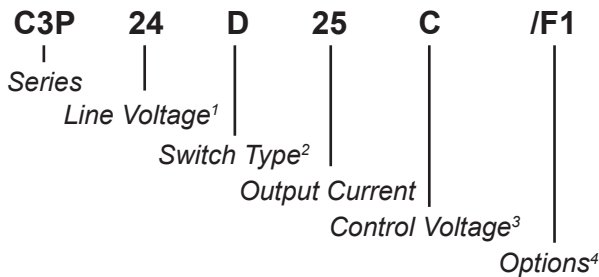


Part Number	Description
C3P24D25	25A, 280 Vac
C3P24D25C	25A, 280 Vac
C3P24D25C/F1	25A, 280 Vac
C3P24D25C/F	25A, 280 Vac

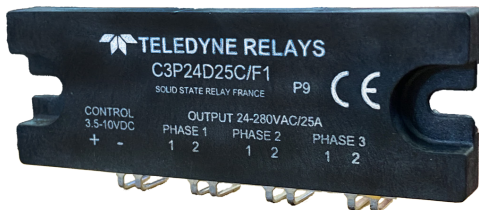


### Part Number Explanation



#### NOTES

- Line Voltage (nominal): 48 = 480 Vac
- Switch Type: D = Zero-cross turn-on
- Control Voltage: C = 3.5-10 Vdc, Blank = 10-30 Vdc
- Options:
  - /F1 = 90° Bent Leads
  - /F = 90° Bent Leads & Thermal Pad



### INPUT (CONTROL) SPECIFICATION

	Min	Max	Units
<b>Control Range</b>			
C3P24D25	10	30	Vdc
C3P24D25C	3.5	10	Vdc
Input Current Range	9	30	mA
Must Turn-Off Voltage		1	Vdc
Input Internal Resistor (Typical)		250	Ω
Input Resistance	(See Figure 1)		
<b>Reverse Voltage Protection</b>			
C3P24D25		30	Vdc
C3P24D25C		10	Vdc

### FEATURES/BENEFITS

- Three-phase solid state relay in a compact SIP package
- High-temperature plastic housing for mechanical ruggedness
- Tight zero-cross window for low EMI
- Exposed ceramic baseplate for reduced thermal resistance

### DESCRIPTION

The Series C3P three-phase AC solid-state relays are designed to control medium amounts of power in three-phase applications. Optical isolation ensures complete protection of the C3P's control circuit from load transients. The C3P's compact plastic housing provides a low-cost alternative to large metallic three-phase contactors. The C3P is designed with heatsinking in mind. The ceramic baseplate provides excellent thermal performance. The relay's tight zero-cross window greatly reduces EMI.

### APPLICATIONS

- Heating control
- HVAC controls
- Light/Lamp control
- Aircraft Control Systems

### CONTROL CHARACTERISTIC

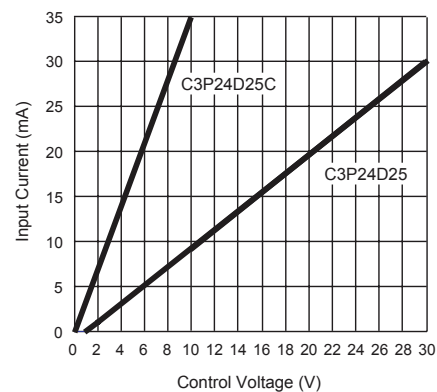


Figure 1

**OUTPUT (LOAD) SPECIFICATION**

	Min	Max	Units
Operating Range	24	280	Vrms
Peak Voltage		600	Vpeak
Load Current Range	.05	25	Arms
(See Figure 2)			
Maximum Surge Current Rating (Non-Repetitive)			
(See Figure 3)			
		250	A
On-State Voltage Drop	0.81 + (0.018 x I)		V
Zero-Cross Window (Typical)	±12		V
Off-State Leakage Current (60 Hz)	1		mA
Turn-On Time	8.3		ms
Turn-Off Time	8.3		ms
Off-State dv/dt	500		V/μs
Operating Frequency Range	47	2000(*)	Hz
I <sup>2</sup> t for Match Fusing (<8.3 ms)	260		A <sup>2</sup> S
Thermal Resistance (One phase) R <sub>thj/c</sub>			
Junction-Case	0.85		°C/W

