VMIVME-2131

64-bit High Current Source/Sink Driver Board

- 500 mA continuous source only or source/sink current (fan cooled)
- 64 bits of high current outputs
- ±3.5 A peak output current (100 ms, 10 percent DC)
- Output transient protected
- Thermal shutdown protection
- High breakdown voltage (35 V minimum)
- 8-, 16-, or 32-bit transfers
- Built-in-Test logic for fault isolation
- Software compatible with VMIVME-2120
- Compatible with Intelligent I/O Controllers
- High reliability DIN-type output connectors
- Outputs are jumper-selectable for source/high-Z or source/sink operations
- Double Eurocard form factor
- Front panel Fail LED

FUNCTIONAL CHARACTERISTICS

Compatibility: VMEbus specification-compatible double height form factor

Output Connector Type: Dual 64-pin connectors - DIN 41612

Output Organization: Eight output ports, eight bits wide. Addressable to any address within short supervisory or short nonprivileged I/O map. Control and Status Register (CSR) address is independently selectable. Each byte can be jumper selected for source/High-Z operations or source/sink operations.

Address Modifier Codes: Jumper-selectable for short supervisory or short nonprivileged I/O access. Factory configured for short supervisory I/O access.

Addressing Scheme: Eight ports individually addressable on 8-, 16-, or 32-bit boundaries. The separate board address decoder for the Control and Status Register allows addresses for hardware control to be grouped for improved software efficiency.

Built-in-Test: This product supports off-line and real-time fault detection and isolation. The off-line mode is enabled by executing a write to the CSR to set the Test Mode Bit. All outputs are OFF with the Test Mode enabled.

Fail LED: A Fail LED is provided that is illuminated at power up and extinguished under program control upon a successful diagnostic execution.

ELECTRICAL CHARACTERISTICS

Output Breakdown Voltage: \( V_S +2.0 \text{ V} \)

Output Current: 500 mA continuous source and/or sink

Peak Output Current: 3.5 A maximum (100 ms, 10 percent DC)

Output Circuit Protection: Thermal shutdown protection

Output Leakage Current: 500 \( \mu \text{A} \) over 0 to 33 V

Output Saturation Voltage: 2 V maximum at 2 A

Output Voltage Drop: 2 V maximum at 2 A and 31 V output

Output Driver Supply Voltage \( V_S \): 8.0 to 33 V

### Ordering Options

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<th>A</th>
<th>B</th>
<th>C</th>
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| A = Manufacturing Option      |
| X = Letter Called Out by Customer |
| 0 = Assigned by Manufacturing* |
| 1 = Assigned by Manufacturing* |
| 9 = Reserved                  |

| B = Data Polarity             |
| 0 = Negative True             |
| 1 = Positive True             |

| C = 0 (Option reserved for future use) |

*A = Manufacturing Option

**X = Letter Called Out by Customer

*0 = Assigned by Manufacturing

1. Additional specifications are provided on page 2.

Specifications subject to change without notice.
PHYSICAL/ENVIRONMENTAL

**Temperature Range:** 0 to 55 °C, operating
-20 to 85 °C, storage

**Relative Humidity Range:** 20 to 80 percent, noncondensing

**Cooling:** Forced convection

**Power Requirements:** +5 V at 5.1 A maximum
External power (8 to 35 V) must be supplied to each output driver used through the front panel connector. The no load supply current is 35 mA per driver.

**MTBF:** 373,400 hours (217°F)

APPLICATIONS —

- Relay drivers
- Lamp drivers
- Solenoid drivers
- Hammer drivers
- Stepper motor drivers
- Triac drivers
- LED drivers
- High current, high-voltage drivers
- Fiber-optic LED drivers

APPLICATION AND CONFIGURATION GUIDES — The following Application and Configuration Guides are available to assist the user in configuring systems based on VMIC’s products:

<table>
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<tr>
<td>Digital Input Board Application Guide</td>
<td>825-000000-000</td>
</tr>
<tr>
<td>Change-of-State Board Application Guide</td>
<td>825-000000-002</td>
</tr>
<tr>
<td>Digital I/O (with Built-in-Test) Product Line Description</td>
<td>825-000000-003</td>
</tr>
<tr>
<td>Synchro/Resolver (Built-in-Test) Subsystem Configuration Guide</td>
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<tr>
<td>Analog I/O Products (with Built-in-Test) Configuration Guide</td>
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<tr>
<td>Connector and I/O Cable Application Guide</td>
<td>825-000000-006</td>
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<tr>
<td>Data Acquisition Noise Reduction Application Guide</td>
<td>825-000000-026</td>
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from the VMEbus data lines will result in a High-Z output state while a logic one from the VMEbus data lines will source current to the output. For a negative true board, the opposite is true. The output will source current when a logic zero is written from the VMEbus data lines.

When configuring a positive true board in the current source/sink mode, a logic zero input from the VMEbus data lines will place a low voltage at the output and thus the board will sink current. Writing a logic one on the VMEbus data lines will place a high voltage at the output and the board will source current. For a negative true board, placing a logic zero out the VMEbus data lines will cause the output to source current, while placing a logic one onto the VMEbus data lines will cause the output to sink current.

TRADEMARKS

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Figure 1. VMIVME-2131 Functional Block Diagram
VMIVME-2131
OUTPUT DRIVER STAGE
UDN-2935Z
HIGH-CURRENT BIPOLAR HALF-BRIDGE MOTOR DRIVER

FEATURES

- 3.5 A Peak Output
- 35 V Output Breakdown
- Output Transient Suppression
- TTL, CMOS, PMOS, NMOS Compatible Inputs
- High-Speed Chopper (to 100 kHz)
- Low Standby Current (10 mA)
- To 220-Style Package
- Internal Thermal Shutdown

UDN-2935Z Functional Block Diagram

LOGIC TRUTH TABLE

| DATA REGISTER INPUT, $V_2$ | JUMPER SELECT INPUT, $V_5$ | OUTPUT $V_4$
|---------------------------|----------------------------|-----------------
| LOW                       | LOW                        | HIGH           |
| LOW                       | HIGH                       | HIGH           |
| HIGH                      | LOW                        | LOW            |
| HIGH                      | HIGH                       | HIGH-Z         |