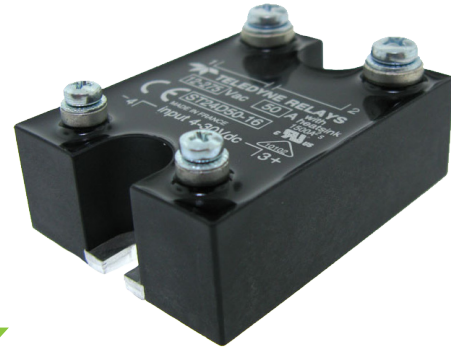


| Part Number | Description |
|-------------|---------------|
| ST24D12 | 12A, 4-30 Vdc |
| ST24D25 | 25A, 4-30 Vdc |
| ST48D50 | 50A, 5-30Vdc |

For RoHS Compliant Contact Factory

NOTES

- 1) Line Voltage (nominal): 24 = 240 Vac; 48 = 480 Vac
- 2) Switch Type: D = Zero-cross turn-on;



MECHANICAL SPECIFICATION

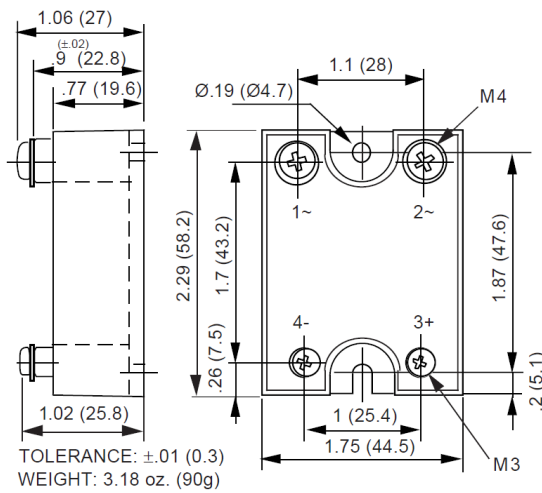


Figure 1 — ST relays, dimensions in inches (mm)

FEATURES/BENEFITS

- Industry standard package
- Internal MOV (certain models)
- Control LED (certain models)
- AC or DC control available
- Excellent thermal performance
- Tight zero-cross window for low EMI
- High immunity to surges

DESCRIPTION

The Series ST single-phase relays are designed for high-power applications. The design incorporates an SCR or triac output. The Series ST relays utilize optical isolation to protect the control from load transients. Control LED is available on certain models. All Series ST relays are zero crossing. Internal MOV is also available on ST24D 25A and 50A models.

APPLICATIONS

- Heating control
- Industrial and process control
- On/Off controls of AC equipment

APPROVALS

All models are UL recognized.
UL File Number: E128555.

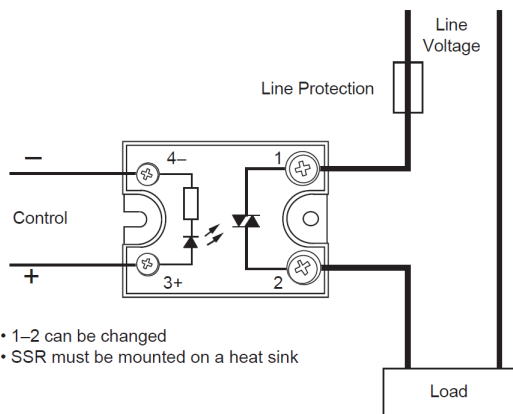


Figure 2 - ST relays

ELECTRICAL SPECIFICATIONS

(+25°C ambient temperature unless otherwise specified)

INPUT (CONTROL) SPECIFICATIONS

| | Input Type | Min | Max | Units |
|-----------------------------------|------------|-----|------|-------|
| Control Range | | | | |
| ST24 | D | 4 | 30 | Vdc |
| ST48 | D | 5 | 30 | Vdc |
| Input Current Range | | | | |
| ST24 | D | 3 | 30 | mA |
| ST48 | D | 5 | 46 | mA |
| Must Turn-Off Voltage | | | | |
| ST | D | | 1 | Vdc |
| Input Resistance (Typical) | | | | |
| ST | D | | 1000 | Ohms |
| Reverse Voltage Protection | | | | |
| S | D | | 30 | V |

