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: 10^8 ohms min. @500VDC.

Coil Data @ 20°C

Voltage: 3 to 48VDC.
Nominal Power: 360 milliwatts.
510 milliwatts for 48VDC coil.
Coil Temperature Rise: 35C° 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).

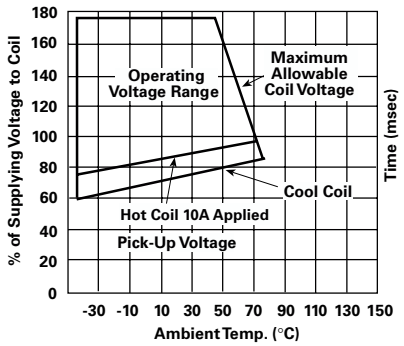
Environmental Data

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.

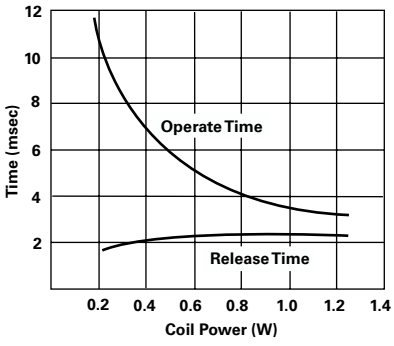
Mechanical Data

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).

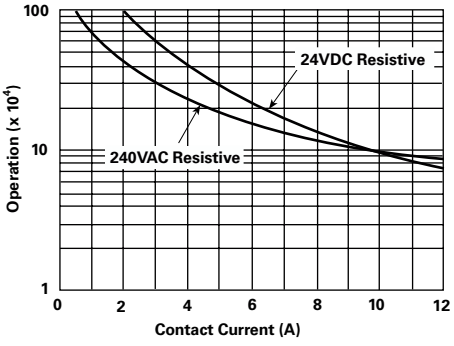
Figure 1 - Coil Temperature Rise



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)

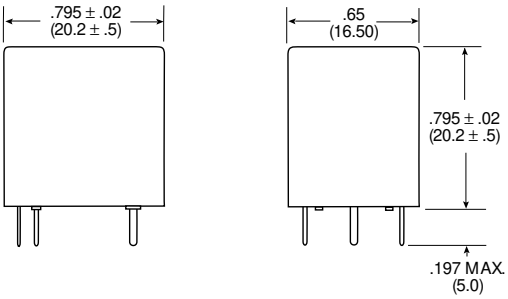
6. Coil Voltage:
03 = 3VDC 05 = 5VDC 06 = 6VDC 09 = 9VDC
12 = 12VDC 18 = 18VDC 24 = 24VDC 48 = 48VDC

* 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

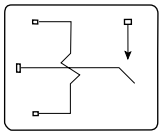
Outline Dimensions



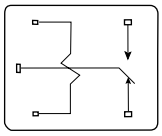
Movable Contact Terminal:
.012 x.039 (0.3 x 1.0)
Stationary Contact Terminals:
.012 x .039 (0.3 x 1.0)
Coil Terminals:
.022 x .022 (.56 x .56)

Wiring Diagrams (Bottom Views)

1 Form A

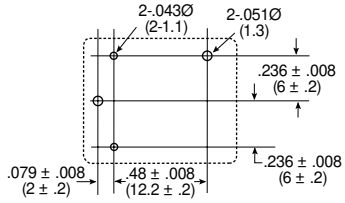


1 Form C

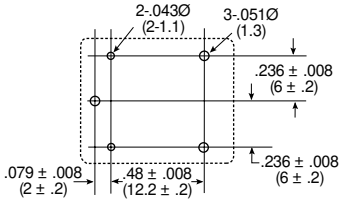


Suggested PC Board Layouts (Bottom Views)

1 Form A

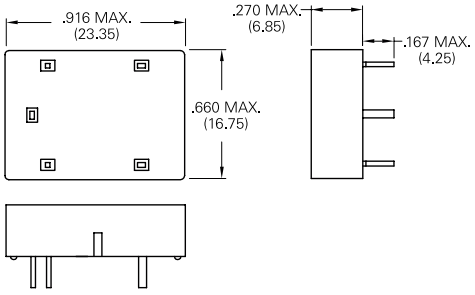


1 Form C



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.