Churod Electronics

EV CHARGER RELAYS

AUTOMOTIVE& NEW ENERGY RELAY

PRODUCT BROCHURE

Electric Vehicle · Charging · Solar Photovoltaic · Network Power

CHS-L Series 30-60A Miniature Power Relay

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℃

CHS-LA Standard				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
5	180	27	3.75	0.25
6	150	40	4.5	0.3
9	100	97	6.75	0.45
12	75	155	9	0.6
18	50	360	13.5	0.9
22	40.9	538	16.5	1.1
24	36	640	18	1.2
48	18.8	2560	36	2.4
110	8.2	13444	82.5	5.5

CHS-LC Standard				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
5	180	27	3.75	0.25
6	150	40	4.5	0.3
9	100	97	6.75	0.45
12	75	155	9	0.6
18	50	360	13.5	0.9
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

CHS-LA2 Standard				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
9	100	97	6.75	0.45
12	75	155	9	0.6
18	50	360	13.5	0.9
24	37.5	640	18	1.2
48	18.8	2560	36	2.4

Note:

1) 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			100mΩ 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
		LA2	15A-50A-15A @ 250VAC, Make-Carry-Break
			15A-60A-15A @ 250VAC, Make-Carry-Break
	Form C	LC	20A(N.O)/10A(N.C) @ 277VAC
		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 MΩ 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℃ (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	,000

1. Product Family

CHS01:PCB terminal
CHS02:PCB & 250QC terminal

2. Enclosure

V = Vented (Flux-tight, RTII)
S = Sealed (Wash-tight, RTIII)

3. Number of Poles

1=1 pole

4. Rated Coil Voltage

05,06,09,12,18,22,24,48,60,110VDC

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

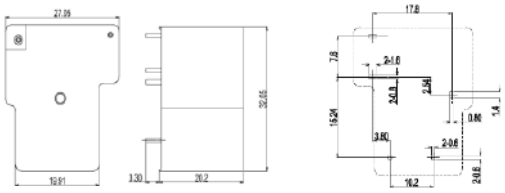
8. Additional numbers and /or letters

000-999 , AAA-ZZZ , aaa-zzz or blank , only for specific customer requirements,ex:(43A)=43A,(50A)=50A,(60A)=60A ...

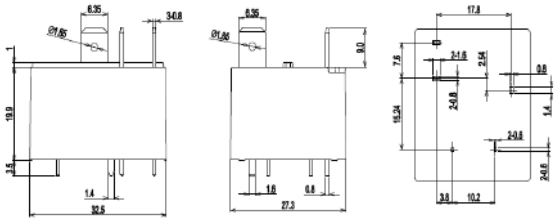
OUTLINE DIMENSION

Unit：mm

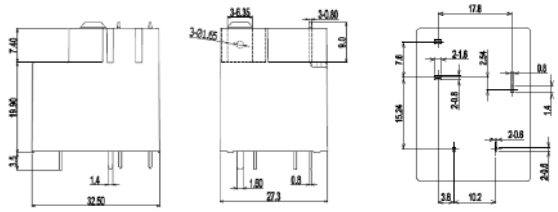
CHS01 ver.



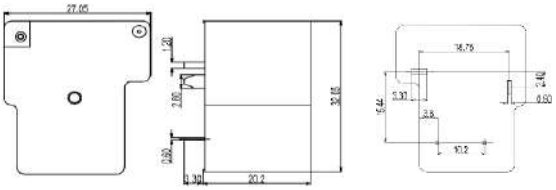
CHS02 ver.



CHS02 G ver.



CHS01-LA2 ver.



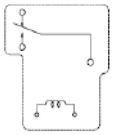
Remark:

1)The reference tolerance in outline dimension:
outline dimension ≤1mm, reference tolerance is ±0.2mm;
outline dimension ＞1mm and ≤5mm, reference tolerance is ±0.3mm;
outline dimension ＞5mm, reference tolerance is ±0.5mm.

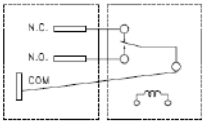
2)The reference tolerance for PC Board layout is ±0.1mm.

WIRING DIAGRAMS (BOTTOM VIEWS)

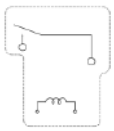
CHS01 Form C



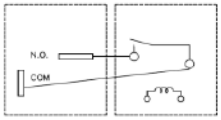
CHS02/CHS02 (G Series) Form C



CHS01 Form A

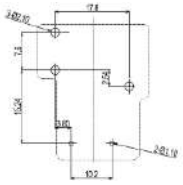


CHS02/CHS02 (G Series) Form A

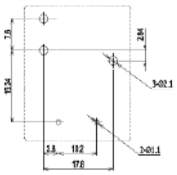


PC BOARD LAYOUTS (BOTTOM VIEWS)

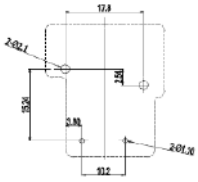
CHS01 Form C



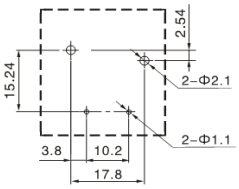
CHS02/CHS02 (G Series) Form C



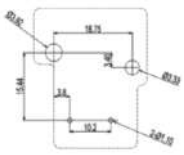
CHS01-LA Form A



CHS02/CHS02 (G Series) Form A



CHS01-LA2 Form A



CHS-H Series 30-60A Miniature Solar Relay

FEATURES

- Outline dimension (32.1mm×27.05mm×20.2mm)
- 1 Form A (SPST) contact arrangement
- Designed to meet cULus,TUV,CQC requirements
- PCB terminal layout
- RoHS compliance
- REACH SvHC compliance
- Halogen-Free type available
- Glow wire type available

File NO. E341422

File NO. R50271657

File NO. CQC13002102346

APPLICATION

Solar inverter , Power Supplier,Industrial Control

COIL PARAMETER

Coil voltage	9-48VDC	
Coil power	High capacity ver.	2250mW
Hold power *	0.35W min	
Holding voltage 2) 3)	40%~120%Un（at 23℃）	
	40%~80%Un（at 85℃）	

COIL DATA @23℃

CHS-HA Standard				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
9	250	36	6.75	0.45
12	187.5	64	9	0.6
18	125	144	13.5	0.9
24	93.8	256	18	1.2
48	46.9	1024	36	2.4

Note:

1) The data shown above are initial values.

2) The coil holding voltage is that voltage of relay coil after being applied rated voltage for 100ms.

3) The relay does not allow for a long time to maintain the upper limit of the holding voltage. It is suggested that when the relay coil applied to the rated voltage 100ms, then decreases to the lower limit value of the voltage specification, prevent overheating of relay.

CONTACT DATA

Contact arrangement		1 Form A (SPST)
Contact material		Ag Alloy
Initial contact resistance		100mΩ max.(at 6VDC,1A)
Max. switching voltage		277VAC
Max. Current	Switching	35A
	Carrying	60A
Max. power	Switching	9,695VA
	Carrying	16,620VA
Contact rating		35A @ 277VAC
		15A-43A-15A @ 250VAC, Make-Carry-Break
		15A-50A-15A @ 250VAC, Make-Carry-Break
		15A-60A-15A @ 250VAC, Make-Carry-Break
Mechanical endurance		300,000 ops Min.(no load)
Electrical endurance (Resistive Load)		35A @ 250VAC,30,000 ops T85
		15A-60A/50A/43A-15A @ 250VAC, Make-Carry-Break ,30,000 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 MΩ min. (at 500 VDC)
Dielectric strength	Between coil and contacts	4,000 VAC, 50/60 Hz for 1 min
	Between open contacts	2,500 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℃ (without icing or condensation)
Ambient humidity		20%~85% RH
Termination		PCB terminals
Enclosure (94V-0 Flammability Ratings)		V: Vented(Flux-tight, RTII)
Unit Weight		Approx.26g

ORDERING INFORMATION

	CHS01	-V	-1	12	H	A	2	,000

1. Product Family
CHS01: PCB terminal

2. Enclosure
V = Vented (Flux-tight, RTII)

3. Number of Poles
1=1 pole

4. Rated Coil Voltage
09,12,18,24,48VDC

5.Coil Power
H = High capacity (2250mW)

6. Contact Arrangement
A = Form A(SPST)

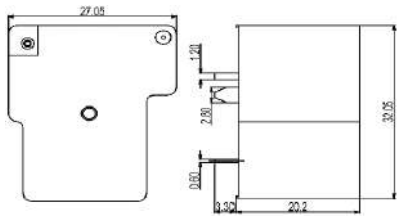
7.Contact material
Blank = AgCdO(43A and down)
2 = AgSnO2

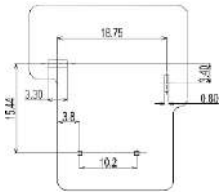
8. Additional numbers and /or letters
000-999 , AAA-ZZZ , aaa-zzz or blank , only for specific customer requirements,ex:(43G)=43A,(50G)=50A,(60G)=60A ...