OUTPUT (LOAD) SPECIFICATIONS

| | Input Type | Min | Max | Units |
|---|------------|------|------|-------|
| Operating Range | | | | |
| ST24 | | 12 | 280 | Vrms |
| ST48 | | 24 | 600 | Vrms |
| Peak Voltage | | | | |
| ST24 | | | 600 | Vpeak |
| ST48 | | | 1200 | Vpeak |
| Load Current Range (Resistive) | | | | |
| 12A output current | | .005 | 12 | Arms |
| 25A output current | | .005 | 25 | Arms |
| 50A output current | | .005 | 50 | Arms |
| Maximum Surge Current Rating (Non-Replicative) | | | | |
| 12A output current | | | 120 | A |
| 25A output current | | | 240 | A |
| 50A output current | | | 550 | A |
| On-State Voltage Drop | | | | |
| 12A output current | | | 1.3 | V |
| 25A output current | | | 1.2 | V |
| 50A output current | | | 1.45 | V |
| Zero-Cross Window (Typical) | | | | |
| S | D | | ±12 | Vac |
| Off-State Leakage Current (60Hz) | | | | |
| All relays | | | 3 | mA |
| Turn-On Time (60Hz) | | | | |
| ST | D | | 8.3 | ms |
| Off-State dv/dt | | | | |
| All relays | | | 500 | V/μS |

OUTPUT (LOAD) SPECIFICATIONS (continued)

| | Input Type | Min | Max | Units |
|--|------------|-----|------|------------------|
| I²t for Match Fusing (<8.3ms) | | | | |
| 12A output current | | | 72 | A ² S |
| 25A output current | | | 288 | A ² S |
| 50A output current | | | 1500 | A ² S |

ENVIRONMENTAL SPECIFICATIONS

| | Min | Max | Units |
|------------------------------|------|-----|-------|
| Storage Temperature | -40 | 100 | °C |
| Operating Temperature | -40 | 100 | °C |
| Input-Output Isolation | 4000 | | Vrms |
| Output-Case Isolation | | | |
| 12A output current | 2500 | | Vrms |
| 25A output current | 2500 | | Vrms |
| 50A output current | 3300 | | Vrms |

SURGE CURRENT

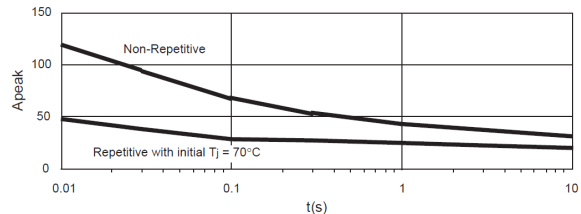


Figure 4a - 12A output current

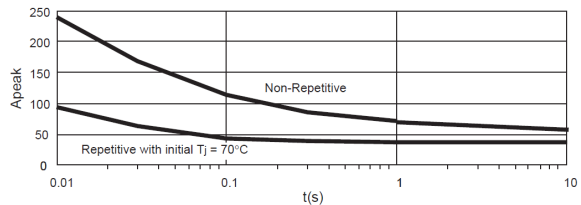


Figure 4b - 25A output current

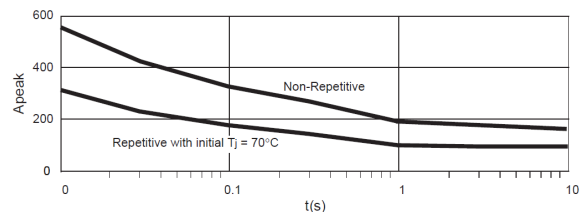


Figure 4c - 50A output current

NOTES:

1. Electrical specifications at 25°C unless otherwise specified.
2. For 800Hz applications, contact factory.
3. For additional/custom options, contact factory.