**ENVIRONMENTAL SPECIFICATION**

	Min	Max	Units
Operating Temperature	-40	100	°C
Storage Temperature		-55	100 °C
Input-Output Isolation	2500		V <sub>i</sub>
Output-Case Isolation	2500		V <sub>i</sub>
Rated Impulse Voltage	2500		V

**BLOCK DIAGRAM**

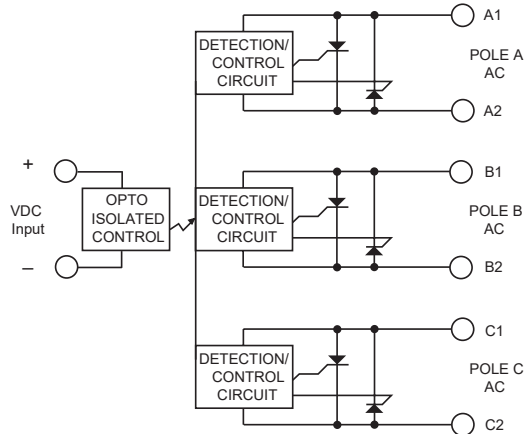


Figure 4

**NOTES**

1. Electrical specifications at 25 °C unless otherwise specified
2. See figure 5 for output protection recommendation
3. For additional or custom options, contact factory

