VAC
		1HP @ 240VAC
		TV-8 @ 240VAC
		Tungsten 1500W @ 120VAC
		Tungsten 3000W @ 240VAC
		Electronic ballast 8A @ 277VAC
		EM Ballast 3.7A @ 480VAC
		NC:
Mechanical endurance	1,000,000 ops Min.(no load)	
Electrical endurance (Resistive Load)	NO: 12A @ 277VAC,100,000 ops T85	
	NO: 17A @ 277VAC,50,000 ops T85	
	NO: 20A @ 277VAC,30,000 ops T85	
	NC: 5A @ 277VAC,50,000 ops T85	
Minimum load (reference value)	100mA @5VDC	

CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	75% of nominal voltage or less	
Operate time (At nominal voltage)	15ms max.	
Release time (At nominal voltage)	15ms max.	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	5,000 VAC, 50/60 Hz for 1 min
	Between open contacts	1,000 VAC, 50/60 Hz for 1 min
Surge voltage between coil and contacts	10,000V(1.2/50us)	
Vibration resistance	Destruction	10 to 55 Hz, 1.5mm double amplitude
	Malfunction	10 to 55 Hz, 1.5mm double amplitude
Shock resistance	Destruction	1,000m/S ² (100G approximately)
	Malfunction	1,00m/S ² (10G approximately)
Ambient temperature	-40~+85°C (without icing or condensation)	
Ambient humidity	20%~85% RH	
Pulse Duration	50ms Min.	
Termination	PCB terminals	
Enclosure	V: Vented(Flux-tight, RTII)	

ORDERING INFORMATION

CHI03

L

-V

-1

12

D

A

2

,000

1. Product Family

CHI03: 17A, Contact terminal pin 5.0mm (code 3)

2. Coil System

L = Latching version

3. Enclosure

V = Vented (Flux-tight, RTII)

S = Sealed (Wash-tight, RTIII)

4. Number of Poles

1=1 pole

5. Rated Coil Voltage

03,05,06,09,12,18,24,36,48VDC

6.Coil Power

D = 1 coil latching 400mW H = 2 coil latching 600mW

7. Contact Arrangement

A = Form A(SPST) C = Form C(SPDT)

8.Contact material

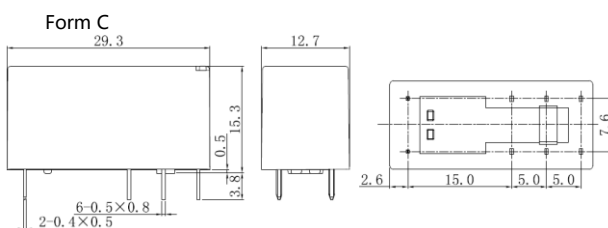
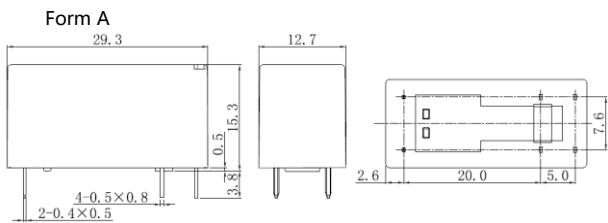
2=AgSnO₂

9. Additional numbers and /or letters

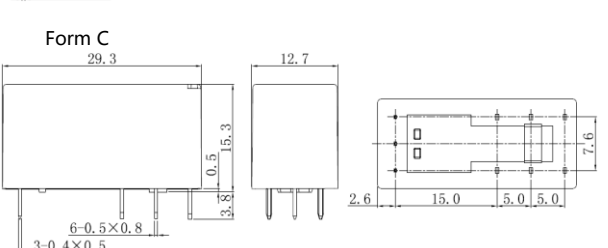
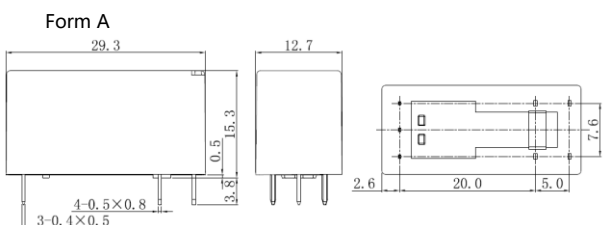
000-999, AAA-ZZZ, aaa-zzz or blank, which does not represent electrical changes, only for specific customer requirements

OUTLINE DIMENSION

1 coil latching type



2 coil latching type



WIRING DIAGRAMS (BOTTOM VIEWS)

1 coil latching type

Form A

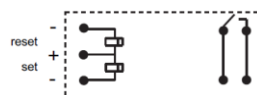


Form C

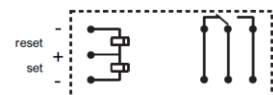


2 coil latching type

Form A



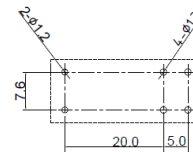
Form C



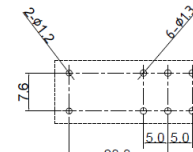
PC BOARD LAYOUTS (BOTTOM VIEWS)

