

# T7C series

## 5 - 12 Amp Miniature Power PC Board Relay

File E22575

File LR48471

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:** 10<sup>8</sup> 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.

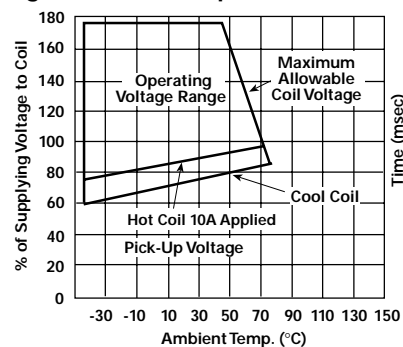
**Enclosure (94V-0 Flammability Ratings):**

**T7CS:** Immersion cleanable with knock-off nib.

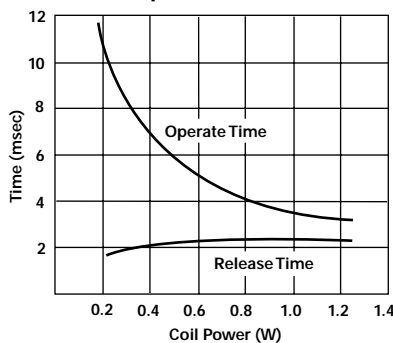
**T7CV:** Vented, flux-tight, plastic cover with knock-off nib.

**Weight:** 0.42 oz. (12g).

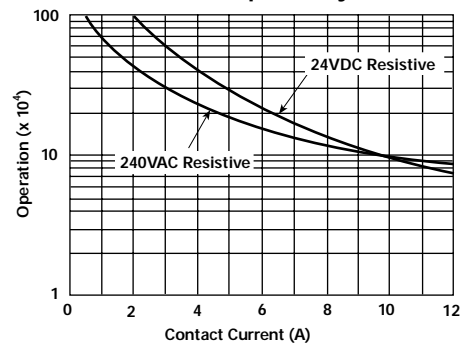
Figure 1 - Coil Temperature Rise



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**

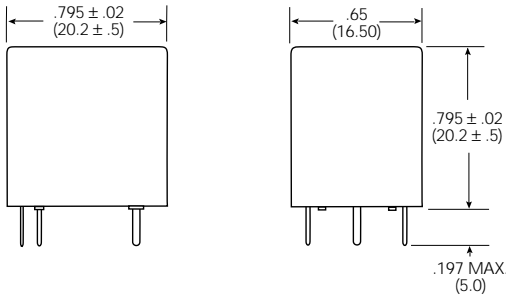
- 1. Basic Series:**  
T7C = Miniature power relay.
- 2. Enclosure:**  
V = Vented (Flux-tight)\*      S = Immersion cleanable case with knock-off nib.
- 3. Contact Arrangement:**  
1 = 1 Form A (SPST-NO)      5 = 1 Form C (SPDT)
- 4. Coil Input:**  
D = DC Voltage
- 5. Contact Material:**  
Leave Blank = 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

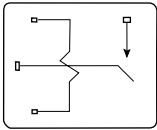
**Outline Dimensions**



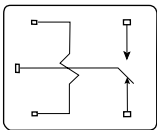
**Movable Contact Terminal:**  
.012 x .039 (0.3 x 1.0)  
**Stationary Contact Terminals:**  
.012 x .039 (0.3 x 1.0)  
**Coil Terminals:**  
.022 x .022 (.56 x .56)

**Wiring Diagrams (Bottom Views)**

**1 Form A**

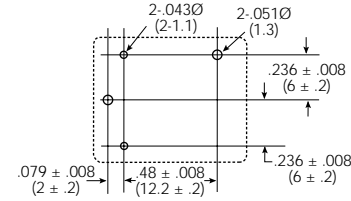


**1 Form C**

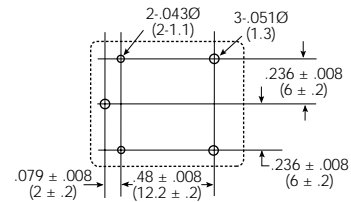


**Suggested PC Board Layouts (Bottom Views)**

**1 Form A**

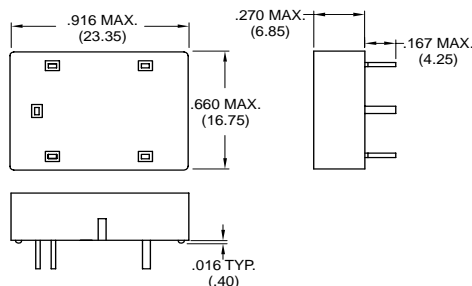


**1 Form C**



**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.