OUTLINE DIMENSION

Unit：mm

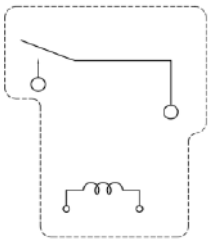
CHS01-H ver.





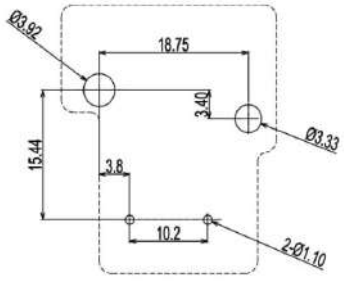
WIRING DIAGRAMS (BOTTOM VIEWS)

CHS01-H ver.



PC BOARD LAYOUTS (BOTTOM VIEWS)

CHS01-H ver.



Remark:

1)The reference tolerance in outline dimension:

outline dimension ≤1mm, reference tolerance is ±0.2mm;

outline dimension ＞1mm and ≤5mm, reference tolerance is ±0.3mm;

outline dimension ＞5mm, reference tolerance is ±0.5mm.

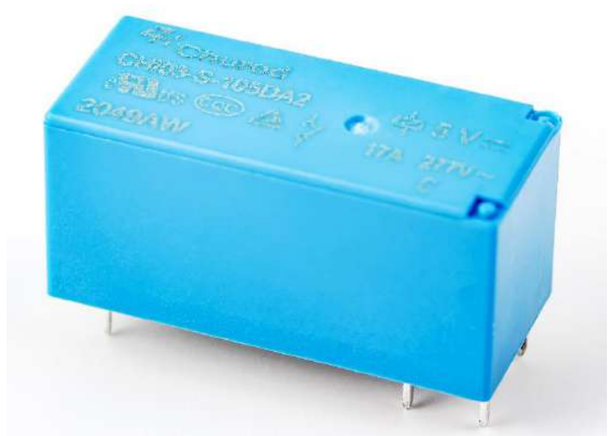
2)The reference tolerance for PC Board layout is ±0.1mm.

CHI03 SERIES 17A MINIATURE POWER RELAY

Churod Electronics

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 avaliable



File NO. E341422

File NO. R50384623

File NO. CQC17002177358

APPLICATION

Appliances, power supper, Industrial Control...etc

COIL PARAMETER

Coil voltage	3-110VDC
Coil power	400mW

COIL DATA@23℃

CHI03				
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
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		100mΩ 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 MΩ 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℃~+105℃ (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

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

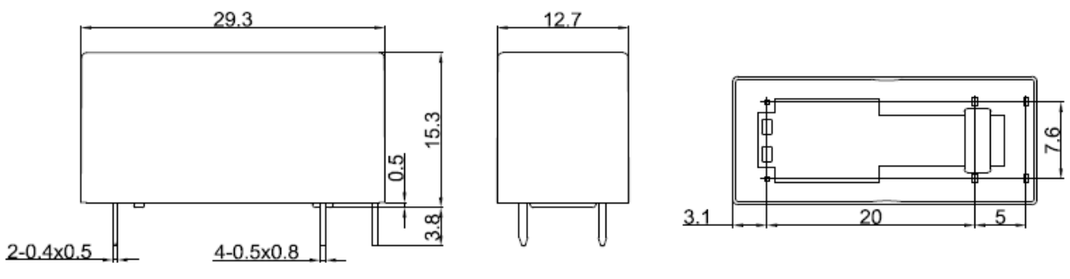
2 = $AgSnO_2$

8.Additional numbers and /or letters

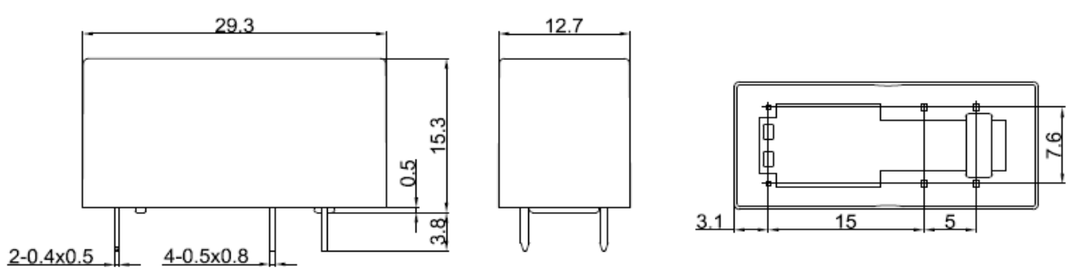
000-999，AAA-ZZZ，aaa-zzz or blank，which does not represent electrical changes, only for specific customer requirements

OUTLINE DIMENSION

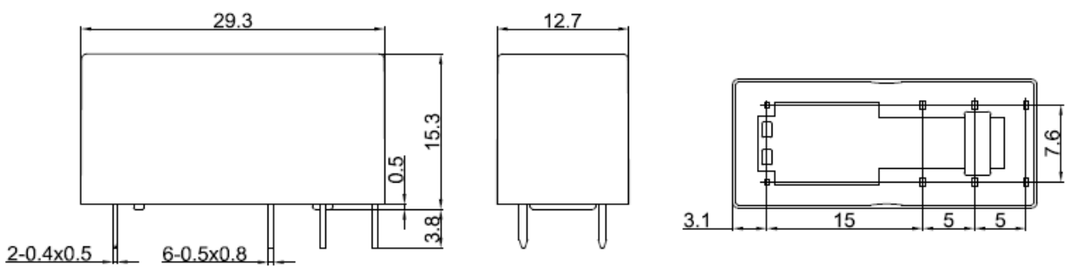
From A



From B

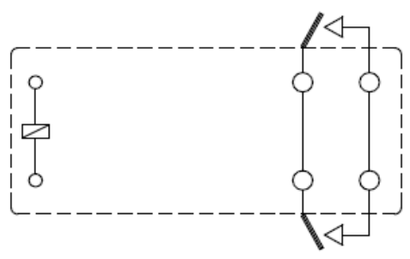


From C



WIRING DIAGRAMS (BOTTOM VIEWS)

From A



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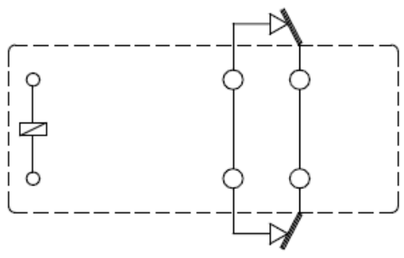
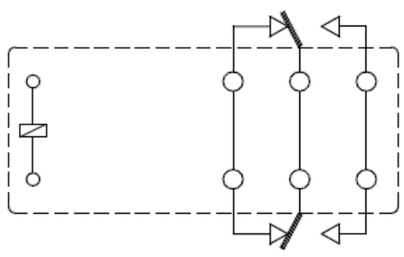
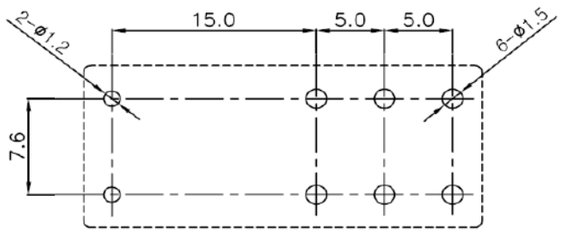