1 coil latching type

Form A

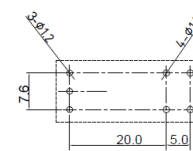


Form C

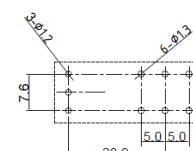


2 coil latching type

Form A



Form C



Remark:

1) The reference tolerance in outline dimension:

outline dimension $\leq 1\text{mm}$, reference tolerance is $\pm 0.2\text{mm}$;

outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, reference tolerance is $\pm 0.3\text{mm}$;

outline dimension $> 5\text{mm}$, reference tolerance is $\pm 0.5\text{mm}$.

2) The reference tolerance for PC Board layout is $\pm 0.1\text{mm}$.

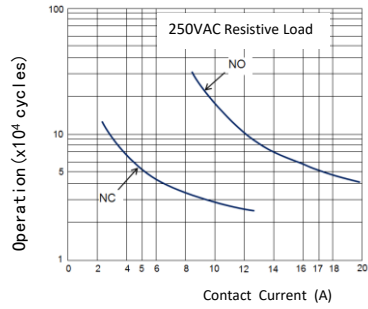
3) Relay is on the "reset" or "set" status when being released from stock, with the consideration of shock risen from transit and relay mounting, relay would be changed to "set" or "reset" status, therefore, when application (connecting the power supply), please rest the relay to "set" or "reset" status on request.

[Http://www.churod.com](http://www.churod.com)

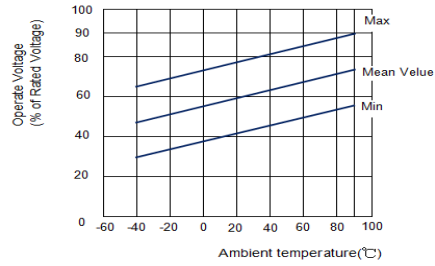
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REFERENCE DATA

Electrical Life

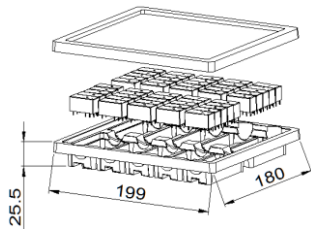


Coil Operate/Release Voltage & Temperature Cure



PACKAGING FIGURE

Box



50 pcs inside a box

500 pcs inside a carton

Disclaimer:

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FEATURES

- 60A Switching Capability
- Single Coil Latching; Double Coil Latching
- 4,000VAC Dielectric Strength(Between Coil and Contact)
- RoHS Compliance
- REACH SvHC Compliance



APPLICATION

Pre-payment Power Meters
Charging Pile

Coil Power

Coil voltage	9-48VDC	
Coil power	Single Coil	1.5W
	Double Coil	3W+3W

CONTACT DATA

Contact arrangement	1 Form B/1 Form A/1 Form C
Contact material	AgSnO2
Initial contact resistance	2mΩ max.@6VDC,1A
Max. switching voltage	250VAC/30VDC
Max. switching current	60A
Max. switching power	15,000VA
Contact rating(Resistive Load)	60A@ 250VAC/30VDC
Mechanical endurance	100,000 ops Min.(no load)
Electrical endurance	10,000 ops Min(rated load)

COIL DATA @23°C

Single Coil(1.5W)				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Max.)
9	167	54	6.8	6.8
12	125	96	9	9
24	63	384	18	18
48	31	1536	36	36

Double Coil(3W+3W)				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Max.)
9	333	27+27	6.8	6.8
12	250	48+48	9	9
24	125	192+192	18	18
48	63	768+768	36	36

Note: Special ordering for other coil voltage

CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	75% of nominal voltage or less	
Operate time (At nominal voltage)	20ms max.	
Release time(At nominal voltage)	20ms max.	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	4,000 VAC, 50/60Hz for 1 min
	Between open contacts	1,500 VAC, 50/60Hz for 1 min
Vibration resistance	10 to 55 Hz,1.5mm double amplitude	
	10 to 55 Hz,1.5mm double amplitude	
Shock resistance	Destruction	1,000 m/s ² (100G approximately)
	Malfunction	100 m/s ² (10G approximately)
Ambient temperature	Operating: -40~ +85°C (without icing or condensation)	
Ambient humidity	Operating: 20% to 85% RH	
Pulse Duration	50ms Min	
Weight	Approx. 34g	

ORDERING INFORMATION

CHP5 -1A 12 B N B 2 -B 60 000

1. Product Family

CHP5 series

2. Number of Poles

1A=1 Form A or 1 Form B 1C=1 Form C

3. Rated Coil Voltage

09=9VDC 12=12VDC 24=24VDC 48=48VDC

4. Coil Type

S=Single Coil B=Double Coil

5. Coil Polarity

P= Positive N:Negative (Refer to "DIAGRAMS Coil Polarity")

