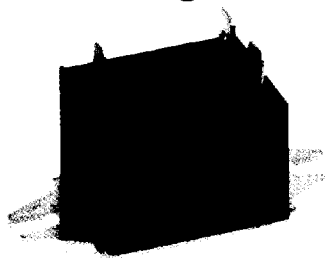


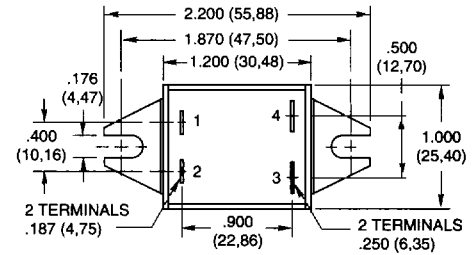
FEATURES

- Mini Puck® Solid State Relay
- Optically Isolated
- Panel Mount; Up to 25 Amp Loads
- Mounts on Hockey Puck Relay Centers, Yet Needs 1/2 the Space
- Screw Terminals or Push-On Tabs
- UL Recognized and CSA Certified
- Lifetime Warranty

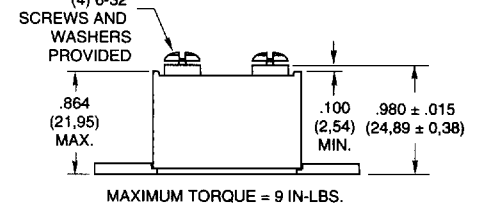
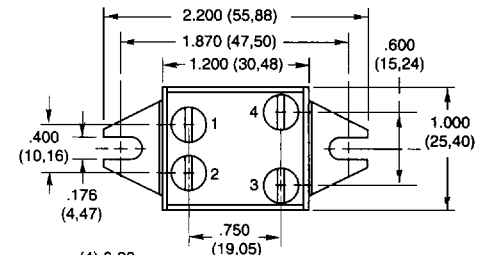
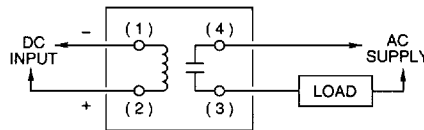
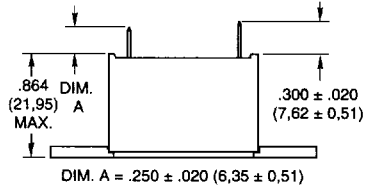
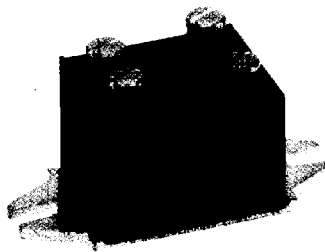
STYLE N 



DIMENSIONS ARE SHOWN IN INCHES AND (MM). ALL TOLERANCES ±.010 (0,25) UNLESS OTHERWISE SPECIFIED



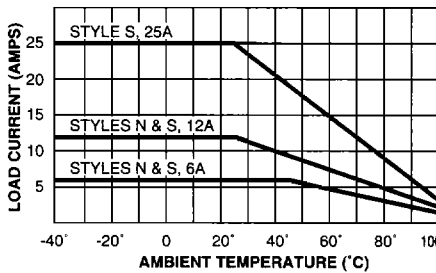
STYLE S 



NOTE: STYLE S IS NOT INTENDED FOR PC BOARD MOUNTING. SCREWING TERMINAL TO A PC BOARD MAY DAMAGE RELAY. CONSULT GRAYHILL.

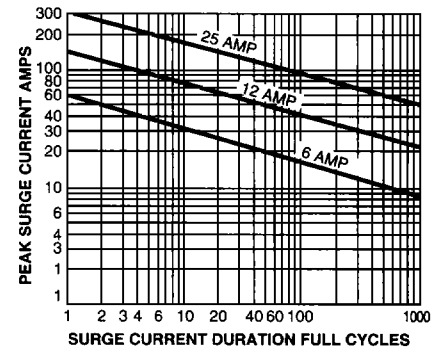
In Figure 1 the chart indicates continuous current to limit the junction temperatures to 100°C. Information is based on the use of a 12" x 12" x 1/8" aluminum heatsink (with silicon grease) in a 2 cubic foot sealed enclosure.