THERMAL CHARACTERISTICS

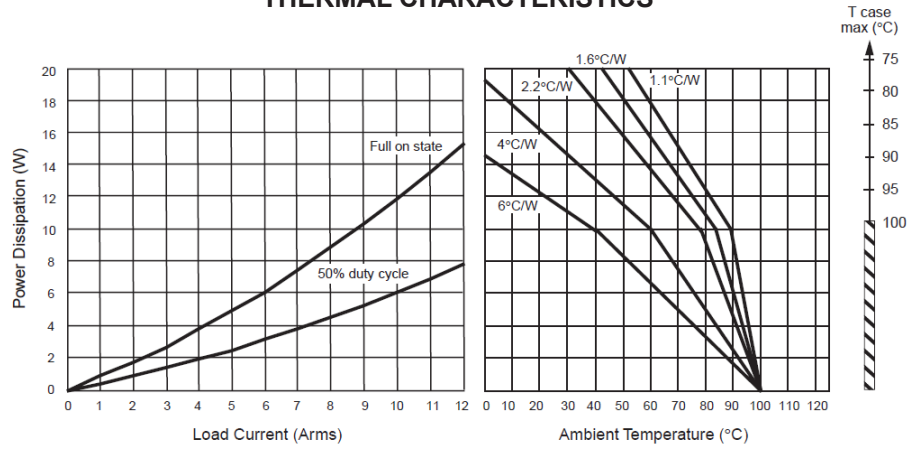


Figure 5a - 12A output current

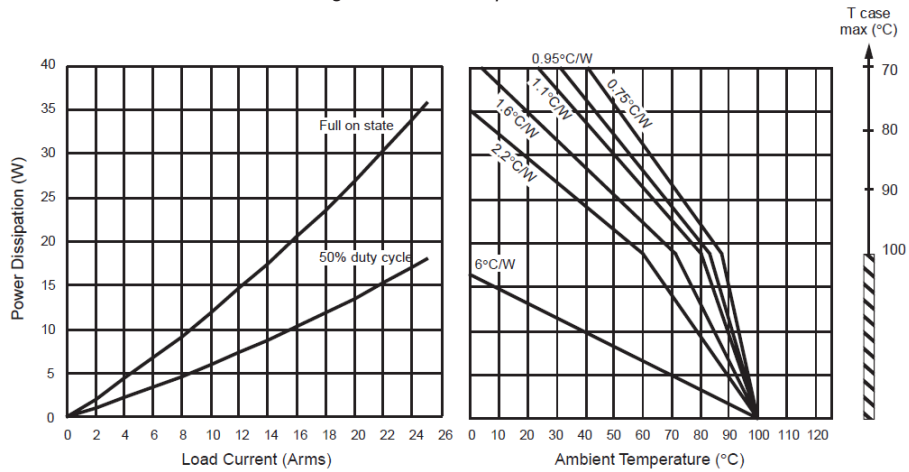


Figure 5b - 25A output current

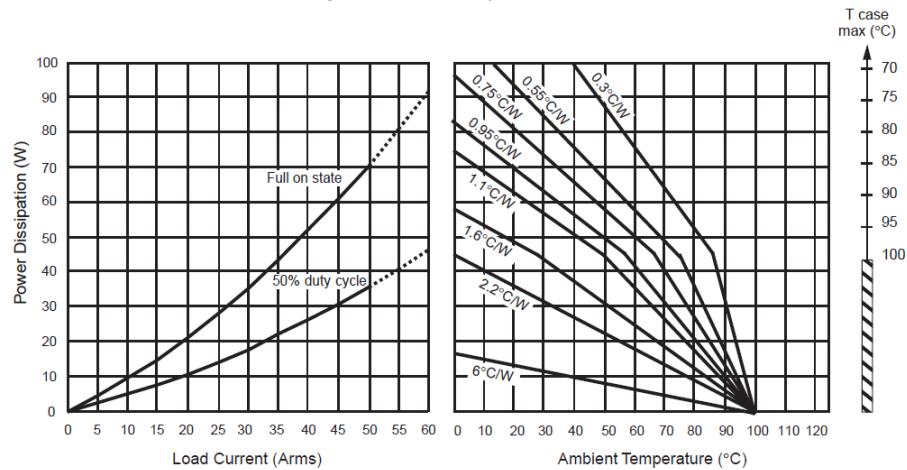


Figure 5c - 50A output current