

»» Features

- ☐ High power 40A automotive relay.
- ☐ USA & European footprint are both available.
- ☐ Open frame, dust cover, flux-free type, and sealed washable type are available.
- ☐ Offering SPNC, SPNO, SPDT of contact configurations.
- ☐ Comply with RoHS-Directive 2002/95/EC, and ELV-Directive 2000/53/EC.

»» Type List

◆ Standard type

Terminal style	Contact form	Designation (enclosure)			
		Open type	Flux tight	Sealed type	Sealed type washable
PCB terminal (Footprint for European)	1A (SPNO)	822E-1A	822E-1A-C	822E-1A-V	822E-1A-S
	1B (SPNC)	822E-1B	822E-1B-C	822E-1B-V	822E-1B-S
	1C (SPDT)	822E-1C	822E-1C-C	822E-1C-V	822E-1C-S
PCB terminal (Footprint for USA)	1A (SPNO)	822U-1A	822U-1A-C	822U-1A-V	822U-1A-S
	1B (SPNC)	822U-1B	822U-1B-C	822U-1B-V	822U-1B-S
	1C (SPDT)	822U-1C	822U-1C-C	822U-1C-V	822U-1C-S
PCB terminal (Footprint for USA different terminal)	1A (SPNO)	-----	822UA-1A-C	822UA-1A-V	822UA-1A-S
	1B (SPNC)		822UA-1B-C	822UA-1B-V	822UA-1B-S
	1C (SPDT)		822UA-1C-C	822UA-1C-V	822UA-1C-S

◆ High sensitivity type

PCB terminal (Footprint for European)	1A (SPNO)	822EN-1A	822EN-1A-C	822EN-1A-V	822EN-1A-S
	1B (SPNC)	822EN-1B	822EN-1B-C	822EN-1B-V	822EN-1B-S
	1C (SPDT)	822EN-1C	822EN-1C-C	822EN-1C-V	822EN-1C-S
PCB terminal (Footprint for USA)	1A (SPNO)	822UN-1A	822UN-1A-C	822UN-1A-V	822UN-1A-S
	1B (SPNC)	822UN-1B	822UN-1B-C	822UN-1B-V	822UN-1B-S
	1C (SPDT)	822UN-1C	822UN-1C-C	822UN-1C-V	822UN-1C-S
PCB terminal (Footprint for USA different terminal)	1A (SPNO)	-----	822UAN-1A-C	822UAN-1A-V	822UAN-1A-S
	1B (SPNC)		822UAN-1B-C	822UAN-1B-V	822UAN-1B-S
	1C (SPDT)		822UAN-1C-C	822UAN-1C-V	822UAN-1C-S

»» Ordering Information

822 E N - 1C - C
1 2 3 4 5

- | | |
|------------------------------------|------------------------------------|
| 1. 822 -- Basic series designation | 4. 1A -- Single pole normally open |
| 2. E -- Europe footprint | 1B -- Single pole normally close |
| U -- USA footprint | 1C -- Single pole double throw |
| UA -- USA different terminal | |
| 3. Blank -- standard type | 5. Blank -- Open type |
| N -- High sensitivity type | C -- Flux tight |
| | V -- Sealed type |
| | S -- Sealed type washable |

»» Contact Rating

Resistive load	1A	1B	1C
	40A 14VDC	30A 14VDC	NC: 20A 14VDC ; NO: 40A 14VDC

»» Coil Rating (DC)

◆ Standard type

Rated voltage (V)	Rated current $\pm 10\%$ at 23 °C (mA)	Coil resistance $\pm 10\%$ at 23 °C (Ω)	Max. continuous voltage at 85 °C ⁽¹⁾	Pick up voltage(Max) at 23 °C	Drop out voltage(Min) at 23 °C	Power consumption at rated voltage
6	315	19	130 % of rated Voltage	3.3	0.6	approx. 1.6W
9	180	50		5.0	0.9	
12	133	90		6.8	1.2	
24	66	362		13.9	2.4	

Note:(1)Continuous contact current at 20A.

◆ High sensitivity type

Rated voltage (V)	Rated current $\pm 10\%$ at 23 °C (mA)	Coil resistance $\pm 10\%$ at 23 °C (Ω)	Max. continuous voltage at 85 °C ⁽¹⁾	Pick up voltage(Max) at 23 °C	Drop out voltage(Min) at 23 °C	Power consumption at rated voltage
6	200	30	130 % of rated Voltage	75 % of rated Voltage	10 % of rated Voltage	approx. 1.2W
9	133	67.5				
12	100	120				
24	50	480				

Note:(1)Continuous contact current at 20A.

