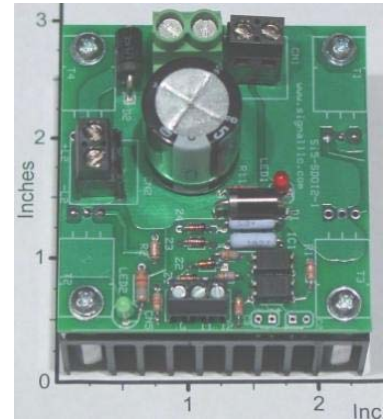




Si5SDOI2-50V-2x16A, Dual, 50V 2x16A Solenoid Driver with Optically Isolated Control Inputs and with Integrated Heat Sink

The **Si5SDOI2-50V-2x16A** is a Dual, 50V 2x16A Solenoid Driver with an integrated heat sink that uses two independent optically isolated digital control voltages $V_{I1,G}$ and $V_{I2,G}$ (0 to 15V) to turn two load-currents on or off. This board requires a single 6V to 50V DC power source (unregulated and unfiltered) at a 0A to 40A current range to operate normally with a wide range of inductive loads (coils or Solenoids). The digital control inputs are zener-diode protected and optically isolated from the power source V_p (with a breakdown voltage of 1000V) and each requires only **2mA** input current at $V_{In,G}=5V$ to fully turn on a load current. Each load current is **off** (zero) when its corresponding control voltage $V_{In,G}$ is: $0 < V_{In,G} < 2.5V$ and the load current is **on** (max.) when $2.5V < V_{In,G} < 15V$. Snubbing circuits and filter capacitors are included to suppress inductive switching transients. Two onboard LEDs (Red and Green) are used to monitor the load-voltages. A small (2.3"x2.4"x0.95") finned integrated heat sink is included with mounting hardware (as shown on the photograph) to operate at 2x16A or 1600W power levels. Higher power-levels (50V, 2x20A or 2000W) can be achieved with more efficient heat-sinks. Please click on this link and read the [Board Mounting Instructions and Heat Sink Selection Guide](#). Typical applications are: Dual Inductive-Plunger Driver, SPDT Solid State Relay, etc. This board can be configured to perform efficiently in many customized applications.



Specification and Application for **Si5SDOI2-50V-2x16A**

- **Typical Operating Temperature at 2x16A:** 45°C with the Metal Heat-Ring Bolted to a small (2.3"x2.4"x0.95") finned Aluminum Heat-Sink, while exposed to air at 25°C (as shown on photograph).
- **Control- Inputs I1, I2:** These digital control inputs are optically isolated from the power source V_p (Isolation Breakdown Voltage of 1000V). In addition, each control input (**I1** or **I2**) is zener-diode protected and requires only **2mA** input current at $V_{In,G}=5V$ to turn the load-current fully on. A load-current is **off** (zero) when $0 < V_{In,G} < 2.5V$ and the load current is **on** (max.) when $2.5V < V_{In,G} < 15V$.
- **Source-Voltage Requirement: V_p (from pin +P to pin -P):** 6V to 50V unregulated and unfiltered DC.
- **Load-Voltage, V_{L1} or V_{L2} :** 0V when $0 < V_{In,G} < 2.5V$ and V_p when $2.5V < V_{In,G} < 15V$.
- **Load-Current, i_{L1} or i_{L2} :** 0A when $0 < V_{In,G} < 2.5V$ and **16A max** when $2.5V < V_{In,G} < 15V$.
- **Load Isolation:** The Load or coil must be isolated from the source voltage (V_p).
- **Power-Conversion Efficiency:** Approximately 98.5% at full-load (50V and 2x16A).



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- **Switching Frequency:** 0 to 2kHz (or min. switching period is 500 μ Sec).
- **Load-Voltage Indicators and Board Protection:** Two onboard LEDs (red) are used to monitor the load voltages.

About the Voltage Requirement: The Si5 will work with any DC motor or load in the 6 V to 50 V voltage range. In addition, the power filters are included on this board, consequently, only unfiltered DC input power is required in most applications.

A Typical Application of the **Si5SDOI2-50V-2x16A**

In this dual application, two high-current (16A at 50V) inductive loads (coils or solenoids) are turned on and off respectively by the optically isolated Digital Control Voltages $V_{I1,G}$ and $V_{I2,G}$. A load current is **off** (zero) when its corresponding control voltage $V_{In,G}$ is: $0 < V_{In,G} < 2.5V$ and the load current is **on** (max.) when $2.5V < V_{In,G} < 15V$.

