POWER-GATE™ Solid-State Devices
Uni-Directional Relay
Precision Circuit Breaker

POWER-GATE solid state uni-directional relays can be programmed to behave as precision, high-current circuit breakers. An integrated microcontroller is factory programmed causing the device to open or close by constantly monitoring battery voltage, load current, internal temperature, and timing cues. Should the load current exceed a programmed threshold indicating an overcurrent or shorted condition downstream, the device will open like a circuit breaker and de-power the load. The device can be manually or automatically reset depending on the user’s preference. Default firmware differentiates between momentary in-rush conditions and actual shorts alleviating false-trips. LED diagnostics provide user feedback indicating the reason a device has opened the circuit.

POWER-GATE is truly a Perfect Switch capable of responding exactly how the user requires, all in a single high current module capable of handling all high-current and low-current accessories.

Devices are strictly DC, and have no mechanical contacts or moving parts which means no arcing or degradation in performance over time.

By melding the worlds of electronic and mechanical design, our internationally patented large MOSFET arrays provide smart, reliable, unidirectional switching of high current.

FEATURES and BENEFITS:
• Low voltage, high current capability
• Internationally patented arrayed MOSFET technology
• MIL-STD-461E Compliant
• Optional sleep mode for ultra-low current draw
• 99.9% efficiency at max. current
• Fully Encapsulated solid state design
• Light weight
• Dramatically smaller than conventional devices
• Market-leading, ultra-low on-state resistance
• No heat sinks or airflow required
• Quik-turn capability
• Recommended by top battery manufacturers

APPLIED ON-ENDS:
An arrayed MOSFET SSR designed to switch and control DC. POWER-GATE is factory programmable to behave as follows:
• Manually triggered relay
• Low Voltage Disconnect (fully autonomous)
• Combination of manual and automatic response
• Precision Circuit Breaker

Common uses include military, aeronautic, automotive, marine, industrial machinery, photovoltaic, and fleet utility.

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Made in USA

A solid state uni-directional relay can be used to switch on/off high current loads like motors, inverters, lights, and communications equipment. Unlike mechanical relays, POWER-GATE relays don’t arc, require minimal trigger current, and are highly reliable in dust and vibration laden environments.
MECHANICAL SPECIFICATIONS:

- 5/16-18 x 0.250" machined brass connection posts
- 6-32 brass ground post with provided ring terminal
- 10-pin Molex control harness
- Vinyl post insulators
- Weight: approximately 14 ounces (0.396kg)

PACKAGE CHARACTERISTICS:

- Vacuum-formed Acrylonitrile Butadiene Styrene (ABS)
- Black 2-part, flame retardant filled epoxy - electronics grade
- Three integrated LED’s for visual status and diagnostics
- Four .250" integrated mounting holes
- 5/16-18 x .500" machined brass connection posts
- 6-32 brass ground post with provided ring terminal
- 10-pin Molex control harness
- Vinyl post insulators
- Weight: approximately 14 ounces (0.396kg)

Quick Specs:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Supply Voltage</td>
<td>6.5 to 18 VDC (12 volt device)</td>
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<tr>
<td></td>
<td>6.5 to 36 VDC (24 volt device)</td>
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<tr>
<td>Ambient Temperature</td>
<td>-40 to +105 °C</td>
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<tr>
<td>Trigger Voltage</td>
<td>3.3 to 36 VDC</td>
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<tr>
<td>Maximum Continuous Load Current</td>
<td>50 to 300 amps DC</td>
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<tr>
<td>Input-to-Output Voltage Drop</td>
<td>30 to 50 mVDC Typical</td>
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<tr>
<td>Trigger Current</td>
<td>2.8 mA (12 volt device)</td>
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<tr>
<td></td>
<td>4.2 mA (24 volt device)</td>
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<tr>
<td>Operating Current</td>
<td>32.3 mA (12 volt device, trigger at 10 VDC)</td>
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<tr>
<td></td>
<td>33.5 mA (24 volt device, trigger at 10 VDC)</td>
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<tr>
<td>Quiescent Current Sleep Mode</td>
<td>650 μA (12 volt device)</td>
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<tr>
<td></td>
<td>900 μA (24 volt device)</td>
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<tr>
<td>Internal Overtemp Shutdown</td>
<td>135 °C</td>
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Current Flow

Device can be controlled manually, or automatically with the on-board processor responding to high or low voltage cues, or responding to changes in current or temperature. If the device senses a shorted load condition, it will behave like an ultra-fast circuit breaker, disrupting current flow until the short is corrected and the breaker is reset.

NOTES:

For complete specifications, please see device data sheet.