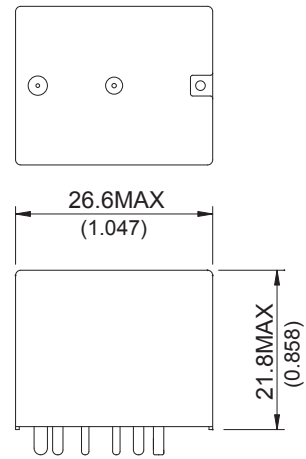
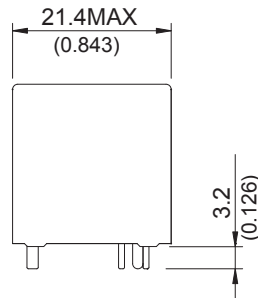
»» Specification

Contact material	AgSnO alloy	
Contact voltage drop ⁽¹⁾	Typ. 40mV at 10A	
Insulation resistance ⁽¹⁾	50M Ω Min. (DC 500V)	
Operate time ⁽¹⁾	5ms Max.	
Release time ⁽¹⁾	4ms Max.	
Dielectric strength ⁽¹⁾	Between open contact	: AC 500V , 50/60Hz 1 min.
	Between contact and coil	: AC 500V , 50/60Hz 1 min.
Vibration resistance	10~55Hz , amplitude 1.5 mm	
Shock resistance	20G , 11ms , half sine wave pulse	
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 1,200 operations/hr)
Operating ambient temperature	-40~+85 °C (no freezing)	
Storage temperature	-40~+130 °C	
Weight	Approx. 17.5g	

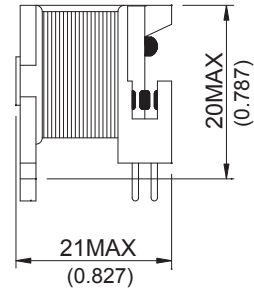
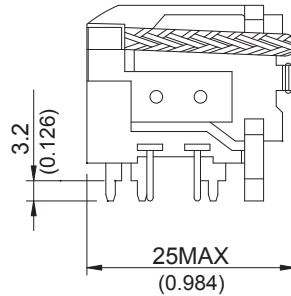
Note : (1) initial value

»» Outline Dimensions

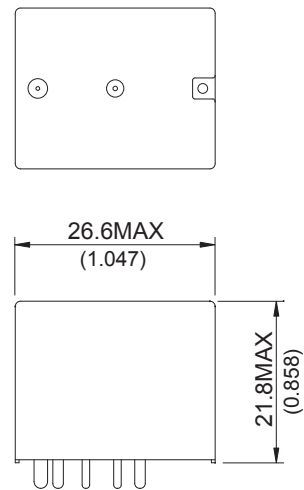
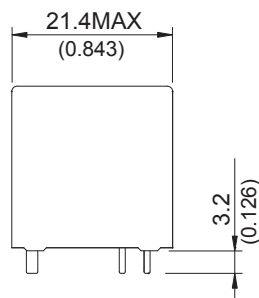
◆ 822E,UA



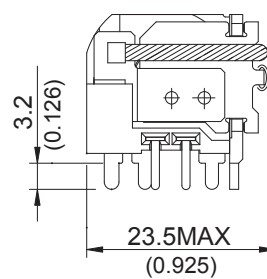
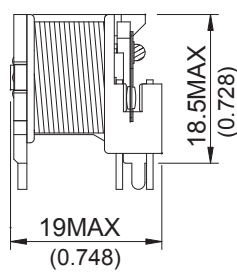
◆ 822E OPEN



◆ 822U



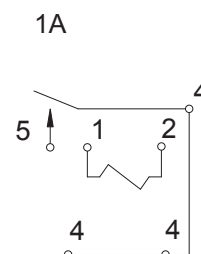
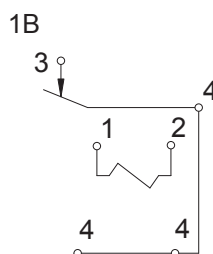
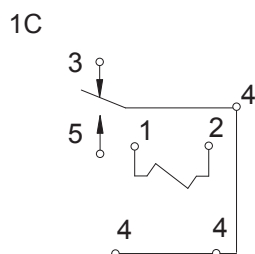
◆ 822U OPEN



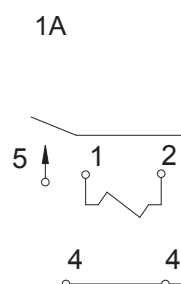
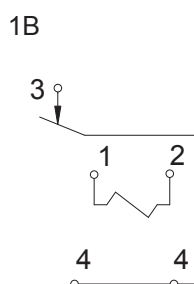
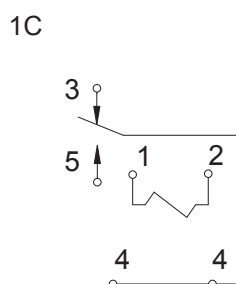
»» Wiring Diagram

BOTTOM VIEW

◆822E,822UA,822U(OPEN)