6.Contact Arrangement

1A: A=Open Contact B= Close Contact

1C: B=Close M(4#)contact and C(3#) A=Open M(4#)contact and C(3#)

7. Contact Material

2=AgSnO2

8.Terminal shape

A=Terminal Type A

B=Terminal Type B

9. Contact Rating

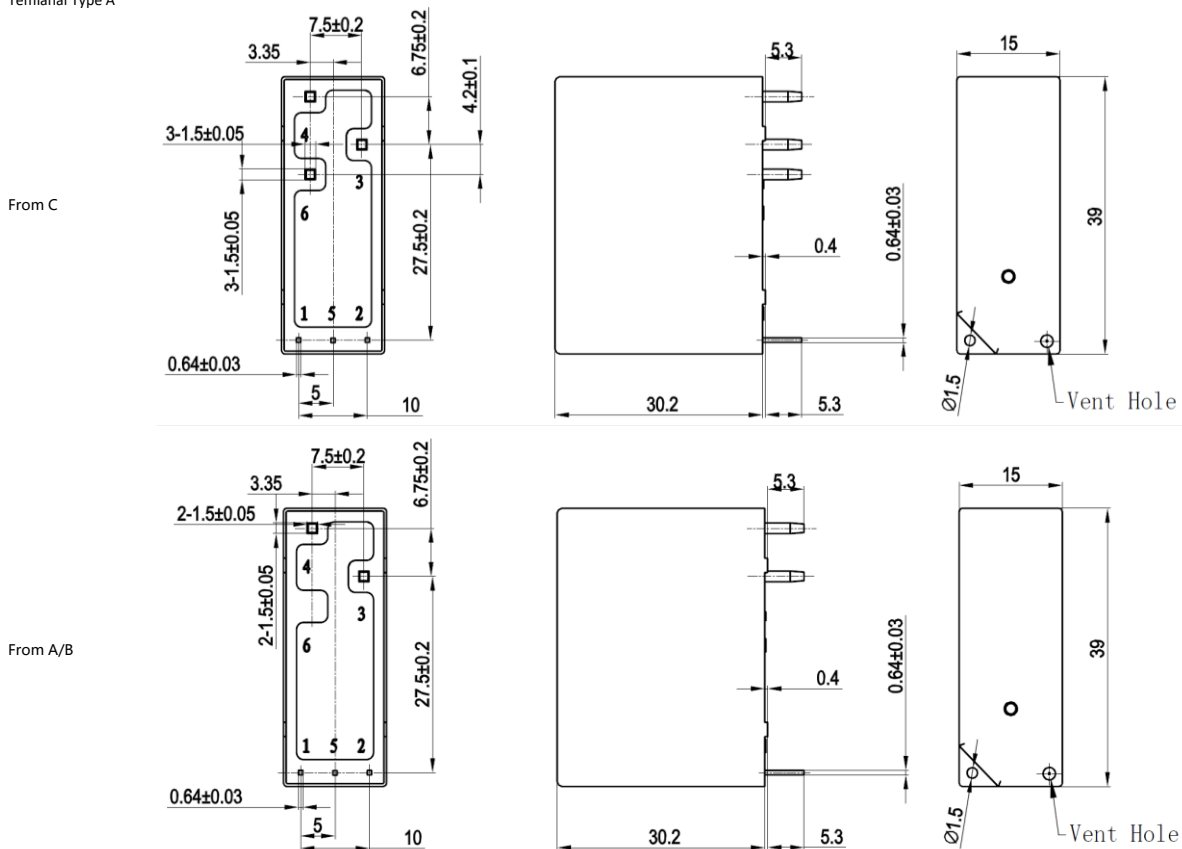
40=40A 50=50A 60=60A

10. Additional numbers and / or letters

A combination of letters and Numbers (or blank),which does not represent electrical changes, only for specific customer requirements

