

T7C series

5 - 12 Amp Miniature Power PC Board Relay

File E 22575

File LR 48471



Users should thoroughly review the technical data before selecting a product part number. It is recommended that user also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

Features

- Up to 12 amp switching capacity.
- UL Class F (155°C) coil insulation system.
- 1 Form A and 1 Form C contact arrangements.
- Ideal for domestic appliances, HVAC and security.
- Resists high temperature and various chemical solutions.

Contact Data @ 20°C

Arrangements: 1 Form A (SPST-NO) and 1 Form C (SPDT).

Material: Silver-cadmium oxide or silver.

Max. Switching Rate: 300 ops./min. (no load).
30 ops./min. (rated load).

Expected Mechanical Life: 10 million operations.

Expected Electrical Life: 100,000 operations.

Minimum Load: 10mA @ 5VDC

Initial Contact Resistance: Ag: 100 milliohms max. @ 100mA, 6VDC.
AgCdO: 100 milliohms max. @ 1A, 6VDC.

Silver Cadmium Oxide Contact Ratings @ 20°C with relay properly vented. Remove vent nib after soldering and cleaning.

| Contact Arrang. | UL/CSA Ratings | Type | Operations |
|-----------------|----------------------------|--------------|-------------|
| 1 & 5 | 1/3HP NO @ 120VAC | Motor | 6,000** |
| | TV-2 NO @ 120VAC | Tungsten | 25,000** |
| | 5.4LRA /0.9FLA NO @ 240VAC | Motor | 30,000*** |
| | 10LRA /1.5FLA @ 120VAC | Motor | 30,000*** |
| | 12A NO @ 120VAC | Resistive/GP | 100,000* |
| | 34.8LRA /6FLA NO @ 120VAC | Motor | 100,000* |
| | 10A /5A @ 240VAC | Resistive/GP | 100,000** |
| | 10A /5A @ 28VDC | Resistive | 100,000** |
| | 240VA, 240VAC | Pilot Duty | 100,000** |
| | 4LRA /4FLA NO @ 120VAC | Motor | 100,000**** |
| | 4LRA /2FLA NC @ 120VAC | Motor | 100,000**** |
| | 6LRA /6FLA NO @ 120VAC | Motor | 100,000*** |
| | 7A @ 277VAC | Resistive/GP | 100,000 |
| | 10LRA /2.5FLA NO @ 277VAC | Motor | 100,000 |

Consult factory for other ratings.

- * Denotes test at 60°C ambient temperature.
- ** Denotes test at 70°C ambient temperature.
- *** Denotes test at 85°C ambient temperature.
- **** Denotes test at 105°C ambient temperature.

Silver Contact Ratings @ 20°C with relay properly vented. Remove vent nib after soldering and cleaning.

| Contact Arrang. | Ratings | Type | Operations |
|-----------------|-------------|-----------|------------|
| 1 & 5 | 5A @ 120VAC | Resistive | 6,000 |
| | 5A @ 28VDC | Resistive | 6,000 |

Initial Dielectric Strength

Between Open Contacts: 750VAC 50/60 Hz. (1 minute).

Between Coil and Contacts: 1,500VAC 50/60 Hz. (1 minute).

Initial Insulation Resistance

Between Mutually Insulated Elements: 10⁸ ohms min. @ 500VDC.

Coil Data @ 20°C

Voltage: 3 to 48VDC.

Nominal Power: 360 milliwatts.

510 milliwatts for 48VDC coil.

Coil Temperature Rise: 35°C max, at rated coil voltage.

Max. Coil Voltage: 130% of nominal.

Duty Cycle: Continuous.

Coil Data @ 20°C

| Rated Coil Voltage (VDC) | Coil Resistance (Ohms) +10% | Must Operate Voltage (VDC) | Must Release Voltage (VDC) |
|--------------------------|-----------------------------|----------------------------|----------------------------|
| 3 | 25 | 2.25 | 0.15 |
| 5 | 70 | 3.50 | 0.25 |
| 6 | 100 | 4.50 | 0.30 |
| 9 | 225 | 6.75 | 0.45 |
| 12 | 400 | 9.00 | 0.60 |
| 24 | 1,600 | 18.00 | 1.20 |
| 48 | 4,500 | 36.00 | 2.40 |

Operate Data @ 20°C

Operate Time: 10 ms (excluding bounce).

Release Time: 5 ms (excluding bounce).

Environmental Data

Temperature Range:

Storage: -40°C to +130°C.

Operating: -40°C to +85°C.

Vibration, Mechanical: 10 to 55 Hz, 1.5mm double amplitude

Operational: 10 to 55 Hz, 1.5mm double amplitude.

Shock, Mechanical: 100g min.

Operational: 10g min.

Operating Humidity: 45 to 85% RH.

Mechanical Data

Termination: Printed circuit terminals.

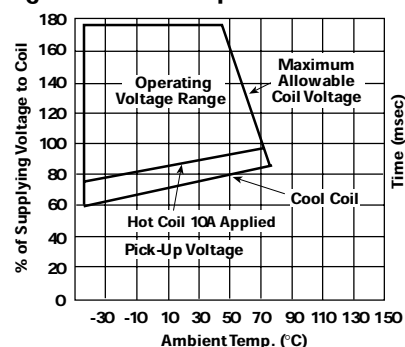
Enclosure (94V-0 Flammability Ratings):

T7CS: Immersion cleanable with knock-off nib.

