

**TECHNICAL DATA  
DATA SHEET 782, REV. B**

**HERMETIC HALF-BRIDGE MOSFET/IGBT GATE Driver**

**Absolute Maximum Rating:**

Absolute Maximum Rating indicate sustained limits beyond which damage to the device may occur. All voltage parameters are absolute voltages referenced to COM. The thermal resistance is specified under board mounted and still air conditions.

| PARAMETER                                | SYMBOL     | MIN            | TYP | MAX            | UNIT          |
|--|------------|----------------|-----|----------------|---------------|
| High Side Floating Supply Voltage        | $V_B$      | -0.3           | -   | 625            | V             |
| High Side Floating Supply Offset Voltage | $V_S$      | $V_B - 25$     | -   | $V_B + 0.3$    | V             |
| Supply Voltage                           | $V_{CC}$   | -0.3           | -   | 25             | V             |
| Logic Supply Voltage                     | $V_{DD}$   | -0.3           | -   | $V_{SS} + 25$  | V             |
| Logic Ground                             | $V_{SS}$   | $V_{CC} - 25$  | -   | $V_{CC} + 0.3$ | V             |
| Logic Input Voltage (HIN, LIN, SD)       | $V_{IN}$   | $V_{SS} - 0.3$ | -   | $V_{DD} + 0.3$ | V             |
| Thermal Resistance                       | $R_{thJA}$ | -              | -   | 85             | $^{\circ}C/W$ |
| Junction Temperature                     | $T_j$      | -55            | -   | 150            | $^{\circ}C$   |
| Lead Soldering Temperature, 10 sec       | $T_L$      | -              | -   | 250            | $^{\circ}C$   |

**Recommended Operating Conditions**

| PARAMETER                          | SYMBOL   | MIN          | TYP | MAX           | UNIT |
|------------------------------------|----------|--------------|-----|---------------|------|
| High Side Floating Supply Voltage  | $V_B$    | $V_S + 10$   | -   | $V_S + 20$    | V    |
| High Side Floating Supply Voltage  | $V_S$    | -5           | -   | 600           | V    |
| Supply Voltage                     | $V_{CC}$ | 10           | -   | 20            | V    |
| Logic Supply Voltage               | $V_{DD}$ | $V_{SS} + 5$ | -   | $V_{SS} + 25$ | V    |
| Logic Ground                       | $V_{SS}$ | - 5          | -   | 5             | V    |
| Logic Input Voltage (HIN, LIN, SD) | $V_{IN}$ | $V_{SS}$     | -   | $V_{DD}$      | V    |

**Dynamic Characteristics**

$V_{CC}=V_{BS} = 15V, V_S = V_{SS}, C_L = 1 \text{ nF}$

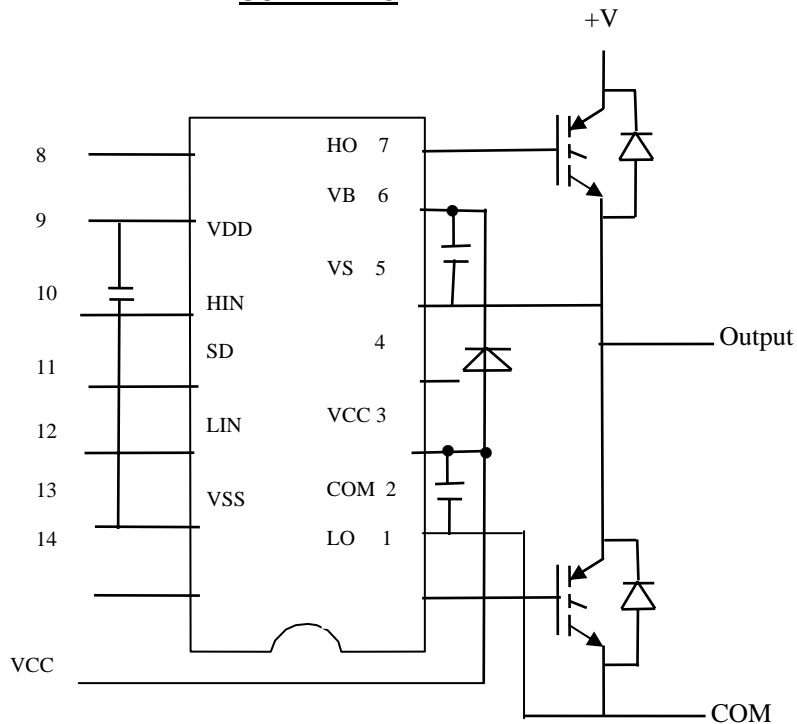
| PARAMETER                           | TEST CONDITIONS   | SYMBOL    | MIN | TYP | MAX | UNIT |
|-------------------------------------|---|-----------|-----|-----|-----|------|
| Turn-On Propagation Delay           | $V_{IN} = 0 \text{ \& } 5V$<br>$V_S = 0 \text{ to } 600V$ | $t_{on}$  | -   | 120 | 150 | nsec |
| Turn-Off Propagation Delay          |   | $t_{off}$ | -   | 94  | 125 | nsec |
| Turn-On Rise Time                   |   | $t_r$     | -   | 25  | 35  | nsec |
| Turn-Off Fall Time                  |   | $t_f$     | -   | 17  | 25  | nsec |
| Delay Matching, HS & LS Turn-On/Off | -   | MT        | -   | -   | 10  | nsec |