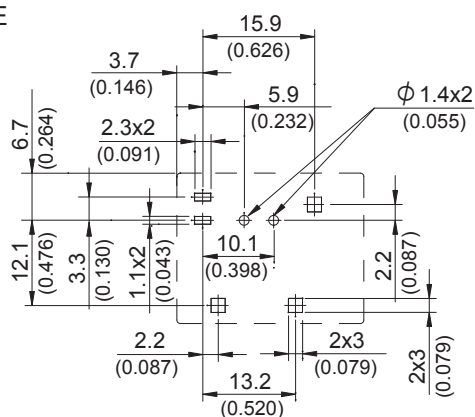
◆822U



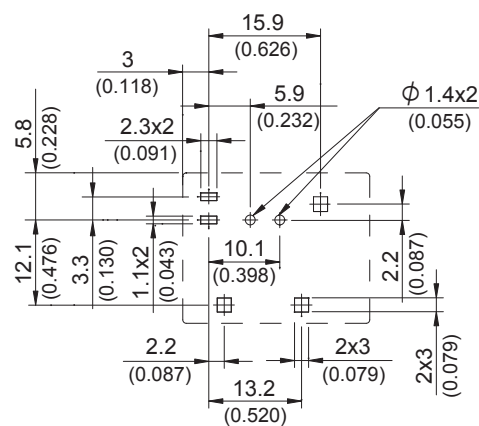
»» PC Board Layout

BOTTOM VIEW

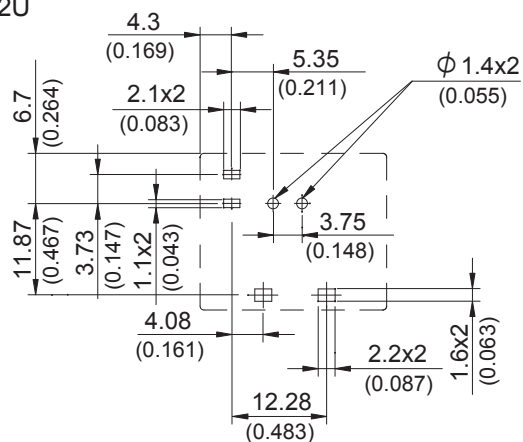
◆822E



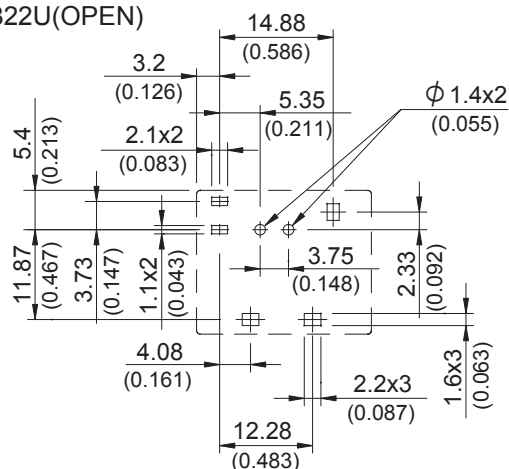
◆822E(OPEN)



◆822U



◆822U(OPEN)



Technical drawing of a mechanical part with dimensions in inches and millimeters. The drawing shows a cross-section of a part with various features and dimensions. The dimensions are as follows:

- Overall width: 14.88 (0.586)
- Overall height: 6.7 (0.264)
- Top left corner radius: 4.3 (0.169)
- Top left corner radius: 2.1x2 (0.083)
- Top right corner radius: 5.35 (0.211)
- Top right corner radius: ϕ 1.4x2 (0.055)
- Left side height: 11.87 (0.467)
- Left side height: 3.73 (0.147)
- Left side height: 1.1x2 (0.043)
- Right side height: 3.75 (0.148)
- Right side height: 2.33 (0.092)
- Bottom left corner radius: 4.08 (0.161)
- Bottom right corner radius: 2.2x3 (0.087)
- Bottom right corner radius: 1.6x3 (0.063)
- Bottom width: 12.28 (0.483)

Figure 10 is a line graph titled "Operate time/Release time". The Y-axis is labeled "Time (ms)" and ranges from 2 to 12 with major grid lines every 2 units. The X-axis is labeled "% of Nominal coil voltage (at 23°C)" and ranges from 60 to 140 with major grid lines every 10 units. Two curves are plotted: "Operate time" and "Release time". The "Operate time" curve starts at approximately 7.8 ms at 60% voltage and decreases to about 4.2 ms at 125% voltage. The "Release time" curve starts at approximately 2.1 ms at 60% voltage and increases to about 2.8 ms at 125% voltage. Both curves show a non-linear relationship with voltage.

% of Nominal coil voltage (at 23°C)	Operate time (ms)	Release time (ms)
60	7.8	2.1
70	6.8	2.2
80	6.0	2.3
90	5.4	2.4
100	4.9	2.5
110	4.6	2.6
120	4.4	2.7
125	4.2	2.8