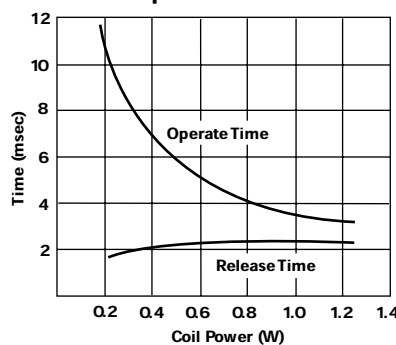
T7CV: Vented, flux-tight, plastic cover with knock-off nib.

Weight: 0.42 oz. (12g).

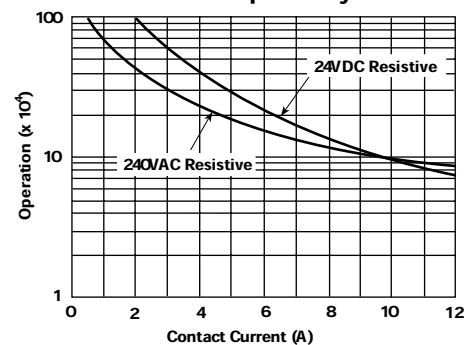
Figure 1 - Coil Temperature Rise



Operate Time



Life Expectancy



Note: Graphical data should not be used as a substitute for specific application verification. To be used for estimates only. Graphical data applicable to model with silver cadmium oxide contacts.

Ordering Information

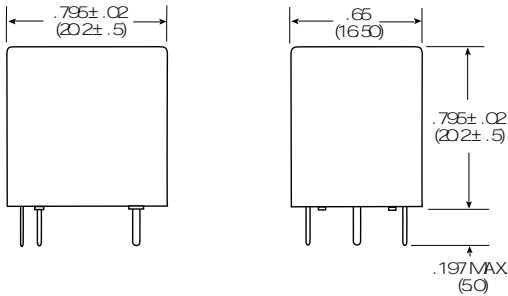
| | | | | | | | | |
|---|--|--|--|------------|----------|----------|----------|------------|
| Typical Part Number ▶ | | | | T7C | V | 5 | D | -24 |
| 1. Basic Series: T7C = Miniature power relay. | | | | | | | | |
| 2. Enclosure: V = Vented (Flux-tight)* S = Immersion cleanable case with knock-off nib. | | | | | | | | |
| 3. Contact Arrangement: 1 = 1 Form A (SPST-NO) 5 = 1 Form C (SPDT) | | | | | | | | |
| 4. Coil Input: D = DC Voltage | | | | | | | | |
| 5. Contact Material: Leave Blank = Silver Cadmium Oxide (12A Max. Rating) 2 = Silver (5A Max. Rating) | | | | | | | | |
| 6. Coil Voltage: 03 = 3VDC 05 = 5VDC 06 = 6VDC 09 = 9VDC 12 = 12VDC 18 = 18VDC 24 = 24VDC 48 = 48VDC | | | | | | | | |

* Not suitable for immersion cleaning processes.

Our authorized distributors are more likely to maintain the following items in stock for immediate delivery.

| | | | |
|-----------|-----------|-----------|-----------|
| T7CV5D-05 | T7CV5D-12 | T7CS5D-05 | T7CS5D-12 |
| T7CV5D-06 | T7CV5D-24 | T7CS5D-06 | T7CS5D-24 |

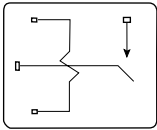
Outline Dimensions



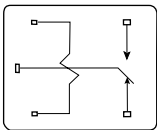
Movable Contact Terminal:
.012 x .039 (0.3 x 1.0)
Stationary Contact Terminals:
.012 x .039 (0.3 x 1.0)
Coil Terminals:
.022 x .022 (.56 x .56)

Wiring Diagrams (Bottom Views)

1 Form A

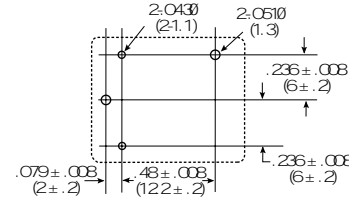


1 Form C

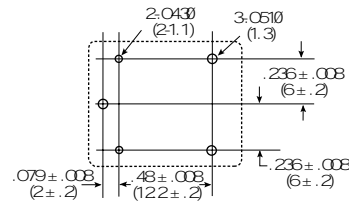


Suggested PC Board Layouts (Bottom Views)

1 Form A

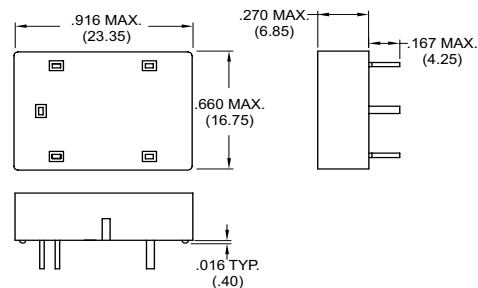


1 Form C



Socket

27E1064 socket is rated 10A @ 300VAC. UL Recognized for US and Canada. Designed to fit same suggested board layout as relay.



Hold-Down Spring

20C430 spring is designed to secure T7C relay in 27E1064 socket.