Figure 1: Maximum Continuous Current vs. Ambient Temperature



In Figure 2 the information is based on a supply frequency of 60 Hertz sinusoidal and a resistive or inductive load. Application of maximum surge current may not be repeated until the relay temperature has returned to its steady state value.

Figure 2: Maximum Peak Surge Current vs. Surge Duration



SPECIFICATIONS

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------|-------------------------|--|--|-------|-------------------------|------|-------------------------------|-------|-------------------------|------|--------------------------------|---------|-------------------------|-------|-------------------------------|--------|-------------------------|------|--------------------------------|--------|-------------------------|-------|--------------------------------|--------|-------------------------|-------|
| Output Circuit | | | <p>Static dV/dT: 3000 V/microsecond typical, measured under open circuit conditions. Not to exceed peak blocking voltage.</p> <p>Frequency Range: 25 to 70 Hz</p> <p>On State Voltage Drop: 1.6 V peak maximum</p> <p>Turn-On Time (60 Hz): 8.3 mS maximum</p> <p>Turn-Off Time (60 Hz): 8.3 mS maximum</p> | <p>Capacitance (Input to Output): 6 pF typical</p> <p>Vibration: 20g's peak or .06" double amplitude 10-2000 Hz per MIL-STD-202, Method 204, Condition D</p> <p>Mechanical Shock: 1500 g's 0.5 mS half-sine per MIL-STD-202, Method 213, Condition F</p> <p>Operating Temperature Range: -40° to +100°C</p> <p>Storage Temperature Range: -40°C to +125°C</p> | | | | | | | | | | | | | | | | | | | | | | | |
| Nominal Line Voltage (Vac): | 120 | 240 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Load Voltage Range (Vac): | 24-140 | 24-280 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Minimum Peak Blocking Voltage (Volts): | 400 | 600 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maximum Zero Voltage Offset (Volts) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6A & 12A Styles: | 8 | 18 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25A Styles: | 8 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. Off State Leakage Current 60 Hz (mA rms): | 6 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max Load Current (Amps rms): | 6 | 12 | | | 25 | | | | | | | | | | | | | | | | | | | | | | |
| Load Current Range (Amps rms): See Figure 1. | .075-6 | .1-12 | | | .1-25 | | | | | | | | | | | | | | | | | | | | | | |
| Max. 1 Cycle Surge Current (Amps Peak): See Figure 2. | 60 | 150 | 300 | | | | | | | | | | | | | | | | | | | | | | | | |
| Typical Power Dissipation (Watts/Amp): | 1.1 | 1.2 | 1.2 | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermal Resistance (J to C in °C/Watt): | 4.2 | 2.4 | 1.75 | | | | | | | | | | | | | | | | | | | | | | | | |
| Minimum I²t For Fusing (Amp²Sec at 8.3 mS): | 26.5 | 90 | 500 | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <p>Input Circuit</p> <p>Control Voltage Range (Vdc): 3-30 6-30</p> <p>Control Current Range (mA)* 7.0-16.0 6.0-10.0</p> <p>Ave. Input Impedance (Ohms)* See below</p> <p>Min. Drop Out Voltage (Vdc): 1.0 1.0</p> <p>Max. Reverse Control Voltage (Vdc): 5 5</p> | <p>Materials and Finishes</p> <p>PC Terminals: Copper wire, Lead-Tin plated</p> <p>Case: Solvent resistant thermoplastic, Polyester, meets UL94V-0</p> <p>Potting: High thermal conductive epoxy</p> <p>Heat Sink: Aluminum, except 25A unit which is copper, tin plated.</p> | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <p>General Characteristics</p> <p>Insulation Resistance (Input to Output; Input or Output to Case): 10⁹ ohms minimum</p> <p>Dielectric Strength (Input to Output): 3000 Vrms minimum (Input or Output to Case): 3000 Vrms min.</p> | <p>UL Recognition and CSA Certification</p> <p>UL file number E58632 and CSA file number LR38763 apply to all relays shown here.</p> <p>All specifications apply over the operation temperature range.</p> | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <p>* The standard N and S styles have circuits on the input which regulate the control current at high voltage levels. Typical Control Current and Input Impedance values are:</p> <p>Modules with 3-30 Vdc Input</p> <table border="1"> <tr> <td>@ 3 Vdc Typical Input Current</td> <td>7 ma</td> <td>Average Input Impedance</td> <td>428Ω</td> </tr> <tr> <td>@ 5 Vdc Typical Input Current</td> <td>10 ma</td> <td>Average Input Impedance</td> <td>500Ω</td> </tr> <tr> <td>@ 24 Vdc Typical Input Current</td> <td>13.5 ma</td> <td>Average Input Impedance</td> <td>1777Ω</td> </tr> </table> <p>Modules with 6-30 Vdc Input</p> <table border="1"> <tr> <td>@ 6 Vdc Typical Input Current</td> <td>6.6 MA</td> <td>Average Input Impedance</td> <td>909Ω</td> </tr> <tr> <td>@ 12 Vdc Typical Input Current</td> <td>7.4 MA</td> <td>Average Input Impedance</td> <td>1621Ω</td> </tr> <tr> <td>@ 24 Vdc Typical Input Current</td> <td>8.7 MA</td> <td>Average Input Impedance</td> <td>2750Ω</td> </tr> </table> | @ 3 Vdc Typical Input Current | 7 ma | Average Input Impedance | 428Ω | @ 5 Vdc Typical Input Current | 10 ma | Average Input Impedance | 500Ω | @ 24 Vdc Typical Input Current | 13.5 ma | Average Input Impedance | 1777Ω | @ 6 Vdc Typical Input Current | 6.6 MA | Average Input Impedance | 909Ω | @ 12 Vdc Typical Input Current | 7.4 MA | Average Input Impedance | 1621Ω | @ 24 Vdc Typical Input Current | 8.7 MA | Average Input Impedance | 2750Ω |
| @ 3 Vdc Typical Input Current | 7 ma | Average Input Impedance | 428Ω | | | | | | | | | | | | | | | | | | | | | | | | |
| @ 5 Vdc Typical Input Current | 10 ma | Average Input Impedance | 500Ω | | | | | | | | | | | | | | | | | | | | | | | | |
| @ 24 Vdc Typical Input Current | 13.5 ma | Average Input Impedance | 1777Ω | | | | | | | | | | | | | | | | | | | | | | | | |
| @ 6 Vdc Typical Input Current | 6.6 MA | Average Input Impedance | 909Ω | | | | | | | | | | | | | | | | | | | | | | | | |
| @ 12 Vdc Typical Input Current | 7.4 MA | Average Input Impedance | 1621Ω | | | | | | | | | | | | | | | | | | | | | | | | |
| @ 24 Vdc Typical Input Current | 8.7 MA | Average Input Impedance | 2750Ω | | | | | | | | | | | | | | | | | | | | | | | | |

