

# 1 AUTOMOTIVE RELAY



## P.C.B RELAYS

CLION  
RELAY

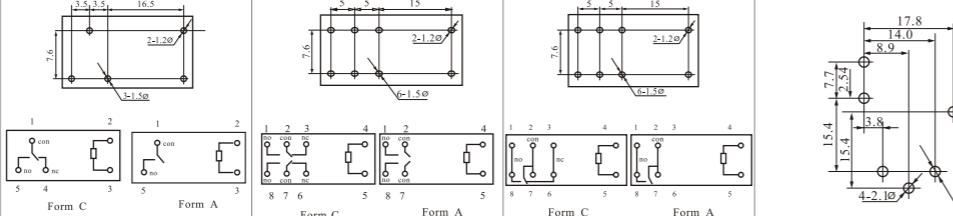
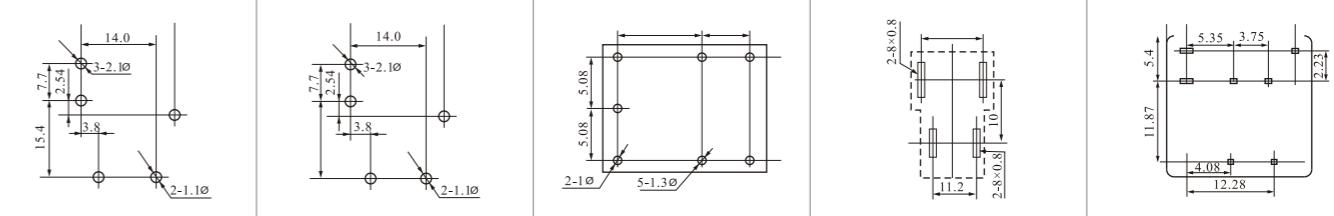
01  
02

Appearance				
Model	NRP02	NRP03	NRP03K	NRP04
Dimension(mm)	15.5×10.5×11.5	15.5×10.5×11.5	12.5×7.5×10	21×10×11.6
Contact Arrangement	1A	1C	1A	1C
Max.	1A	5A	1A	5A
Contact Capacity	Rated	1A	3A	1A
Min.	1mA 5VDC	1mA 5VDC	1mA 5VDC	1mA 5VDC
MAX Switching Voltage	60VDC/250VAC	60VDC/250VAC	60VDC/120VAC	60VDC/250VAC
MAX Switching Power	90W/360VA	30W/120VA 90W/360VA	48W/240VA	60W/120VA
Nominal Voltage	3~48VDC	3~48VDC	3~24VDC	3~48VDC
Pull-in Voltage	≤75%	≤75%	≤75%	≤75%
Release Voltage	≥10%	≥10%	≥10%	≥5%
Operate / Release Time	≤6ms/4ms	≤6ms/4ms	≤4ms/3ms	≤6ms/4ms
Coil Power	0.15W、0.20W、0.36W	0.15W、0.20W、0.36W	0.15W、0.20W	0.15W、0.20W、0.45W
Contact Resistance	≤100mΩ	≤100mΩ	≤100mΩ	≤100mΩ
Insulation Resistance	≥100MΩ	≥100MΩ	≥100MΩ	≥100MΩ
Dielectric Strength Vr.m.s	Between Contacts	500VAC	500VAC	400VAC
	Between Coil&Contact	1000VAC	1000VAC	1000VAC
Ambient Temp.(°C)	-25~+70°C	-25~+70°C	-30~+70°C	-30~+70°C
Service Life	Electrical	1×10 <sup>5</sup>	1×10 <sup>5</sup>	1×10 <sup>5</sup>
	Mechanical	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>
Mounting Holes(mm)	 Form C: 6x6mm, Form A: 12x8mm	 Form C: 12x11mm, Form A: 7x7mm	 Form C: 12x11mm, Form A: 7x7mm	 Form C: 16x13mm, Form A: 11x9mm
Terminal Type	P.C.B	P.C.B	P.C.B	P.C.B
Model Cross Reference	FUJITSU:FB211SC/SE OMRON:G2E OEG:OUA P&B:T81 SIEMENS:V23101	FUJITSU:FB211SC/SE OMRON:G2E OEG:OUA P&B:T81 SIEMENS:V23101	FUJITSU:SY OMRON:G5V-1 NAIS:HY	NAIS:DS2Y OMRON:G5V-2 OEG:OVR P&B:T82/T85
Approval				



Appearance				
Model	NRP05	NRP07	NRP08	NRP10
Dimension(mm)	18.8×10.6×15.6	19×15.4×15.6	22×16×16.5	20.2×16.5×20.2
Contact Arrangement	1A、1C	1A、1C	1A、1C	1A、1C
Max.	10A	15A	12A	15A
Contact Capacity	Rated	5A、10A 10A/12A 120VAC 7A 250VAC	10A 250VAC 10A 28VDC	15A 125VAC 10A 250VAC
Min.	100mA 5VDC	10mA 5VDC	10mA 5VDC	10mA 5VDC
MAX Switching Voltage	30VDC/250VAC	30VDC/250VAC	30VDC/250VAC	30VDC/250VAC
MAX Switching Power	150W/1200VA	280W/1250VA	240W/2400VA	240W/2700VA
Nominal Voltage	3~48VDC	3~48VDC	3~48VDC	3~60VDC
Pull-in Voltage	≤75%	≤75%	≤75%	≤75%
Release Voltage	≥5%	≥5%	≥5%	≥5%
Operate / Release Time	≤8ms/6ms	≤8ms/5ms	≤10ms/5ms	≤10ms/5ms
Coil Power	0.20W、0.45W	0.36W	0.36W	0.36W、0.54W
Contact Resistance	≤100mΩ	≤100mΩ	≤100mΩ	≤100mΩ
Insulation Resistance	≥100MΩ	≥100MΩ	≥100MΩ	≥100MΩ
Dielectric Strength Vr.m.s	Between Contacts	1000VAC	750VAC	750VAC
Between Coil&Contact	2500VAC	1500VAC	2000VAC	1500VAC
Ambient Temp.(°C)	-40~+75°C	-40~+85°C	-40~+75°C	-40~+70°C
Service Life	Electrical	1×10 <sup>5</sup>	1×10 <sup>5</sup>	1×10 <sup>5</sup>
Mechanical	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>
Mounting Holes(mm)	 	 	 	 
Terminal Type	P.C.B	P.C.B	P.C.B	P.C.B
Model Cross Reference	OMRON:OJE ZETTLER:AZ765/AZ767 P&B:T77 SONGCHUAN:835	FUJITSU:FBR161-H OMRON:G5L OEG:PCE OEG:ORW P&B:T72 NAIS:JS	OMRON:G5L-E OEG:SRU P&B:T72 NAIS:JS	OMRON:G5L OEG:SRU P&B:T70
Approval				

NRP18	NRP18D	NRP12	NRP13	NRP14
15.7×12.3×14	15.7×12.3×14	29×12.7×20	29×12.7×20	29×12.7×20
1A、1C	2A、2C	1A、1C	2A、2C	1A、1C
20A 14DVC	20A	12A	8A	20A
5A 250VAC 7A 125VAC	5A 250VAC 7A 125VAC	10A	5A	16A
100mA 5VDC	100mA 5VDC	100mA 5VDC	100mA 5VDC	100mA 5VDC
16VDC/250VAC	16VDC/250VAC	30VDC/250VAC	30VDC/250VAC	30VDC/120VAC
400W/840VA	400W/840VA	300W/250VA	240W/1250VA	480W/4800VA
3~24VDC	3~24VDC	3~48VDC	3~48VDC	3~48VDC
≤65%	≤65%	≤75%	≤75%	≤75%
≥10%	≥10%	≥10%	≥10%	≥10%
≤10ms/5ms	≤10ms/5ms	≤15ms/10ms	≤15ms/10ms	≤15ms/10ms
0.60W、0.80W	0.60W、0.80W	0.54W、0.72W	0.54W、0.72W	0.54W、0.72W
≤100mΩ	≤100mΩ	≤100mΩ	≤100mΩ	≤100mΩ
≥100MΩ	≥100MΩ	≥100MΩ	≥100MΩ	≥100MΩ
500VAC	500VAC	1000VAC	1000VAC	1000VAC
1000VAC	1000VAC	5000VAC	5000VAC	5000VAC
-40~+85°C	-40~+85°C	-40~+85°C	-40~+85°C	-40~+85°C
1×10 <sup>5</sup>	1×10 <sup>5</sup>	1×10 <sup>5</sup>	1×10 <sup>5</sup>	1×10 <sup>5</sup>
1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>
P.C.B	P.C.B	P.C.B	P.C.B	P.C.B
OMRON:R501 FUJITSU:FBR51 P&B:T78	OMRON:R501 FUJITSU:FBR51 P&B:T78	OMRON: G2R-1 OEG: OMI-1P FUJITSU: FTR-H ZETTLER:AZ742/763/764 FEME:MZ5	OMRON: G2R-2 OEG: OMI-2P FUJITSU: FTR-H ZETTLER:AZ742/763/764 FEME:MZ5	OMRON: G2RE OEG: OZ P&B: RK FUJITSU: FTR-H ZETTLER:AZ742/763/764 FEME:MZ5

Appearance				
Model	NRP12T	NRP13T	NRP14T	HHC67E(NRP15)
Dimension(mm)	29×12.7×15.7	29×12.7×15.7	29×12.7×15.7	32.5×27×23.4
Contact Arrangement	1A、1C	2A、2C	1A、1C	1A、1C
Max.	12A	8A	20A	30A
Contact Capacity	Rated	10A	8A	16A
Min.		100mA 5VDC	100mA 5VDC	100mA 5VDC
MAX Switching Voltage	30VDC/250VAC	30VDC/250VAC	24VDC/120VAC	28VDC/220VAC
MAX Switching Power	300W/3000VA	240W/2000VA	480W/4000VA	560W/6000VA
Nominal Voltage	3~48VDC	3~48VDC	3~48VDC	5~110VDC/6~240VAC
Pull-in Voltage	≤75%	≤80%	≤75%	≤75%
Release Voltage	≥10%	≥5%	≥5%	≥10%
Operate / Release Time	≤15ms/10ms	≤15ms/10ms	≤15ms/10ms	≤15ms/10ms
Coil Power	0.40W	0.40W	0.40W	0.93W
Contact Resistance	≤100mΩ	≤100mΩ	≤100mΩ	≤50mΩ
Insulation Resistance	≥100MΩ	≥100MΩ	≥100MΩ	≥100MΩ
Dielectric Strength Vr.m.s	Between Contacts	1000VAC	1000VAC	1000VAC
Between Coil&Contact	5000VAC	5000VAC	5000VAC	1500VAC
Ambient Temp.(°C)	-40~+70°C	-40~+70°C	-40~+70°C	-40~+75°C
Service Life	Electrical	1×10 <sup>5</sup>	1×10 <sup>5</sup>	1×10 <sup>5</sup>
Mechanical		1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>
Mounting Holes(mm)				
Terminal Type	P.C.B	P.C.B	P.C.B	P.C.B
Model Cross Reference	SCHRACK:RT OMRON: G2R-1 OEG: EMI-1P ZETTLER:AZ761	SCHRACK:RT OMRON: G2R-2 OEG: EMI-2P ZETTLER:AZ761		OMRON:G8P OEG:ORU P&B:T91
Approval	 applying	 applying	 applying	 CQC

				
HHC67F(NRP16)	HHC67H(NRP17)	NRA01	HHC68C	NRA06
32.5×27.5×27.5	32.5×27.5×27.5	17.2×14.7×19.7	29.0×25.0×45.5	26.8×21.5×22.30
1A、1C	1A、1C	1A、1C、2A、2C(1U)	1A、1C	1A、1C
30A	30A	20A	25A	40A
NC:20A/NO:30A	NC:20A/NO:30A	15A、10A	20A	40A
28VDC/220VAC	28VDC/220VAC	75VDC	14VDC	30VDC
560W/6000VA	560W/6000VA	280W	280W	560W
5~110VDC/6~240VAC	5~110VDC/6~240VAC	6~24VDC	3~24VDC	3~24VDC
≤75%	≤75%	≤75%	≤70%	≤70%
≥10%	≥10%	≥10%	≥5%	≥10%
≤15ms/10ms	≤15ms/10ms	≤10ms/5ms	≤15ms/10ms	≤5ms/4ms
0.93W	0.93W	1.1W	1.8W	1.6W/1.9W
≤50mΩ	≤50mΩ	≤100mΩ	≤100mΩ	≤100mΩ
≥100MΩ	≥100MΩ	≥100MΩ	≥100MΩ	≥100MΩ
1000VAC	1000VAC	750VAC	500VAC	≥500VAC
1500VAC	1500VAC	1500VAC	500VAC	≥750VAC
-40~+75°C	-40~+75°C	-40~+85°C	-40~+85°C	-40~+85°C
1×10 <sup>5</sup>	1×10 <sup>5</sup>	1×10 <sup>5</sup>	1×10 <sup>5</sup>	1×10 <sup>5</sup>
1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>
P.C.B	P.C.B	P.C.B	Plug-in	P.C.B
OMRON:G7G-G8P OEG:ORU P&B:T91	OMRON:G8P SONG CHUAN:852	OEG:OAR P&B:VKM TYCO: V23072	NCR:NRA05 OMRON:G4R	NCR:NRA06 P&B:VKP TYCO: V23076
 CQC	 CQC			



Appearance				
Model	NRA04	NRA07	HHC67D	HHC68D
Dimension(mm)	28.0×28.0×25.0	29.0×29.0×26.5	25.0×28.0×29.4	23.0×15.5×26.0
Contact Arrangement	1A、1B、1C、2A	1A、1C	1A	1A、1C
Max.	40A	80A	30A	25A
Contact Capacity	Rated	30A	70A	30A
	Min.	20A	25A	20A
MAX Switching Voltage	75VDC	75VDC	28VDC	75VDC
MAX Switching Power	630W	980W	700W	350W
Nominal Voltage	3~24VDC	6~24VDC	3~24VDC	6~24VDC
Pull-in Voltage	≤70%	≤65%	≤75%	≤70%
Release Voltage	≥10%	≥10%	≥10%	≥10%
Operate / Release Time	≤10ms/8ms	≤7ms/5ms	≤10ms/8ms	≤15ms/10ms
Coil Power	1.8W	1.8W	1.44W	1.6W
Contact Resistance	≤50mΩ	≤50mΩ	≤100mΩ	≤50mΩ
Insulation Resistance	≥100MΩ	≥100MΩ	≥100MΩ	≥100MΩ
Dielectric Strength	Between Contacts	750VAC	500VAC	500VAC
Vr.m.s	Between Coil&Contact	750VAC	500VAC	1000VAC
Ambient Temp.(°C)	-40~+85°C	-40~+85°C	-40~+85°C	-40~+85°C
Service Life	Electrical	1×10 <sup>5</sup>	1×10 <sup>5</sup>	1×10 <sup>5</sup>
	Mechanical	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>
Mounting Holes(mm)				
Terminal Type	Plug~in P.C.B	Plug~in P.C.B	Plug~in	Plug~in
Model Cross Reference	P&B:HVF4 OEG:ORAL HHC67G OMRON: G8J MATSUSHITA: CB TYCO:VF4	P&B:VF7 HHC67G	NCR:NRA03 NAIS:CA	NCR:NRA09 P&B:VFM
Approval				