From C



PC BOARD LAYOUTS (BOTTOM VIEWS)



Remark:

1) The reference tolerance in outline dimension:

outline dimension ≤1mm, reference tolerance is ±0.2mm;

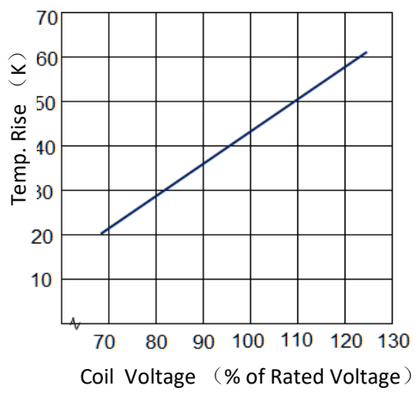
outline dimension > 1mm and ≤5mm, reference tolerance is ±0.3mm;

outline dimension > 5mm, reference tolerance is ±0.5mm.

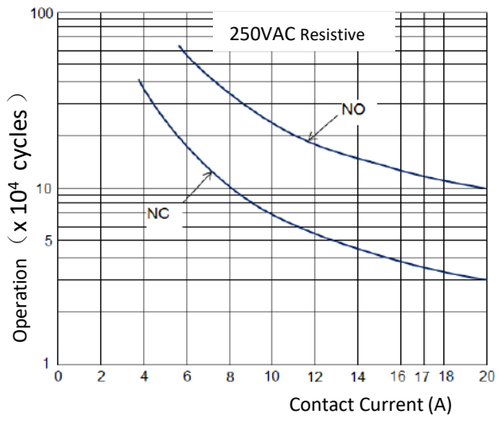
2) The reference tolerance for PC Board layout is ±0.1mm.

REFERENCE DATA

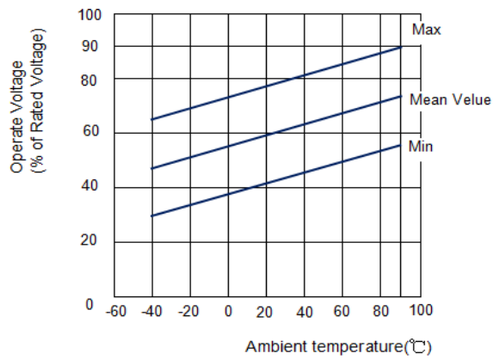
Coil Temperture Rise



Electrical Life

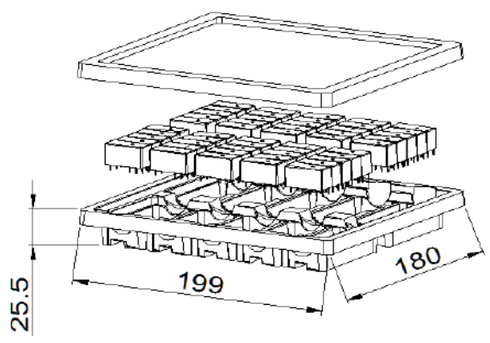


Coil Operate Voltage & Temperature Cure



PACKAGING FIGURE

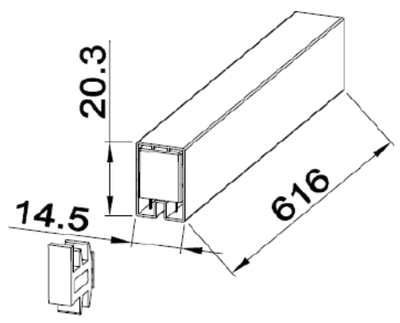
1.Box



50 pcs inside a box

500 pcs inside a carton

2.Tube



20 pcs inside a tube

1000 pcs inside a carton

Disclaimer:

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CHI04 SERIES 10A300VDC MINIATURE POWER RELAY

Churod Electronics

FEATURES

- 10A 300VDC high-voltage switching capability
- Outline dimension(29.3×12.7×19.0)
- 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 avaliable

File NO. E341422

File NO. R50376810

File NO. CQC17002165837

APPLICATION

AC/DC Power Source, Industry Control...etc

COIL PARAMETER

Coil voltage	5-48VDC
Coil power	400mW

COIL DATA@23℃

CHI03				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
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-NO)
Contact material	Ag Alloy
Initial contact resistance	100mΩ max.@6VDC,1A
Max. switching voltage	420VDC,300VAC
Max. switching current	16A
Max. switching power	3,000W/4800VA
Contact rating	5A 420VDC, Resistive
	10A 300VDC, Resistive
	16A 180VDC, Resistive
	16A 300VAC, Resistive
Mechanical endurance	3,000,000 ops Min.(no load)
Electrical endurance	30,000 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)		5ms 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	100m/S^2(10G approximately)
Ambient temperature		-40℃~+105℃ (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. 15g

ORDERING INFORMATION

	CHI04	-V	-1	12	D	A	2	,000

1. Product Family

2.Enclosure

V = Vented(Flux-tight),plastic cover.(RT II)

3.Number of Poles

1 = 1 pole

4.Rated Coil Voltage

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

5.Coil Input

D = Standard(400mW)

6.Contact Arrangement

A = Form A (SPST-NO)

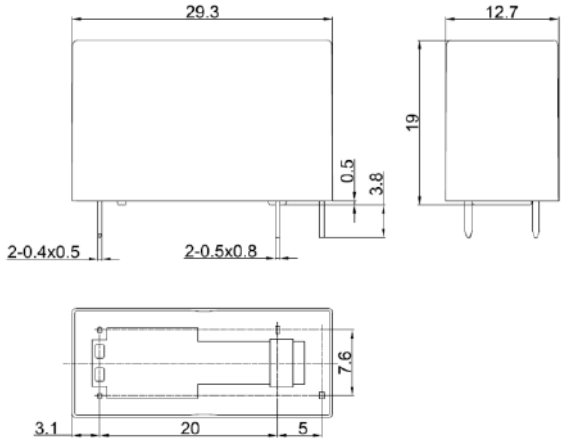
7.Contact material

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



Remark:

1) The reference tolerance in outline dimension:

outline dimension ≤1mm, reference tolerance is ±0.2mm;

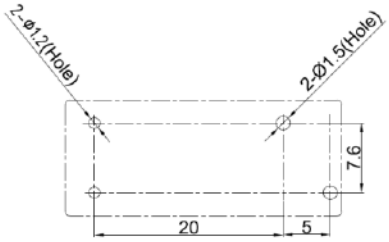
outline dimension ＞1mm and ≤5mm, reference tolerance is ±0.3mm;

outline dimension ＞5mm, reference tolerance is ±0.5mm.

2) The reference tolerance for PC Board layout is ±0.1mm.