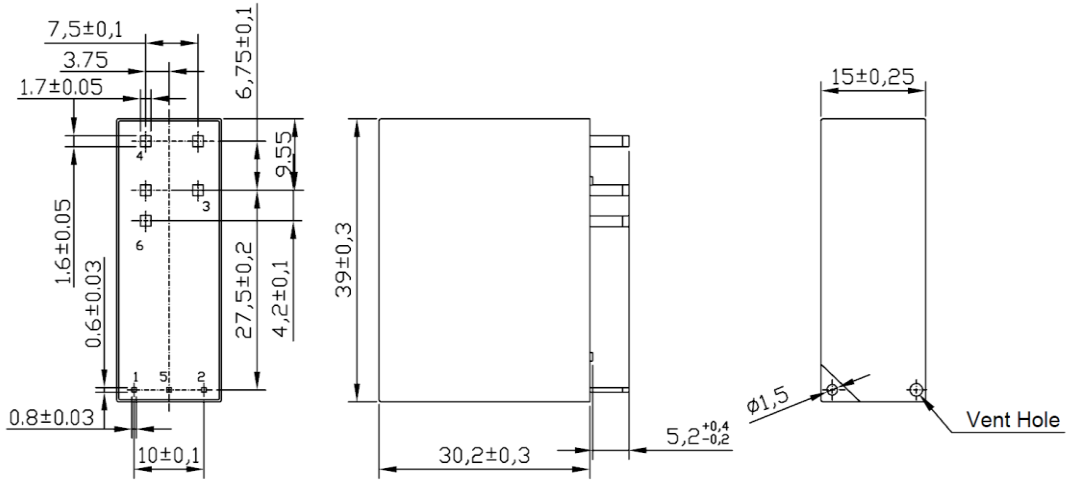
Typical Outline

Terminal Type A

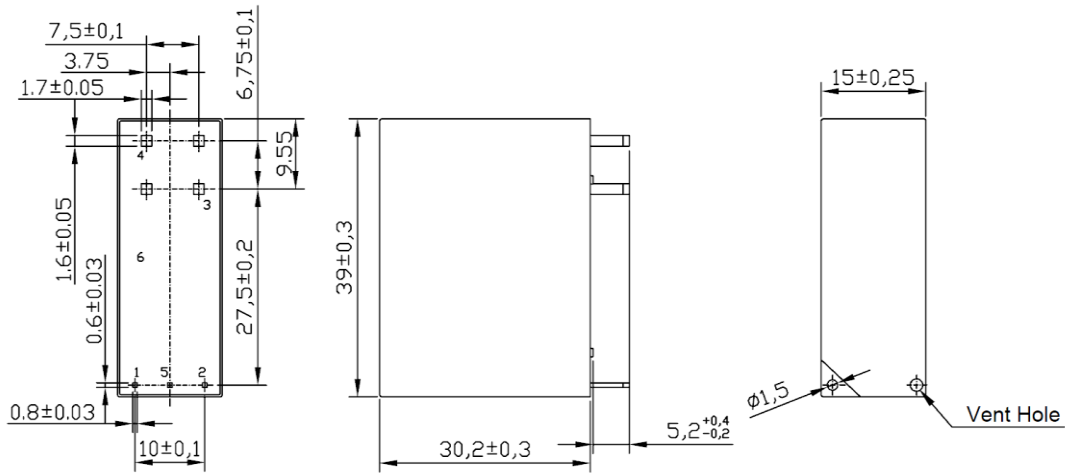


Terminal Type B

From C



From A/B



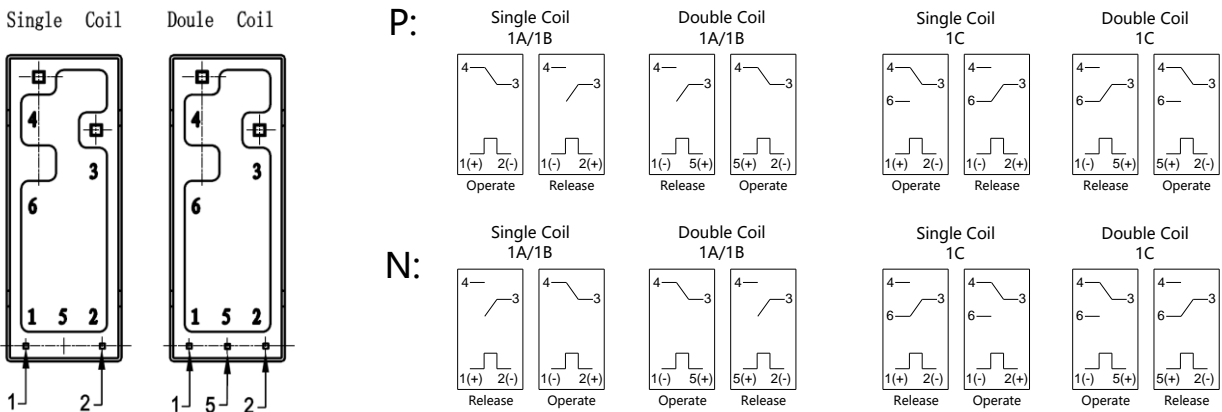
Remark: 1)The reference tolerance in outline dimension:

- outline dimension $\leq 1\text{mm}$, reference tolerance is $\pm 0.2\text{mm}$;
- outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, reference tolerance is $\pm 0.3\text{mm}$;
- outline dimension $> 5\text{mm}$, reference tolerance is $\pm 0.5\text{mm}$.

2)The reference tolerance for PC Board layout is $\pm 0.1\text{mm}$.