**THERMAL CHARACTERISTICS**

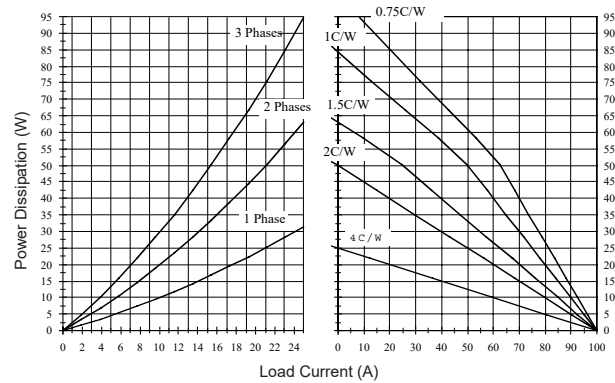


Figure 2

**SURGE CURRENT**

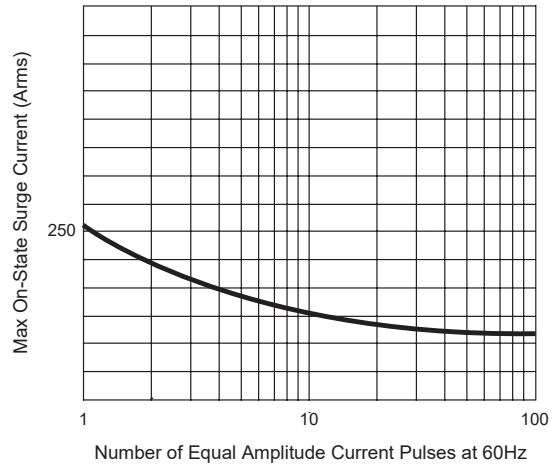


Figure 3

**RECOMMENDED OUTPUT VOLTAGE PROTECTION**

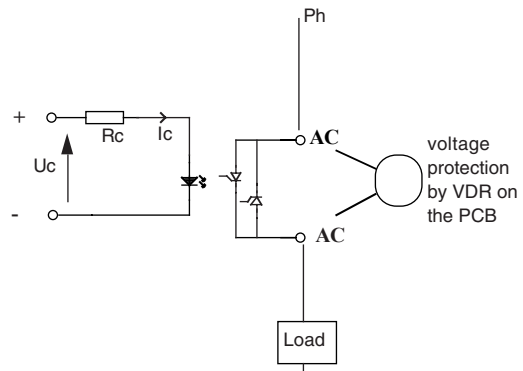


Figure 5

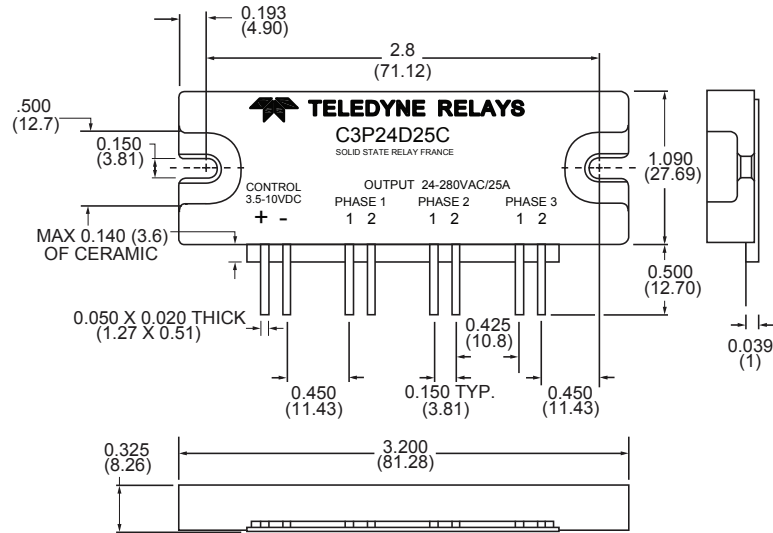
An external Voltage Dependent Resistor (VDR) is recommended in case of voltage spike.

**NOTES**

(\*) Relay built with back-to-back thyristors and high performance optocouplers. Relays have been tested at Teledyne Relays with frequencies higher than 2000 Hz on a resistive load. For other loads the user will have to check functionality in final application.

**MECHANICAL SPECIFICATION**

For P/Ns: C3P24D25 & C3P24D25C



WEIGHT: 1.093 oz. (31g)

For P/Ns: C3P24D25C/F1 & C3P24D25C/F\*

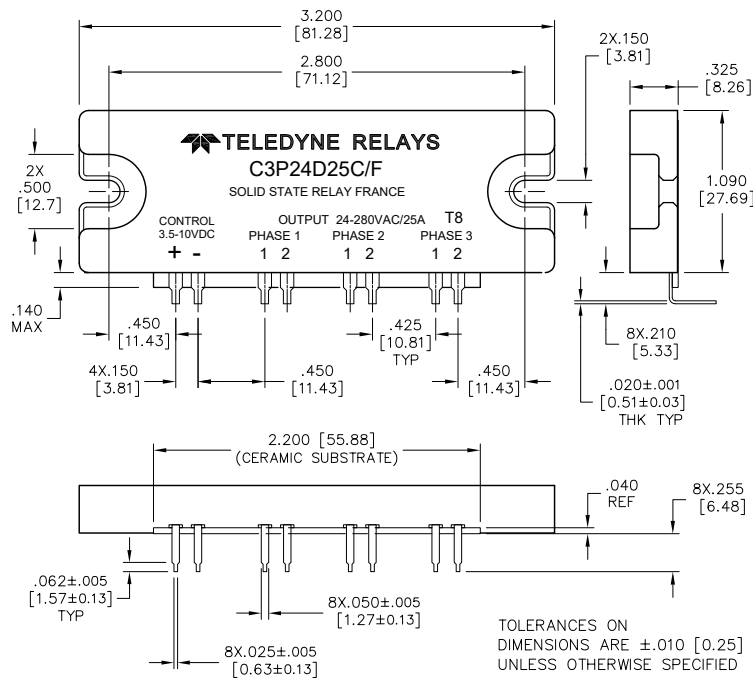


Figure 6 — Dimensions in inches [mm]

\* For C3P24D25C/F, it should be noted that the addition of the thermal pad adds .0065" to the body thickness (NOM .325").