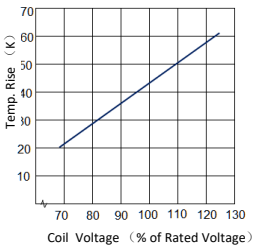
WIRING DIAGRAMS (BOTTOM VIEWS)

PC BOARD LAYOUTS (BOTTOM VIEWS)

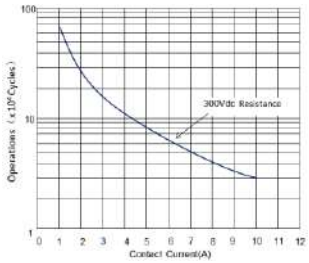


REFERENCE DATA

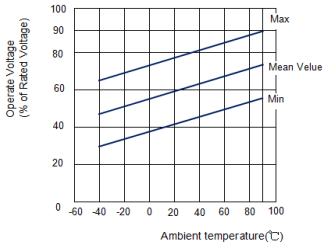
Coil Temperture Rise



Electrical Life

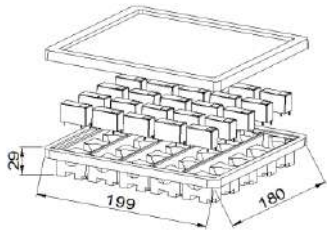


Coil Operate Voltage & Temperature Cure



PACKAGING FIGURE

1.Box



25 pcs inside a box

250 pcs inside a carton

Disclaimer:

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CHDR Series Latching contactor

Churod Electronics

FEATURES

- PCB terminal，large current latching contactor: small size(39.2*22*27.5mm)
- Double contact for arc extinguishing structure,Load is non-polarity
- Low contact pressure drop
- Lightning strike surge current maximum 20KA
- Short-circuit resistance current 10KA,Ment Class 2 grade(With SPCD circuit breaker)
- Contact GAP: ≥1.5mm
- Compressive strength between coil and contact 3000VAC
- High rated insulation withstand voltage:500VAC
- Contact arrangement: Main normally open contacts；Auxiliary normally open contacts
- UL,CCC compliance
- RoHS compliance
- REACH SvHC compliance

File NO. E341422

File NO.2020000304000068

APPLICATION

5G communication power supply

Charging pile

Other DC load devices

COIL PARAMETER

Coil voltage	12-60VDC	
Coil power	CHDR-125LA	53W
	CHDR-110LA/80LA	7.7W

CONTACT DATA

Type	CHDR-125LA	CHDR-110LA	CHDR-80LA
Contact arrangement	1 Form A		
Contact material	Ag Alloy		
Initial contact resistance	0.8mΩ Max.@6VDC 20A		
Max. switching voltage	80VDC	60VDC	24VDC
Max. switching current	125A	110A	80A
Max. switching power	10000W	6600W	1920W
Main contact rated load (Resistive Load)	125A@80VDC	110A@60VDC	80A@24VDC
Auxiliary contact rated load (Resistive Load)	1A@80VDC		
Mechanical endurance	100,000 ops Min.(no load)		
Electrical endurance (Resistive Load)	6,000 ops Min.		10,000 ops Min.
Minimum load (reference value)	Main Contact:100mA@ 1VDC Auxiliary Contact:1mA@ 3VDC		

COIL DATA @23℃

CHDR-125LA(53W),Standard				
Nominal coil voltage (VDC)	Nominal Current (A)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Max.)
12	4.4	2.7	5.4	5.4
24	2.2	10.8	10.8	10.8
48	1.1	43.4	21.6	21.6
60	0.9	68.0	27.0	27.0

CHDR-110LA/80LA(7.7W),Sensitive				
Nominal coil voltage (VDC)	Nominal Current (A)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Max.)
12	0.6	18.7	8.4	8.4
24	0.3	75.0	16.8	16.8
48	0.2	299.0	33.6	33.6
60	0.1	467.0	42.0	42.0

CHARACTERISTICS

Operate voltage		70% of nominal voltage or less
Release voltage		70% of nominal voltage or more
Operate time(At nominal voltage)		≤30ms
Release time (At nominal voltage)		≤30ms
Operate bounce time (At nominal voltage)		≤3ms
Insulation resistance		1,000 MΩ (at 500 VDC)
Dielectric strength	Between coil and main contacts	3,000 VAC, 50/60 Hz (1 Min)
	Between coil and Auxiliary contacts	2,000 VAC, 50/60 Hz (1 Min)
	Between open main contacts	3,000 VAC, 50/60 Hz (1 Min)
	Between open Auxiliary contacts	1,000 VAC, 50/60 Hz (1 Min)
	Between main contacts and Auxiliary contacts	3,000 VAC, 50/60 Hz (1 Min)
	Between Live part and ground electrode	3,000 VAC, 50/60 Hz (1 Min)
Rated impulse withstand voltage	Between coil and contacts	6,000V(1.2/50μs)
Vibration resistance	Functional	10 ~ 55 Hz.,Acceleration≤2G
	Destructive	10 ~ 55 Hz.,Acceleration≤5G
Shock resistance	Functional	5G Min.
	Destructive	30G Min.
Ambient temperature		Operating: -40~+85℃ (without icing or condensation)
Storage ambient temperature		Operating: -40~+75℃ (without icing or condenasation)
Ambient humidity		5% to 85%Rh at 20℃
Terminal shape		PCB Terminal
Protection grade		IP00
Weight		Approx. 49g

ORDERING INFORMATION

	CHDR	-1	60	D125	L	A	,000

1. Product Family

2. Number of Poles

1=1 pole

3. Rated Coil Voltage

12,24,48,60VDC

4. Rated load current

D125: DC125A

D110: DC110A

D80: DC80A

5.Product type

L: Latching type

6. Contactor construction

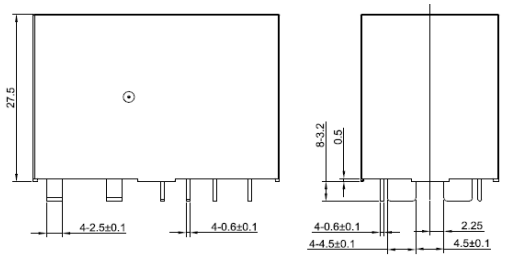
A: Auxiliary normally open contacts

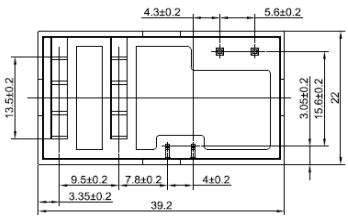
7. Additional numbers and /or letters

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

OUTLINE DIMENSION

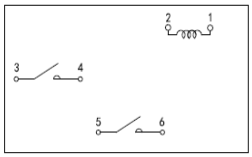
Unit:mm

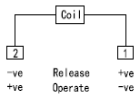




WIRING DIAGRAMS(BOTTOM VIEWS)

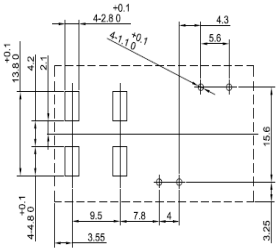
Unit:mm





PC BOARD LAYOUTS (BOTTOM VIEWS)

Unit:mm



Remark:

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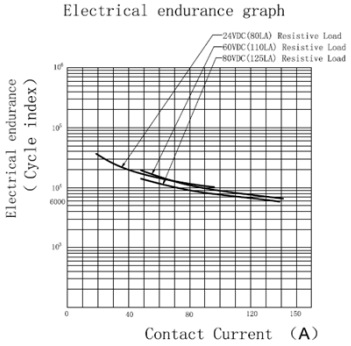
outline dimension ≤1mm, reference tolerance is ±0.2mm;

outline dimension ＞1mm and ≤5mm, reference tolerance is ±0.3mm;

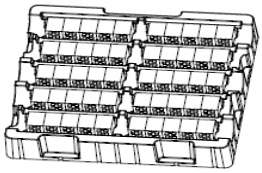
outline dimension ＞5mm, reference tolerance is ±0.5mm.

The reference tolerance for PC Board layout is ±0.1mm.

REFERENCE DATA



PACKAGING FIGURE



50 pcs inside a box

250 pcs inside a carton

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CHEV Series 60~300 Ampere High voltage DC relay

Churod Electronics

Feature

- Hermetically sealed: Intrinsically safe, operates in harsh environments without oxidation or contamination of coil or contacts.
- Excellent switching performance: Adopt the design of magnetic-driving, fast extinguishing of arc gases and anti-welded contacts.
- Space saving: Outline structure miniaturization.
- Mounting simplification: No barrier around the main terminals.
- Optional auxiliary contact: Be easy monitoring of power contact position.
- Economized coil system: Energy saving by owned PWM design control.

