

# 35 Amp ISO 280 Automotive Plug-In Relay- Ignition Protected

**PC785**



## FEATURES

- Ignition Protected\* | SAE J1171 | UL 1500 | ISO 8846
- ISO 280 Footprint
- 1A and 1C Contact Forms Available
- Contact Switching Capacity up to 105 Amps
- 35 Amps Continuous Carrying Current
- 125°C Operating Temperature
- Internal Diodes or Resistors Available
- RoHS Compliant

## CONTACT RATINGS @ 14 VDC

|                                 |                                    |                 |
|---------------------------------|------------------------------------|-----------------|
| Contact Form                    | 1 Form A (SPST) or 1 Form C (SPDT) |                 |
|                                 | Normally Open                      | Normally Closed |
| Max Switching Current           | Make 105 A                         | Make 75 A       |
|                                 | Break 35 A                         | Break 25 A      |
| Max Switching Voltage           | 75 VDC                             |                 |
| Max Continuous Current Standard | 35 A                               | 25 A            |
| Max Switching Power             | 490 Watts                          |                 |
| Minimum Load                    | 0.1 A at 12 VDC                    |                 |

## CHARACTERISTICS

|                           |                                                                                                                    |
|---------------------------|--------------------------------------------------------------------------------------------------------------------|
| Operate Time              | 5 msec or less (without coil suppression)                                                                          |
| Release Time              | 2 msec or less (without coil suppression)                                                                          |
| Insulation Resistance     | 100 MΩ min at 500VDC, 50% RH (Item 7 of IEC255-5)                                                                  |
| Dielectric Strength       | 500 Vrms, 1 min. between coil and contacts<br>500 Vrms, 1 min. between contacts (Item 6 of IEC 255-5)              |
| Shock Resistance          | 200 m/s <sup>2</sup> 11 ms (IEC-2-27 Test Ea.)                                                                     |
| Vibration Resistance      | DA (double amplitude) 127 mm, 10-40 Hz; 40-70 Hz: 5 g<br>DA (double amplitude) 0.5 mm, 70-100 Hz; 100-500 Hz: 10 g |
| Drop Resistance           | 1 Meter Height Drop on Concrete In Final Enclosure                                                                 |
| Terminal Strength         | 10N                                                                                                                |
| Ambient Temperature Range | - 40 to 125°C Operating                                                                                            |
| Relative Humidity         | 85% (at 25°C)                                                                                                      |
| Weight                    | 21 grams                                                                                                           |

\* Sealed with 12 or 24 VDC, 1.3 Watt Coil Versions

## ORDERING INFORMATION

|                     |                                                               |     |     |   |    |    |
|---------------------|---------------------------------------------------------------|-----|-----|---|----|----|
| Example:            | PC785                                                         | -1C | -12 | C | -R | -X |
| Model:              | <b>PC785</b>                                                  |     |     |   |    |    |
| Contact Form:       | <b>1A, 1C</b>                                                 |     |     |   |    |    |
| Coil Voltage:       | <b>12, 24</b>                                                 |     |     |   |    |    |
| Enclosure:          | <b>C: Dust Cover, S: Sealed, S1: Flux Tight<sup>(1)</sup></b> |     |     |   |    |    |
| Parallel Component: | <b>Nil: None, D: Diode, R: Resistor</b>                       |     |     |   |    |    |
| RoHS Compliant:     | <b>-X</b>                                                     |     |     |   |    |    |

(1) Flux Tight relays are constructed such that Flux will not enter the relay in an automated soldering process, they are NOT Suitable for water wash cleaning.

Box Quantity: 500; Inner Box: 250

## CROSS REFERENCES

|             |                                                                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Omron:      | G8V Series                                                                                                                                                                                     |
| Examples:   | G8V-1A7T-R-DC12 Crosses to PC785-1A-12C-R-X<br>G8V-RH-1A7T-R-DC12 Crosses to PC785-1A-12C-R-X<br>G8V-1C7T-R-DC12 Crosses to PC785-1C-12C-R-X<br>G8V-RH-1C7T-R-DC12 Crosses to PC785-1C-12C-R-X |
| Song Chuan: | 301 Series                                                                                                                                                                                     |
| Examples:   | 301-1A-S-R1-12VDC Crosses to PC785-1A-12C-R-X<br>301-1C-S-R1-12VDC Crosses to PC785-1C-12C-R-X                                                                                                 |

NOTES: The G8V is a 20/10 Amp relay. The PC785 is a 35/25 Amp Relay

## CONTACT RATINGS @ 28 VDC

|                                 |                                    |                 |
|---------------------------------|------------------------------------|-----------------|
| Contact Form                    | 1 Form A (SPST) or 1 Form C (SPDT) |                 |
|                                 | Normally Open                      | Normally Closed |
| Max Switching Current           | Make 62.5 A                        | Make 37.5 A     |
|                                 | Break 17.5 A                       | Break 12.5 A    |
| Max Switching Voltage           | 75 VDC                             |                 |
| Max Continuous Current Standard | 17.5 A                             | 12.5 A          |
| Max Switching Power             | 490 Watts                          |                 |
| Minimum Load                    | 0.1 A at 12 VDC                    |                 |

