



EAGLE HARBOR TECHNOLOGIES

Integrated Power Module Capabilities



A turnkey, solid-state switching solution

Key Features

- High current, solid-state switching at high frequency
- Designed for hard switching or inductive load driving
- Easily integrated into larger systems
- Precision, low jitter gate drive produces clean switching waveforms
- Robust switching into a wide range of loads
- Parallel operation allows for even higher power switching



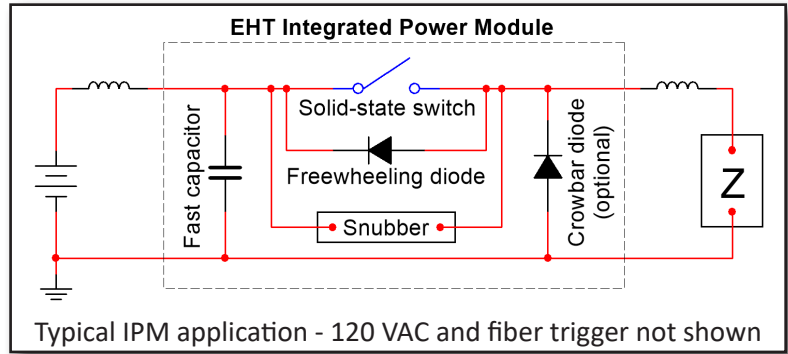
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TECHNOLOGIES**

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EHT Integrated Power Module

Originally designed to simplify precision magnetic control for the fusion science community, the EHT Integrated Power Module (IPM) is capable of hard switching high currents into resistive loads and driving crowbarred inductive loads. The EHT IPM includes fiber optically isolated gate drive, solid-state switches, freewheeling diodes, fast capacitors, snubbers (optional), and crowbar diodes (optional) in a compact, easy to install package. Below are sample specifications.

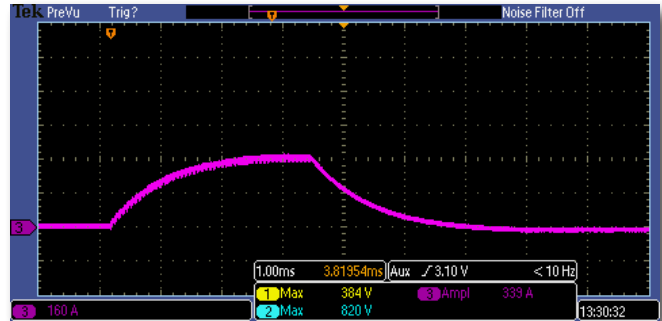
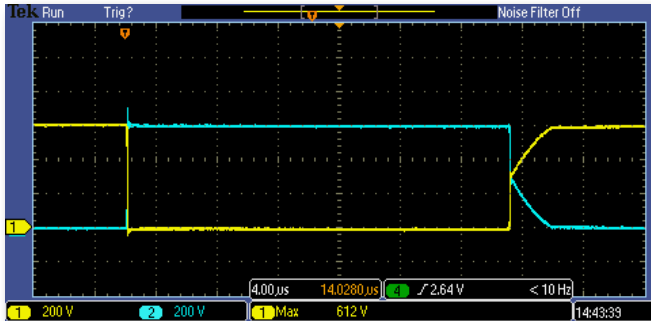


Below are sample specifications.

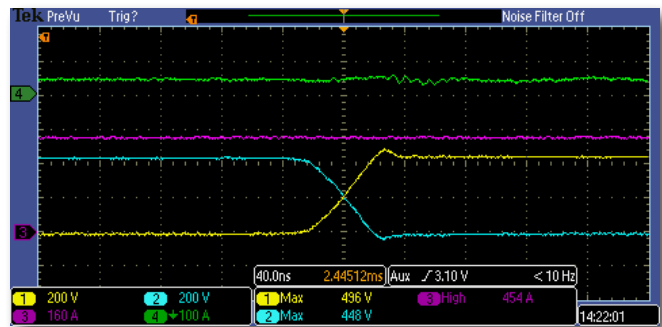
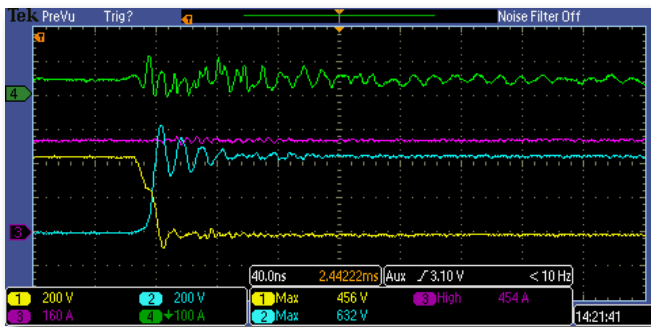
- Absolute maximum voltage: 1200 V
- Recommended operating voltage: 800 V
- Single pulse current: 10 kA
- Burst example: 2.5 kA at 100 kHz and 50% duty cycle for 10 ms
- Continuous current: 500 A at 30 kHz and 50% duty cycle (air cooled)
- Significant power increase with silicon carbide components and water cooling
- All control voltages are produced from 120 VAC that is isolated to 5 kV (10 pF).

Please contact EHT to discuss your application's specific needs.

Sample Waveforms



Left: V_{ce} (yellow) and V_{Load} (blue) hard switching 800 A, 600 V at 30 kHz with 25 μ s pulse width. Right: Current (340 A at peak) in 85 μ H inductor. PWM with 350 V at 30 kHz with 30 μ s pulse width (100 pulses).



Fast switch transition time demonstration: V_{ce} (yellow) and V_{Load} (blue) - 20 ns fall time (left) and 40 ns rise time (right). 400 V, 440 A, 30 kHz with 30 μ s pulse width