

80V/2.5A Peak, High Frequency Full Bridge FET Driver

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Features

- Drives N-Channel FET Full Bridge Including High Side Chop Capability
- Bootstrap Supply Max Voltage to 95V_{DC}
- Drives 1000pF Load at 1MHz in Free Air at 50°C with Rise and Fall Times of 10ns (Typ)
- User-Programmable Dead Time
- Charge-Pump and Bootstrap Maintain Upper Bias Supplies
- DIS (Disable) Pin Pulls Gates Low
- Input Logic Thresholds Compatible with 5V to 15V Logic Levels
- Very Low Power Consumption

Applications

- Medium/Large Voice Coil Motors
- Full Bridge Power Supplies
- Class D Audio Power Amplifiers
- High Performance Motor Controls
- Noise Cancellation Systems
- Battery Powered Vehicles
- Peripherals
- U.P.S.

Description

The HIP4080 is a high frequency, medium voltage Full Bridge N-Channel FET driver IC, available in 20 lead plastic SOIC and DIP packages. The HIP4080 includes an input comparator, used to facilitate the "hysteresis" and PWM modes of operation. Its HEN (high enable) lead can force current to freewheel in the bottom two external power MOSFETs, maintaining the upper power MOSFETs off. Since it can switch at frequencies up to 1MHz, the HIP4080 is well suited for driving Voice Coil Motors, switching amplifiers in class D high-frequency switching audio amplifiers and power supplies.

HIP4080 can also drive medium voltage brush motors, and two HIP4080s can be used to drive high performance stepper motors, since the short minimum "on-time" can provide fine micro-stepping capability.

Short propagation delays of approximately 55ns maximizes control loop crossover frequencies and dead-times which can be adjusted to near zero to minimize distortion, resulting in precise control of the driven load.

The similar HIP4081 IC allows independent control of all 4 FETs in an Full Bridge configuration.

See also, Application Note AN9324 for the HIP4080.

Similar part, HIP4080A, includes under voltage circuitry which doesn't require the circuitry shown in Figure 30 of this data sheet.

Ordering Information

PART NUMBER	TEMP. RANGE (°C)	PACKAGE	PKG. NO.
HIP4080IP	-40 to 85	20 Lead PDIP	E20.3
HIP4080IB	-40 to 85	20 Lead SOIC	M20.3

Pinout

HIP4080 (PDIP, SOIC)
TOP VIEW