## HHC69A(JQX-14FC)

### Ordering Code

HHC69A-2Z-24VDC

Coil Voltage  
Contact Ratings  
Relay Type



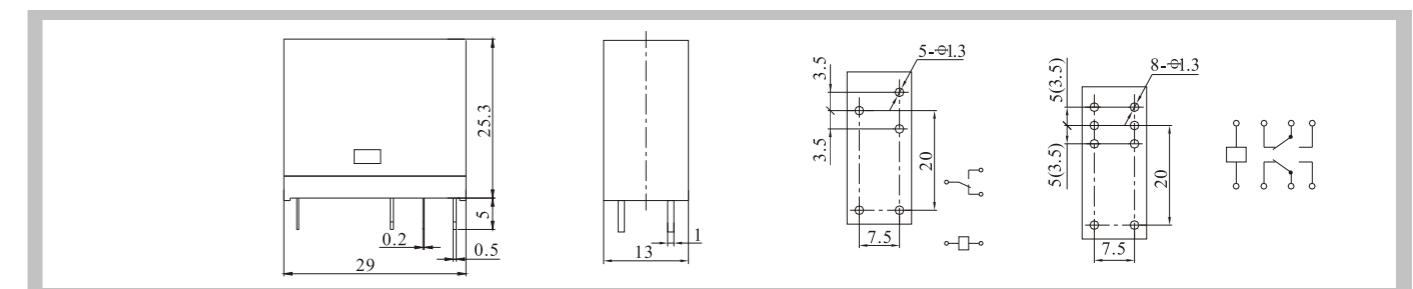
### Contact Ratings

Contact Ratings	1H、1Z 2H、2Z
Contact Resistance	≤50mΩ(1A 24VDC)
Contact Material	Silver Alloy
Contact Capacity	JQX-14FC-1Z:10A/16A 220VAC/28VDC JQX-14FC-2Z:5A 220VAC/28VDC

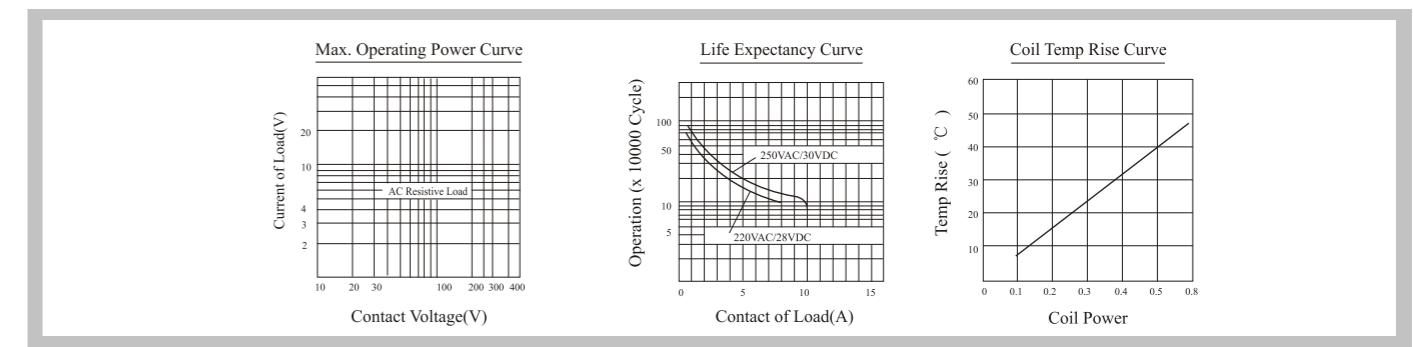
### Specification

Insulation Resistance	1000MΩ
Dielectric Strength (1mA)	B.C.C 5000VAC/1Min B.O.C 1500/1000VAC/1Min
Operate Time	Pull-in ≤15ms Release ≤5ms
Terminal Type	P.C.B
Packing Info	Ctn:500pcs /G.W:10kg Carton Size:342×263×325mm N.W:9kg

### Mounting Dimension



### Reference Data



**HHC67G(JD19.29)****Ordering Code**

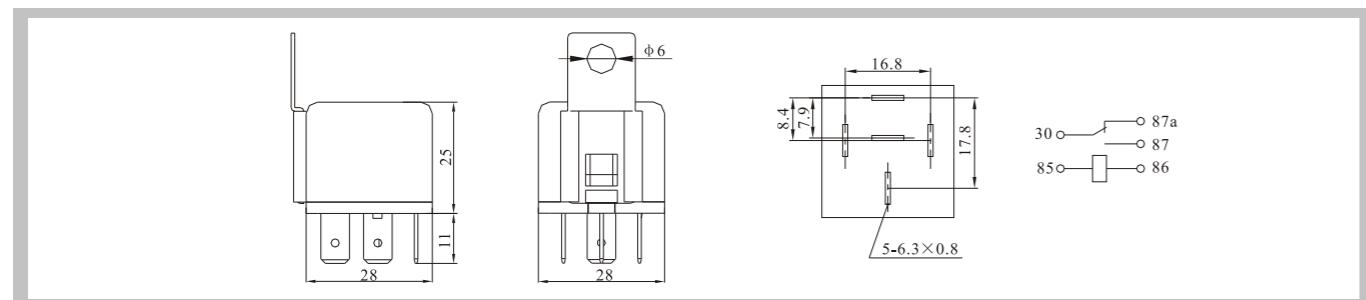
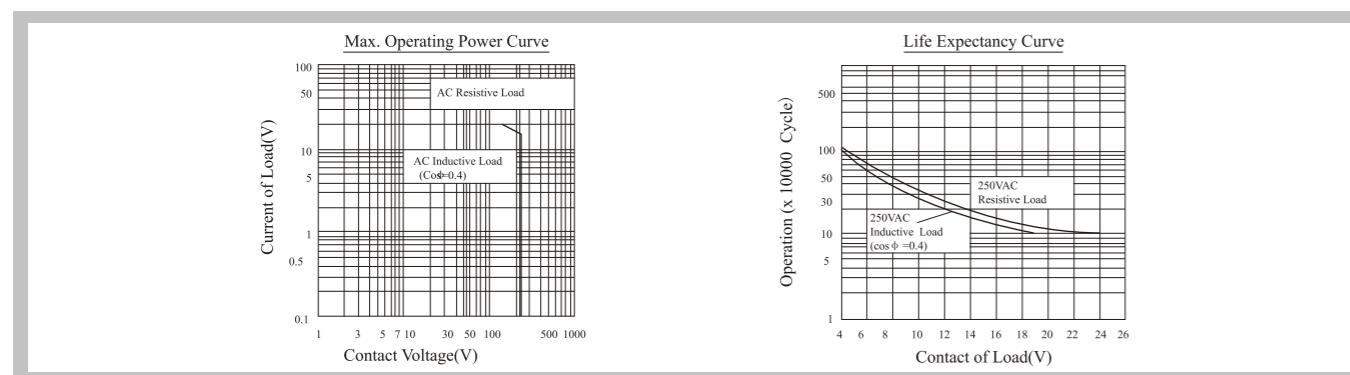
HHC67G-1Z-12VDC  
 └── Coil Voltage  
 └── Contact Ratings  
 └── Relay Type

**Contact Ratings**

Contact Ratings	1H、1Z、1D
Contact Resistance	$\leq 50\text{m}\Omega$ (1A 24VDC)
Contact Material	Silver Alloy
Contact Capacity	30A 12VDC/20A 24VDC

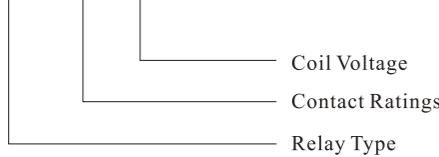
**Coil Versions**

Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC	Coil Resistance $\Omega \pm 10\%$
12	$\leq 9$	$\geq 1.2$	80
24	$\leq 18$	$\geq 2.4$	320

**Mounting Dimension****Reference Data**


**HHC68A-1Z(LY1) HHC68A-3Z(LY3)  
 HHC68A-2Z(LY2) HHC68A-4Z(LY4)**
**Ordering Code**

HHC68A-1Z-12VDC

**Contact Ratings**

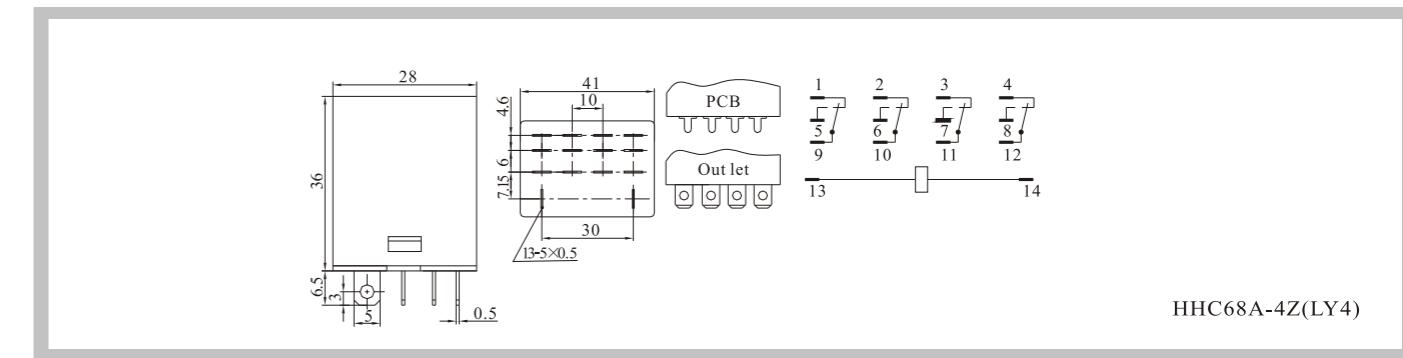
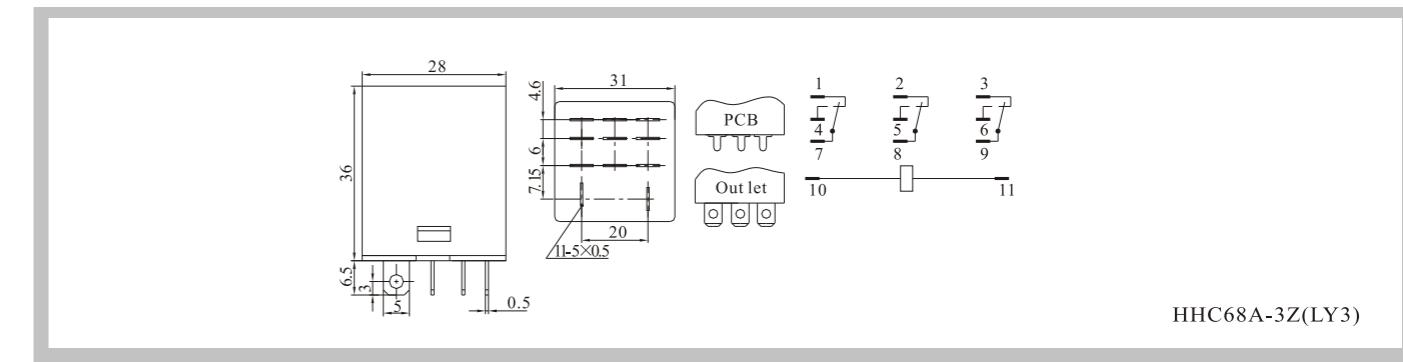
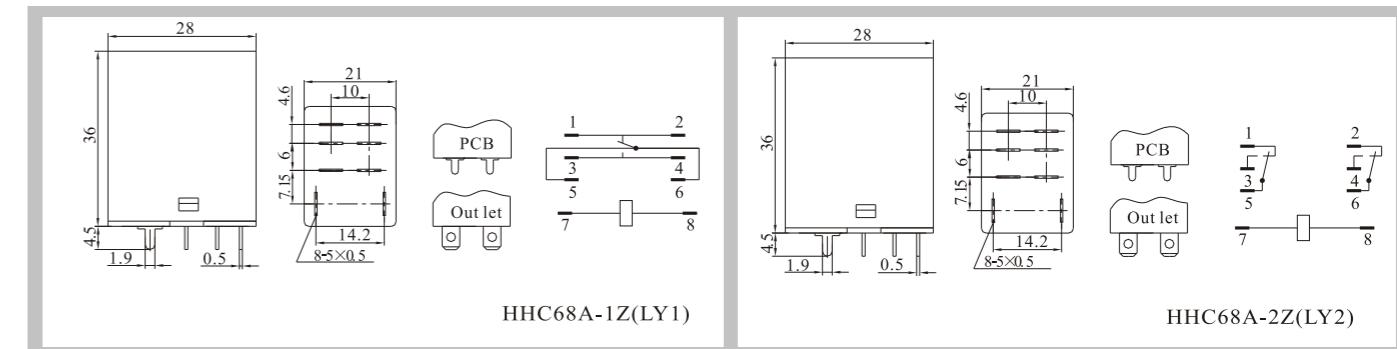
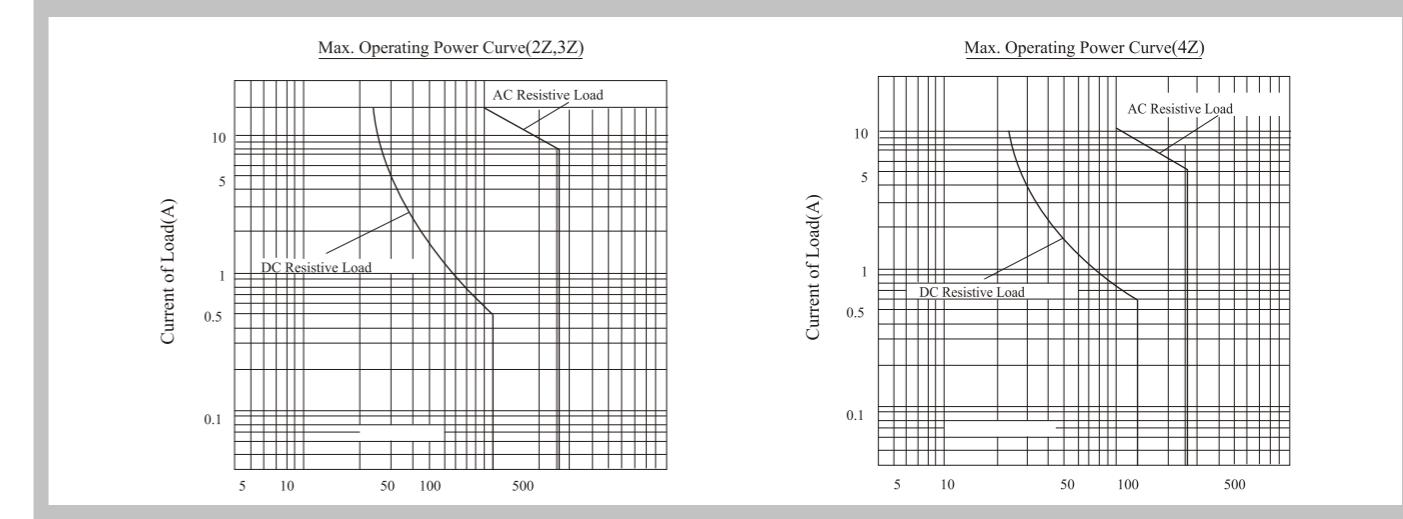
Contact Ratings	1Z, 1H   2Z, 2H   3Z, 4H   4Z, 4H
Contact Resistance	$\leq 50\text{m}\Omega$ (1A 24VDC)
Contact Material	Silver Alloy
Contact Capacity	1Z:15A 220VAC/28VDC 2Z3Z4Z:10A 220VAC/28VDC

