

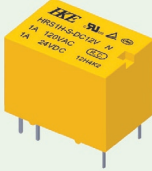



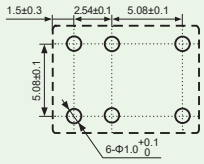
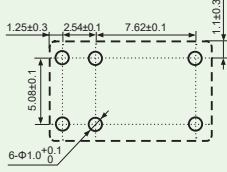
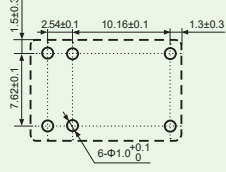
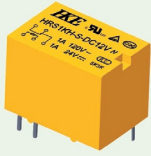
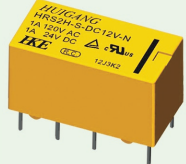






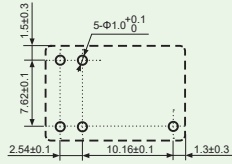
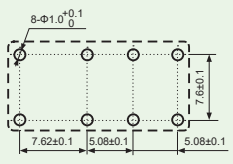


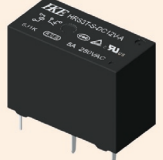



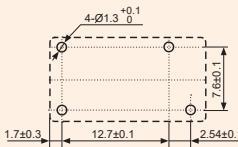
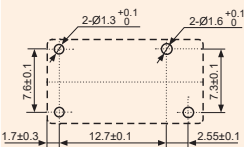
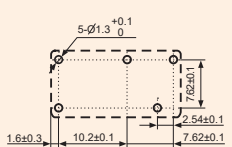
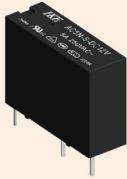
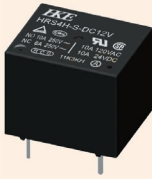


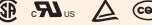

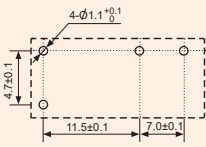
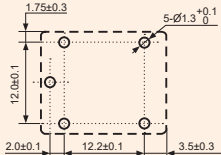
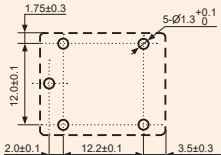


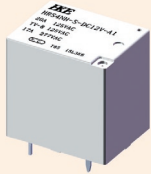



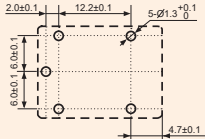
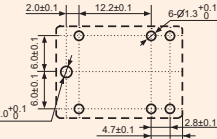
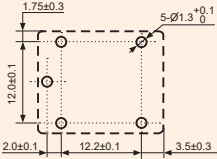
Category	SIGNAL RELAY		
Product Model	HRA	HRB1	HRS1
Relay Picture			
Dimensions L×W×H(mm)	10.2×7.4×10.0	12.3×7.3×10.2	15.6×10.6×11.8
Safety Standards			
Characteristics	<ul style="list-style-type: none"> ■ Microminiature relay ■ Light weight ■ Contact: 1 Form C (SPDT) 	<ul style="list-style-type: none"> ■ Microminiature relay ■ Light weight ■ Contact: 1 Form C ■ High sensitivity 150mW 	<ul style="list-style-type: none"> ■ Microminiature relay ■ High sensitivity ■ Contact: 1 Form C ■ Max. Switching capacity 3A
Contact Form	1C	1C	1C
Contact Rating (Resistive Load)	1A 120VAC/24VDC	1A 125VAC/24VDC 2A 125VAC/24VDC	1A 120VAC/24VDC 3A 120VAC/24VDC
Max. Switching Voltage	120VAC/30VDC	125VAC/60VDC	220VAC/30VDC
Max. Switching Current	2A	2A	3A
Max. Switching Power	120VA,30W	250VA,48W	360VA,72W
Min. Switching Load	5VDC,10mA	5VDC,10mA	5VDC,10mA
Coil Voltage	3~24VDC	3~24VDC	3~24VDC
Coil Power (mW)	330mW,450mW	150mW	200mW,360mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 500VAC,1min ② 500VAC,1min	① 500VAC,1min ② 1,000VAC,1min	① 750VAC,1min ② 1,000VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000(1A 120VAC/24VDC) 50,000(3A 120VAC/24VDC)
Operating Temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	1.7g	2.2g	4.0g
Page	34	37	40







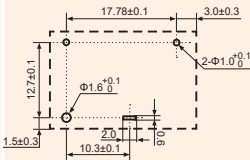
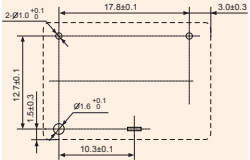
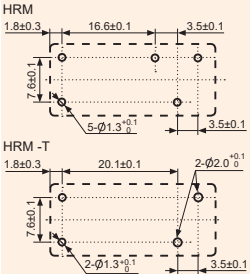
Category	SIGNAL RELAY	
Product Model	HRS1K	HRS2H
Relay Picture		
Dimensions L×W×H (mm)	15.6×10.6×11.8	20.5×9.9×11.4
Safety Standards	  	  
Characteristics	<ul style="list-style-type: none"> ▪ Microminiature relay ▪ High sensitivity ▪ Contact: 1 Form C ▪ Dielectric strength of 2500V between coil and contacts 	<ul style="list-style-type: none"> ▪ Microminiature relay ▪ High sensitivity ▪ 2 Form C contacts (DPDT)
Contact Form	1C	2C
Contact Rating (Resistive Load)	1A 120VAC/24VDC 3A 120VAC/24VDC	1A 120VAC/24VDC 2A 120VAC/24VDC
Max. Switching Voltage	220VAC/30VDC	125VAC/30VDC
Max. Switching Current	3A	2A
Max. Switching Power	360VA,72W	240VA,48W
Min. Switching Load	5VDC,10mA	5VDC,10mA
Coil Voltage	3~24VDC	3~24VDC
Coil Power (mW)	200mW,360mW	150mW、200mW、360mW、450mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 750VAC,1min ② Standard: 1,500VAC, 1 min ② E: 2,500VAC, 1 min	① 500VAC,1min ② 1,000VAC,1min
Electrical Life (ops.)	100,000次 (1A 120VAC/24VDC) 50,000次 (3A 120VAC/24VDC)	100,000
Operating Temperature	-25°C to +70°C	-25°C to +70°C
Terminal Type	PCB	PCB
Terminal Layout (Bottom View) (mm)		
Weight (Approximately)	4.0g	5.0g
Page	43	46

Category	POWER RELAY		
Product Model	HRS1KH3	HRS3	HRS3F
Relay Picture			
Dimensions L×W×H(mm)	15.6×10.6×11.8	18.6×10.4×15.8	18.2×10.2×15.5
Safety Standards			
Characteristics	<ul style="list-style-type: none"> ■ Microminiature relay ■ High sensitivity ■ Contact: 1 Form A ■ Switching capacity 3A 	<ul style="list-style-type: none"> ■ Microminiature relay ■ Max. Switching capacity: 10A ■ Contact: 1 Form A, 1 Form C 	<ul style="list-style-type: none"> ■ Microminiature relay ■ 5A switching capacity ■ Contact: 1 Form A ■ Reinforced insulation between coil and contact
Contact Form	1A	1A,1C	1A
Contact Rating (Resistive Load)	3A 220VAC/30VDC	A:10A250VAC,5A 250VAC/28VDC C:NO/NC:5A3A250VAC/28VDC	5A 250VAC/30VDC Horsepower : 1/3HP 240VAC(0.45W) 1/4HP 240VAC
Max. Switching Voltage	220VAC/30VDC	250VAC/28VDC	277VAC/30VDC
Max. Switching Current	3A	10A	5A
Max. Switching Power	660VA,90W	1,250VA,280W	1,250VA,150W
Min. Switching Load	5VDC,100mA	5VDC,100mA	5VDC,100mA
Coil Voltage	3~24VDC	3~24VDC	5~24VDC
Coil Power (mW)	200mW	200mW,450mW	200mW,450mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 750VAC,1min ② 1,000VAC,1min	① 1,000VAC,1min ② A: 3,500VAC,1 min ② C: 2,500VAC,1 min	① 1,000VAC,1min ② 4,000VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-25°C to +70°C	-40°C to +85°C	-40°C to +85°C
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	4.0g	6.0g	6.0g
Page	50	53	57


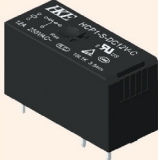
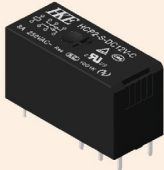



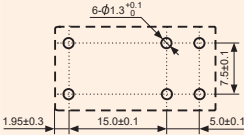
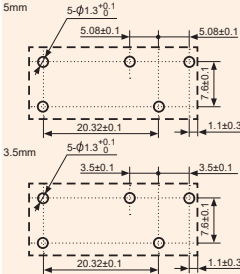
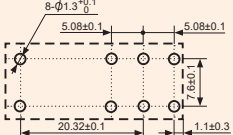
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Product Model	HRS3FN	HRS3FT	HRS3T
Relay Picture			
Dimensions L×W×H(mm)	18.2×10.2×15.5	18.2×10.2×15.5	20.9×10.2×15.5
Safety Standards			
Characteristics	<ul style="list-style-type: none"> ▪ Microminiature relay ▪ 10A switching capacity ▪ Contact: 1 Form A ▪ Reinforced insulation between coil and contact 	<ul style="list-style-type: none"> ▪ Microminiature relay ▪ 16A switching capacity ▪ Contact: 1 Form A ▪ Reinforced insulation between coil and contact ▪ Dielectric strength of 4000V between coil and contacts ▪ TV-5, TV-8 rating 	<ul style="list-style-type: none"> ▪ Microminiature relay ▪ Max. Switching capacity: 10A ▪ Contact: 1 Form A, 1 Form C
Contact Form	1A	1A	1A,1C
Contact Rating (Resistive Load)	10A 250VAC Horsepower:1/3HP 240VAC(0.45W) Horsepower:1/4HP 240VAC TV-5 250VAC	16A 250VAC TV-5 250VAC TV-8 250/125VAC	A:5A 250VAC/28VDC C:NO/NC:5A/3A 250VAC/28VDC
Max. Switching Voltage	277VAC/30VDC	250VAC/30VDC	250VAC/28VDC
Max. Switching Current	10A	16A	10A
Max. Switching Power	2,500VA,300W	4,000VA,480W	1,250VA,280W
Min. Switching Load	5VDC,100mA	5VDC,100mA	5VDC,100mA
Coil Voltage	5~24VDC	3~24VDC	3~48VDC
Coil Power (mW)	200mW,450mW	200mW,450mW	200mW,450mW
Dielectric Strength:			
① Open Contacts	① 1,000VAC,1min	① 1,000VAC,1min	① 1,000VAC,1min
② Coil and Contacts	② 4,000VAC,1min	② 4,000VAC,1min	② 4,000VAC,1min
Electrical Life (ops.)	100,000	50,000	100,000
Operating Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	6.0g	約6.0g	7.0g
Page	59	61	63

Category	POWER RELAY		
Product Model	AC5N	HRS4	HRS4F
Relay Picture			
Dimensions L×W×H(mm)	20.4×7.0×15.4	19.0×15.5×15.8	19.0×15.5×15.8
Safety Standards			
Characteristics	<ul style="list-style-type: none"> ■ Microminiature relay ■ Slim type, 7mm width ■ High mounting density ■ High sensitivity 200mW 	<ul style="list-style-type: none"> ■ Miniature relay ■ Contact: 1 Form A, 1 Form B, 1 Form C ■ TV-5 rating ■ UL Class F insulation 	<ul style="list-style-type: none"> ■ Miniature relay ■ Dielectric strength of 2500V between coil and contacts ■ Contact: 1 Form A, 1 Form C
Contact Form	1A	1A,1B,1C	1A,1C
Contact Rating (Resistive Load)	5A 250VAC	A: 15A 125VAC, 10A 250VAC C: NO:10A 250VAC/24VDC NC:6A 250VAC/24VDC TV-5 125VAC	10A 250VAC/30VDC
Max. Switching Voltage	250VAC/30VDC	250VAC/28VDC	250VAC/30VDC
Max. Switching Current	5A	15A	10A
Max. Switching Power	1,250VA,150W	2,500VA,280W	2,500VA,300W
Min. Switching Load	5VDC, 100mA	5VDC, 100mA	5VDC, 100mA
Coil Voltage	5~24VDC	3~48VDC	3~48VDC
Coil Power (mW)	200mW	360mW,450mW	360mW,450mW
Dielectric Strength:			
① Open Contacts	① 750VAC, 1min	① 750VAC, 1min	① 1,000VAC, 1min
② Coil and Contacts	② 4,000VAC, 1min	② 1,500VAC, 1min	② 2,500VAC, 1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	3.0g	10.0g	11.0g
Page	66	68	72





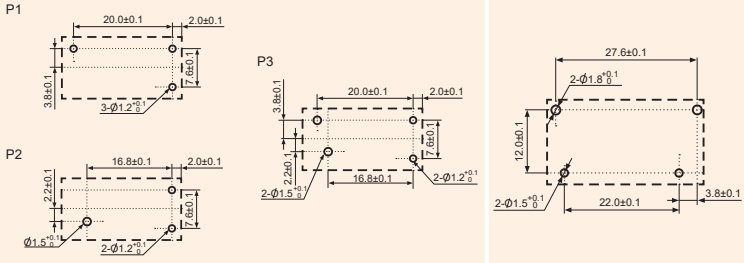
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Product Model	HRS4N	HRS4T
Relay Picture		
Dimensions L×W×H(mm)	21.0×16.0×20.8	20.0×16.3×20.2
Safety Standards		
Characteristics	<ul style="list-style-type: none"> ■ Max.20A switching capability ■ High temperature load: 17A 277VAC at 105°C ■ Available for single pin and double pins terminal ■ Compliance to standard EN 60335-1 ■ Compliance to RoHS Directive ■ UL Insulation system: F Class 	<ul style="list-style-type: none"> ■ Miniature relay ■ Contact: 1 Form A, 1 Form B, 1 Form C ■ UL Class F insulation
Contact Form	1A,1B,1C	1A,1B,1C
Contact Rating (Resistive Load)	A: 20A 125VAC 17A 277VAC TV-8 125VAC C: NO:17A 277VAC NC:7A 277VAC	10A 250VAC/24VDC
Max. Switching Voltage	400VAC/28VDC	250VAC/28VDC
Max. Switching Current	20A(A),17A(C)	15A
Max. Switching Power	4,700VA	2,500VA,280W
Min. Switching Load	5VDC,100mA	5VDC,100mA
Coil Voltage	3~48VDC	3~48VDC
Coil Power (mW)	360mW	360mW,450mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 2,500VAC,1min	① 1,000VAC,1min ② 1,500VAC,1min
Electrical Life (ops.)	100,000	100,000
Operating Temperature	-40°C to +85°C(Single pin) -40°C to +105°C(Double pin)	-40°C to +85°C
Terminal Type	PCB	PCB
Terminal Layout (Bottom View) (mm)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Single pin version</p>  </div> <div style="text-align: center;"> <p>Double pin version</p>  </div> </div>	
Weight (Approximately)	约14.0g	12.0g
Page	75	78



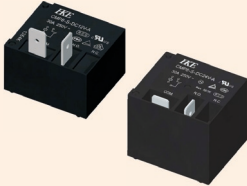
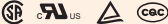


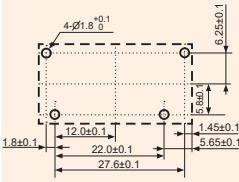
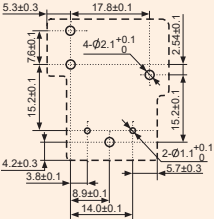
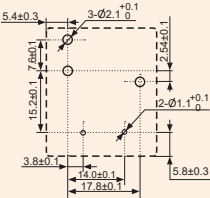
Category	POWER RELAY		
Product Model	V6	V6T	HRM
Relay Picture			
Dimensions L×W×H(mm)	23.0×16.1×10.2	23.0×16.1×10.2	29.0×12.6×20.8
Safety Standards			
Characteristics	<ul style="list-style-type: none"> Low profile, flat type relay Max. Switching capacity: 15A Tungsten lamp load: 10A 125VAC High sensitivity 200mW 	<ul style="list-style-type: none"> Low profile, flat type relay Max. Switching capacity: 16A Lever type(Manual Operation) High sensitivity 200mW 	<ul style="list-style-type: none"> General purpose power relay TV-5 rating Creepage distance: 8mm
Contact Form	1A	1A	1A,1C
Contact Rating (Resistive Load)	15A125VAC 10A 250VAC/24VDC	16A 250VAC 16A 30VDC	10A 250VAC/30VDC, TV-5 Inductive: 5A240VAC (COSΦ=0.4) 16A 250VAC(For T type)
Max. Switching Voltage	250VAC/30VDC	250VAC/30VDC	250VAC/30VDC
Max. Switching Current	16A	16A	16A
Max. Switching Power	4,000VA,480W	4,000VA,480W	2,500VA,300W
Min. Switching Load	5VDC,100mA	5VDC,100mA	5VDC,100mA
Coil Voltage	3~48VDC	3~48VDC	3~48VDC
Coil Power (mW)	200mW	200mW	540mW,720mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 750VAC,1min ② 2,500VAC,1min	① 750VAC,1min ② 2,500VAC,1min	① 1,000VAC,1min ② 4,000VAC,1min
Electrical Life (ops.)	100,000	50,000	100,000
Operating Temperature	-40°C to +85°C	-40°C to +85°C	-30~+55°C(720mW) -30~+70°C(540mW)
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	9.00g	10.00g	13.00g
Page	82	85	87



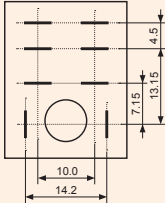
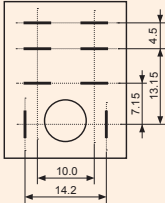
Category	POWER RELAY		
Product Model	HRM1	HRM2	HRM3
Relay Picture			
Dimensions L×W×H (mm)	29.0×12.6×20.8	29.0×12.6×20.8	Sealed: 24.6×10.6×25.0 Unsealed: 24.0×10.0×25.0
Safety Standards			
Characteristics	<ul style="list-style-type: none"> ■ Slim type ■ Contact: 2 Form A, 2 Form C ■ Dielectric strength of 4000V between coil and contacts ■ Creepage distance: 8mm 	<ul style="list-style-type: none"> ■ General purpose power relay ■ Contact: 1 Form A, 1 Form C ■ Dielectric strength of 4000V between coil and contacts ■ 16A contact current ■ Creepage distance: 8mm 	<ul style="list-style-type: none"> ■ Available in sealed and unsealed versions ■ High sensitivity type with power consumption of 250mW ■ 1 form A contact configuration ■ Comply with TV-5 standards required for TV and audio power supplies
Contact Form	2A,2C	1A,1C	1A
Contact Rating (Resistive Load)	5A 250VAC/24VDC, TV-5 Inductive Load 5A 250VAC/24VDC (COSΦ=0.4, L/R=7ms)	16A 250VAC/30VDC, TV-8 Inductive Load 8A 250VAC/30VDC (COSΦ=0.4, L/R=7ms)	10A 250VAC/30VDC, TV-5
Max. Switching Voltage	250VAC/30VDC	250VAC/30VDC	250VAC/30VDC
Max. Switching Current	5A	16A	10A
Max. Switching Power	1,250VA, 150W	4,000VA, 480W	2,500VA, 300W
Min. Switching Load	5VDC, 100mA	5VDC, 100mA	5VDC, 100mA
Coil Voltage	3~48VDC	3~48VDC	3~48VDC
Coil Power (mW)	540mW, 720mW	540mW, 720mW	150mW, 250mW, 540mW
Dielectric Strength:			
① Open Contacts	① 1,000VAC, 1min	① 1,000VAC, 1min	① 1,000VAC, 1min
② Coil and Contacts	② 4,000VAC, 1min	② 4,000VAC, 1min	② 4,000VAC, 1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-30~+55°C (720mW) -30~+70°C (540mW)	-30~+55°C (720mW) -30~+70°C (540mW)	-40°C to +70°C
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	13.0g	13.0g	10.0g
Page	91	95	99

Category	POWER RELAY		
Product Model	HRM4	HCP1	HCP2
Relay Picture			
Dimensions L×W×H(mm)	Sealed: 24.4×12.9×24.8 Unsealed: 23.5×12.0×24.8	29.0×12.6×15.8	29.0×12.6×15.8
Safety Standards			
Characteristics	<ul style="list-style-type: none"> ■ Small size ■ Sealed and unsealed versions ■ 5A contact current ■ 2 form A contact configuration ■ Creepage distance: 6mm ■ Cross bar or rivet contacts 	<ul style="list-style-type: none"> ■ Low profile, height 15.8mm ■ Switching capacity 12A ■ Contact: 1 Form A, 1 Form C ■ Sensitivity 400mW ■ Insulation: 5KV Creepage:10mm 	<ul style="list-style-type: none"> ■ Low profile, height 15.8mm ■ Switching capacity 8A ■ Contact: 2 Form A, 2 Form C ■ Sensitivity 400mW ■ Insulation: 5KV Creepage:10mm
Contact Form	2A	1A,1C	2A,2C
Contact Rating (Resistive Load)	5A 250VAC/30VDC, TV-5 3A 125VAC/30VDC(SP)	12A 250VAC/30VDC Inductive load 5A 250VAC Cosφ=0.4	8A 250VAC/30VDC Inductive load 4A 250VAC Cosφ=0.4
Max. Switching Voltage	250VAC/30VDC	440VAC/120VDC	440VAC/120VDC
Max. Switching Current	5A	12A	8A
Max. Switching Power	1,250VA, 150W	3,000VA, 360W	2,000VA, 240W
Min. Switching Load	5VDC, 100mA	5VDC, 100mA	5VDC, 100mA
Coil Voltage	3~48VDC	5~48VDC	5~48VDC
Coil Power (mW)	250mW, 540mW	400mW	400mW
Dielectric Strength:			
① Open Contacts	① 1,000VAC, 1min	① 1,000VAC, 1min	① 1,000VAC, 1min
② Coil and Contacts	② 4,000VAC, 1min	② 5,000VAC, 1min	② 5,000VAC, 1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-30°C to +70°C	-40°C to +85°C	-40°C to +85°C
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	13.0g	13.00g	13.0g
Page	103	107	111

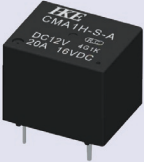
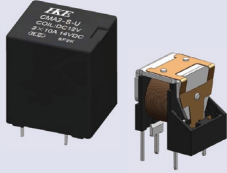

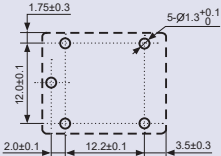
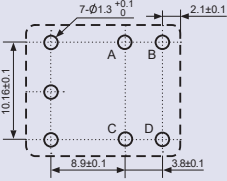
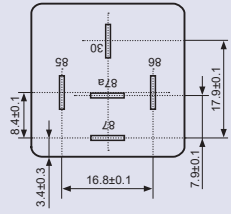
Category	POWER RELAY	
Product Model	HCP3	HCP4
Relay Picture		
Dimensions L×W×H (mm)	29.0×12.6×15.8	28.4×10.0×12.7
Safety Standards		
Characteristics	<ul style="list-style-type: none"> Low profile, height 15.8mm Switching capacity 16A Contact: 1 Form A, 1 Form C Sensitivity: 400mW, 250mW Insulation: 5KV Creepage: 10mm 	<ul style="list-style-type: none"> Slim type, width 10.0mm Contact: 1 Form A, 1 Form C High sensitivity 220mW High isolation, Insulation distance 8mm
Contact Form	1A, 1B, 1C	1A, 1C
Contact Rating (Resistive Load)	16A 250VAC/30VDC Inductive load 8A 250VAC Cosφ=0.4	8A 250VAC/30VDC
Max. Switching Voltage	440VAC/120VDC	440VAC/30VDC
Max. Switching Current	16A	10A
Max. Switching Power	4,000VA, 480W	2,000VA, 240W
Min. Switching Load	5VDC, 100mA	5VDC, 100mA
Coil Voltage	3~48VDC	5~48VDC
Coil Power (mW)	250m, 400mW	0.22W
Dielectric Strength:		
① Open Contacts	① 1,000VAC, 1min	① 1,000VAC, 1min
② Coil and Contacts	② 5,000VAC, 1min	② 5,000VAC, 1min
Electrical Life (ops.)	100,000	100,000
Operating Temperature	-40°C to +85°C	-40°C to +85°C
Terminal Type	PCB	PCB
Terminal Layout (Bottom View) (mm)		
Weight (Approximately)	13.0g	8.00g
Page	114	117

Category	POWER RELAY	
Product Model	F5	F6
Relay Picture		
Dimensions L×W×H(mm)	24.2×12.3×20.1	30.5×16.0×20.1
Safety Standards		
Characteristics	<ul style="list-style-type: none"> ■ Compact and small in size ■ Switching capacity: 20A ■ Dielectric strength of 5000V between coil and contacts ■ Available in PCB or quick connect terminals ■ Ideal for switching magnetron and heater loads in microwave oven 	<ul style="list-style-type: none"> ■ Miniature relay with high switching contact capacity, 20A/250VAC and 25A/250VAC ■ Low profile, height 16mm ■ Dielectric strength of 5000V between coil and contacts ■ Ideal for switching compressor and inverter loads ■ Available in both PCB and quick connect terminals ■ Applications: Air conditioners, refrigerators, OA equipment, etc
Contact Form	1A	1A
Contact Rating (Resistive Load)	16A 250VAC, 20A 125VAC	F6: 25A 250VAC F6-P: 20A 250VAC 20 FLA/80 LRA 120VAC
Max. Switching Voltage	250VAC/30VDC	250VAC
Max. Switching Current	20A	25A
Max. Switching Power	4,000VA/480W	6,250VA
Min. Switching Load	5VDC, 100mA	5VDC, 100mA
Coil Voltage	3~48VDC	5~24VDC
Coil Power (mW)	500mW, 400mW	900mW
Dielectric Strength:		
① Open Contacts	① 1,000VAC, 1min	① 1,500VAC, 1min
② Coil and Contacts	② 5,000VAC, 1min	② 5,000VAC, 1min
Electrical Life (ops.)	100,000(16A 250VAC)	100,000
Operating Temperature	-40°C to +85°C	-40°C to +85°C
Terminal Type	PCB, Quick connect	PCB, Quick connect
Terminal Layout (Bottom View) (mm)		
Weight (Approximately)	10.00	18.0g
Page	120	124



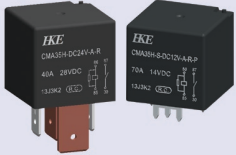
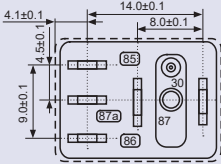
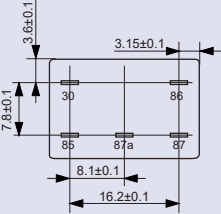
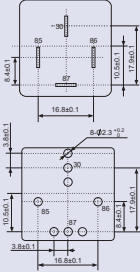
Category	POWER RELAY		
Product Model	CMP6	CMP7	CMP8
Relay Picture			
Dimensions L×W×H (mm)	QC:30.4×15.9×23.4 P:30.4×15.9×26.4	31.8×27.4×20.0	Exposed: 31.8×27.4×19.8 Concealed: 31.8×27.4×27.7
Safety Standards			
Characteristics	<ul style="list-style-type: none"> Switching capacity: 20A PCB or quick connect terminals 	<ul style="list-style-type: none"> Switching capacity: 40A PCB terminal Class F insulation 	<ul style="list-style-type: none"> Switching capacity 30A Dielectric strength of 2500V between coil and contacts PCB or quick connection terminals Available in exposed or concealed terminals
Contact Form	1A	1A,1C	1A,1C
Contact Rating (Resistive Load)	20A 250VAC/30VDC Inrush Current: 80A Break Current: 20A	A : 30A 250VAC/24VDC AT : 40A 250VAC/24VDC C : NO: 20A 250VAC/24VDC NC : 15A 250VAC/24VDC CT : NO: 40A 250VAC/24VDC NC : 30A 250VAC/24VDC	A: 30A 250VAC/24VDC C: NO: 20A 250VAC/24VDC NC: 15A 250VAC/24VDC
Max. Switching Voltage	250VAC/30VDC	250VAC/28VDC	250VAC/28VDC
Max. Switching Current	20A	40A(T) 30A	30A
Max. Switching Power	5,000VA,600W	10,000VA,560W 7,500VA,560W	7,500VA,560W
Min. Switching Load	5VDC,100mA	5VDC,100mA	5VDC,100mA
Coil Voltage	5~24VDC	5~48VDC	5~48VDC
Coil Power (mW)	900mW	900mW	900mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 4,500VAC,1min	① 1,500VAC,1min ② 2,500VAC,1min	① 1,500VAC,1min ② 2,500VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-20°C to +55°C	-40°C to +85°C	-40°C to +85°C
Terminal Type	PCB, Quick connect	PCB	PCB, Quick connect
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	21.0g	27.0g	29.0g
Page	127	130	135

Category	POWER RELAY	
Product Model	LH	
Relay Picture		
Dimensions L×W×H (mm)	27.6×21.6 ×35.0	
Safety Standards		
Characteristics	<ul style="list-style-type: none"> ▪ Switching capacity: 15A ▪ Contact: 1 Form, 2 Form ▪ Transparent cover ▪ AC/DC Coil 	
Contact Form	1A, 1B, 1C	2A, 2B, 2C
Contact Rating (Resistive Load)	15A 220VAC/28VDC	10A 220VAC/28VDC
Max. Switching Voltage	250VAC/30VDC	250VAC/30VDC
Max. Switching Current	15A	10A
Max. Switching Power	3300VA/420W	2200VA/280W
Min. Switching Load	—	—
Coil Voltage	5~110VDC,6~240VAC	5~110VDC,6~240VAC
Coil Power (mW)	900mW, 1100mW, 1200mVA	900mW, 1100mW, 1200mVA
DielectricStrength:		
① Open Contacts	① 1,000VAC,1min	① 1,000VAC,1min
② Coil and Contacts	② 1,500VAC,1min	② 1,500VAC,1min
Electrical Life (ops.)	100,000	100,000
Operating Temperature	-40°C to +70°C	-40°C to +70°C
Terminal Type	PCB, Quick connect	PCB, Quick connect
Terminal Layout (Bottom View) (mm)		
Weight (Approximately)	PCB: 37g ,Quick connect: 37g	
Page	140	


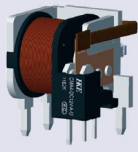

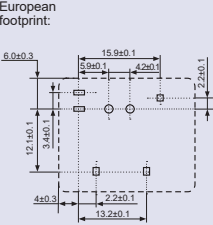
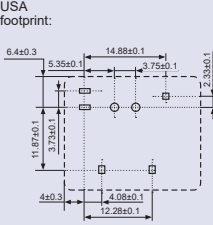
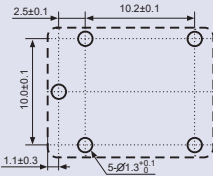
Category	POWER RELAY		
Product Model	LT		
Relay Picture			
Dimensions L×W×H (mm)	27.6×21.6×35.0		
Safety Standards			
Characteristics	<ul style="list-style-type: none"> ▪ Dimensions: 27.6×21.6×35.0(mm) ▪ Available in various types mounting terminals ▪ Contact form : 2A, 2B, 2C; 3A, 3B, 3C; 4A, 4B, 4C ▪ Transparent cover ▪ AC/DC Coil 		
Contact Form	2A, 2B, 2C	3A, 3B, 3C	4A, 4B, 4C
Contact Rating (Resistive Load)	5A 220VAC/28VDC 7A 220VAC/28VDC	5A 220VAC/28VDC 7A 220VAC/28VDC	3A 220VAC/28VDC 5A 220VAC/28VDC
Max. Switching Voltage	250VAC/30VDC	250VAC/30VDC	250VAC/30VDC
Max. Switching Current	5A, 7A	5A, 7A	3A, 5A
Max. Switching Power	5A: 1100VA/140W 7A: 1540VA/196W	5A: 1100VA/140W 7A: 1540VA/196W	3A: 660VA/84W 5A: 1100VA/140W
Min. Switching Load	—	—	—
Coil Voltage	5~110VDC,6~240VAC	5~110VDC,6~240VAC	5~110VDC,6~240VAC
Coil Power (mW)	900mW, 1100mW,1200mVA		
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 5,000VAC,1min	① 1,000VAC,1min ② 5,000VAC,1min	① 1,000VAC,1min ② 5,000VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Terminal Type	PCB, Quick connect	PCB, Quick connect	PCB, Quick connect
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	PCB: 37g ,Quick connect: 37g		
Page	143		




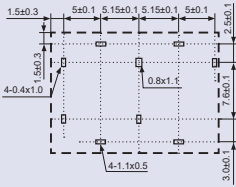
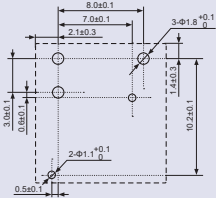
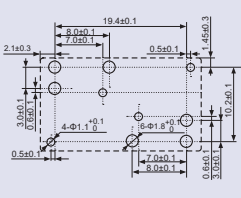
Category	AUTOMOTIVE RELAY		
Product Model	CMA1	CMA2	CMA31
Relay Picture			
Dimensions L×W×H(mm)	19.0×15.5×15.8	Sealed: 17.3×14.8×19.5 Open: 15.7×12.7×17.7	27.8×27.8×24.6
Characteristics	<ul style="list-style-type: none"> Miniature automotive relay High Switching capacity 20A Available in 3 contact configurations, 1 Form A, B and C Applications: car alarm, central locking system, power windows, seat control, etc 	<ul style="list-style-type: none"> Miniature automotive relay Available in both open frame and plastic sealed package Numerous contact arrangements High switching capacity 20A 	<ul style="list-style-type: none"> Heavy duty general purpose automotive relay Switching capacity 40A Available in 2 mounting options, socket or bracket mount Applications: air compressor, heater, fan motor, blower fan, defogger, etc
Contact Form	1A, 1B, 1C	1A, 1C, 1U, 1V, 1W	1A, 1B, 1C
Contact Rating (Resistive Load)	15A 14VDC (B, C) 20A 14VDC (A)	A: 15A 14VDC C: NO/NC: 15A/10A 14VDC W: NO/NC: 2×7A/2×5A 14VDC U: 2×10A 14VDC V: 2×7A 14VDC	12VDC: 40A 14VDC (A) 30A 14VDC (B) 30A 14VDC (C) 24VDC: 20A 28VDC (A) 10A 28VDC (B) NONC: 20A/10A 28VDC (C)
Max. Switching Voltage	75VDC	75VDC	75VDC
Max. Switching Current	20A	20A	40A
Max. Switching Power	280W	280W	420W(C), 560W(A)
Coil Voltage	6~24VDC	3~24VDC	6~24VDC
Coil Power (W)	0.8W, 0.36mW	1.1W	1.6W, 1.8W
Dielectric Strength:			
① Open Contacts	① 750VAC, 1min	① 550VAC, 1min	① 550VAC, 1min
② Coil and Contacts	② 1,000VAC, 1min	② 1,000VAC, 1min	② 550VAC, 1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C -40°C to +125°C(T)
Terminal Type	PCB	PCB	Quick Connect
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	10.0g	sealed : 12.0g, open: 8.0g	Bracket : 37.0g Without Bracket: 32.0g
Page	149	152	155




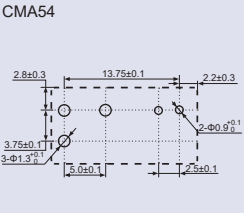
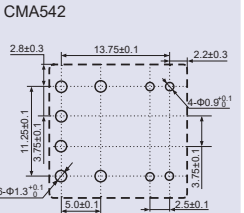
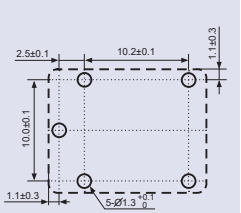
Category	AUTOMOTIVE RELAY		
Product Model	CMA31(A1/B1)	CMA32	4133
Relay Picture			
Dimensions L×W×H(mm)	27.9×27.9×25.0	27.8×27.8×24.6	20.4×15.1×22.0
Characteristics	<ul style="list-style-type: none"> Automotive relay Switching capacity : 40A Contact: 1 Form A, 1 Form B 	<ul style="list-style-type: none"> Heavy duty general purpose automotive relay Available in 2 mounting options, with bracket or without bracket Two contact configurations, 1 Form A and 2 Form A 	<ul style="list-style-type: none"> Miniature heavy duty general purpose automotive relay Switching capacity 35A 1 Form A and C contact configurations Operating ambient temperature: 125°C Applications: air compressor, heater, fan motor, blower fan, defogger, etc
Contact Form	1A,1B	1A,1U	1A,1C
Contact Rating (Resistive Load)	12VDC:40A 14VDC(A1) 30A 14VDC(B1) 24VDC:20A 28VDC(A1) 10A 28VDC(B1)	12VDC: 30A 14VDC(A) 2×20A 14VDC(U) 24VDC: 10A 28VDC(A) 2×10A 28VDC(U)	12VDC:NO:35A 14VDC NC:20A 14VDC 24VDC:NO:20A 28VDC NC:10A 28VDC
Max. Switching Voltage	75VDC	75VDC	28VDC
Max. Switching Current	40A	30A	35A
Max. Switching Power	420W	420W	490W(12V),420W(24V)
Coil Voltage	12~24VDC	12~24VDC	12~24VDC
Coil Power (W)	1.6W	1.6W,1.8W	1.5W,1.7W,1.8W,2.0W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	50,000	100,000	100,000
Operating Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +125°C
Terminal Type	Quick Connect	Quick Connect	Quick Connect
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	Bracket : 26.0g Without Bracket: 23.0g	Bracket : 37.0g Without Bracket: 32.0g	18.0g
Page	158	160	163



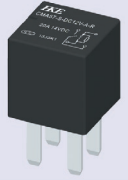
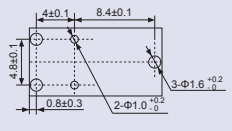
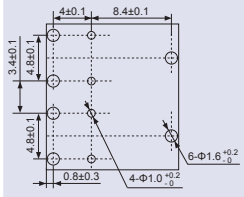
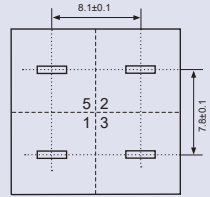
Category	AUTOMOTIVE RELAY		
Product Model	4133W	CMA34	CMA35
Relay Picture			
Dimensions L×W×H(mm)	20.4×15.1×23.0	22.5×15.0×25.0	26.0×26.0×24.8
Characteristics	<ul style="list-style-type: none"> Miniature heavy duty general purpose automotive relay Switching capacity 30A 1 Form A and C contact configurations Operating ambient temperature: 125°C Applications: air compressor, heater, fan motor, blower fan, defogger, etc 	<ul style="list-style-type: none"> Microminiature automotive relay 125°C of operating ambient temperature 2.8mm of Flat quick connection terminal Compliance to Rohs、ELV Directive 	<ul style="list-style-type: none"> Heavy duty general purpose automotive relay 70A of contact switching capacity 125°C of working temperature Normal open contact configuration Available for Plastic sealed and unsealed type Quick Connect Terminals and PCB Terminals
Contact Form	1A,1C	1A,1C	1A
Contact Rating (Resistive Load)	12VDC:NO:30A 14VDC NC:20A 14VDC 24VDC:NO:20A 28VDC NC:10A 28VDC	12VDC:NO:35A 14VDC NC:20A 14VDC 24VDC:NO:20A 28VDC NC:10A 28VDC	6V,12VDC: 70A 14VDC 24VDC: 40A 28VDC
Max. Switching Voltage	28VDC	40VDC	50VDC
Max. Switching Current	30A	Make(NO):150A, Break(NO):35A	70A
Max. Switching Power	490W(12V),420W(24V)	490W(12V),560W(24V)	1120W
Coil Voltage	12~24VDC	12~24VDC	6~24VDC
Coil Power (W)	1.5W,1.7W,1.8W,2.0W	1.2W, 1.4W,1.6W	1.6W, 1.8W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal Type	Quick connect	Quick connect	Quick connect,PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	18.0g	20.0g	38.0g
Page	166	169	172


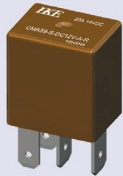
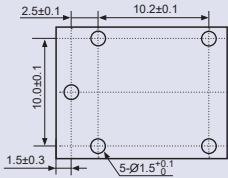
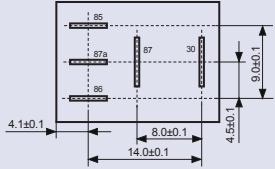
Category	AUTOMOTIVE RELAY		
Product Model	CMA36	CMA36N	CMA39
Relay Picture			
Dimensions L×W×H(mm)	26.0×26.0×22.7	26.6×26.0×22.7	28.0×28.0×25.0
Characteristics	<ul style="list-style-type: none"> 50A of switching capacity 125°C of operating ambient temperature SPST and SPDT contact form Compliance to Rohs ELV Directive Available for Plastic sealed and unsealed type 	<ul style="list-style-type: none"> General purpose automotive relay 70A of switching capability Contact 1 Form A Available for Plastic sealed and unsealed type Quick Connect Terminals and PCB Terminals 125°C of operating ambient temperature 	<ul style="list-style-type: none"> 2.8mm of quick flat connection terminal Contact: 1 Form A, 1 Form C 125°C of working temperature Available for Sealed type or bayonet-type Compliance for Rohs and ELV directive
Contact Form	1A,1C	1A	1A,1C
Contact Rating (Resistive Load)	Standard: NO:40A/14VDC,NC:30A/14VDC NO:20A/28VDC,NC:10A/28VDC T: NO:50A/14VDC,NC:30A/14VDC NO:30A/28VDC,NC:10A/28VDC	Resistive: NO:70A/14VDC NO:40A/28VDC Inductive: Make150A/14VDC break50A/14VDC Lamp: Surge200A/14VDC break40A/14VDC	NO: 35A 14VDC NC: 20A 14VDC
Max. Switching Voltage	75VDC	Refer to 'Max.switching power curve'	30VDC
Max. Switching Current	Make: 150A (NO,surge) Break: 50A (steady-state)	Make(NO,lamp)200A Break (steady state) 70A (res, 13.5V)	Make:150A(lamp),Break:35A
Max. Switching Power	640W	640W	490W
Coil Voltage	12~24VDC	12~24VDC	12~24VDC
Coil Power (W)	1.6W,1.8W,2.0W,2.2W	1.6W,1.8W,2.0W	1.6W,1.8W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal Type	Quick connect,PCB	Quick connect,PCB	Quick connect
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	35.0g	38.0g	35.0g
Page	175	179	183

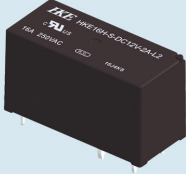
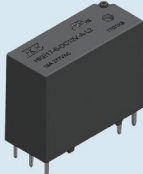

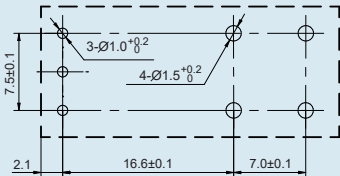
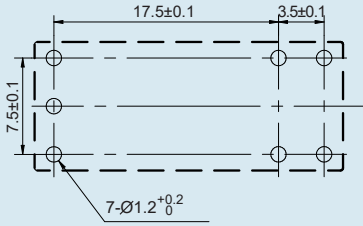
Category	AUTOMOTIVE RELAY		
Product Model	CMA4		CMA51
Relay Picture	 		
Dimensions L×W×H(mm)	Sealed: 25.8×20.6×21.0	Open: 18.0×23.4×17.9	15.6×12.2×13.7
Characteristics	<ul style="list-style-type: none"> ▪ General purpose automotive relay ▪ Available in open frame and plastic sealed packages ▪ High contact capacity 40A ▪ USA or European footprints 		
Contact Form	1A,1C	1A,1C	1A,1B,1C
Contact Rating (Resistive Load)	30A 14VDC (C) 40A 14VDC (A)	30A 14VDC (C) 40A 14VDC (A)	A: 20A 14VDC B、C: 15A 14VDC
Max. Switching Voltage	75VDC	75VDC	30VDC
Max. Switching Current	40A	40A	35A
Max. Switching Power	560W	560W	280W
Coil Voltage	6~24VDC	6~24VDC	6~24VDC
Coil Power (W)	1.6W	1.6W	0.6W,0.8W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>European footprint</p>  </div> <div style="text-align: center;"> <p>USA footprint</p>  </div> </div>		
Weight (Approximately)	Sealed: 21.0g	Open: 15.0g	6.0g
Page	186		190

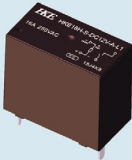


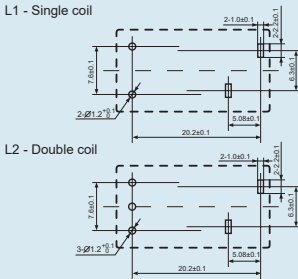
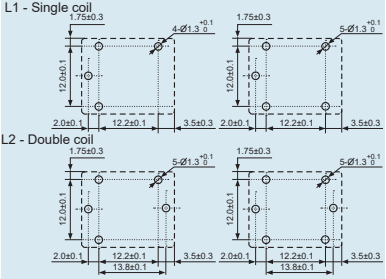
Category	AUTOMOTIVE RELAY		
Product Model	CMA512	CMA53/CMA532	
Relay Picture			
Dimensions L×W×H(mm)	23.2×16.0×14.1	CMA53: 13.0×12.0×10.0	CMA532: 23.6×13.0×10.0
Characteristics	<ul style="list-style-type: none"> ■ Miniature automotive twin relay ■ High inrush capability: 60A ■ Contains no lead and features cadmium-free contacts ensuring environment-friendly use ■ Applications: car alarm, power window, central locking system, seat adjustment control, etc <ul style="list-style-type: none"> ■ Small and compact ■ Available in single and twin relay ■ CMA53 - single relay ■ CMA532 - twin relay ■ High contact capacity 30A ■ Low noise operation ■ Contains no lead and features cadmium-free contacts ensuring environment-friendly use ■ Applications: car alarm, power window, central locking system, seat adjustment control, sunroof motor control, wiper, etc 		
Contact Form	2×1C	1A, 1C	2×1A, 2×1C
Contact Rating (Resistive Load)	15A 14VDC	NO/NC:20A/15A 14VDC	NO/NC:20A/15A 14VDC
Max. Switching Voltage	30VDC	16VDC	16VDC
Max. Switching Current	35A	30A	30A
Max. Switching Power	280W	280W	280W
Coil Voltage	6~24VDC	6~24VDC	6~24VDC
Coil Power (W)	0.6W	0.55W,0.8W	0.55W,0.8W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40°C to +85°C	-40°C to +105°C	-40°C to +105°C
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)		CMA53 	CMA532 
Weight (Approximately)	12.0g	CMA53:4.0g	CMA532:8.0g

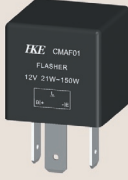
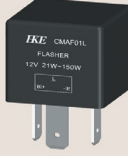
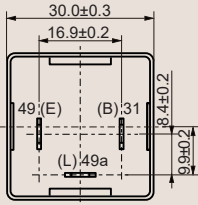
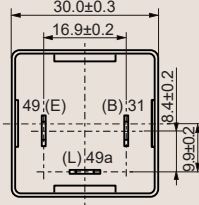
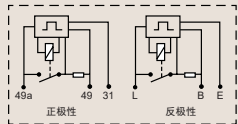
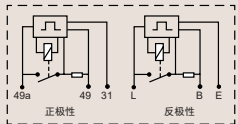
Category	AUTOMOTIVE RELAY		
Product Model	CMA54/CMA542		CMA55
Relay Picture			
Dimensions L×W×H(mm)	CMA54: 17.5×9.2×13.2	CMA542: 17.5×16.9×13.2	15.6×12.2×13.7
Characteristics	<ul style="list-style-type: none"> ■ Small and compact ■ Available in single and twin relay ■ CMA54 - single relay, CMA542 - twin relay ■ CMA54 dimensions: 17.5×9.2×13.2(mm) ■ CMA542 dimensions: 17.5×16.9×13.2(mm) ■ High contact capacity 25A ■ Low noise operation ■ Contains no lead and features cadmium-free contacts ensuring environment-friendly use ■ Applications: car alarm, power window, central locking system, seat adjustment control, sunroof motor control, wiper, etc 		<ul style="list-style-type: none"> ■ Microminiature automotive relay ■ Double make contact ■ Applications: car alarm, reverse sensor, etc
Contact Form	1C	2×1C	2A
Contact Rating (Resistive Load)	20A 14VDC	2×20A 14VDC	12V: 2×6A 13.5VDC 24V: 2×5A 28VDC
Max. Switching Voltage	40VDC	40VDC	14VDC
Max. Switching Current	25A	2×25A	2×10A
Max. Switching Power	280W	2×280W	2×81W
Coil Voltage	12VDC	12VDC	6~24VDC
Coil Power (W)	0.56W	0.56W	1.0W
Dielectric Strength:			
① Open Contacts	① 550VAC, 1min	① 550VAC, 1min	① 550VAC, 1min
② Coil and Contacts	② 550VAC, 1min	② 550VAC, 1min	② 550VAC, 1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)	<p>CMA54</p> 	<p>CMA542</p> 	
Weight (Approximately)	CMA54: 5.0g	CMA542: 10.0g	6.0g
Page	200		203

Category	AUTOMOTIVE RELAY		
Product Model	CMA56/CMA562		CMA57
Relay Picture			
Dimensions L×W×H(mm)	CMA56: 14×7.2×13.7 CMA56T: 14×7.2×14.2	CMA562: 14×15.4×13.7 CMA562T: 14×15.4×14.2	15.6×15.2×16.5
Characteristics	<ul style="list-style-type: none"> ▪ Miniature automotive relay ▪ 25A of Motor Load ▪ Single relay or twin relay 		<ul style="list-style-type: none"> ▪ 125°C of operating ambient temperature ▪ 2.8mm of Flat quick connection terminal ▪ Compliance to RoHS, ELV Directive
Contact Form	1C	2×1C	1A
Contact Rating (Resistive Load)	12V: 25A(Inrush) 14VDC(Motor) 12V: 20A 14VDC(Resistance) 24V: 10A 24VDC(Resistance)	12V: 2×25A(Inrush) 14VDC(Motor) 12V: 2×20A 14VDC(Resistance) 24V: 2×10A 24VDC(Resistance)	12V: 20A 14VDC 24V: 15A 28VDC
Max. Switching Voltage	16VDC	16VDC	16VDC
Max. Switching Current	30A	2×30A	Make:100A Break:30A
Max. Switching Power	350W	2×350W	320W
Coil Voltage	6~24VDC	6~24VDC	12VDC
Coil Power (W)	0.64W,0.8W	0.64W,0.8W	0.95W,1.1W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC, 1min ② 550VAC, 1min	① 550VAC, 1min ② 550VAC, 1min	① 550VAC, 1min ② 550VAC, 1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40°C to +105°C (Standard) -40°C to +125°C (Reflow)	-40°C to +105°C (Standard) -40°C to +125°C (Reflow)	-40°C to +125°C
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)	CMA56 	CMA562 	
Weight (Approximately)	CMA56:4.0g	CMA562:8.0g	10.0g
Page	205		209

Category	AUTOMOTIVE RELAY	
Product Model	CMA58	CMA59
Relay Picture		
Dimensions L×W×H(mm)	17.0×13.0×16.0	20.4×15.1×22.0
Characteristics	<ul style="list-style-type: none"> ▪ Reduction of 20dB sound pressure ▪ Saving Space ▪ Plastic Cover Sealed ▪ Compliance to RoHS、ELV Directive 	<ul style="list-style-type: none"> ▪ Automotive Mute Relay ▪ 100,000operations for 25A 14VDC (Locked rotor current) ▪ Quick-Flat connection terminal ▪ sound pressures≤50dB ▪ Compliance to RoHS and ELV
Contact Form	1C	1A,1C
Contact Rating (Resistive Load)	NO/NC:20A/10A 14VDC	A(Resistive): 20A 14VDC C(Resistive): NO:20A 14VDC NC:10A 14VDC Motor: 25A (peak) 14VDC
Max. Switching Voltage	16VDC	16VDC
Max. Switching Current	20A	30A
Max. Switching Power	320W	480W
Coil Voltage	12VDC	12VDC
Coil Power (W)	0.64W	0.64W,0.85W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000
Operating Temperature	-40°C to +85°C	-40°C to +125°C
Terminal Type	PCB	Quick connect
Terminal Layout (Bottom View) (mm)		
Weight (Approximately)	6.5g	11.6g
Page	211	214

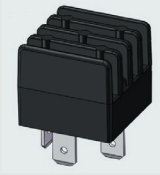
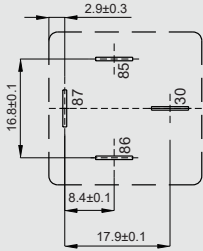
Category	MAGNETIC LATCHING RELAY	
Product Model	HKE16	HKE17
Relay Picture		
Dimensions L×W×H(mm)	29.0×12.7×16.0	24.0×10.0×15.8
Safety Standards		—
Characteristics	<ul style="list-style-type: none"> DPST 16A Magnetic latching relay Max.Surge Current 350A/2ms Energy-saving and Environmental Friendly product(RoHS Compliant) 	<ul style="list-style-type: none"> Magnetic Latching Relay SPST 16A Magnetic latching relay Max.Surge Current 100A/2ms Comply to IEC 60335-1:household and similar electrical appliances-safety Impulse voltage is 12000V,Dielectric strength is 5000V
Contact Form	2A	1A
Contact Rating (Resistive Load)	16A 250VAC,5×10 ⁴ (Res) 20A 250VAC,2×10 ⁴ (Res) 1.5HP 250VAC,3×10 ⁴ (HP) 8A 220VAC,cosφ0.4,3×10 ⁴ 3300W 277VAC,2×10 ⁴ (Electronic Ballast)	Standard: 8A 250VAC T : 16A 277VAC
Max. Switching Voltage	277VAC	250VAC 277VAC
Max. Switching Current	20A	8A 16A
Max. Switching Power	5000VA	2000VA 4432VA
Coil Voltage	3~48VDC	3~24VDC
Coil Power (W)	0.6W,0.8W,1.2W	0.2W,0.4W,0.6W,1.0W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,50/60Hz,1min ② 4,000VAC,50/60Hz,1min	① 1,000VAC,50/60Hz,1min ② 5,000VAC,50/60Hz,1min
Electrical Life (ops.)	Refer to 'contact load'	Refer to 'electrical life'
Operating Temperature	-40°C to +85°C	-40°C to +85°C(8A) -40°C to +70°C(8A~16A)
Terminal Type	PCB	PCB
Terminal Layout (Bottom View) (mm)		
Weight (Approximately)	12.0g	8.0g
Page	217	220

Category	MAGNETIC LATCHING RELAY	
Product Model	HKE18	HKE19
Relay Picture		
Dimensions L×W×H (mm)	24.2×13.0×16.4	19.0×15.5×15.8
Safety Standards		—
Characteristics	<ul style="list-style-type: none"> ■ Magnetic Latching Relay ■ 20A of switching capability ■ Contact: 1 Form A ■ Only pulse excitation, single and double coil work available ■ Dielectric strength of 4000V between coil and contacts ■ Friendly product(RoHS Compliant) 	<ul style="list-style-type: none"> ■ Magnetic Latching Relay ■ 15A of switching capability ■ Contact: 1 Form A, 1 Form C ■ Only pulse excitation, single and double coil work available ■ Dielectric strength of 2700V between coil and contacts ■ Friendly product(RoHS Compliant)
Contact Form	1A	1A,1C
Contact Rating (Resistive Load)	16A 250VAC/30VDC, 5×10^4 (Res) 20A 250VAC, 2×10^4 (Res) 1.5HP 250VAC, 4×10^4 (HP) TV-8 250VAC, 2.5×10^4	10A 277VAC (Res) 15A 120VAC (Tungsten lamp)
Max. Switching Voltage	277VAC/30VDC	277VAC/30VDC
Max. Switching Current	20A	15A(1 Form A) , 10A(1 Form C)
Max. Switching Power	5000VA	2770VAC/300W
Coil Voltage	3~48VDC	5~48VDC
Coil Power (W)	0.6W,0.8W,1.2W	0.4W,0.8W
Dielectric Strength:		
① Open Contacts	① 1,000VAC,50/60Hz,1min	① 750VAC,50/60Hz,1min
② Coil and Contacts	② 4,000VAC,50/60Hz,1min	② 2,700VAC,50/60Hz,1min
Electrical Life (ops.)	Refer to "contact load"	6×10^3 (15A 120VAC Tungsten lamp ON/OFF:1S/59S) 1×10^4 (10A 277VAC Resistance ON/OFF:1S/9S)
Operating Temperature	-40°C to +85°C	-40°C to +85°C
Terminal Type	PCB	PCB
Terminal Layout (Bottom View) (mm)	 <p>L1 - Single coil</p> <p>L2 - Double coil</p>	 <p>L1 - Single coil</p> <p>L2 - Double coil</p>
Weight (Approximately)	11.0g	11.0g
Page	223	227

Category	FLASHER	
Product Model	CMAF01	CMAF01L
Relay Picture		
Dimensions L×W×H (mm)	30.0×30.0×40.0	30.0×30.0×30.0
Characteristics	<ul style="list-style-type: none"> ■ Special integrate circuit,stable reliable performance ■ Use of special high performance contacts, ultra-long electrical endurance ■ Surface mounting technology,advanced technology ■ Solid base design,stable structure ■ Protection IP50 ■ Steering light of the automobile control, Hazard warning flash lamp control 	<ul style="list-style-type: none"> ■ Special integrate circuit,stable reliable performance ■ Use of special high performance contacts, ultra-long electrical endurance ■ Surface mounting technology,advanced technology ■ Solid base design,stable structure ■ Protection IP50 ■ Steering light of the automobile control, Hazard warning flash lamp control
Norminal Load	<p>2×21W+5W Turning Mode</p> <p>2×(2×21W+5W) Hazard warning mode</p> <p>21W+5W Failure mode</p>	<p>2×21W+5W Turning Mode</p> <p>2×(2×21W+5W) Hazard warning mode</p> <p>21W+5W Failure mode</p>
Norminal Voltage	12VDC,24VDC	12VDC
Flash Frequency	(60~110)ops/min	(60~110)ops/min
Lamp Failure Flash Frequency	(140~230)ops/min	(140~230)ops/min
Duty cycle	30%~70%	30%~70%
Electrical Endurance	<p>12V:1000h(Turning15s on / 15s off)</p> <p>360h(hazard warning continuously)</p> <p>24V:400h(Turning15s on / 15s off)</p> <p>200h(hazard warning continuously)</p>	<p>1000h(Turning15s on / 15s off)</p> <p>360h(hazard warning continuously)</p>
Ambient temperature	-40℃~85℃	-40℃~85℃
Terminal Layout (Bottom View) (mm)		
Wiring Diagram (Bottom View)		
Weight (Approximately)	40g	30g
Page	232	232

Category	HV DIRECT CURRENT RELAY	
Product Model	HEV50	
Relay Picture		
Dimensions L×W×H (mm)	66.0×34.0×52.0	
Characteristics	<ul style="list-style-type: none"> ▪ 150A of switching capability ▪ Contact: 1 Form A ▪ With arc extinguishing device, increased load capacity ▪ Optional resistor or diode to protect the coil circuit ▪ 75°C of working temperature ▪ According to customer needs to select connector ▪ Friendly product(RoHS Compliant) 	
Contact Form	1 Form A	
Contact Resistance	Max.50mΩ(24VDC 1A)	
Coil Voltage	DC12V,DC24V,DC36V,DC48V	
Max.Continuous Current	150A	
Max.Connect Current	300A	
Operate Time (at 23°C)	Max.50ms	
Release Time (at 23°C)	Max.50ms	
Insulation Resistance	Min.100MΩ 500VDC	
Dielectric Strength	Between open contacts	550VAC,50/60Hz,1min
	Between coil and contacts	550VAC,50/60Hz,1min
Ambient temperature	-40°C to +75°C	
Relative Humidity	5~85% R.H	
Vibration resistance	Sine wave 10-500Hz Peak, 5G	
Shock resistance	10G	
Electrical (23°C)	Resistance: 12VDC 150A 5×10 ⁴ ops ON/OFF:1S/4S 24VDC 100A 5×10 ⁴ ops ON/OFF:1S/4S 36VDC 70A 5×10 ⁴ ops ON/OFF:1S/4S 48VDC 60A 5×10 ⁴ ops ON/OFF:1S/4S 72VDC 50A 5×10 ⁴ ops ON/OFF:1S/4S 110VDC 30A 5×10 ⁴ ops ON/OFF:1S/4S	
Mechanical	1×10 ⁷	
Weight (Approximately)	85g	
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Category		HV DIRECT CURRENT RELAY
Product Model		HEV200
Relay Picture		
Dimensions L×W×H (mm)		80.0×62.3×72.3
Characteristics		<ul style="list-style-type: none"> ▪ Compact,light weight,low cost for enclosure,high current HV relay ▪ Able to attach energy saving module for coil ▪ Optional auxiliary contact,monitor the status of main contact in real time ▪ Highly sealed,safe and reliable because fully insulated from coil and contacts ▪ Available for multiple coil supply mode ▪ Compliance with ROHS
Contact Form		1 Form A
Contact Resistance		Typical 0.2mΩ(@200A)
Coil Voltage		DC9~36V,DC32V~95V,DC48~95V
Rated switching load(Res)		200A 12~900VDC
Rated switching current(Res)		200A
Rated switching voltage		12~900VDC
Max.switching current		Make500A,Break2000A@320VDC
Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	2,200VAC,50/60Hz,1min
	Between coil and contacts	2,200VAC,50/60Hz,1min
Ambient temperature		-40°C to +85°C
Relative Humidity		5~85%RH(no dew and frost at low temp) , 40°C
Vibration resistance		Sine wave80-2000Hz peak, ≤20G
Shock resistance		11ms,1/2Sine wave peak,≤20G
Electrical (Res 200A)		1×10 ⁵ cycles(28VDC) 25000cycles(120VDC) 10000cycles(270VDC) 3000cycles(400VDC) 800cycles(600VDC) 150cycles(900VDC)
Mechanical		1×10 ⁶
Weight (Approximately)		43g
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Category	SOLID STATE RELAY
Product Model	CMS
Relay Picture	
Dimensions L×W×H(mm)	26.4×26.4×22.7
Safety Standards	—
Characteristics	<ul style="list-style-type: none"> ■ 22A continuous current carrying capacity ■ Contact: 1 Form A ■ No noise, low power consumption ■ No mechanical wear, high switching life ■ Operating temperature: -40°C ~ +85 °C ■ Rated voltage 9 ~ 32V ■ Compliance to ROHS
Contact Form	1 Form A
Output switching resistance	≤20mΩ
Rated switching current(Res)	22A
Rated switching voltage	9~32VDC
Max.protection current	250A (23°C) ; 150A (150°C)
Max.output leakage current	≤0.1mA
Operate Time	Max.400μs
Release Time	Max.150μs
Temperature	-40°C to +85°C
Humidity	5~85%RH
Vibration resistance	10~55Hz, 1.5mm double amplitude
Shock resistance	980m/s ²
Terminal Type	Quick connect
Terminal Layout (Bottom View) (mm)	
Weight (Approximately)	29g
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