Application

Battery Electric Vehicles(BEV), Fuel Cell Electric Vehicles(FCEV)
Hybrid Electric Vehicles(HEV), EV Charging Station, UPS

Coil

Series	Type	Coil voltage(VDC)	Coil Power(Max)
S/SA60	Standard	12 , 24	6W
E/EA60	Economizes	12-24	Inrush: 42W～100ms, Hold: 1.9W
S/SA120	Standard	12 , 24	6W
E/EA120	Economizes	12-24	Inrush: 42W～100ms, Hold: 1.9W
S/SA150	Standard	12 , 24	6W
E/EA150	Economizes	12-24	Inrush: 42W～100ms, Hold: 1.9W
S200	Standard	12 , 24	6W
E/EA200	Economizes	12-24	Inrush: 42W～100ms, Hold: 1.9W
E/EA250	Economizes	12-24	Inrush: 42W～100ms, Hold: 1.9W
E/EA300	Economizes	12-24	Inrush: 55W～100ms, Hold: 3.2W

Contact Data

Type	60A	120A	150A	200A	250A	300A
Contact arrangement	1 Form X					
Intital drop voltage(mV)	100mV					
Rated voltage(DC)	900VDC					
Max. break current (1 cycle)	360VDC/1000A		450VDC /1500A	450VDC/2000A		
Electrical endurance	See electrical endurance curve					
Mechanical endurance	200,000 ops Min.(no load)					
Aux.-contact voltage	30VDC / 125VAC					
Aux.-contact current	2A(DC) / 3A(AC)					
Minimum load(Main terminal)	48VDC 100mA					
Minimum load(Aux.contact)	9VDC 100mA					
Endurance Capacity (at 85℃)	See endurace capacity curve					

Coil Data(23℃)

Series	Type	Coil voltage (VDC)	Coil resistance (Ω)±10%	Operate voltage (VDC)Max	Max. Work voltage (VDC)	Release voltege (VDC)Min
S/SA60	Standard	12	26	9.0	14.4	0.6
	Standard	24	104	18.0	28.8	1.2
E/EA60	Economizes	12-24	4.6	9.0	36.0	4.0
S/SA120	Standard	12	26	9.0	14.4	0.6
	Standard	24	104	18.0	28.8	1.2
E/EA120	Economizes	12-24	4.6	9.0	36.0	4.0
S/SA150 S200	Standard	12	26	9.0	14.4	0.6
	Standard	24	104	18.0	28.8	1.2
E/EA150	Economizes	12-24	3.2	9.0	36.0	4.0
E/EA200	Economizes	12-24	3.2	9.0	36.0	4.0
E/EA250	Economizes	12-24	3.2	9.0	36.0	4.0
E/EA300	Economizes	12-24	2.8	9.0	36.0	4.0

Characteristics

Operate time		25ms max.
Release time		25ms max.(E type); 10ms max.(S type)
Insulation resistance		1000MΩ min.(at1000V DC)
Dielectric strength	Coil-contact	4,000V AC, 50/60Hz (1min)
	Contact-contact	3,000V AC, 50/60Hz (1min)
Vibration resistance	Destruction	20G (10~2000Hz)
	Malfunction	20G (10~2000Hz)
Shock resistance	Destruction	50G
	Malfunction	ON: 40G(S type); 50G(E type) OFF:10G
Ambient temperature		- 40～+85℃(with no icing or condensation)
Ambient humidity		20% to 85%RH
Mounting		M4 Screw(60~120A)
		M5 Screw(150~350A)
Weight		60~120A about 210g
		150~300A about 410g

Rating

Item	Voltage	S/SA60	E/EA60	S/SA120	E/EA120	S/SA150	E/EA150	S200	E/EA200	E/EA250	E/EA300
Electrical endurance (Making/Breaking) (cycles)	450VDC	35,000	35,000	6,000	6,000	4,000	6,000	2,000	3,000	3,000	3,000
	750VDC	4,000	6,000,	1,000	1,500	1,000	2,000	1,000	1,000	700	500
Electrical endurance (only for Breaking) (cycles)	450VDC	40,000	40,000	8,000	10,000	8,000	10,000	2,500	6,000	5,000	4,000
	750VDC	5,700	8,500	1,400	2,000	1,400	2,800	1,200	1,400	1,000	700

Notes: The temperture of electric endurance is 23℃ and the on-off ratio is 1s/9s

Ordering Information

	CHEV	-1	12	S	A	60	H	,000

1.Product family

CHEV series

2.Number of poles

1=1pole

3.Rated coil voltage

12 =12VDC 24 =24VDC 12=12-24VDC(only for E-type)

4.Coil type

S = Standard，For 60/120/150/200A

E = Economizes，For 60/120/150/200/250/300

5.Aux.contact

A = With aux. contact Blank = Without aux.contact

6.Contact current

60=60A 120=120A 150=150A 200=200A 250=250A 300=300A

7.Product type

Blank = Standard H = H type P = P type W = W type

8. Additional numbers and / or letters

000-999，AAA-ZZZ，aaa-zzz or blank,only for specitic customer requirements

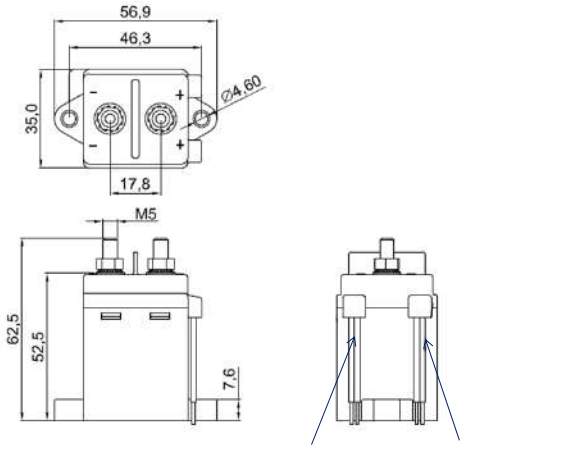
Typical Products

Product Description		Characteristic				
Product type	Code	Coil Votage	Contact Load	Load Ternimal form	Special Feature	
CHEV-1**S*60	000	12V,24V	60A @750VDC	M5 Screw		
CHEV-112E*60	000	12-24V	60A @750VDC	M5 Screw		
CHEV-112E*60	001	12-24V	60A @750VDC	M5 Screw	JAE Connector	
CHEV-1**S*120	000	12V,24V	120A @750VDC	M5 Screw		
CHEV-1**S*120	002	12V,24V	120A @750VDC	M5 Screw	Molex Connector	
CHEV-112E*120	000	12-24V	120A @750VDC	M5 Screw		
CHEV-112EA120	500	12-24V	120A @750VDC	M5 Screw	5557 Connector	
CHEV-1**S*150	000	12V,24V	150A @750VDC	M8 Screw		
CHEV-1**S*150	210	12V,24V	150A @750VDC	M8 Screw	Hulian Connector	
CHEV-1**S*150	200	12V,24V	150A @750VDC	M8 Screw	Hulian Connector	
CHEV-112E*150	000	12-24V	150A @750VDC	M8 Screw		
CHEV-112E*200	000	12-24V	200A @750VDC	M8 Screw		
CHEV-112E*200W	000	12-24V	200A @750VDC	M8 Screw	Mounting Type W	
CHEV-112E*200H	000	12-24V	200A @750VDC	M6 internal Screw	Mounting Type H	
CHEV-112E*200P	100	12-24V	200A @750VDC	M8 Screw	Mounting Type P	
CHEV-112E*250	000	12-24V	250A @750VDC	M8 Screw		
CHEV-112E*300	000	12-24V	300A @750VDC	M8 Screw		
CHEV-112E300P	100	12-24V	300A @750VDC	M8 Screw	Mounting Type P	