**Coil Versions**

Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC	Coil Resistance $\Omega \pm 10\%$		
			1Z, 2Z	3Z	4Z
5	$\geq 3.75$	$\leq 0.5$	28	18	17
6	$\geq 4.5$	$\leq 0.6$	40	26	24
12	$\geq 9$	$\leq 1.2$	160	100	96
48	$\geq 36$	$\leq 4.8$	2560	1645	1536
110	$\geq 82.5$	$\leq 11$	13400	8640	8000

Nominal Voltage VAC	Pull-in Voltage VAC	Release Voltage VAC	Coil Resistance $\Omega \pm 10\%$		
			1Z, 2Z	3Z	4Z
6	$\geq 4.8$	$\leq 1.8$	10.5	5	4
9	$\geq 7.2$	$\leq 2.7$	23.6	11.3	9
12	$\geq 9.6$	$\leq 3.6$	42	20	16
18	$\geq 14.4$	$\leq 5.4$	94.5	45	35
24	$\geq 19.2$	$\leq 7.2$	168	81	63
36	$\geq 28.8$	$\leq 10.8$	380	182	142
48	$\geq 38.4$	$\leq 14.4$	672	322	252
110	$\geq 88$	$\leq 33$	3530	1694	1323
127	$\geq 11.6$	$\leq 38.1$	4700	2258	1760
220	$\geq 176$	$\leq 66$	14100	6770	5290
380	$\geq 304$	$\leq 114$	42000	20200	14000

**Dimension & Bottom View****Reference Data**


**HHC68B-2Z(HH52P) HHC68B-4Z(HH54P)**  
**HHC68B-3Z(HH53P)**
**Ordering Code**

HHC68B-3Z-220VAC

Coil Voltage  
Contact Ratings  
Relay Type

**Contact Ratings**

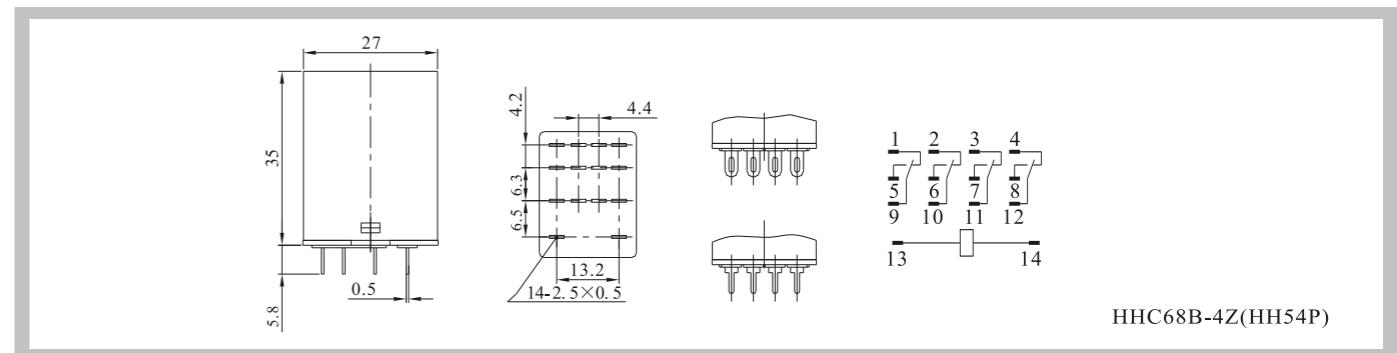
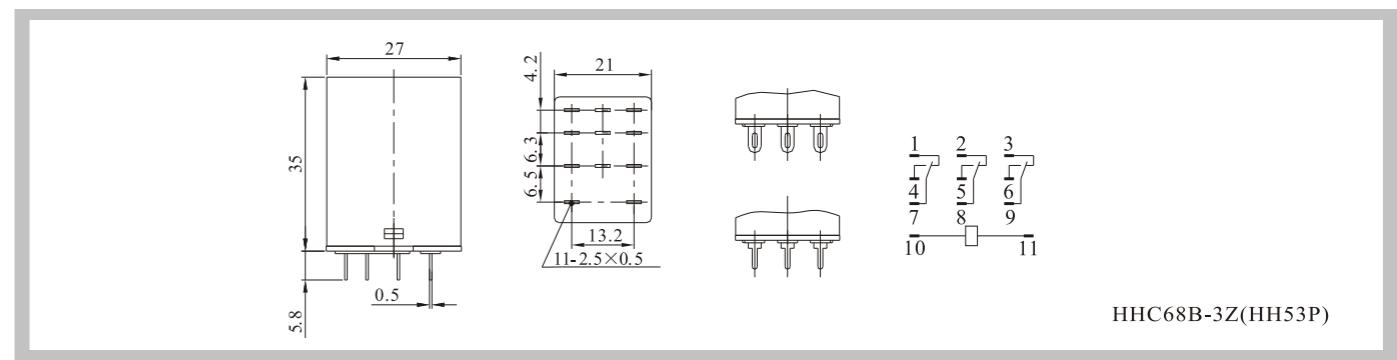
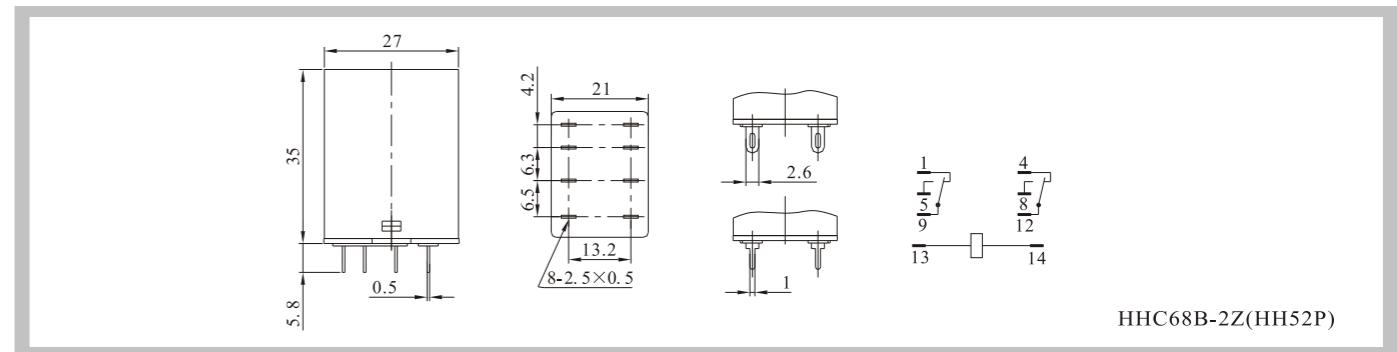
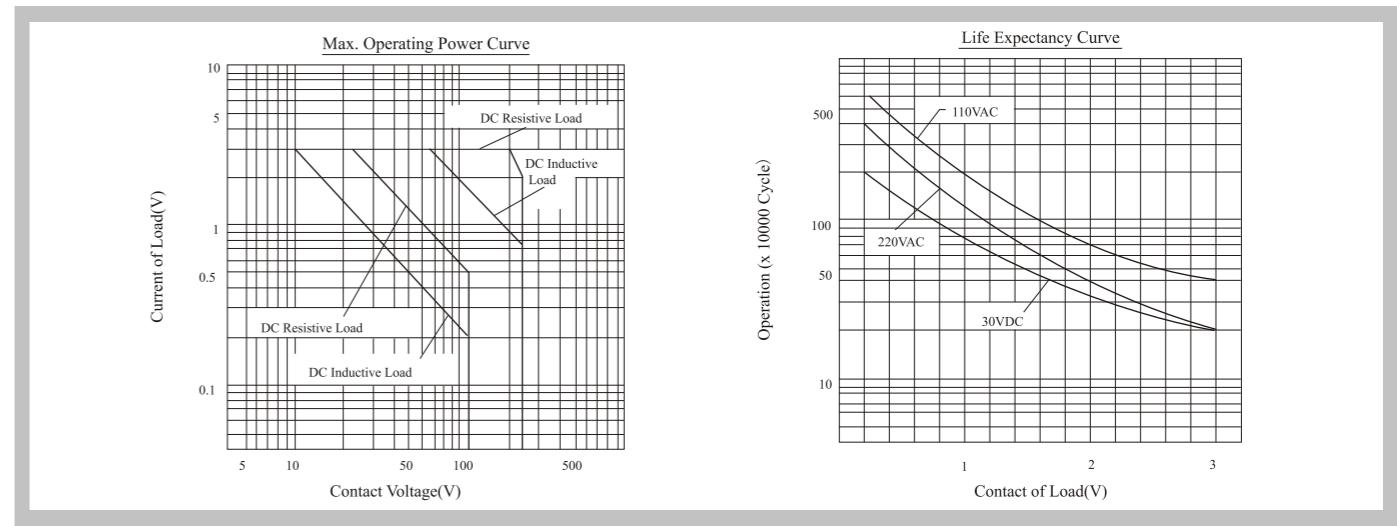
Contact Ratings	2Z	3Z	4Z
Contact Resistance	$\leq 50\text{m}\Omega$ (1A 24VDC)		
Contact Material	Silver Alloy		
Contact Capacity	5A, 7A/220VAC 3A, 5A/220VAC 30VDC		

**Coil Versions**

Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC	Coil Resistance $\Omega \pm 10\%$
5	$\leq 3.75$	$\geq 0.5$	28
6	$\leq 4.5$	$\geq 0.6$	40
12	$\leq 9$	$\geq 1.2$	160
24	$\leq 18$	$\geq 2.4$	640
48	$\leq 36$	$\geq 4.8$	2560
110	$\leq 82.5$	$\geq 11$	12100

Nominal Voltage VAC	Pull-in Voltage VAC	Release Voltage VAC	Coil Resistance $\Omega \pm 10\%$
6	$\leq 4.8$	$\geq 1.8$	10.5
9	$\leq 7.2$	$\geq 2.7$	23.6
12	$\leq 9.6$	$\geq 3.6$	42
18	$\leq 14.4$	$\geq 5.4$	94.5
24	$\leq 19.2$	$\geq 7.2$	168
36	$\leq 28.8$	$\geq 10.8$	380
48	$\leq 38.4$	$\geq 14.4$	672
110	$\leq 88$	$\geq 33$	3530
127	$\leq 11.6$	$\geq 38.1$	4700
220	$\leq 176$	$\geq 66$	14100
380	$\leq 304$	$\geq 114$	42000

**Dimension & Bottom View****Reference Data**


**HHC70A-2Z**  
**(JQX-10F-2Z、JTX-2C)**
**HHC70A-3Z**  
**(JQX-10F-3Z、JTX-3C)**
**HH C70B<sub>2</sub><sup>1</sup>-2Z(MK2P-1/S) HHC70B<sub>2</sub><sup>1</sup>-3Z(MK3P-1/S)**

**Ordering Code**

HHC70A(B) 1 -2Z-220VAC

- Coil Voltage
- Contact Ratings
- Wiring Means
- Relay Type

**Contact Ratings**

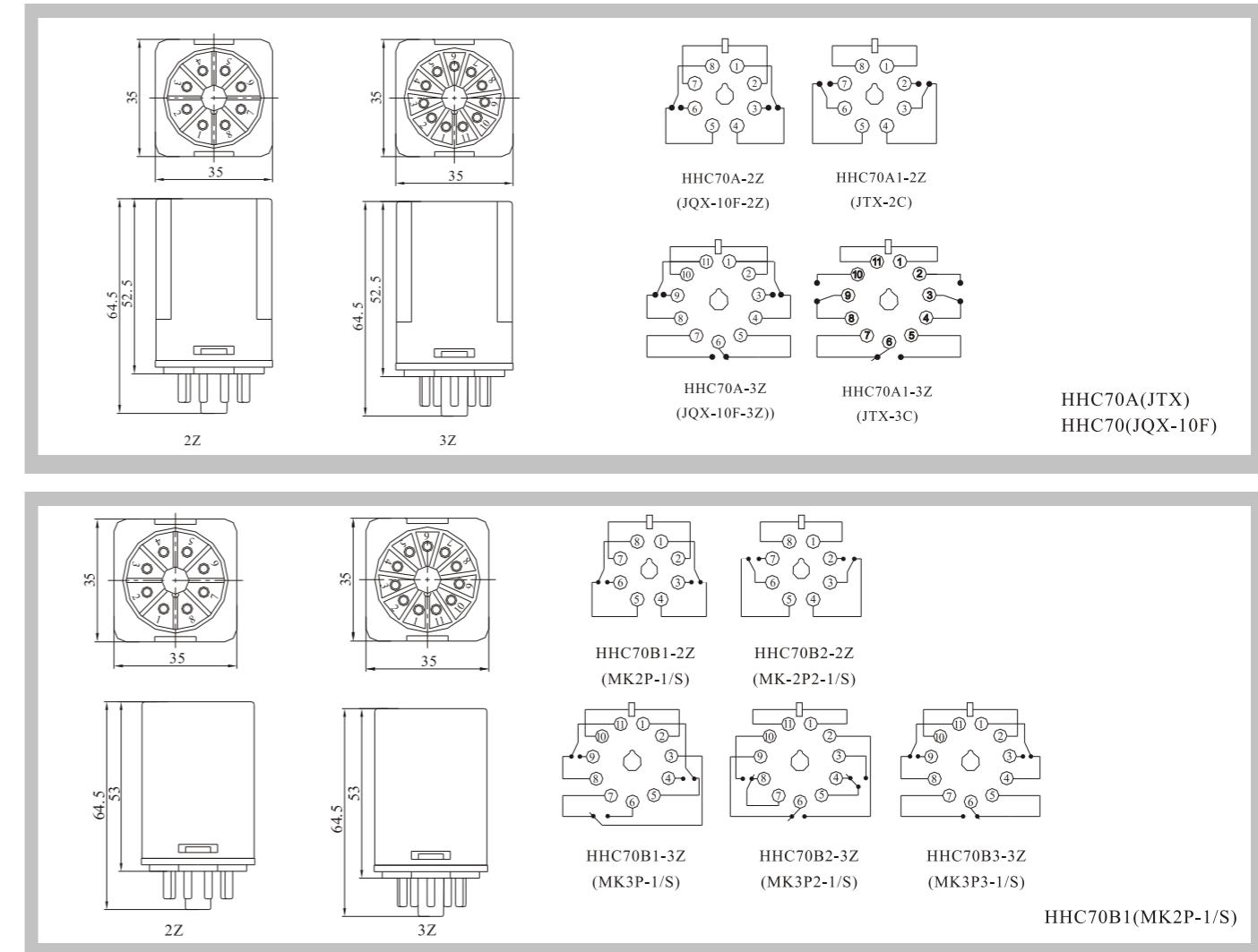
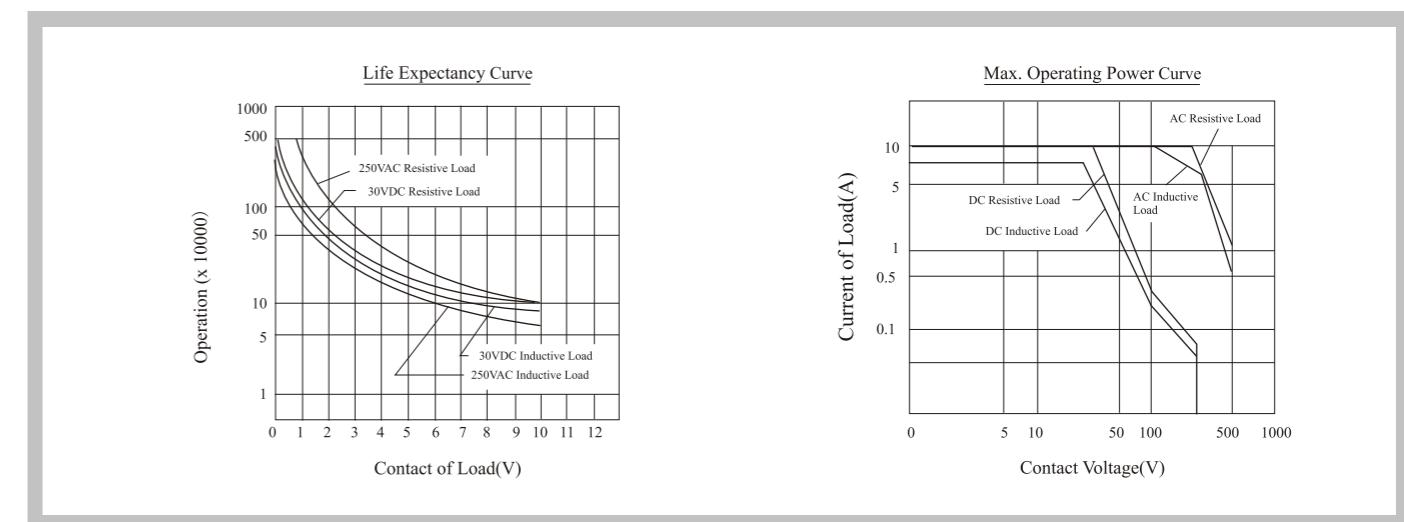
Contact Ratings	2Z, 3Z
Contact Resistance	$\leq 50\text{m}\Omega$ (1A 24VDC)
Contact Material	Silver Alloy
Contact Capacity	10A 250VAC/30VDC