ORDERING INFORMATION

| Nom. Load Vac | Max. Load Amps | Control Voltage Vdc | Grayhill Part Number |
|----------------|----------------|---------------------|----------------------|
| STYLE N | | | |
| 120 | 6A | 3-30 | 70S2-04-B-06-N |
| 120 | 6A | 6-30 | 70S2-05-B-06-N |
| 120 | 12A | 3-30 | 70S2-04-B-12-N |
| 120 | 12A | 6-30 | 70S2-05-B-12-N |
| 240 | 6A | 3-30 | 70S2-04-C-06-N |
| 240 | 6A | 6-30 | 70S2-05-C-06-N |
| 240 | 12A | 3-30 | 70S2-04-C-12-N |
| 240 | 12A | 6-30 | 70S2-05-C-12-N |

| Nom. Load Vac | Max. Load Amps | Control Voltage Vdc | Grayhill Part Number |
|----------------|----------------|---------------------|----------------------|
| STYLE S | | | |
| 120 | 6A | 3-30 | 70S2-04-B-06-S |
| 120 | 6A | 6-30 | 70S2-05-B-06-S |
| 120 | 12A | 3-30 | 70S2-04-B-12-S |
| 120 | 12A | 6-30 | 70S2-05-B-12-S |
| 120 | 25A | 3-30 | 70S2-03-B-25-S |
| 240 | 6A | 3-30 | 70S2-04-C-06-S |
| 240 | 6A | 6-30 | 70S2-05-C-06-S |
| 240 | 12A | 3-30 | 70S2-04-C-12-S |
| 240 | 12A | 6-30 | 70S2-05-C-12-S |
| 240 | 25A | 3-30 | 70S2-03-C-25-S |

Available from your local Grayhill Electronic and Industrial Distributors. For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.

These styles are also available in DC to DC solid state relays, see page I-11.

Solid State Heavy