Notes:
1、Code description:
Coil line form
000--leads;
001--leads+JAE Connector;
002--leads+Molex Connector;
100/101--leads+yazaki Connector;
200/210--leads+hulian Connector;
500--leads+5557 Connector;
2、The length of the coil outgoing wire, aux. contact outgoing wire can be optional:
100mm、300mm、400mm、1300mm。
The default length is 400mm。

Outside Dimension

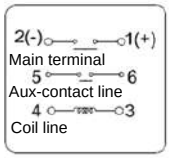
S/SA60；E/EA60；S/SA120；E/EA120



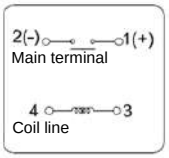
Aux._contact line：White
Spec：20AWG,Length：L

Coil line：Black
Spec：20AWG,Length：L

Wiring Diagram



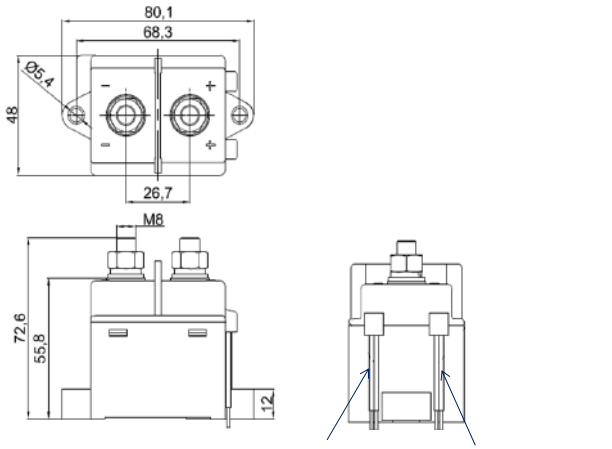
With Aux.contact



Without Aux.contact

Outside Dimension

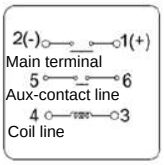
S/SA150；E/EA150；S200；E/EA200；E/EA250；E/EA300



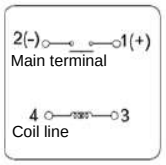
Aux._contact line：White
Spec：20AWG,Length：L

Coil line：Black
Spec：20AWG,Length：L

Wiring Diagram



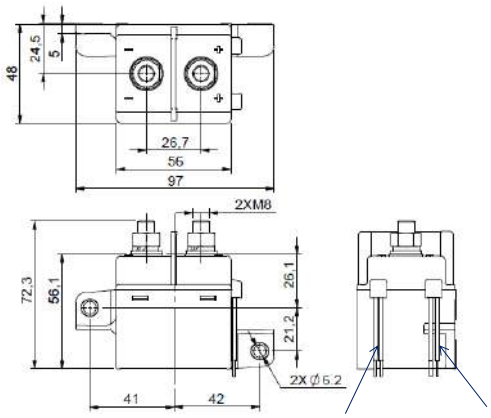
With Aux.contact



Without Aux.contact

Outside Dimension

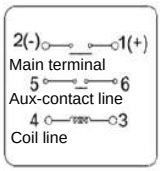
S200W；E/EA200W



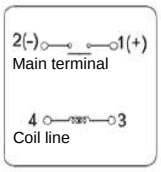
Aux._contact line：White
Spec：20AWG,Length：L

Coil line：Black
Spec：20AWG,Length：L

Wiring Diagram



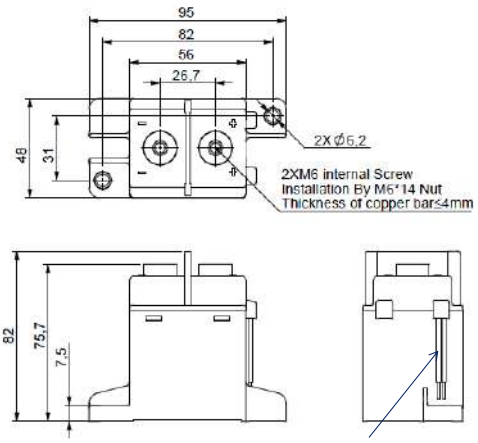
With Aux.contact



Without Aux.contact

Outside Dimension

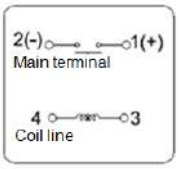
S200H；E/EA200H



Coil line：Black

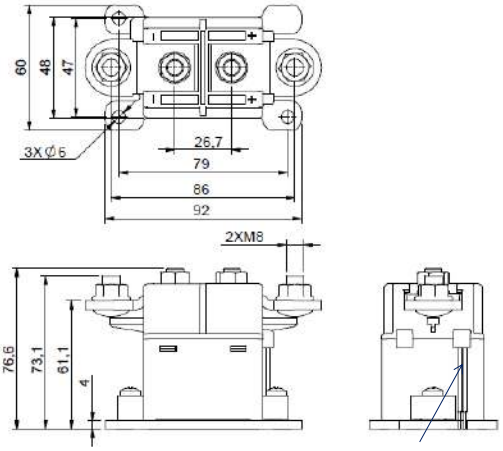
Spec：20AWG,Length：L

Wiring Diagram



Outside Dimension

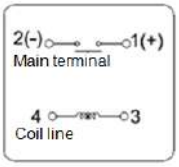
E200P/E300P



Coil line：Black

Spec：20AWG,Length：L

Wiring Diagram



Remarks：

1)The reference tolerance in outline dimension:

outline dimension ≤10mm, reference tolerance is±0.3mm;

outline dimension > 10mm and ≤50mm， reference tolerance is±0.6mm;

outline dimension ＞50mm， reference tolerance is±1.0mm;

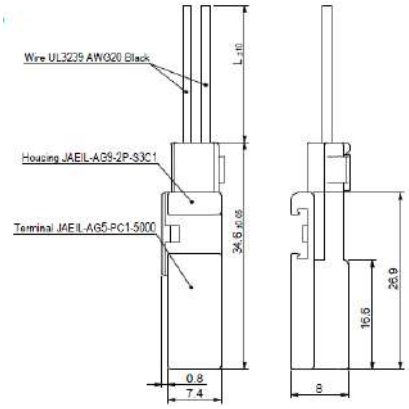
2)The torque requirement of Main Terminal：
CHEV-60~120A： 3.0~3.5 N．m
CHEV-150~350A： 8.0～9.0 N．m

3)The torque requirement of Relay：
CHEV-60~120A： 2~ 2.4N．m
CHEV-150~350A： 3～4 N．m

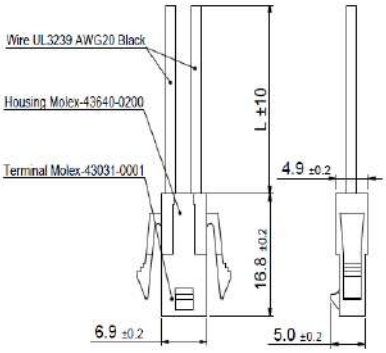
4) L See the Typical Products.