**Coil Versions**

Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC	Coil Resistance $\Omega \pm 10\%$
6	$\leq 4.5$	$\geq 0.6$	18
12	$\leq 9$	$\geq 1.2$	72
24	$\leq 18$	$\geq 2.4$	288
48	$\leq 36$	$\geq 4.8$	1152
100	$\leq 75$	$\geq 10$	5000
110	$\leq 82.5$	$\geq 11$	6050

Nominal Voltage VAC	Pull-in Voltage VAC	Release Voltage VA C	Coil Resistance $\Omega \pm 10\%$
6	$\leq 4.8$	$\geq 1.8$	3.6
9	$\leq 7.2$	$\geq 2.7$	8.1
12	$\leq 9.6$	$\geq 3.6$	14.4
18	$\leq 14.4$	$\geq 5.4$	32.4
24	$\leq 19.2$	$\geq 7.2$	57.6
36	$\leq 28.8$	$\geq 10.8$	129.6
48	$\leq 38.4$	$\geq 14.4$	230.4
110	$\leq 88$	$\geq 33$	1210
127	$\leq 11.6$	$\geq 38.1$	1600
220	$\leq 176$	$\geq 66$	4840
380	$\leq 304$	$\geq 114$	14400

**Dimension & Bottom View**

**Reference Data**


# 3 POWER RELAYS



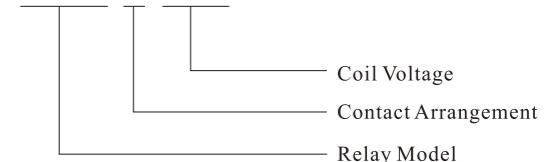
## HHC68F(JQX-29F)



HHC68F(JQX-29F)

### Ordering Code

HHC68F-1C-12VDC



### Contact Spec.

Contact Arrangement	1A、1B、1C	2A、2B、2C
Contact Resistance	$\leq 50\text{m}\Omega$ (1A 24VDC)	
Contact Material	Silver Alloy	
Contact Capacity	20A/30A 250VAC/30VDC	

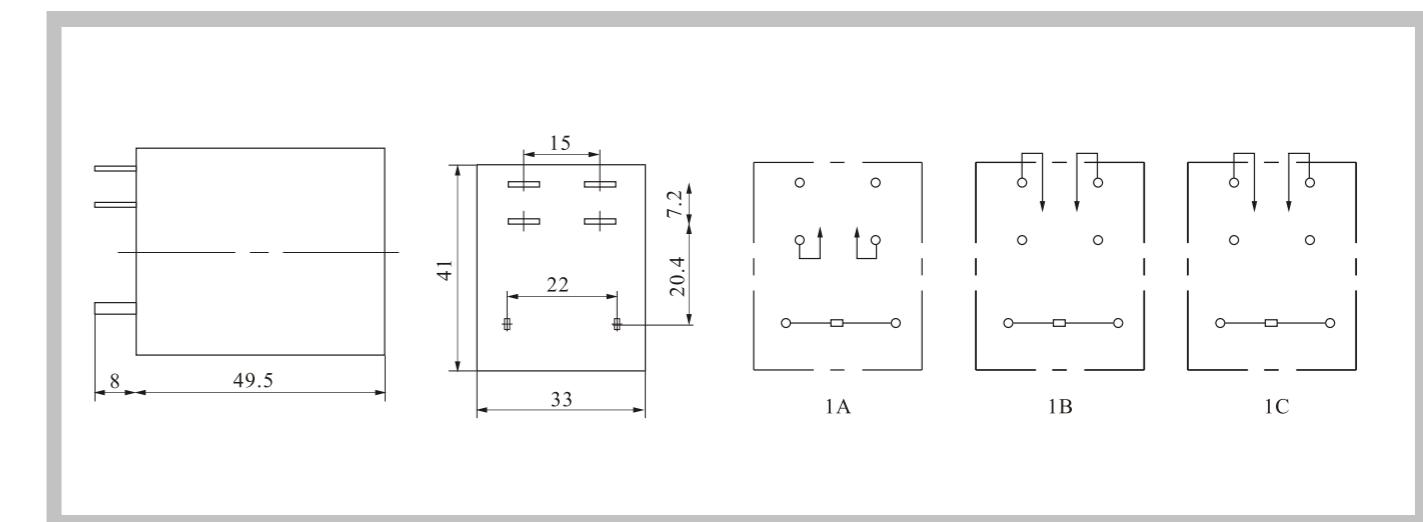
### Coil Data

Nominal Coil Power	DC:3.0W、AC:4.5W
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### Coil Data

Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC	Coil Resistance $\Omega \pm 10\%$
6	$\leq 4.5$	$\geq 0.6$	12
9	$\leq 6.75$	$\geq 0.9$	27
12	$\leq 9$	$\geq 1.2$	48
18	$\leq 13.5$	$\geq 1.8$	108
24	$\leq 18$	$\geq 2.4$	192
48	$\leq 36$	$\geq 4.8$	768
60	$\leq 45$	$\geq 6$	1200
110	$\leq 82.5$	$\geq 11$	4040

### Dimension & Bottom View & Schematics





## HHC71A(JQX-30F/JQX-12F) HHC71C1(JQX-40)

### Ordering Code

HHC71A-1Z-220VAC

Coil Voltage  
Contact Ratings  
Relay Type



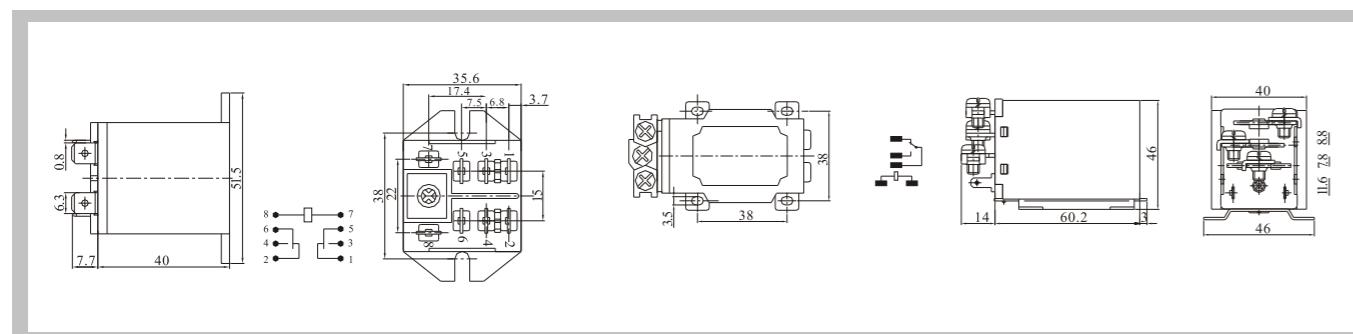
### Contact Ratings

Contact Ratings	1Z, 1H, 1D, 2Z, 2H, 2D	1H, 1D, 1Z
Contact Resistance	$\leq 50\text{m}\Omega$ (1A 24VDC)	
Contact Material	Silver Alloy	
Contact Capacity	20A/30A 250VAC/30VDC 30A 250VA/24VDC	

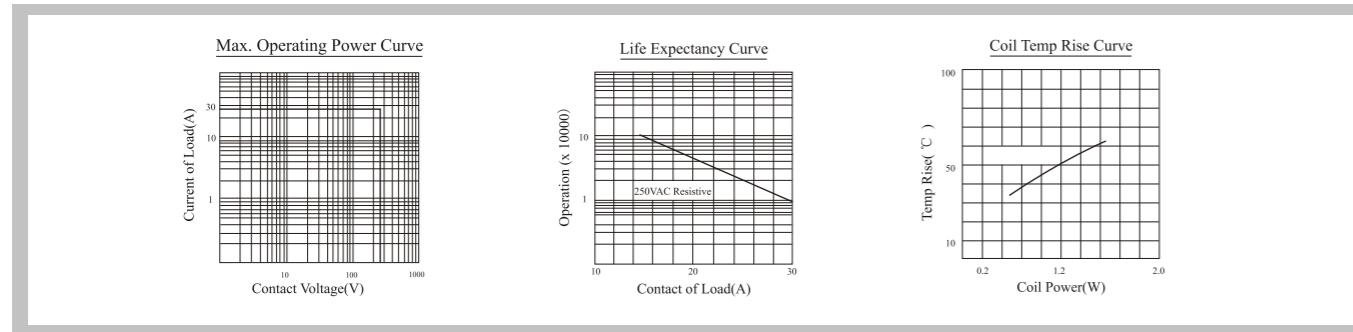
### Coil Versions

Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC	Coil Resistance $\Omega \pm 10\%$
6	$\leq 4.5$	$\geq 0.6$	18
9	$\leq 6.75$	$\geq 0.9$	40.5
12	$\leq 9$	$\geq 1.2$	72
18	$\leq 13.5$	$\geq 1.8$	162
24	$\leq 18$	$\geq 2.4$	288
48	$\leq 36$	$\geq 4.8$	1125
60	$\leq 45$	$\geq 6$	1800
110	$\leq 82.5$	$\geq 11$	6050

### Mounting Dimension



### Reference Data

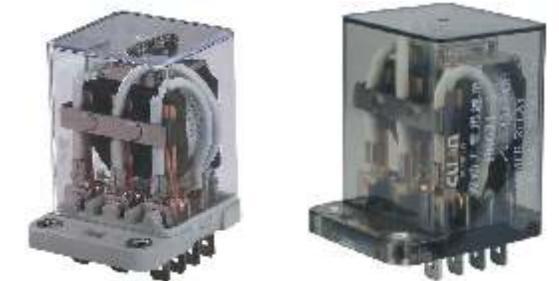


## HHC71B(JQX-38F)

### Ordering Code

HHC71B-1Z-220VAC

Coil Voltage  
Contact Ratings  
Relay Type



### Specification

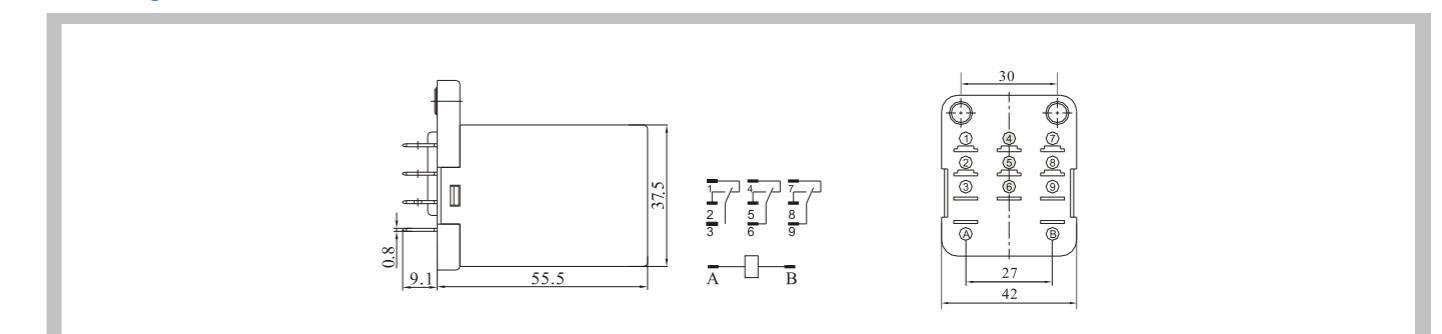
Insulation Resistance	500M $\Omega$	500VDC
Dielectric Strength (1mA)	B.C.C	2500VAC
	B.O.C	1500VAC
Operate Time	Pull-in	$\leq 20\text{ms}$
	Release	$\leq 15\text{ms}$
Terminal Type	Plug-in、Flange	

### Coil Ratings

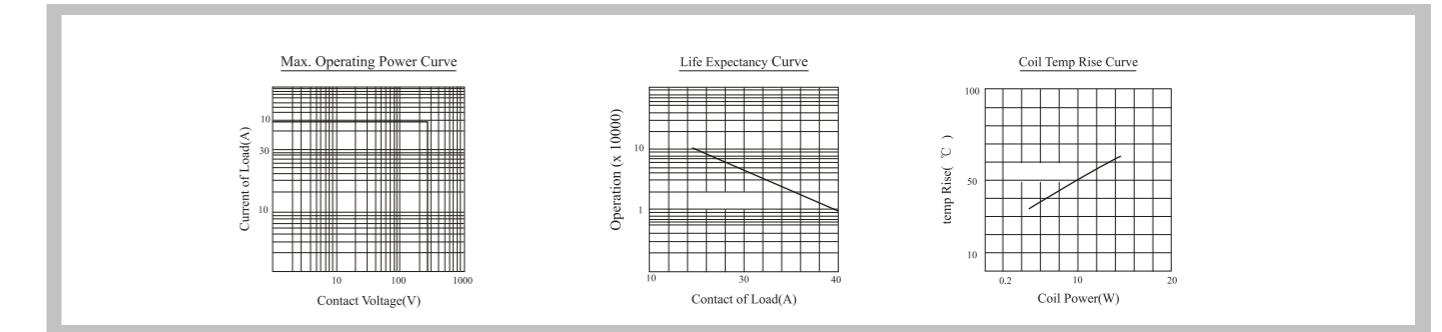
Nominal Coil Power	2W, 4VA	DC2.5W
Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC
6	$\leq 4.8$	$\geq 1.8$
9	$\leq 7.2$	$\geq 2.7$
12	$\leq 9.6$	$\geq 3.6$
18	$\leq 14.4$	$\geq 5.4$
24	$\leq 19$	$\geq 7.2$
48	$\leq 38.4$	$\geq 14.4$
60	$\leq 45$	$\geq 6$
110	$\leq 88$	$\geq 33$
220	$\leq 176$	$\geq 66$

Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC	Coil Resistance $\Omega \pm 10\%$
6	$\leq 4.5$	$\geq 0.6$	14.4
9	$\leq 6.75$	$\geq 0.9$	32.4
12	$\leq 9$	$\geq 1.2$	57.6
18	$\leq 13.5$	$\geq 1.8$	130
24	$\leq 18$	$\geq 2.4$	230
48	$\leq 36$	$\geq 4.8$	920
60	$\leq 45$	$\geq 6$	1440
110	$\leq 82.5$	$\geq 11$	4840

### Mounting Dimension



### Reference Data

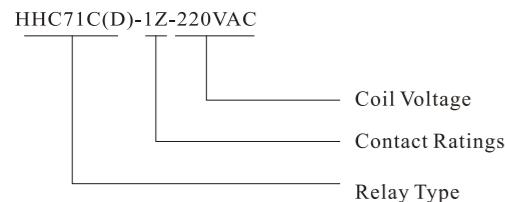




## HHC71C-1Z(JQX-40F)

## HHC71G1(JQX-58F)

### Ordering Code



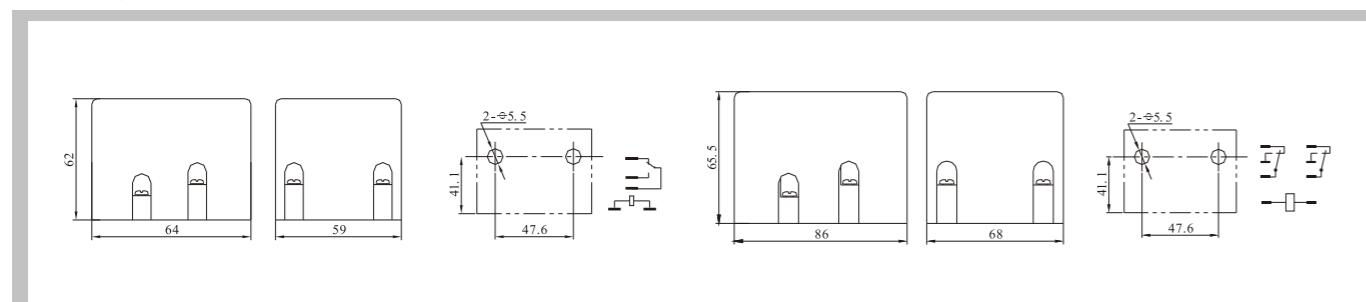
### Contact Ratings

Contact Ratings	1Z, 1H, 1D, 2Z, 2H, 2D	1H, 1D, 1Z
Contact Resistance	$\leq 50\text{m}\Omega$ (1A 24VDC)	
Contact Material	Silver Alloy	
	40F-1Z 50A 250VAC/24VDC	
Contact Capacity	58F-1Z 60A 250VAC/24VDC	
	40F-2Z 40A 250VAC/24VDC	

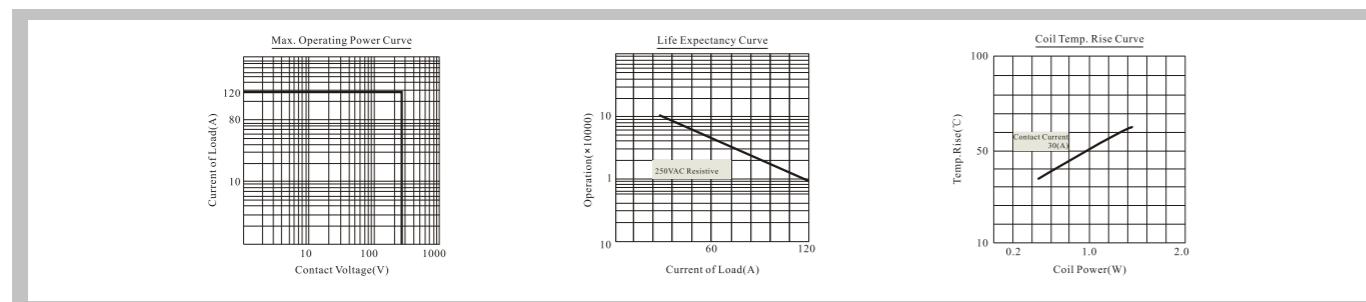
### Coil Versions

Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC	Coil Resistance $\Omega \pm 10\%$
6	$\leq 4.5$	$\geq 0.6$	18
9	$\leq 6.75$	$\geq 0.9$	40.5
12	$\leq 9$	$\geq 1.2$	72
18	$\leq 13.5$	$\geq 1.8$	162
24	$\leq 18$	$\geq 2.4$	288
48	$\leq 36$	$\geq 4.8$	1125
60	$\leq 45$	$\geq 6$	1800
110	$\leq 82.5$	$\geq 11$	6050

### Mounting Dimension

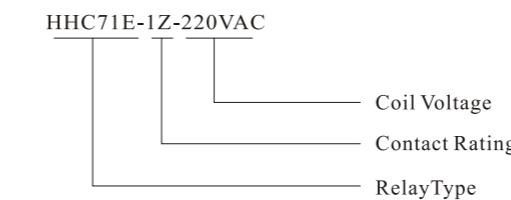


### Reference Data



## HHC71E(JQX-59F)

### Ordering Code



### Contact Rating

Contact Ratings	1Z, 1H, 1D	2Z, 2H, 2D
Contact Resistance	$\leq 50\text{m}\Omega$ (1A 24VDC)	
Contact Material	Silver Alloy	
Contact Capacity	80A 250VAC/24VDC	

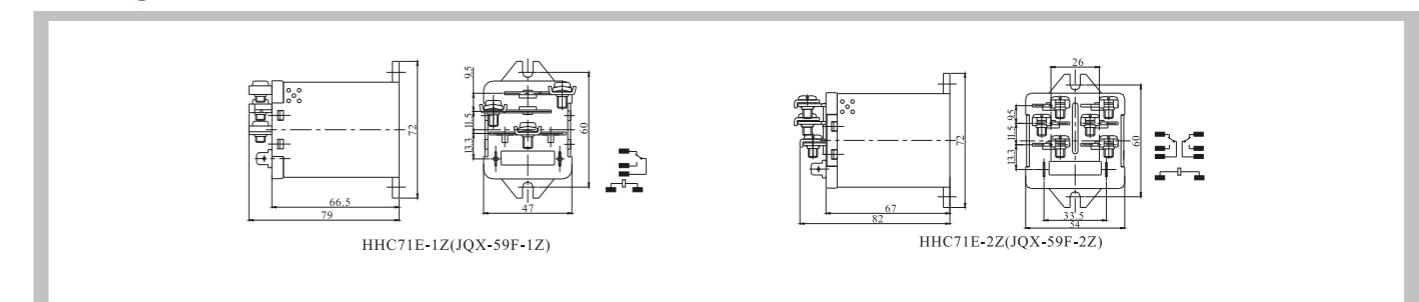
### Coil Ratings

Nominal Coil Power	DC:2W AC:6.5VA
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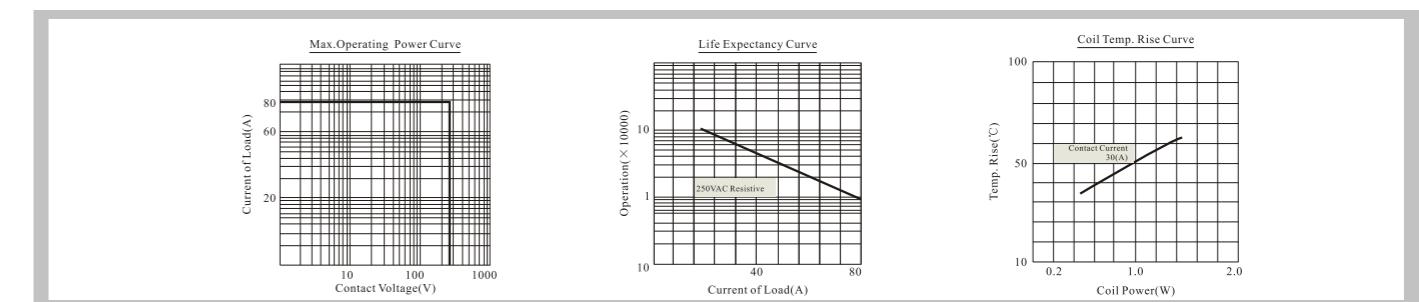
### Coil Versions

Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC	Coil Resistance $\Omega \pm 10\%$
6	$\leq 4.5$	$\geq 0.6$	10
9	$\leq 6.75$	$\geq 0.9$	22.5
12	$\leq 9$	$\geq 1.2$	40
18	$\leq 13.5$	$\geq 1.8$	90
24	$\leq 18$	$\geq 2.4$	160
48	$\leq 36$	$\geq 4.8$	640
60	$\leq 45$	$\geq 6$	1000
110	$\leq 82.5$	$\geq 11$	3360

### Mounting Dimension



### Reference Data





## HHC71F-1Z(JQX-62F-1Z) HHC71F-2Z(JQX-62F-2Z)

### Ordering Code

HHC71F-1Z-220VAC

Coil Voltage

Contact Ratings

Relay Type



### Contact Ratings

Contact Ratings	1Z, 1H, 1D	2Z, 2H, 2D
Contact Resistance	$\leq 50\text{m}\Omega$ (1A 24VDC)	
Contact Material	Silver Alloy	
Contact Capacity	100A 250VAC/24VDC	80A 250VAC/24VDC

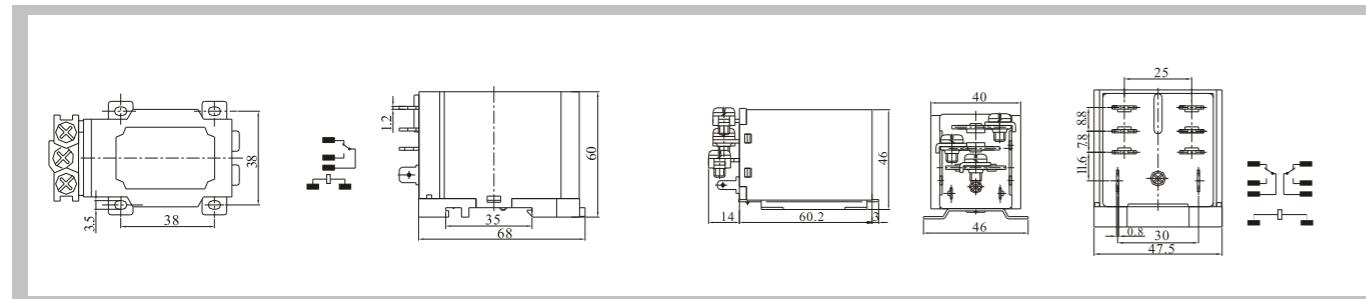
### Coil Ratings

Nominal Coil Power	DC:2W AC:17.5VA
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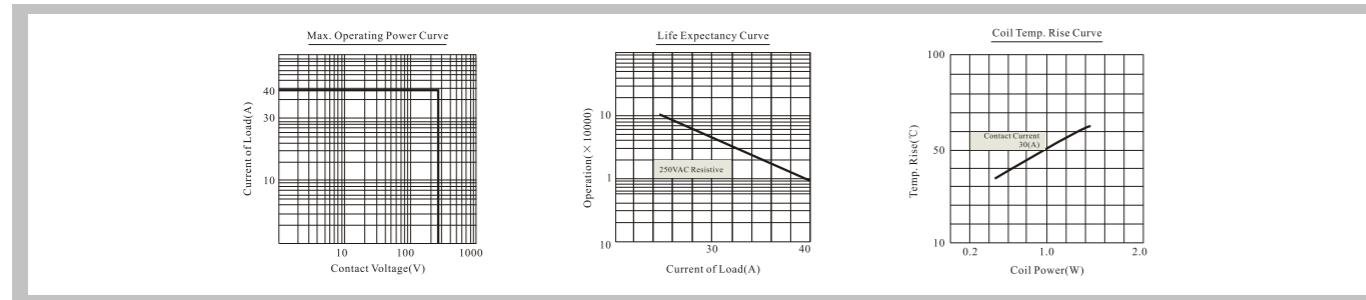
### Coil Versions

Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC	Coil Resistance $\Omega \pm 10\%$
6	$\leq 4.5$	$\geq 0.6$	18
9	$\leq 6.75$	$\geq 0.9$	40.5
12	$\leq 9$	$\geq 1.2$	72
18	$\leq 13.5$	$\geq 1.8$	162
24	$\leq 18$	$\geq 2.4$	288
48	$\leq 36$	$\geq 4.8$	1152
60	$\leq 45$	$\geq 6$	1800
110	$\leq 82.5$	$\geq 11$	6050

### Mounting Dimension



### Reference Data



备注：原欣大HHC71E(JQX-60F)为HHC71C-1Z(JQX-40F-60安培)

## HHC71-4(JQX-78F) For Electricity Power Vehicle

### Ordering Code

HHC71-4-3Z-220VAC

HHC71E-1Z-220VAC

Coil Voltage

Contact Ratings

Relay Type

### Contact Ratings

Contact Ratings	3Z, 3H, 3D	1H, 1D, 1Z
Contact Resistance	$\leq 50\text{m}\Omega$ (1A 24VDC)	
Contact Material	Silver Alloy	
Contact Capacity	60A 250VAC/24VDC	

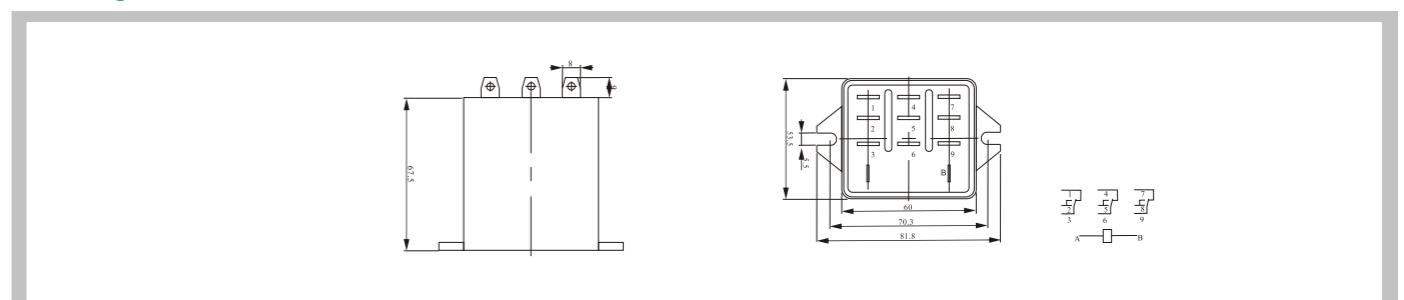
### Coil Ratings

Nominal Coil Power	DC:2W AC:6.5VA
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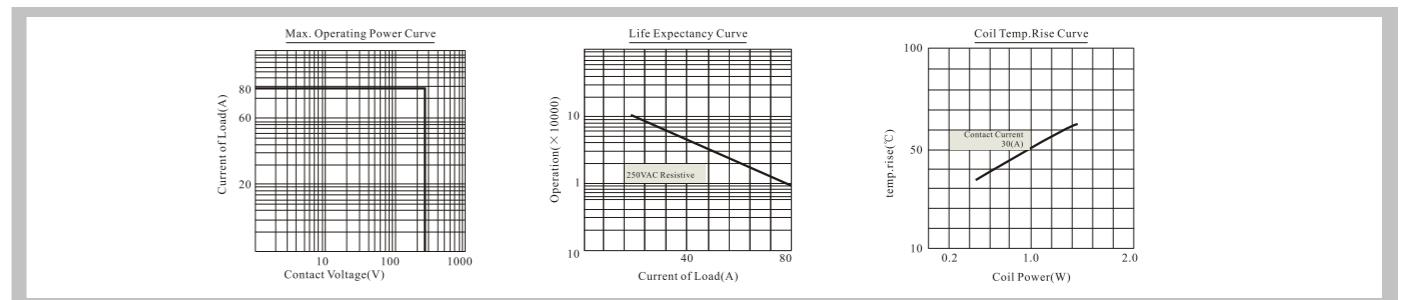
### Coil Versions

Nominal Voltage VDC	Pull-in Voltage VDC	Release Voltage VDC	Coil Resistance $\Omega \pm 10\%$
6	$\leq 4.5$	$\geq 0.6$	10
9	$\leq 6.75$	$\geq 0.9$	22.5
12	$\leq 9$	$\geq 1.2$	40
18	$\leq 13.5$	$\geq 1.8$	90
24	$\leq 18$	$\geq 2.4$	160
48	$\leq 36$	$\geq 4.8$	640
60	$\leq 45$	$\geq 6$	1000
110	$\leq 82.5$	$\geq 11$	3360

### Mounting Dimension



### Reference Data



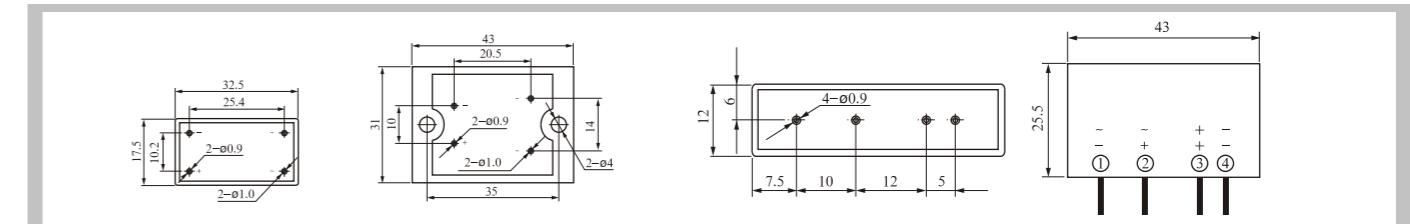
# 4 SOLID STATE RELAYS(S.S.R)



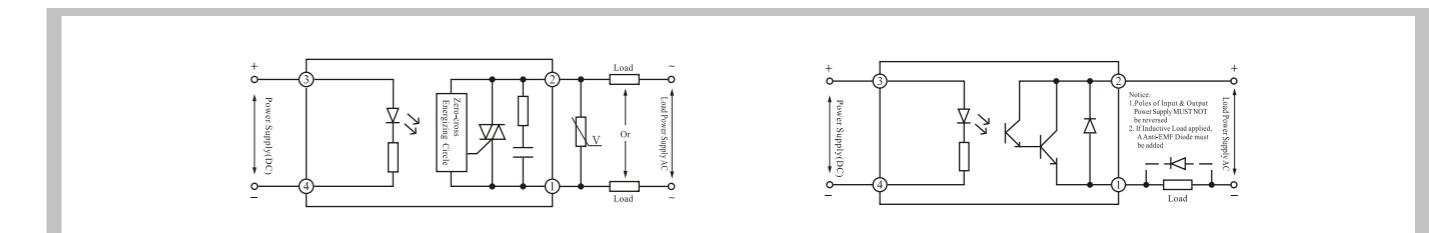
## Specification

Model	HHG1-1/032F-22, 38 1A(SSR-DA)	HHG1-0/032F-06, 20 5A(SSR-DD)	HHG1-1/032F-22, 38 1-4A(SSR-DA)	HHG1-1/032F-22, 38 1-4A(SSR-DD)
Description	Miniature DIP	Miniature DIP	Miniature SIP	Miniature SIP
Controlling Voltage	3-14VDC 3-32VDC	3-14VDC 3-32VDC	3-14VDC 3-32VDC	3-14VDC 3-32VDC
Controlling Current	6-35mA	6-35mA	6-35mA	6-35mA
Make-on Voltage	3VDC	3VDC	3VDC	3VDC
Break-off Voltage	1VDC	1VDC	1VDC	1VDC
Reverse Voltage	32VDC	32VDC	32VDC	32VDC
Load Voltage	30-240VAC 40-440VAC	60V、110V、200VDC	30-240VAC 40-440VAC	60VDC、110VDC、200VDC
Load Current	1A	5A	1A、2A、3A、4A	1A、2A、3A、4A
Instant Voltage	22、600VAC 38、900VAC	06-100VDC 20-220VDC	22、600VAC 38、900VAC	06-100VDC 20-220VDC
Voltage Drop in On	<1.6VAC	<1.2VDC	<1.6VAC	<1.2VDC
On-off Time	≤10mS	≤5mS	≤10mS	≤5mS
Leakage Current in Off	≤10mA	≤5mA	≤10mA	≤5mA
Dielectric Strength	≥1500VAC	≥1500VAC	≥1500VAC	≥1500VAC
Insulation Resistance	500MΩ 500VDC	500MΩ 500VDC	500MΩ 500VDC	500MΩ 500VDC
Ambient Temp.	-30~80°C	-30~80°C	-30~80°C	-30~80°C
Dimensions	32.5L×17.5W×17.6H	43L×31W×20H	43L×25.5W×12H	43L×25.5W×12H
Indicate Methods	—	—	—	—
Mounting Type	PCB	PCB	PCB	PCB
Weight	≤17g	≤78g	≤22g	≤22g
Remarks	Used in Air-conditioner, Cash-betting Machine and other electrical appliance			

## Mounting Dimension



## Wire Diagram

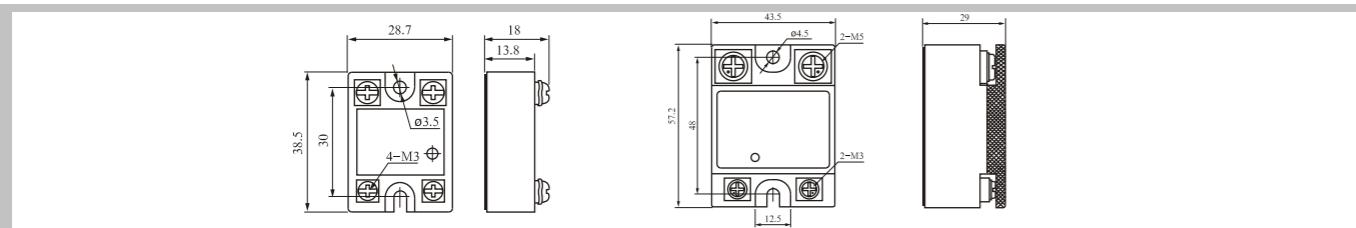




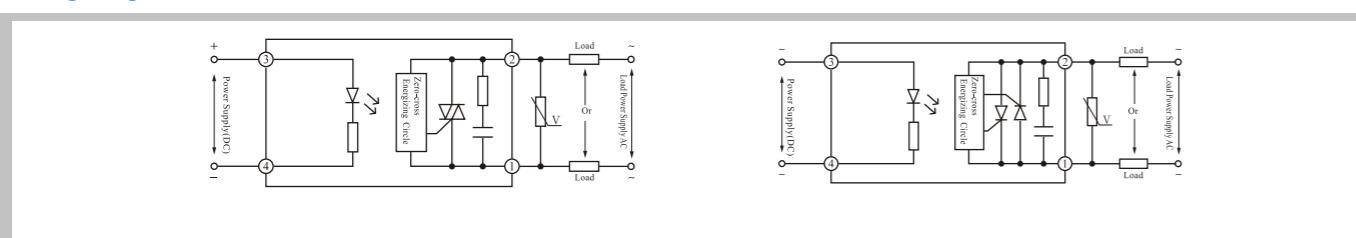
## Specification

Model	HHG5-1/032F-22, 38 5-15A(SSR-DA)	HHG1-1/032F-22, 38 10-80A(SSR-DA)	HHG5-1/032F-38, 120 60-120A(SSR-DA)
Description	Single Phase S.S.R	Single Phase S.S.R	1-Phase Thyristor Anti-Parallel S.S.R
Controlling Voltage	3-14VDC 3-32VDC	3-14VDC 3-32VDC	3-32VDC
Controlling Current	6-35mA	6-35mA	6-25mA
Make-on Voltage	3VDC	3VDC	3VDC
Break-off Voltage	1VDC	1VDC	1VDC
Reverse Voltage	32VDC	32VDC	32VDC
Load Voltage	30-240VAC 40-440VAC	30-240VAC 40-440VAC	40-440VAC 40-1200VAC
Load Current	5A, 10A, 15A	10, 15, 20, 25, 30, 40, 60, 80A	60, 80, 100, 120A
Instant Voltage	22, 600VAC 38, 900VAC	22, 600VAC 38, 900VAC	38, 900VAC 120, 1600VAC
Voltage Drop in On	<1.6VAC	<1.6VAC	<1.6VAC
On-off Time	≤10mS	≤10mS	≤10mS
Leakage Current in Off	≤10mA	≤10mA	≤10mA
Dielectric Strength	≥2500VAC	≥2500VAC	≥2500VAC
Insulation Resistance	500MΩ 500VDC	500MΩ 500VDC	500MΩ 500VDC
Ambient Temp.	-30~80°C	-30~80°C	-30~80°C
Dimensions	32.5L×28W×18H	57.2L×43.5W×29H	57L×43.5W×29H
Indicate Methods	LED	LED	LED
Mounting Type	Screw Fixing	Screw Fixing	Screw Fixing
Weight	≤30g	10A≤110g 40A≤145g 80A≤150g	60A≤135g 80A≤140g 120A≤145g
Remarks	1. Load>10A, need mounting radiator ; Load>80A, need mounting Cooling Fan or Cooling Water Sys. 2. For inductive Load, Pls mount a Varistor on output terminal.		

## Mounting Dimension



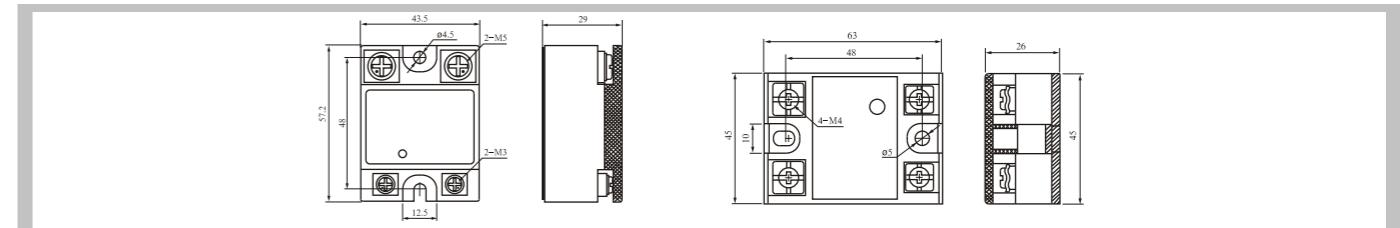
## Wiring Diagram



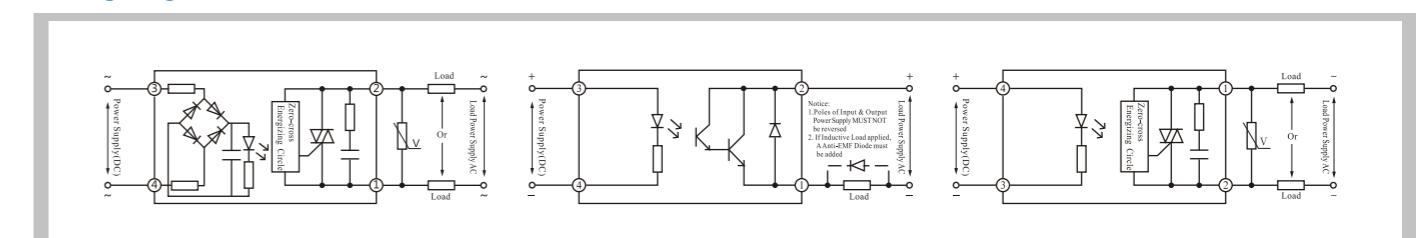
## Specification

Model	HHG1-1/250F-22, 38 10-80A(SSR-AA)	HHG1-0/032F-20 10-40A(SSR-DD)	HHG2-1/032F-22, 38 10-80A(SSR-DA)
Description	Single Phase S.S.R	Single Phase S.S.R	Single Phase S.S.R
Controlling Voltage	90-250VAC	5-32VDC	3-14VDC 3-32VDC
Controlling Current	5-30mA	6-35mA	6-35mA
Make-on Voltage	90VDC	5VDC	3VDC
Break-off Voltage	10VDC	1VDC	1VDC
Reverse Voltage	—	32VDC	32VDC
Load Voltage	30-240VAC 40-440VAC	12-250VDC	30-240VAC 40-440VAC
Load Current	10, 15, 20, 25, 30, 40, 60, 80A	10, 15, 20, 25, 40A	10, 15, 20, 25, 30, 40, 60, 80A
Instant Voltage	22, 600VAC 38, 900VAC	20-400VDC	22, 600VAC 38, 900VDC
Voltage Drop in On	<1.6VAC	<1.2VDC	<1.6VAC
On-off Time	≤10mS	≤5mS	≤10mS
Leakage Current in Off	≤10mA	≤5mA	≤10mA
Dielectric Strength	≥2500VAC	≥2500VAC	≥2500VAC
Insulation Resistance	500MΩ 500VDC	500MΩ 500VDC	500MΩ 500VDC
Ambient Temp.	-30~80°C	-30~80°C	-30~80°C
Dimensions	57.2L×43.5W×29H	57.2L×43.5W×29H	63L×45W×26H
Indicate Methods	LED	LED	LED
Mounting Type	Screw Fixing	Screw Fixing	Screw Fixing
Weight	10A≤110g 40A≤145g 80A≤150g	10A≤110g 20A≤140g 40A≤145g	10A≤130g 20A≤135g 40A≤145g
Remarks	1. Load>10A, need mounting radiator ; Load>80A, need mounting Cooling Fan or Cooling Water Sys. 2. For inductive Load, Pls mount a Varistor on output terminal.		

## Mounting Dimension



## Wiring Diagram





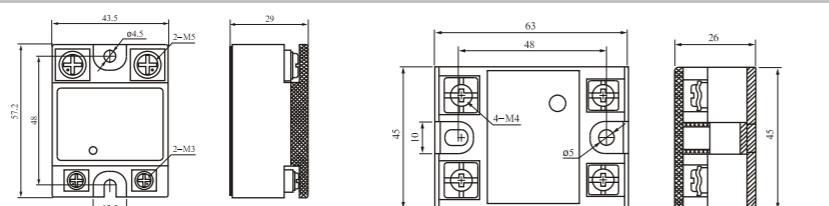
# SOLID STATE RELAYS(S.S.R)



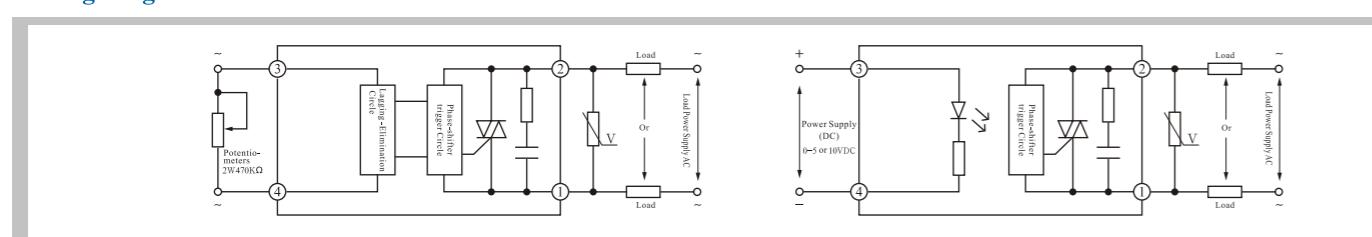
## Specification

Model	HHT1-R/22、38 10-40A(SSR-VA)	HHT2-R/22、38 60-80A(SSR-VA)	HHT2-U/22 10-40A(SSR-VA)
Description	Single Phase Regulator	Single Phase Regulator	Single Phase Regulator
Controlling Method	2W470-560K Ω by Potentiometers	2W470-560K Ω by Potentiometers	0-5VDC / 0-10VDC
Load Voltage	220VAC 380VAC	220VAC 380VAC	220VAC
Ragulate Range	10-250VAC 10-440VAC	10-250VAC 10-440VAC	10-250VAC
Isolation Voltage	No Isolation	No Isolation	Full Isolation
Leakage Current in Off	≤10mA	≤10mA	≤10mA
Output Current	10、15、20、25、30、40A	60、80A	10、15、20、30、40A
Instant Voltage	22、600VAC 38、900VAC	22、600VAC 38、900VAC	22、600VAC
Voltage Drop in On	<3VAC	<3VAC	<3VAC
Dielectric Strength	≥2500VAC Output Terminal & Cooling Plate	≥2500VAC Output Terminal & Cooling Plate	≥2500VAC
Insulation Resistance	500MΩ 500VDC	500MΩ 500VDC	500MΩ 500VDC
Ambient Temp.	-30~80°C	-30~80°C	-30~80°C
Dimensions	57.2L×43.5W×29H	63L×45W×26H	63L×45W×26H
Indicate Methods	LED	LED	LED
Mounting Type	Screw Fixing	Screw Fixing	Screw Fixing
Weight	10A≤110g 40A≤145g	≤145g	10A≤130g 20A≤135g 40A≤145g
Remarks	1. Load>10A , need mounting radiator; Potentiometer should have insulation knob and shell. 2. 0-5(10)VDC manual or Automatic adjustable.		

## Mounting Dimension



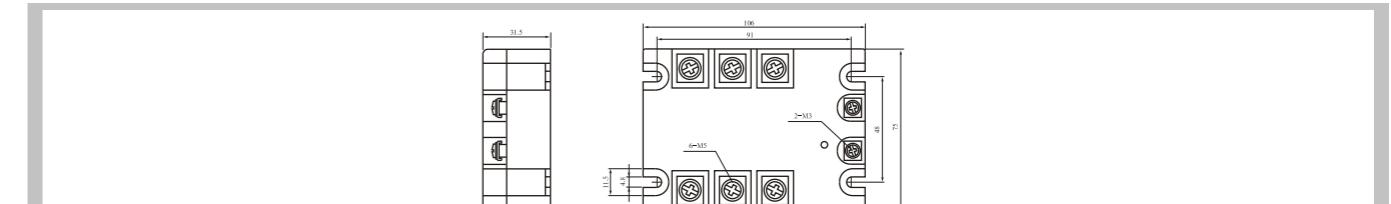
## Wiring Diagram



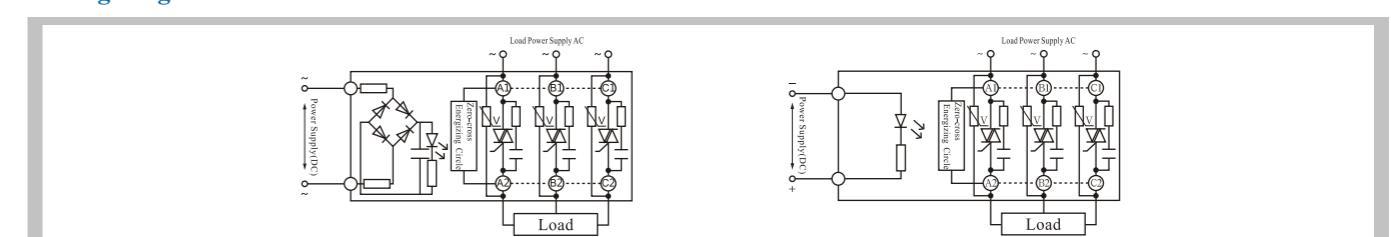
## Specification

Model	HHG1-3/032F-38 10-120A (SSR-DA)	HHG1-3/250F-38 10-80A (SSR-AA)	HHG1-3/005F-38 10-40A (SSR-DA)
Description	Three Phase S.S.R	Three Phase S.S.R	Three Phase S.S.R
Controlling Voltage	3-14VDC 3-32VDC	90-250VDC	5VDC 10VDC
Controlling Current	5-25mA	5~30mA	8-20mA
Make-on Voltage	3VDC	90VDC	4.5VDC 9.5VDC
Break-off Voltage	1VDC	10VDC	1VDC
Now/Reverse Turn Time	—	—	≥200ms
Reverse Voltage	32VDC	—	—
Load Voltage	40-440VAC	40-440VDC	40-440VDC
Load Current	10、15、20、25、40、60、80、100、120A	10、15、20、25、30、40、60、80A	10、15、20、25、40A
Instant Voltage	38、1000VAC	38、1000VAC	38、1000VAC
Voltage Drop in On	<1.6VAC	<1.6VAC	<1.6VAC
On-off Time	≤10mS	≤10mS	≤10mS
Leakage Current in Off	≤10mA	≤10mA	≤10mA
Dielectric Strength	≥2500VAC	≥2500VAC	≥2500VAC
Insulation Resistance	500MΩ 500VDC	500MΩ 500VDC	500MΩ 500VDC
Ambient Temp.	-30~80°C	-30~80°C	-30~80°C
Dimensions	106L×75W×31.5H	106L×75W×31.5H	106L×75W×31.5H
Indicate Methods	LED	LED	LED
Mounting Type	Screw Fixing	Screw Fixing	Screw Fixing
Weight	10A≤365g 40A≤460g 80A≤500g	10A≤365g 40A≤460g 80A≤500g	10A≤450g 40A≤460g
Remarks	1. Load>10A , need mounting radiator ; Load>80A, need mounting Cooling Fan or Cooling Water Sys. 2. For inductive Load, Pls mount a Varistor on output terminal.		

## Mounting Dimension



## Wiring Diagram





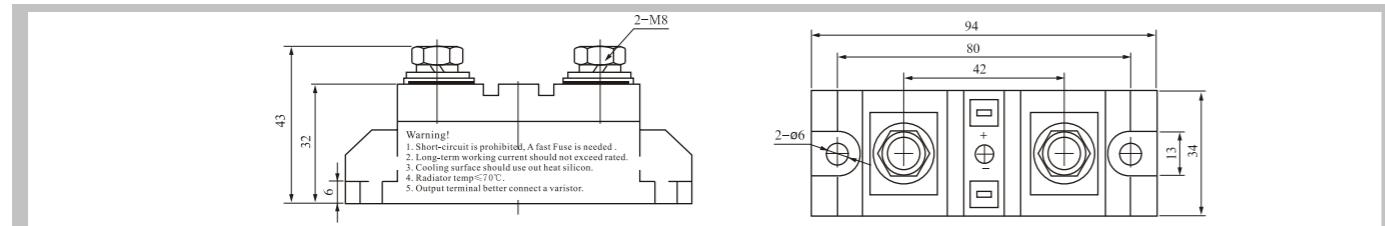
# SOLID STATE RELAYS(S.S.R)



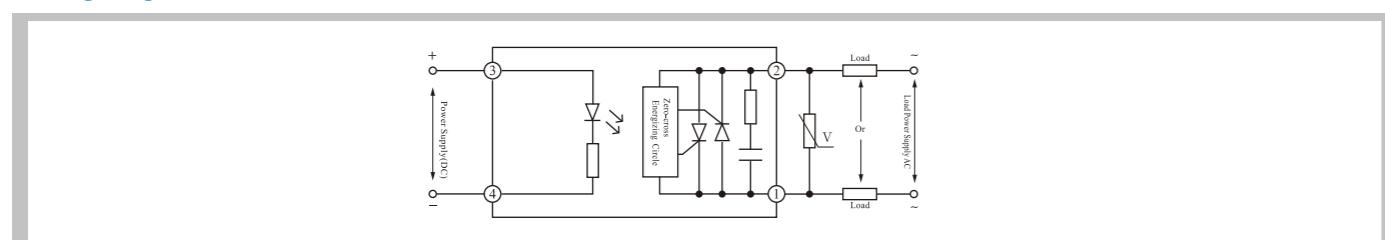
## Specification

Model	HHG1A-1/032F-38 100-250A (SSR-DA)	HHG1C-1/032F-120 100-250A (SSR-DA)
Description	Industrial S.S.R	Industrial S.S.R
Controlling Voltage	3-14VDC 3-32VDC	3-14VDC 3-32VDC
Controlling Current	5-25mA	6-35mA
Make-on Voltage	3VDC	3VDC
Break-off Voltage	1VDC	1VDC
Reverse Voltage	32VDC	32VDC
Load Voltage	40-440VAC	60-1200VAC
Load Current	100、120、150、200、250A	100、120、150、200、250A
Instant Voltage	38、1100VAC	120、1600VAC
Voltage Drop in On	<1.6VAC	<1.6VAC
On-off Time	≤10mS	≤10mS
Leakage Current in Off	≤10mA	≤10mA
Dielectric Strength	≥2500VAC	≥2500VAC
Insulation Resistance	500MΩ 500VDC	500MΩ 500VDC
Ambient Temp.	-30~80°C	-30~80°C
Dimensions	94L×34W×43H	94L×34W×43H
Indicate Methods	LED	LED
Mounting Type	Screw Fixing	Screw Fixing
Weight	≤235g	≤235g
Remarks	1. Load >10A, need mounting radiator ; Load>80A, need mounting Cooling Fan or Cooling Water Sys. 2. For inductive Load, Pls mount a Varistor on output terminal.	

## Mounting Dimension



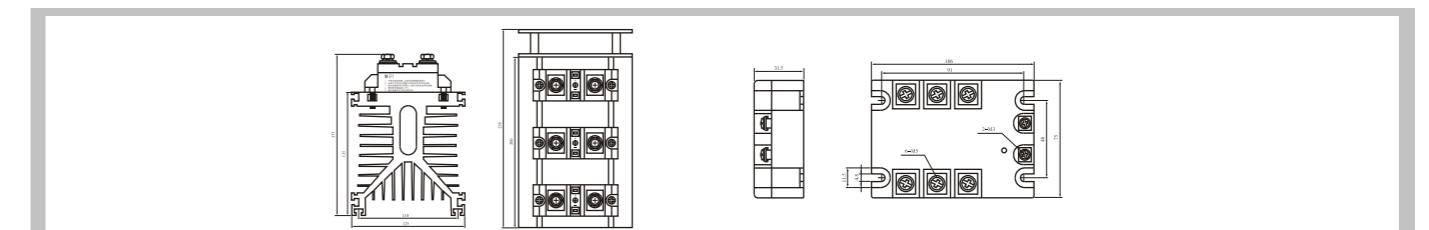
## Wiring Diagram



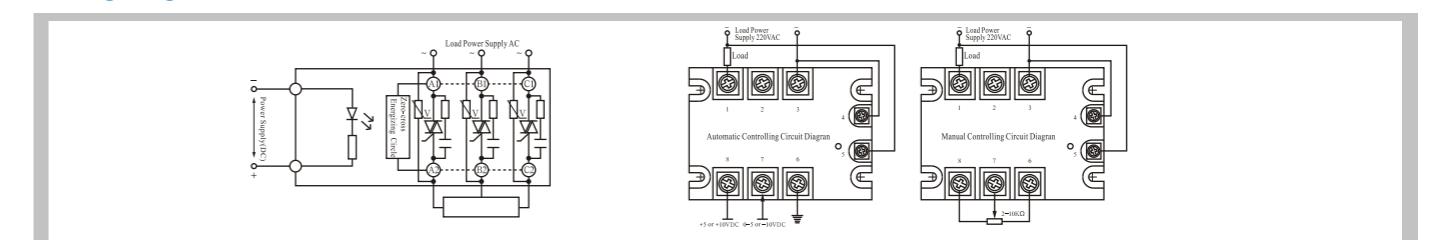
## Specification

Model	HHG1-3/032F-38 100-250A (SSR-DA)	HHT3-U/22 10-100A (SSR-VA)
Description	Three Phase S.S.R Combination	Full isolation 1-Phase voltage regulator module
Controlling Voltage	3-32VDC	—
Controlling Current	6-35mA	—
Controlling Method	—	0-5VDC、0-10VDC、4-20mA Adjustable
Make-on Voltage	3VDC	—
Break-off Voltage	1VDC	—
Load Voltage	40-440VAC	220VAC
Load Current	100、120、150、200、250A	10、20、30、40、100A
Regulate Range	—	10-250VAC
Instant Voltage	38、1000VAC	22、600VAC
Voltage Drop in On	<1.6VAC	<3VAC
On-off Time	≤10mS	—
Isolation Voltage	—	Full isolation
Leakage Current in Off	≤10mA	≤10mA
Dielectric Strength	≥2500VAC	≥2500VAC
Insulation Resistance	500MΩ 500VDC	500MΩ 500VDC
Ambient Temp.	-30~80°C	-30~80°C
Dimensions	238L×125W×177H	106L×75W×31.5H
Indicate Methods	LED	LED
Mounting Type	Screw fixing, Din Rail Mounting Radiator	Screw Fixing
Weight	≤4520g	10A≤390g 40A≤470g 100A≤540g
Remarks	1. Load >10A, need mounting radiator ; Load>80A, need mounting Cooling Fan or Cooling Water Sys. 2. For inductive Load, Pls mount a Varistor on output terminal.	