**Static Characteristics**

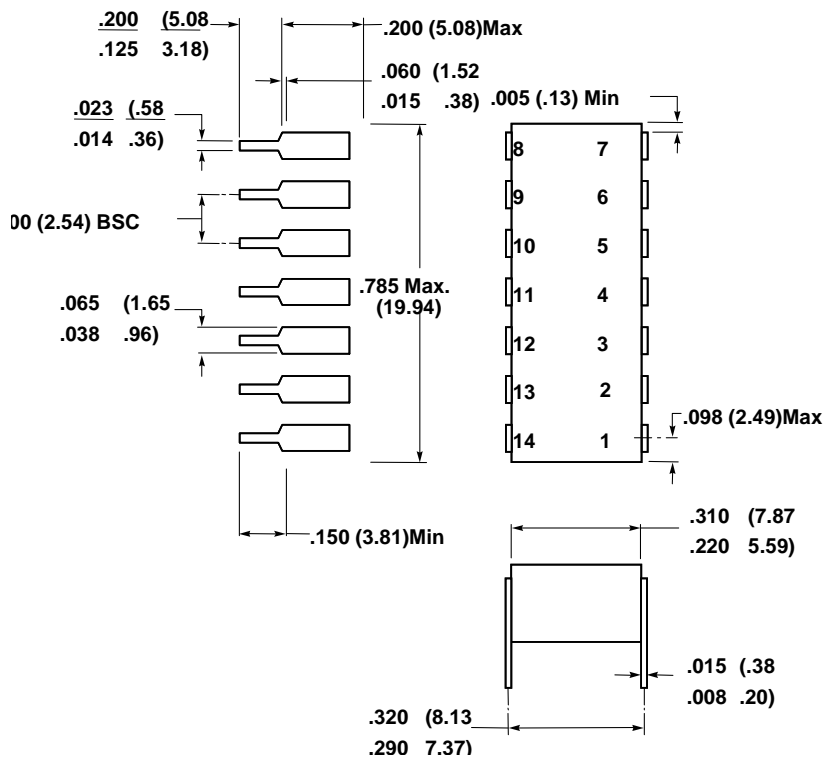
$V_{CC} = V_{DD} = V_{BS} = 15V, V_S = V_{SS}$

| PARAMETER                                     | TEST CONDITIONS  | SYMBOL                      | MIN | TYP | MAX  | UNIT |
|---|--|-----------------------------|-----|-----|------|------|
| Logic "1" Input Voltage (Output =HI)          | -  | $V_{IH}$                    | 9.5 | -   | -    | V    |
| Logic "0" Input Voltage (Output = LO)         | -  | $V_{IL}$                    | -   | -   | 6.0  | V    |
| Quiescent $V_{CC}$ Supply Current             | $V_{IN} = 0V, \text{ or } V_{DD}$                                | $I_{QCC}$                   | -   | -   | 0.34 | mA   |
| Quiescent $V_{DD}$ Supply Current             | $V_{IN} = 0V, \text{ or } V_{DD}$                                | $I_{QDD}$                   | -   | -   | 0.03 | mA   |
| Quiescent $V_{BS}$ Supply Current             | $V_{IN} = 0V, \text{ or } V_{DD}$                                | $I_{QBS}$                   | -   | -   | 0.23 | mA   |
| Supply Under Voltage Positive Going Threshold | -  | $V_{CCIUV+}$<br>$V_{BSIU+}$ | 7.5 | 8.6 | 9.7  | V    |
| Supply Under Voltage Negative Going Threshold | -  | $V_{CCIUV-}$<br>$V_{BSIU-}$ | 7.0 | 8.2 | 9.4  | V    |
| Output High Short Circuit Pulsed Current      | $V_{OUT} = 0V,$<br>$V_{IN} = V_{DD},$<br>$t_p < 10\mu\text{sec}$ | $I_{O+}$                    | 2.0 | 2.5 | -    | A    |
| Output Low Short Circuit Pulsed Current       | $V_{OUT} = 0V,$<br>$V_{IN} = 15V,$<br>$t_p < 10\mu\text{sec}$    | $I_{O-}$                    | 2.0 | 2.5 | -    | A    |

**SCHEMATIC**



**PACKAGE LAYOUT**



**TECHNICAL DATA  
DATA SHEET 782, REV. B****DISCLAIMER:**

1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the Sensitron Semiconductor sales department for the latest version of the datasheet(s).

2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.

3- In no event shall Sensitron Semiconductor be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). Sensitron Semiconductor assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.

4- In no event shall Sensitron Semiconductor be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.

5- No license is granted by the datasheet(s) under any patents or other rights of any third party or Sensitron Semiconductor.

6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of Sensitron Semiconductor.

7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations.