

CHAR RELAY SERIES

60A~160A MINIATURE POWER RELAY

UL File NO. E341422
TUV File NO. R50316974



FEATURES

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

APPLICATION

Solar inverter,
Inverter precharge circuit control
Industrial Control

COIL PARAMETER

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

CONTACT DATA

Type	CHAR-A60	CHAR-A80	CHAR-A100 CHAR-A100T	CHAR-A130	CHAR-A150	CHAR-A160
Contact arrangement	1 Form X					
Contact material	Ag Alloy					
Initial contact resistance	100mΩ max.@6VDC,1A					
Max. switching voltage	690VAC	690VAC	690VAC	690VAC	690VAC	690VAC
Max. switching current	60A	80A	100A	130A	150A	160A
Max. switching power	41,400VA	55,200VA	69,000VA	89,700VA	103,500VA	110,400VA
Contact rating	60A	Make 60A, Carry 60A, Break 60A 277VAC				
		Make 30A, Carry 60A, Break 30A 690VAC				
	80A	Make 60A, Carry 80A, Break 60A 277VAC				
		Make 30A, Carry 80A, Break 30A 690VAC				
	100A	Make 60A, Carry 100A, Break 60A 277VAC				
		Make 30A, Carry 100A, Break 30A 690VAC				
	130A	Make 60A, Carry 130A, Break 60A 277VAC				
Make 40A, Carry 130A, Break 40A 690VAC						
150A	Make 60A, Carry 150A, Break 60A 277VAC					
	Make 30A, Carry 150A, Break 30A 400VAC					
160A	Make 45A, Carry 160A, Break 45A 690VAC					
Mechanical endurance	1,000,000 ops Min.(no load)					
Electrical endurance	30,000 ops Min.(Resistive load)					
Minimum load(reference value)	100mA@5VDC					

COIL DATA @23°C

CHAR				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
12	267	45	9.0	0.6
24	133	180	18.0	1.2
48	67	720	36.0	2.4

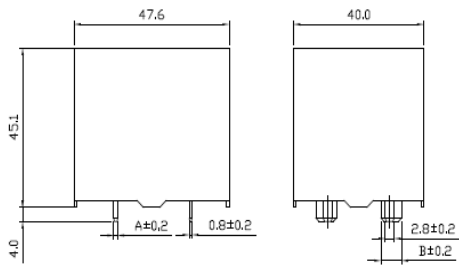
CHARACTERISTICS

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

ORDERING INFORMATION

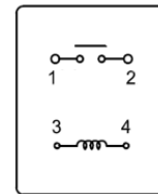
	CHAR	-1	12	A100	'000
1. Product Family CHAR Series					
2. Number of Poles 1 = 1 pole					
3. Rated Coil Voltage 12 = 12VDC 24 = 24VDC 48 = 48VDC					
4. Rated Current A60 = AC 60A A80 = AC 80A A100 = AC 100A A100T = AC 100A A130 = AC 130A A150 = AC 150A A160 = AC 160A					
5. Additional numbers and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

OUTLINE DIMENSION

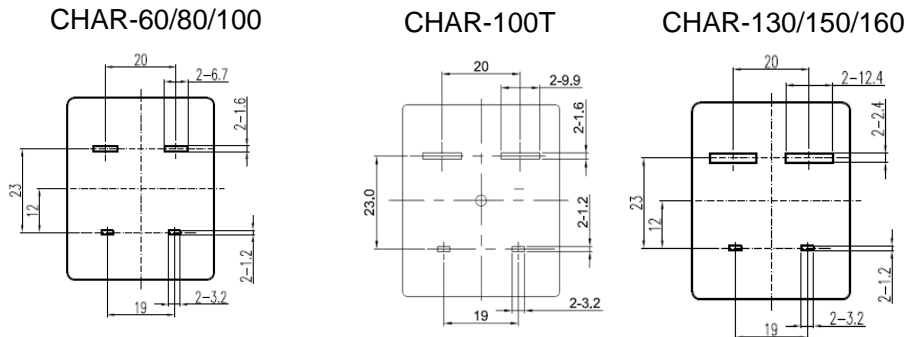


Model	A Terminal	B Terminal
CHAR-60/80/100	1.2	6.3
CHAR-130/150/160	2.0	12.0
CHAR-100T	1.2	9.5

WIRING DIAGRAMS (BOTTOM VIEWS)



PC BOARD LAYOUTS (BOTTOM VIEWS)



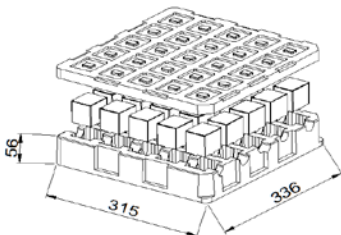
Remark: The reference tolerance in outline dimension:
 outline dimension ≤ 1mm, reference tolerance is ±0.2mm;
 outline dimension > 1mm and ≤ 5mm, reference tolerance is ±0.3mm;
 outline dimension > 5mm, reference tolerance is ±0.5mm.

Typical products

Product Description		Characteristic					
Product Name	Code	Coil Rated voltage	Contact material	Contact Load	Electrical endurance	Safety certification	Special Feature
CHAR-1**A60	000	12V, 24V, 48V	Ag Alloy	60A@400VAC Make 30A, Carry 60A, Break 30A	30000ops.min	UL/cUL,TUV	
CHAR-1**A80	000			80A@400VAC Make 30A, Carry 80A, Break 30A	30000ops.min		
CHAR-1**A100	000			100A@400VAC Make 30A, Carry 100A, Break 30A	30000ops.min		
CHAR-1**A100T	000			100A@400VAC Make 30A, Carry 100A, Break 30A	30000ops.min		Special PCB Terminal
CHAR-1**A130	000			130A@400VAC Make 30A, Carry 130A, Break 30A	30000ops.min		
CHAR-1**A150	000			150A@400VAC Make 30A, Carry 150A, Break 30A	30000ops.min		
CHAR-1**A160	000			160A@400VAC Make 30A, Carry 160A, Break 30A	30000ops.min		
CHAR-1**A130 001	001			130A@690VAC Make 30A, Carry 130A, Break 30A	30000ops.min		
CHAR-1**A150 001	001			150A@690VAC Make 30A, Carry 150A, Break 30A	30000ops.min		
CHAR-1**A160 001	001			160A@690VAC Make 30A, Carry 160A, Break 30A	30000ops.min		

Remarks: Special ordering for other requirements

PACKAGING FIGURE



25 pcs inside a box
50pcs inside a carton

CHAR-200A Series

150A~200A MINIATURE POWER RELAY

FEATURES

- Outline dimension(47.6mm×40.0mm×51.8mm)
- 1 Form X arrangement
- Contact gap,4.0mm Min.
- Designed to meet UL/cUL,TUV requirements
- PCB terminal for the mounting
- RoHS compliance
- REACH SvHC compliance

UL File NO. E341422
TUV File NO. R50316974



APPLICATION

Solar inverter,
Industrial Control

COIL PARAMETER

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

CONTACT DATA

Type	CHAR-A200	CHAR150H
Contact arrangement	1 Form X	
Contact material	Ag Alloy	
Initial contact resistance	1mΩ max.@DC20A	
Max. switching voltage	830VAC	
Max. switching current	220A	180A
Max. switching power	182,600VA	149,400VA
Contact rating	Make 50A, Carry 200A, Break 50A 830VAC	Make 30A, Carry 150A, Break 30A
Mechanical endurance	1,000,000 ops Min.(no load)	
Electrical endurance	30,000 ops Min.(Resistive load)	
Minimum load(reference value)	100mA@48VAC	

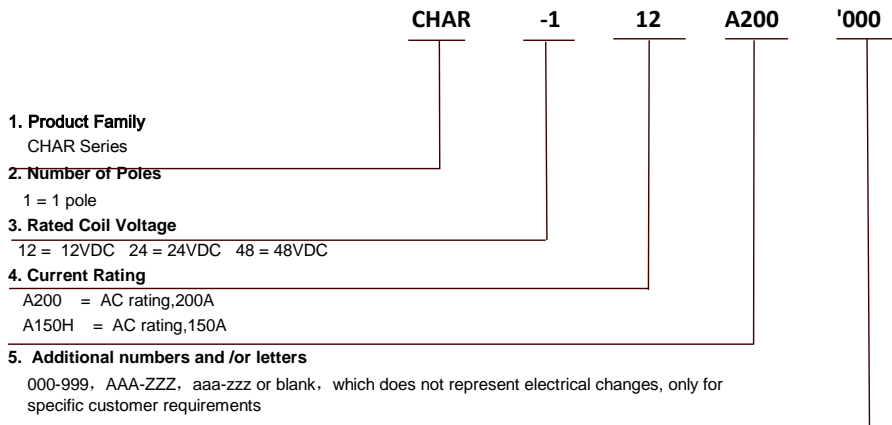
COIL DATA @23°C

CHAR				
Nominal coil voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω)±10%	Operate Voltage (VDC Max.)	Release Voltage (VDC Min.)
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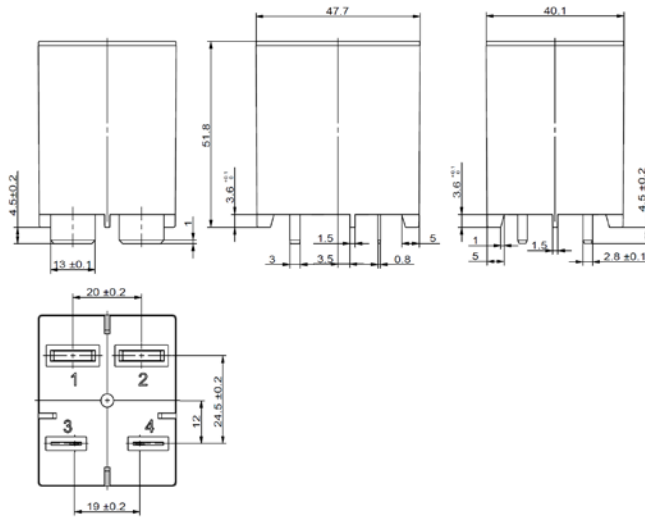
CHARACTERISTICS

Operate voltage	75% of nominal voltage or less	
Release voltage	5% of nominal voltage or more	
Operate time (At nominal voltage)	30ms max.	
Release time(At nominal voltage)	30ms max.	
Insulation resistance	1,000 MΩ min. (at 1000 VDC)	
Dielectric strength	Between coil and contacts	4,500 VAC, 50/60 Hz for 1 min
	Between open contacts	2,500 VAC, 50/60 Hz for 1 min
Surge voltage between coil and contacts	6,000V(1.2/50μs)	
Vibration resistance	Destruction	10 to 55 Hz.,1.5mm double amplitude
	Malfunction	10 to 55 Hz.,1.5mm double amplitude
Shock resistance	Destruction	1,000 m/s ² (100G approximately)
	Malfunction	100 m/s ² (10G approximately)
Ambient temperature	Operating: -40~+85°C (without icing or condensation)	
Ambient humidity	Operating: 20% to 85% RH	
Terminal	PCB terminals	
Enclosure (94V-0 Flammability Ratings)	V: Vented(Flux-tight),plastic cover.(RT II)	
Weight	Approx. 165g	

ORDERING INFORMATION

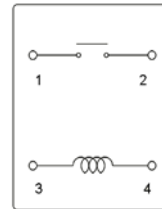


OUTLINE DIMENSION

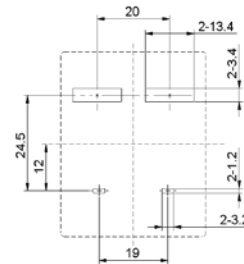


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 outline dimension > 1mm and ≤ 5mm, reference tolerance is ±0.3mm;
 outline dimension > 5mm, reference tolerance is ±0.5mm.

WIRING DIAGRAMS (BOTTOM)



PC BOARD LAYOUTS (BOTTOM)



Unit:mm

Typical products

Product Description		Characteristic					
Product Name	Code	Coil Rated voltage	Contact material	Contact Load	Electrical endurance	Safety certification	Special Feature
CHAR-1**A200	000	12V、24V、48V	Ag Alloy	200A@830VAC Make 50A, Carry 200A, Break 50A	30,000	UL/cUL,TUV	
CHAR-1**A150H	000	12V、24V、48V	Ag Alloy	150A@830VAC Make 30A, Carry 150A, Break 30A	30,000	UL/cUL,TUV	

Remarks: Special ordering for other requirements

Packaging Figure

