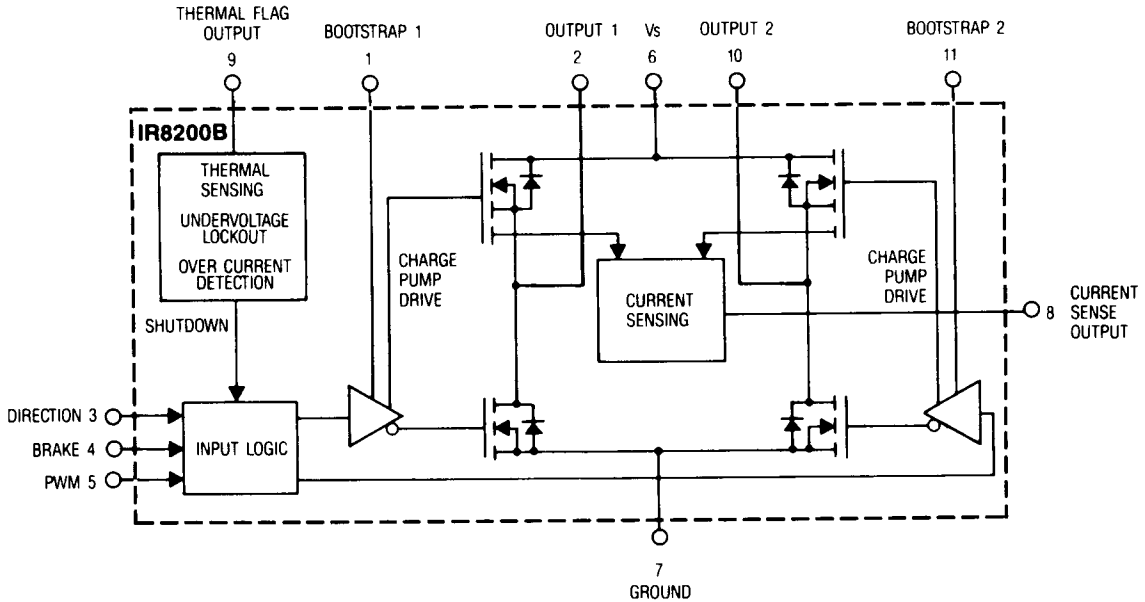


**3A, 55V DMOS H-BRIDGE**

**IR8200B**



**FEATURES**

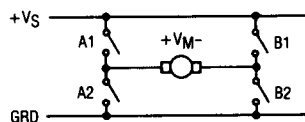
- High Efficiency H-Bridge DMOS Output Stage
  - High Current Output — 3A Continuous.
  - 6A Peak.
  - up to 55 Volts Operation.
  - Low  $R_{ds(on)}$  — 0.3 ohm per switch.
- Lossless HEXSense(TM) Current Sensing
  - 380  $\mu$ A/A Analog Feedback.
- Thermal Flag Output at 145°C.
- Rugged Internal Clamp Diodes.
  - $T_{rr} = 100$  ns.
- On-board Protection.
  - Thermal Shutdown at 170°C.
  - Undervoltage Lockout at 11V.
  - Overcurrent Shutdown above 6A.
  - Deadband of 60ns to avoid Shoot-Through.
- CMOS Control.
  - Low Quiescent Current — 20 mA.
  - User Selectable Drivers.
  - Charge Pump or Bootstrap.
- User Friendly Inputs.
  - TTL and CMOS Compatible.
  - On-Chip Decoding of Motor Oriented Commands.
  - PWM, Direction and Brake.
- High Power package.
  - 11 pin Single In-line. (1.5 $\phi$  Jc)

| PART NUMBER | V <sub>IN</sub> (V) | V <sub>OUT</sub> (V) | I <sub>O</sub> CONT (A) | I <sub>O</sub> PEAK (A) | CASE OUTLINE (1) | NOTES | CASE STYLE             |
|-------------|---------------------|----------------------|-------------------------|-------------------------|------------------|-------|------------------------|
| IR8200B     | 11-55               | 11-55                | 3                       | 6                       | P1               |       | 11 PIN SIP PLASTIC<br> |

**COMPARISON BETWEEN LOCKED ANTI PHASE & SIGN/MAGNITUDE PWM CONTROL AS RELATED TO THE IR8200**

| CHARACTERISTIC                    | LOCKED ANTI PHASE                                  | SIGN/MAGNITUDE   |
|-----------------------------------|--|--|
| Output ripple voltage             | Relatively high                                    | Relatively low   |
| Input ripple current              | Relatively high                                    | Relatively low   |
| Control discontinuity around zero | No   | Yes (generally)  |
| Current Sensing                   | Sense signal is chopped. May need "reconstruction" | Sense signal always represents load current, (except for regeneration) |
| Diode commutation losses          | Low  | Lower  |
| Switching losses                  | Low  | More than 50% lower for same frequency                                 |
| Load power regeneration           | Yes  | Yes  |

**TWO CONTROL MODES FOR THE IR8200B**



|                          | LOCKED ANTI PHASE  | SIGN/MAGNITUDE                                       |
|--------------------------|--|--|
| DEVICE SEQUENCE          | <br>BOTH SIDES TOGGLED   | <br>ONE SIDE TOGGLED                                 |
| VOLTAGE SEEN BY THE LOAD |  |  |
| REVERSAL                 | +V <sub>M</sub> IF D > 0.5<br>-V <sub>M</sub> IF D < 0.5<br>D = DUTY CYCLE | +V <sub>M</sub> IF B2 ON<br>-V <sub>M</sub> IF A2 ON |

(1) For case outline drawing see page 144.

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