3) Relay is on the "reset" or "set" status when being released from stock, with the consideration of shock risen from transit and relay mounting, relay would be changed to "set" or "reset" status, therefore, when application (connecting the power supply), please rest the relay to "set" or "reset" status on request.

DIAGRAMS Coil Polarity



Operating Instruction

1,Default status of contacts is close(reset). But due to the collision during transportation or assembly, contacts status could be changed. So it's necessary to reset the contacts status before using.

2,This specifications is just reference, reserve the right to change the parameters without prior notice

Disclaimer:

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And the user should be in a right position to choose the suitable product for their own application. If there is any new need, please contact Churod for the technical service.

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FEATURES

- Dimensions of maximum products (40.4mm×30mm×17mm)
- 60A~100A Switching Capability
- Single Coil Latching; Double Coil Latching
- 4,000VAC Dielectric Strength(Between Coil and Contact)
- RoHS Compliance
- REACH SvHC Compliance
- IEC62055-31 UC2 Compliance(80A&90A)/UC3 Compliance(100A)
- Coil wire insulation class F
- Customized Terminal Likes Shunt ,Braided Cu-wire Etc



APPLICATION

Pre-payment Power Meters

Coil Power

H-Type

Coil voltage	9-48VDC	
Coil power	Single Coil Power	2W
	Double Coil Power	4W+4W

D-Type

Coil voltage	9-48VDC	
Coil power	Single Coil Power	1.5W
	Double Coil Power	3W+3W

L-Type

Coil voltage	9-48VDC	
Coil power	Single Coil Power	1W
	Double Coil Power	2W+2W

CONTACT DATA

Contact arrangement	1B/1A
Contact material	AgSnO2
Initial contact resistance	2mΩ max.@6VDC,1A
Max. switching voltage	250VAC
Max. switching current	100A
Max. switching power	25,000VA
Contact rating(Resistive Load)	60A@ 250VAC
	80A@ 250VAC
	90A@ 250VAC
	100A@ 250VAC
Mechanical endurance	500,000 ops Min.(no load)
Electrical endurance	10,000 ops Min.(rated load)
Minimum load(reference value)	1A @5VDC

COIL DATA @23°C

H-Type

Single Coil(2.0W)				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
9	225	40	6.8	6.8
12	167	72	9	9
24	83	288	18	18
48	42	1152	36	36

H-Type

Double Coil(4W+4W)				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
9	450	20+20	6.8	6.8
12	333	36+36	9	9
24	167	144+144	18	18
48	83	576+576	36	36

D-Type

Single Coil(1.5W)				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
9	167	54	6.8	6.8
12	125	96	9	9
24	63	384	18	18
48	31	1536	36	36

CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	75% of nominal voltage or less	
Operate time (At nominal voltage)	20ms max.	
Release time(At nominal voltage)	20ms max.	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	4,000 VAC, 50/60Hz for 1 min
	Between open contacts	2,000 VAC, 50/60Hz for 1 min
Vibration resistance	10 to 55 Hz,1.5mm double amplitude	
	10 to 55 Hz,1.5mm double amplitude	
Shock resistance	Destruction	1,000 m/s2(100G approximately)
	Malfunction	100 m/s2(10G approximately)
Ambient temperature	Operating: -40~+85°C (without icing or condensation)	
Ambient humidity	Operating: 20% to 85% RH	
Pulse Duration	80ms Min	
Weight	Approx. 50g	

D-Type

Double Coil (3W+3W)				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance ($\Omega \pm 10\%$)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
9	334	27+27	6.8	6.8
12	250	48+48	9	9
24	125	192+192	18	18
48	63	768+768	36	36

L-Type

Single Coil (1W)				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance ($\Omega \pm 10\%$)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
9	111	81	6.8	6.8
12	83	144	9	9
24	42	576	18	18
48	21	2304	36	36

L-Type

Double Coil (2W+2W)				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance ($\Omega \pm 10\%$)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
9	222	40.5+40.5	6.8	6.8
12	167	72+72	9	9
24	84	288+288	18	18
48	42	1152+1152	36	36