Connector Form

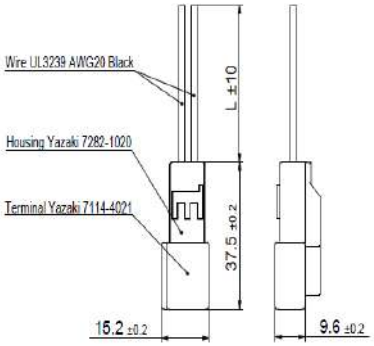
Code 001 JAE Connector



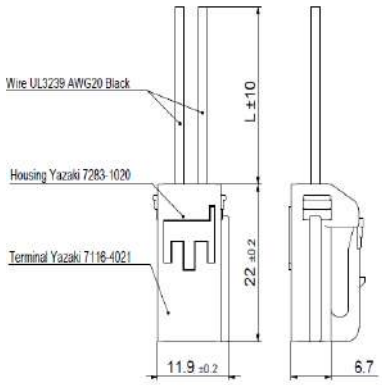
Code 002 Molex Connector



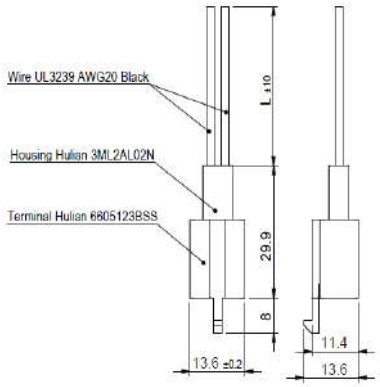
Code 100 Yazaki Connector



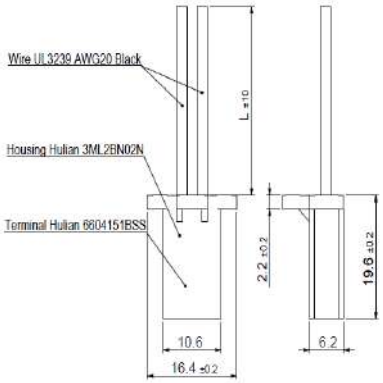
Code 101 Yazaki Connector



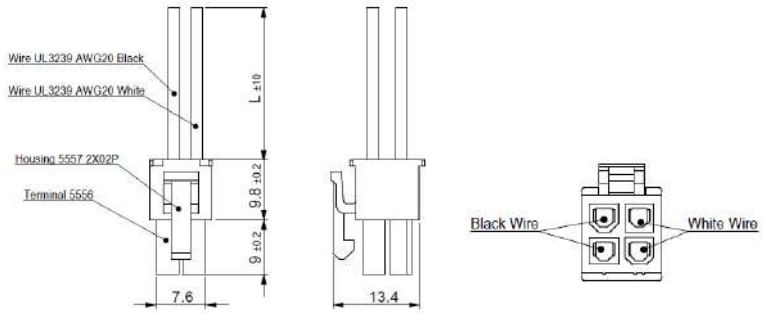
Code 200 Hulian Connector



Code 201 Hulian Connector



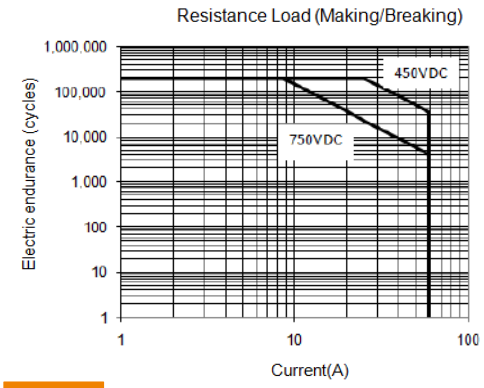
Code 500 5557 Connector



Referance Date

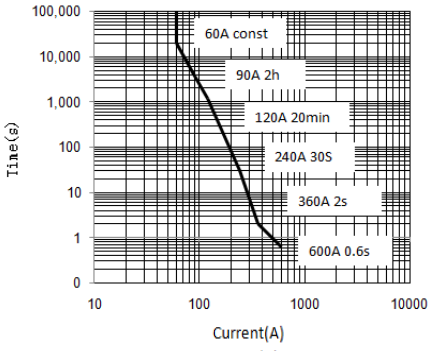
S/SA60

Electric Edurace Curve



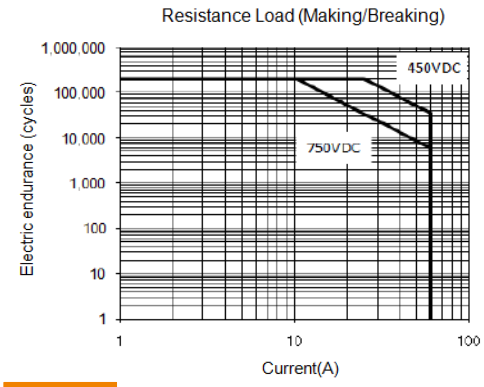
Endurance Capacity Curve

Notes: The environment temperture of test is 85℃; Cross section area of wire≥15mm²



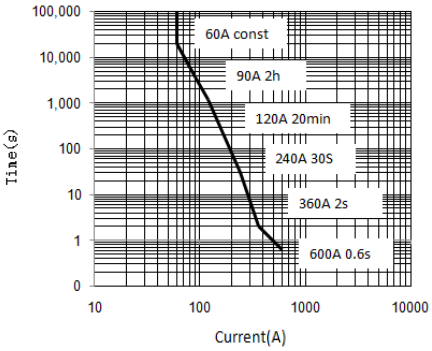
E/EA60

Electric Edurace Curve



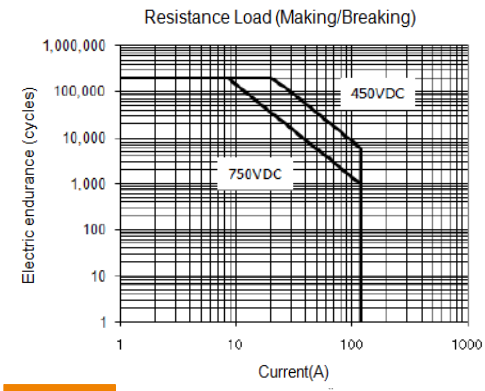
Endurance Capacity Curve

Notes: The environment temperture of test is 85℃; Cross section area of wire≥15mm²



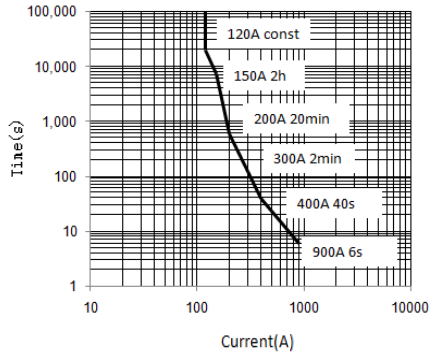
S/SA120

Electric Edurace Curve



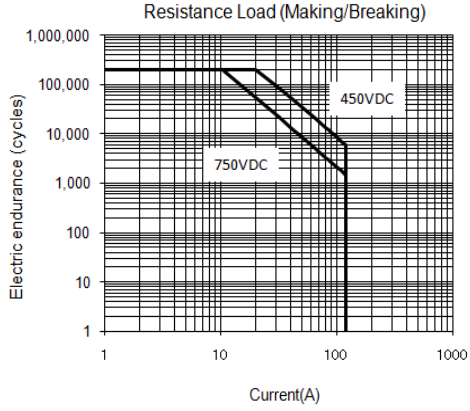
Endurance Capacity Curve

Notes: The environment temperture of test is 85℃; Cross section area of wire≥50mm²



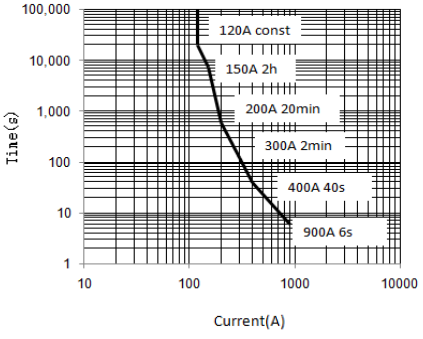
E/EA120

Electric Edurace Curve



Endurance Capacity Curve

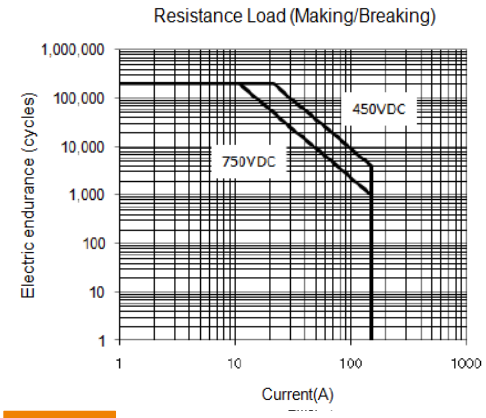
Notes: The environment temperture of test is 85℃; Cross section area of wire≥50mm²