## Mounting Dimension



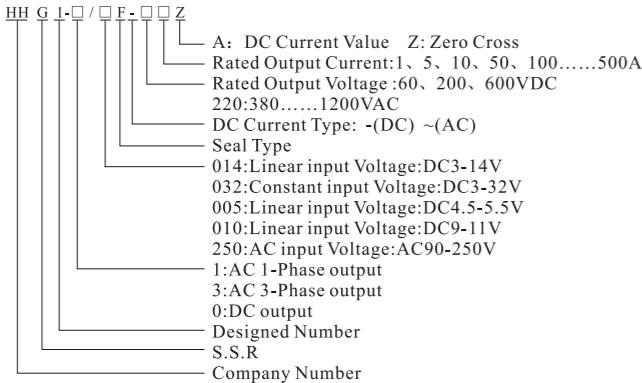
## Wiring Diagram



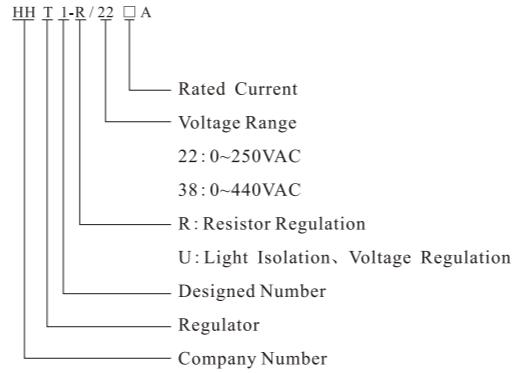


# SOLID STATE RELAYS(S.S.R)

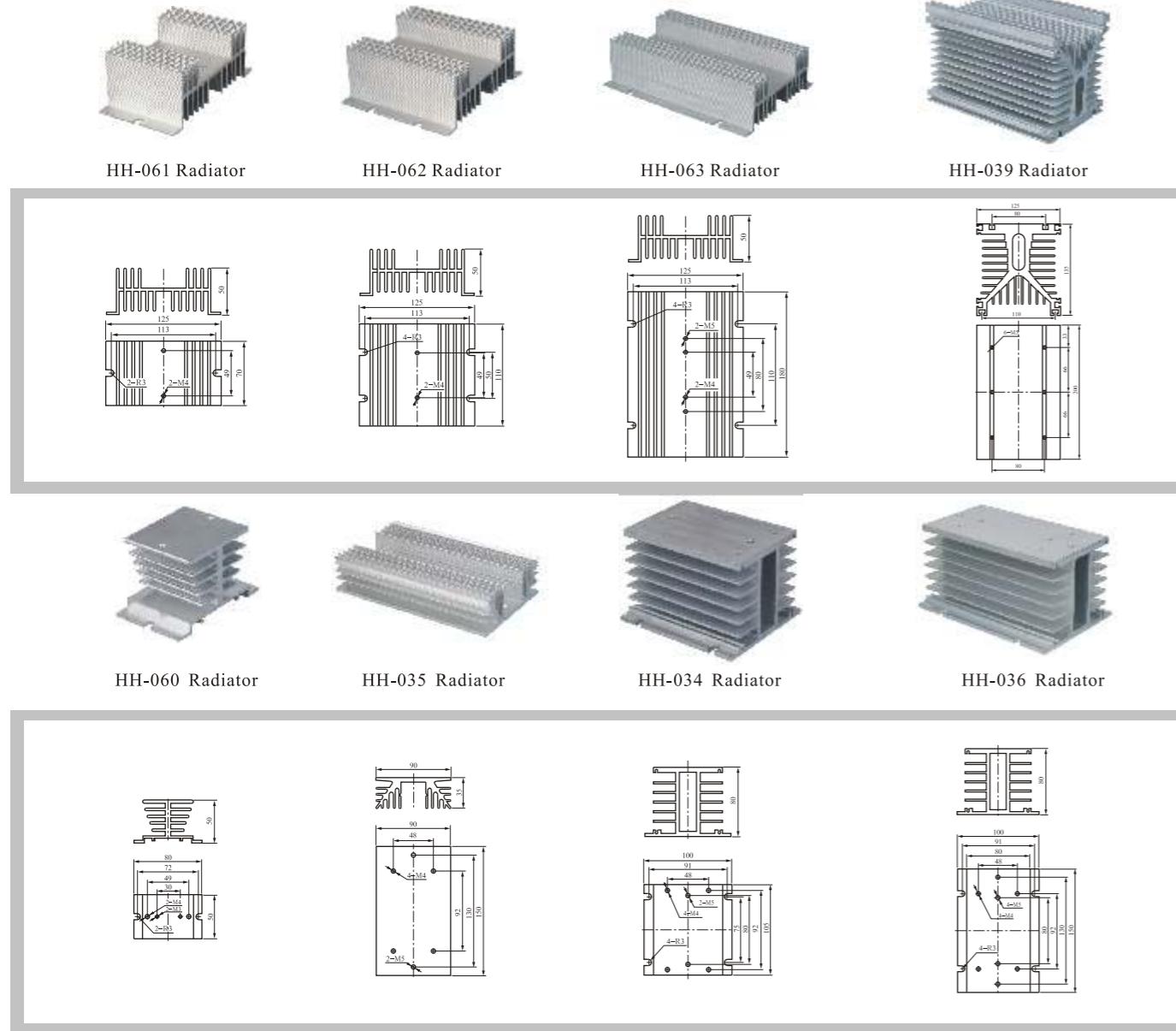
## S.S.R Part Number Definition



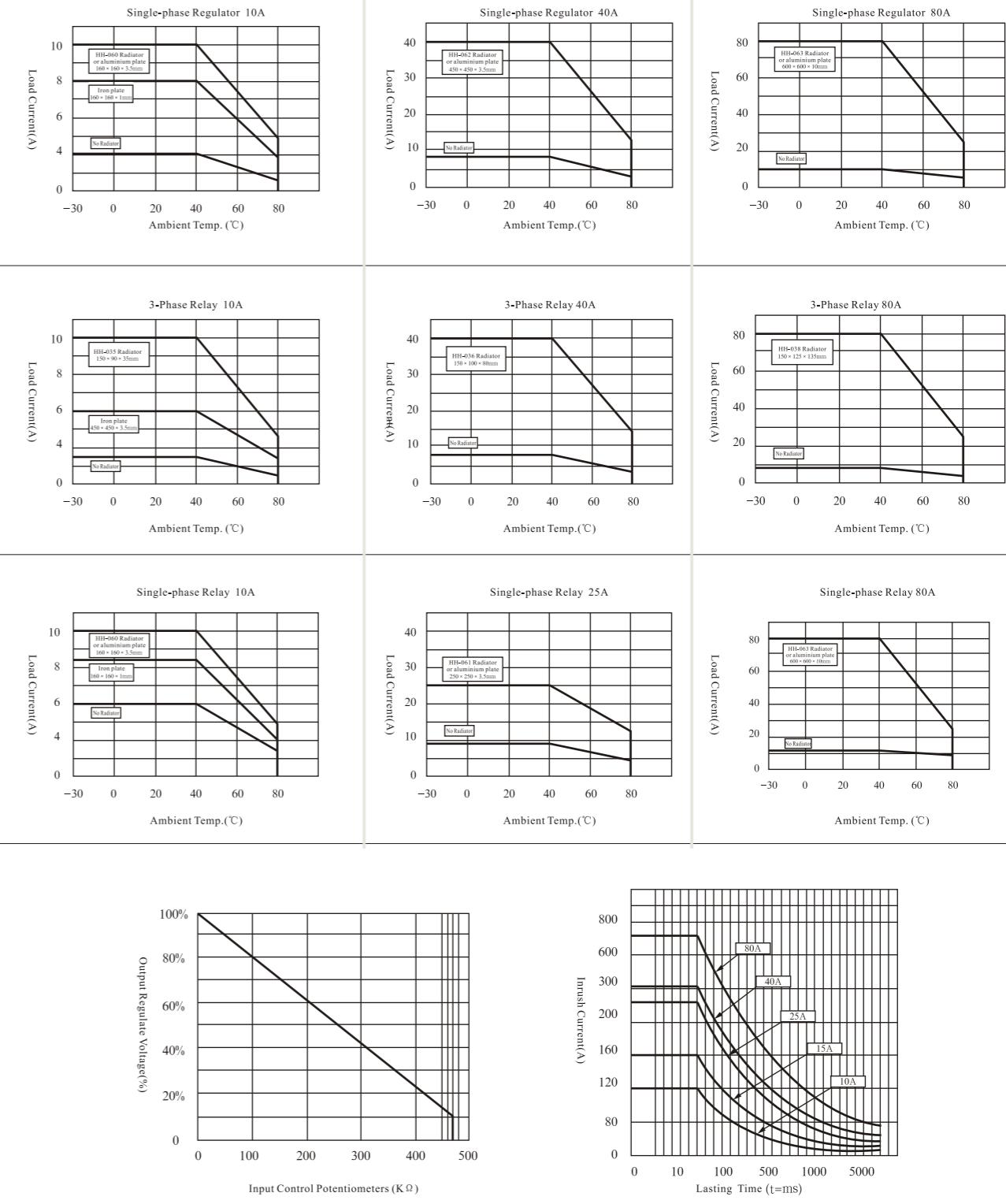
## Regulator Part Number Definition

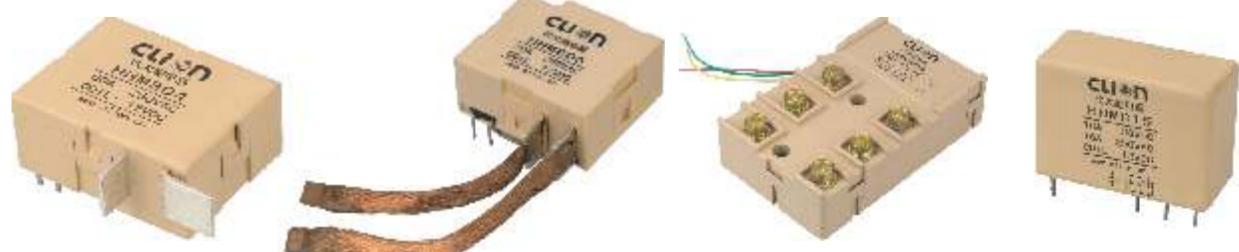


## HH Series Radiator

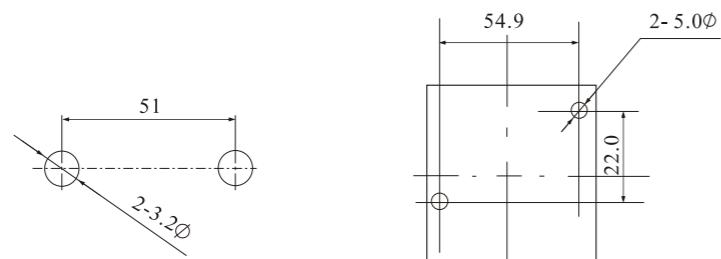


## Load Current & Ambient Temp. Curves

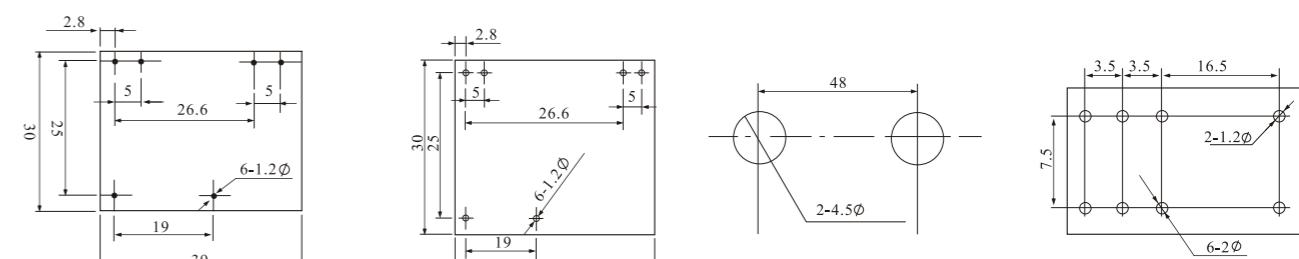


**Specification**

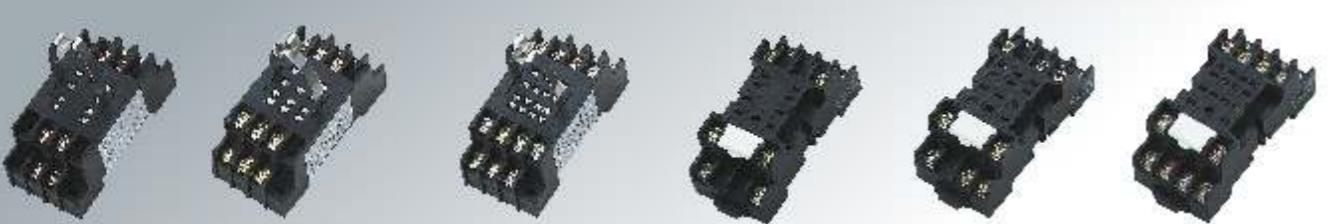
Model	HHM801	HHM802
Contact Arrangement	1A, 1B	1A, 1B
Contact Capacity	200	100A
	100	
	80	
	60	
	40	
	20	
MAX Switching voltage VDC/VAC	30VDC/250VAC	30VDC/250VAC
Coil Data	Coil Voltage DC/AC	6~48VDC
	Coil Power W/VA	(S):2.5W, (D):5W
Specifications Data	Make Voltage	≤75%
	Break Voltage	≤75%
	Pulse Width(ms)	≥50ms
	Contact Resistance(mΩ)	≤2mΩ
	Insulation Resistance(MΩ)	≥1000MΩ
	Between Open Contacts	≥2000VAC
	Dielectric Strength Vr.m.s	Between Coil&Contacts
	Between Contacts Form	≥3000VAC
	Ambient Temp.(°C)	-40 ~ +55°C
	Operation/Release Time(ms)	≤30/30ms
Service Life	Electrical	1×10 <sup>4</sup>
	Mechanical	5×10 <sup>5</sup>
Mounting Method	Welding	Welding
Weight(gr)	95	146.0
Dimensions(mm)	60×40×22.0	66.7×24.0×48.5

**Mounting Holes(mm)****Specification**

HHM804	HHM805	HHM806	HHM815
1A, 1B	1A, 1B	3A, 3B	1C, 2C
50A	60A	70A 80A	60A 80A 100A
30VDC/250VAC	30VDC/250VAC	30VDC/250VAC	30VDC/250VAC
6~48VDC	5~48VDC	6~48VDC	5~48VDC
(S):1.3W, (D):1.9W	(S):1.5W, (D):1.9W	(S):3.8~5W, (D):6~10W	1W
≤70%	≤70%	≤70%	≤70%
≤70%	≤70%	≤70%	≤70%
≥30ms	≥30ms	≥50ms	≥30%
≥2mΩ	≥2mΩ	≥2mΩ	≥15mΩ
≥1000MΩ	≥1000MΩ	≥1000MΩ	≥1000MΩ
≥1500VAC	≥1500VAC	≥2000VAC	≥1000VAC
≥2500VAC	≥2500VAC	≥3000VAC	≥3000VAC
		≥4000VAC	
-40 ~ +55°C	-40 ~ +55°C	-40 ~ +55°C	-40 ~ +55°C
≤20/20ms	≤30/30ms	≤30/30ms	≤20/20ms
1×10 <sup>4</sup>	1×10 <sup>5</sup>	60A:5×10 <sup>4</sup> 80A:1×10 <sup>4</sup> 100A:3000	5×10 <sup>4</sup>
1×10 <sup>6</sup>	5×10 <sup>5</sup>	5×10 <sup>5</sup>	1×10 <sup>6</sup>
Welding	Screw Fasten	Welding	P.C.B
35.0	45	450.0	18.0
39.0×17.5×30.0	38.0×18.0×32.0	110.0×68.0×30.0	29.0×12.5×25.0

**Mounting Holes(mm)**

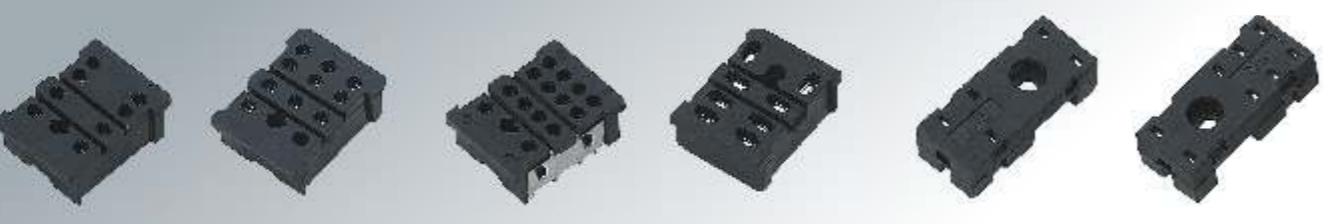
## RELAY SOCKETS



TP58X      TP511X      TP514X      PYF08      PYF11      PYF14



78750      78755      PF083A      PF113A      PF083A-E      PF113A-E



HH52A      HH53A      HH54A      13FA      14F-1Z      14F-2Z



PTF08A      PTF11A      PTF-14A      38F座      30F      RPML0024



US08      US11      RX78624-1Z      PX78625      PX78626