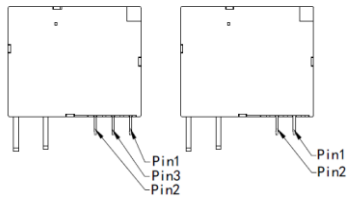
ORDERING INFORMATION

	CHP8	-1	12	D	A	2	-S	N	R	90	,P	000
1. Product Family	CHP8 series											
2. Number of Poles	1=1 pole											
3. Rated Coil Voltage	09=9VDC 12=12VDC 24=24VDC 48=48VDC											
4. Coil Power	H=2.0W(Single Coil) 4W (Double Coil) (100A) D=1.5W(Single Coil) 3W (Double Coil) (60A&80A&90A) L=1.0W(Single Coil) 2W (Double Coil) (60A)											
5. Contact Arrangement	B= Form B(SPST-NC) A= Form A(SPST-NO)											
6. Contact Material	2=AgSnO2											
7. Coil Type	S=Single Coil D=Double Coil											
8. Coil Polarity	(Blank:Positive N:Negative (Refer to "DIAGRAMS Coil Polarity")											
9. Coil Terminal Position	Blank: Coil and load terminal on the same side R: Coil and load terminal on the different side (Refer to Coil Terminal Position")											
10. Contact Rating	60=60A 80=80A 90=90A 100=100A											
11. Terminal Type(customized according to customer requirements)	P: PCB Type without brush wire W: PCB Type with brush wire M: With shunt N: With shunt and brush wire											
12. Additional numbers and /or letters	A combination of letters and Numbers (or blank),which does not represent electrical changes, only for specific customer requirements											

DIAGRAMS :Coil Terminal

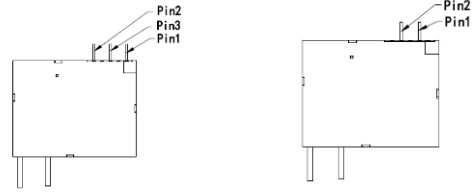
(Blank) D;Double Coil

S;Singe Coil



R: D;Double Coil

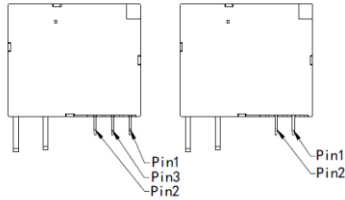
S;Singe Coil



DIAGRAMS :Coil Polarity

D;Double Coil

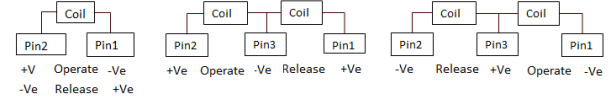
S;Singe Coil



(Blank):

Single Coil

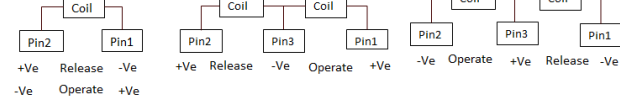
Double Coil



N:

Single Coil

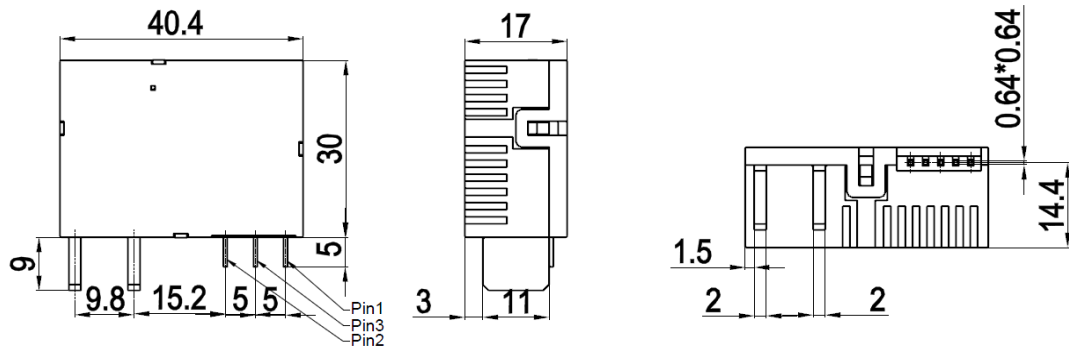
Double Coil



Standard size

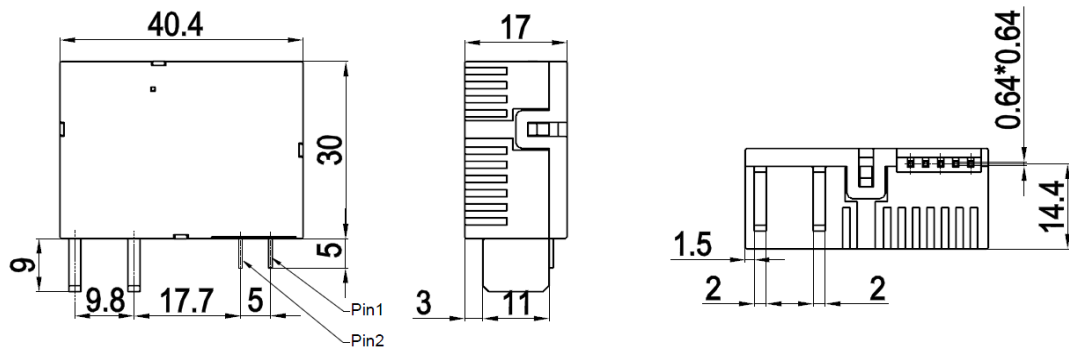
100A

D;Double Coil

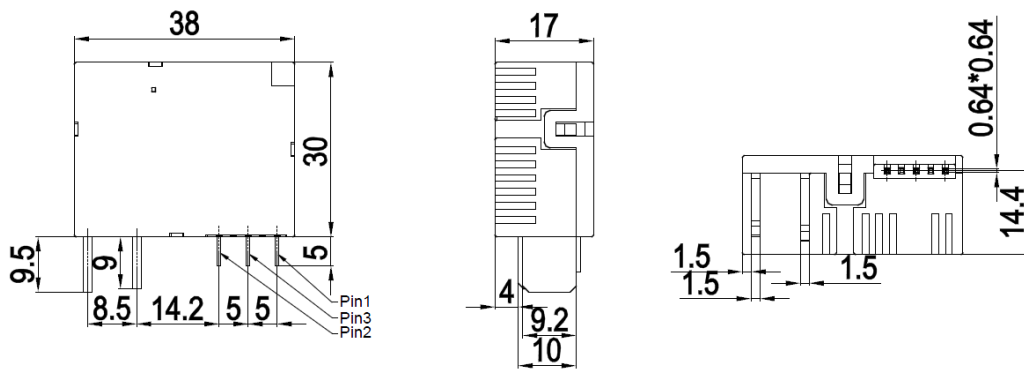


100A

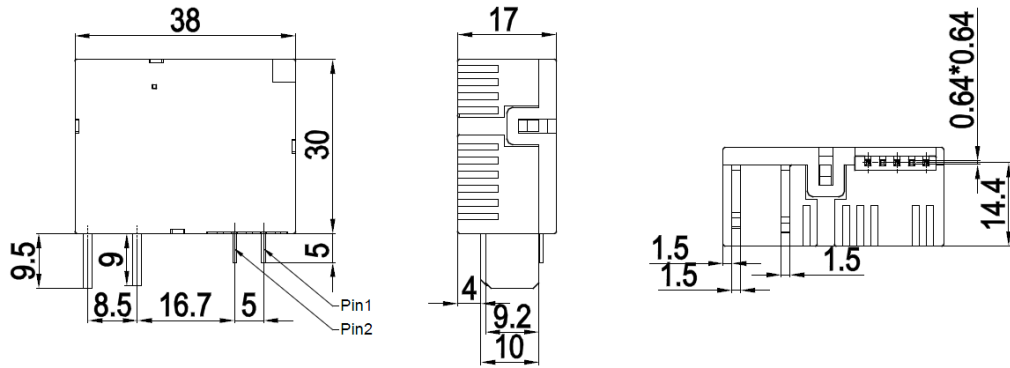
S;Singe Coil



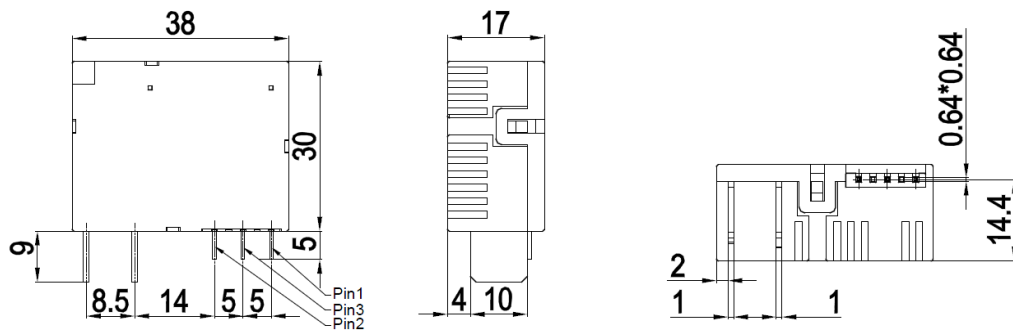
80-90A
D;Double Coil



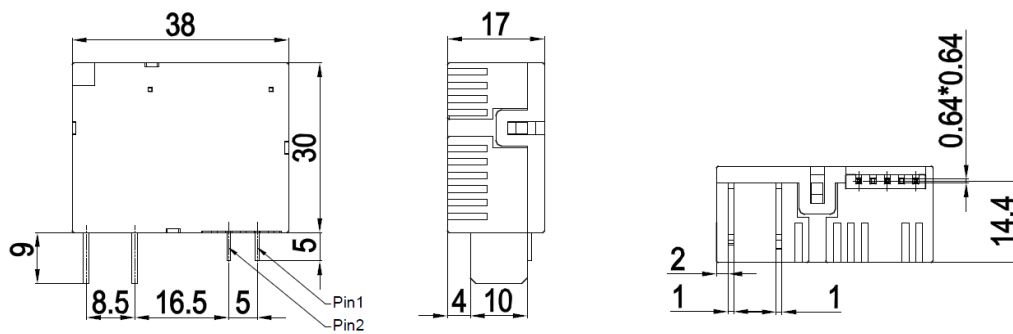
80-90A
S;Single Coil



60A
D;Double Coil



60A
S;Single Coil

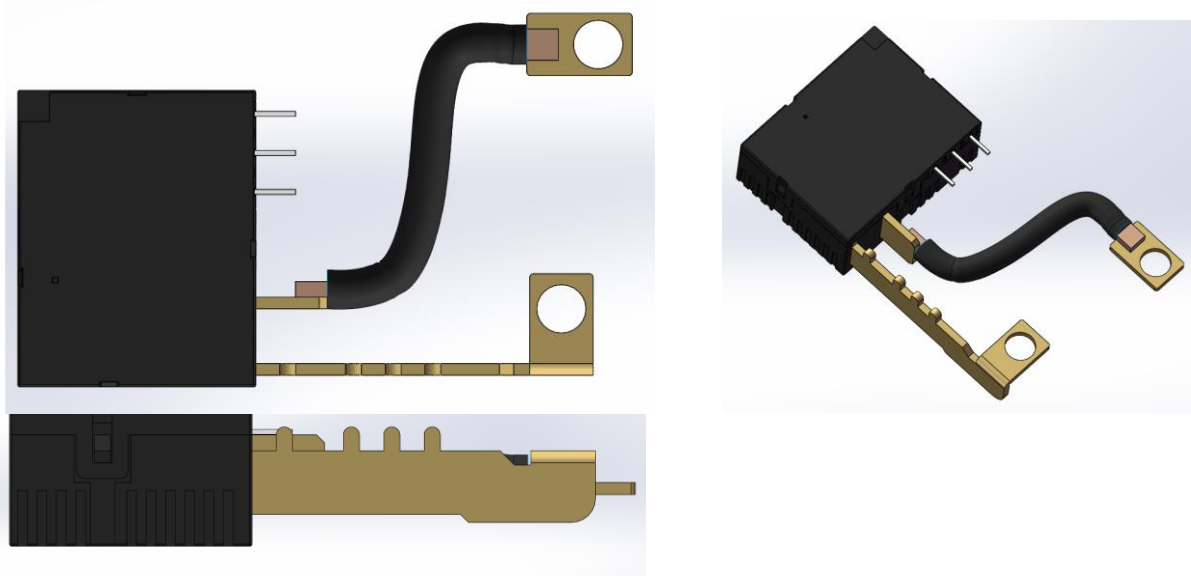


Unit:mm

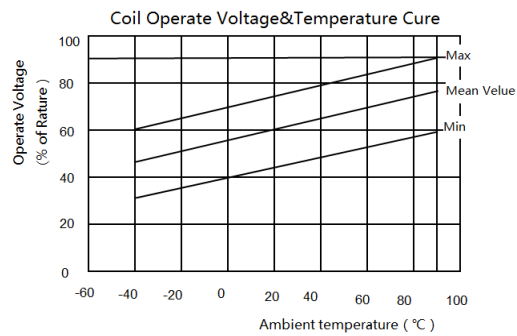
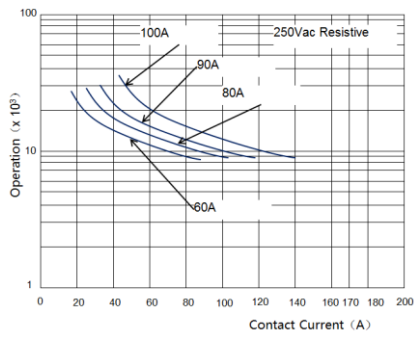
Remark:

- 1)The reference tolerance in outline dimension:
outline dimension $\leq 1\text{mm}$, reference tolerance is $\pm 0.2\text{mm}$;
outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, reference tolerance is $\pm 0.3\text{mm}$;
outline dimension $> 5\text{mm}$, reference tolerance is $\pm 0.5\text{mm}$.
- 2)The reference tolerance for PC Board layout is $\pm 0.1\text{mm}$.
- 3) Relay is on the "reset" or "set" status when being released from stock, with the consideration of shock risen from transit and relay mounting,relay would be changed to "set" or "reset" sttus, therefore, when application (connecting the power supply), please rest the relay to "set" or "reset" status on request.

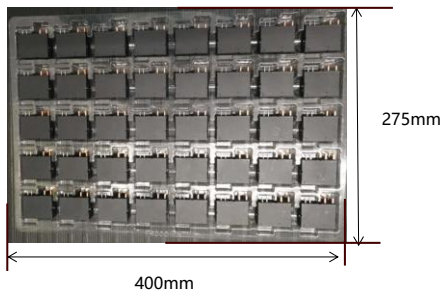
Customized typical



Reference Date



PACKAGING FIGURE



40 pcs inside a box (Lengt*Width 400mm*275mm)

400pcs inside a carton (Lengt*Width*Height 415mm*290mm*220mm)

Disclaimer:

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CHUROD

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