Referance Date

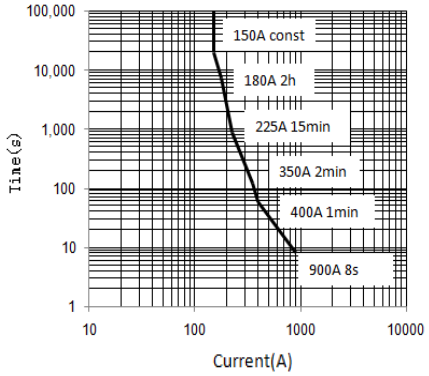
S/SA150

Electric Edurace Curve



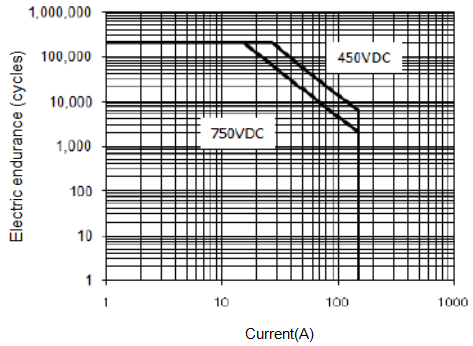
Endurance Capacity Curve

Notes: The environment temperture of test is 85℃; Cross section area of wire≥50mm²



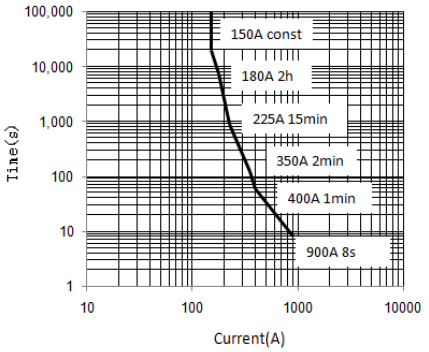
E/EA150

Electric Edurace Curve



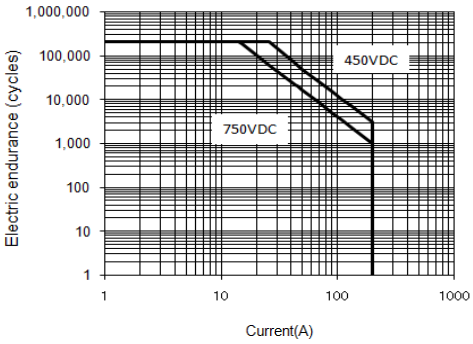
Endurance Capacity Curve

Notes: The environment temperture of test is 85℃; Cross section area of wire≥50mm²



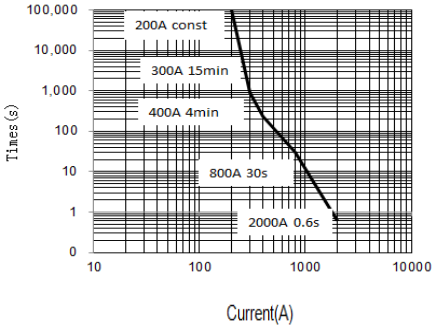
S200

Electric Edurace Curve



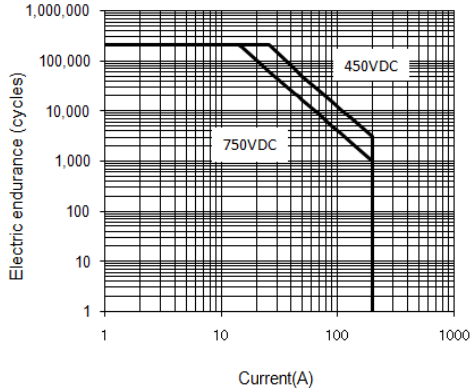
Endurance Capacity Curve

Notes: The environment temperture of test is 85℃; Cross section area of wire≥60mm²



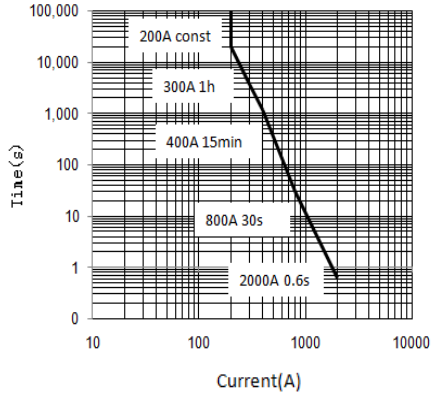
E/EA200

Electric Edurace Curve



Endurance Capacity Curve

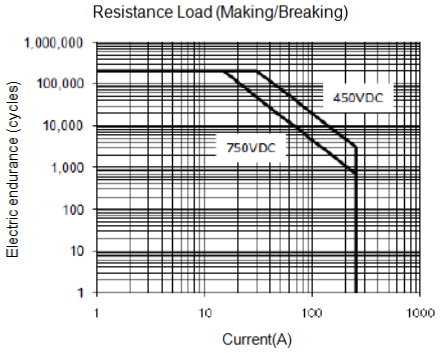
Notes: The environment temperture of test is 85℃; Cross section area of wire≥60mm²



Referance Date

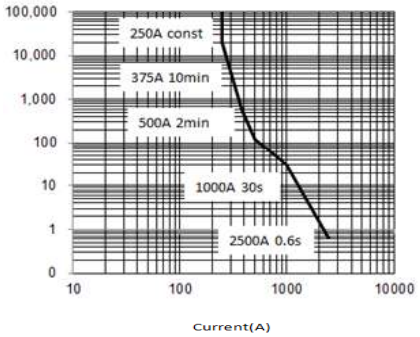
E/EA250

Electric Edurace Curve



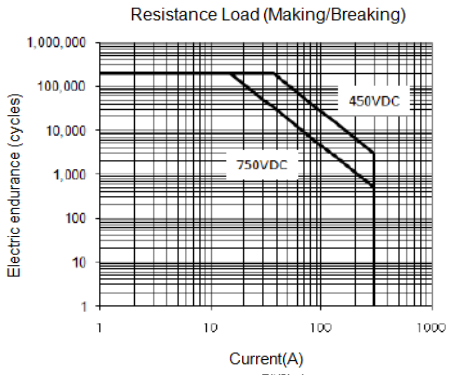
Endurance Capacity Curve

Notes: The environment temperture of test is 85℃; Cross section area of wire≥100mm²



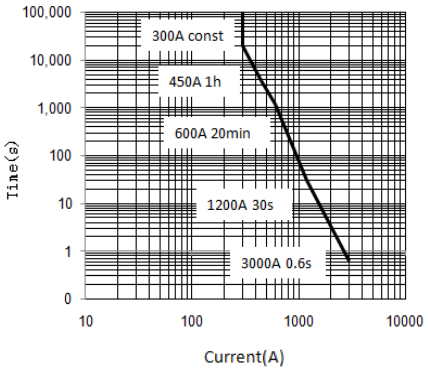
E/EA300

Electric Edurace Curve

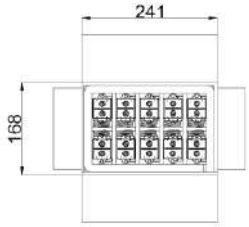


Endurance Capacity Curve

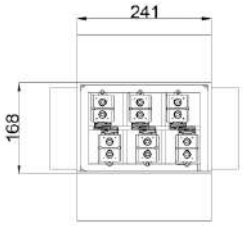
Notes: The environment temperture of test is 85℃; Cross section area of wire≥100mm²



Packaging figure



S/SA60; E/EA60; S/SA120; E/EA120: one box: 10PCS。



S/SA150; E/EA150; S200; E/EA200; E/EA250; E/EA300: one box: 6PCS。

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.

CHUROD

relays to a better future

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