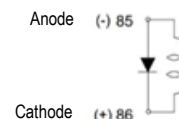
## CONTACT DATA

|                            |                                   |                                |
|----------------------------|-----------------------------------|--------------------------------|
| Material                   | AgSnInO (Silver Tin Indium Oxide) |                                |
| Initial Contact Resistance | 100 mΩ max at 1 A, 6 VDC          |                                |
| Service Life               | Electrical                        | 1 x 10 <sup>5</sup> Operations |
|                            | Mechanical                        | 1 x 10 <sup>7</sup> Operations |

## Coil Options

Resistor Values (1/4 Watt):  
12V - 680 ohm  
24V - 2,700 ohm  
Diode: 1N4005

Orientation of Optional Diode



\*Contact Picker if You Require the Opposite Polarity or a Dual Diode

**COIL DATA**

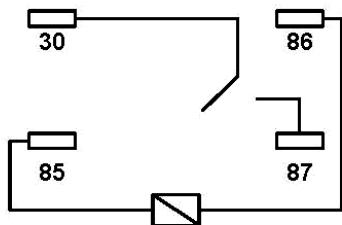
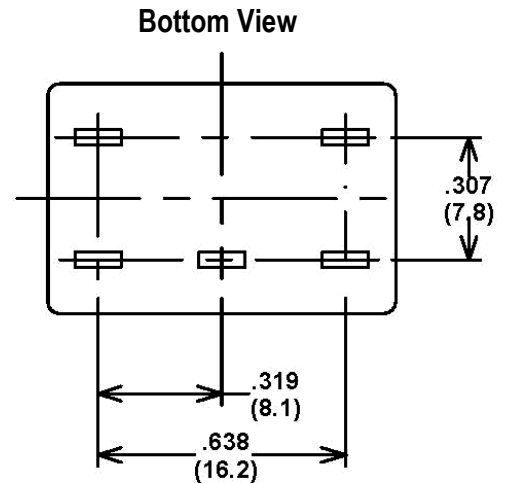
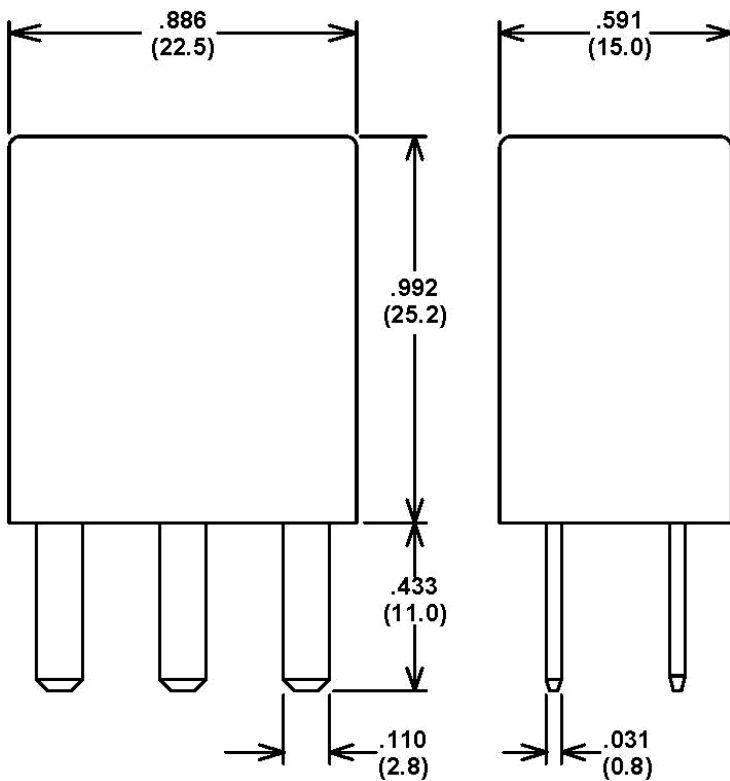
| Coil Voltage (VDC) |      | Resistance (Ohms ± 10%) | Must Operate Voltage Max (VDC) | Must Release Voltage Min. (VDC) | Coil Power (W) |
|--------------------|------|-------------------------|--------------------------------|---------------------------------|----------------|
| Rated              | Max  |                         |                                |                                 |                |
| 12                 | 15.6 | 109                     | 7.2                            | 1.2                             | 1.3 W          |
| 24                 | 31.2 | 436                     | 14.4                           | 2.4                             | 1.3 W          |

**NOTES:**

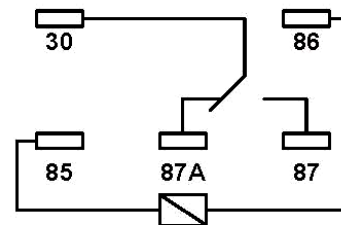
The use of any coil voltage less than the rated voltage will compromise the operation of the relays. Must Operate Voltage is listed for test purposes only and is not to be used as design criteria. Pickup and release voltages are for test purposes only and are not to be used as design criteria. Dimensions are in mm, Inches are listed for reference only.

**DIMENSIONS (mm / inches)**

In compliance with SAE J1744



**Form 1A  
(Bottom View)**



**Form 1C  
(Bottom View)**