



BISD

BHARAT INSTITUTE FOR
SKILL DEVELOPMENT

HIGH PERFORMANCE GATE DRIVER KIT

Precision Control for Advanced Power Electronics

An isolated gate driver solution engineered
for IGBT & MOSFETs in demanding industrial,
automotive and renewable energy applications.



1200V / 100A
IGBT RATED



2.5A PEAK
OUTPUT CURRENT



5000Vrms
OPTICAL ISOLATION



500ns
SWITCHING SPEED



UVLO PROTECTION
ACTIVE UNDER VOLTAGE LOCKOUT



BUILT FOR FUTURE TECHNOLOGIES



EV POWERTRAINS



SOLAR INVERTERS



INDUSTRIAL DRIVES



ROBOTICS &
AUTOMATION



RENEWABLE
ENERGY



R&D &
EDUCATION

EMPOWERING INNOVATION. DRIVING TOMORROW.



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LEARN • BUILD • INNOVATE

ARCHITECTURE OVERVIEW

Engineered for reliable isolation, precise switching and robust protection in high power electronic systems.



PWM INPUT INTERFACE

Industry standard connectors for accurate and reliable PWM signal input.



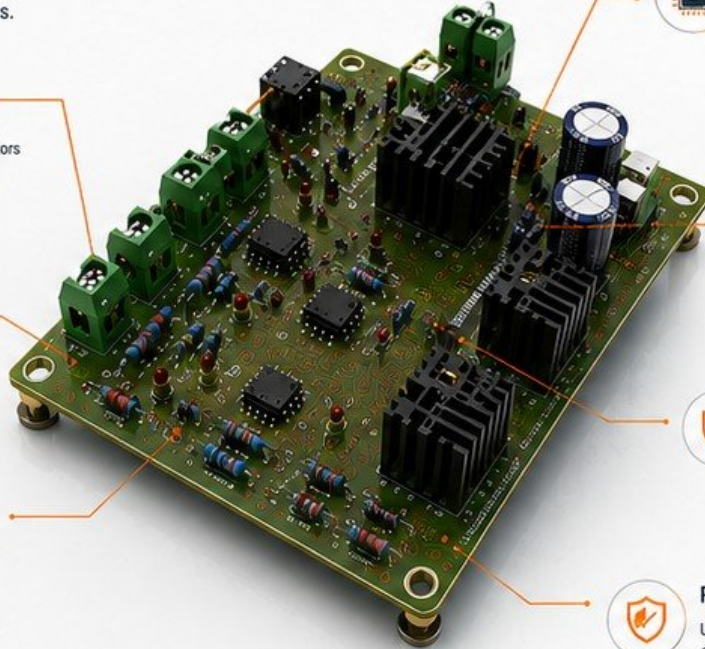
ISOLATION STAGE

5000Vrms galvanic isolation using high performance optocouplers for maximum safety.



MCU / DSP INTERFACE

Flexible interface for custom control, diagnostics and advanced features.



GATE DRIVER ICs

High speed, high current driver ICs for efficient and reliable switching.



2.5A PEAK OUTPUT STAGE

Capable of driving high power IGBTs & MOSFETs with ease.



INDEPENDENT DRIVER CHANNELS (4 Nos.)

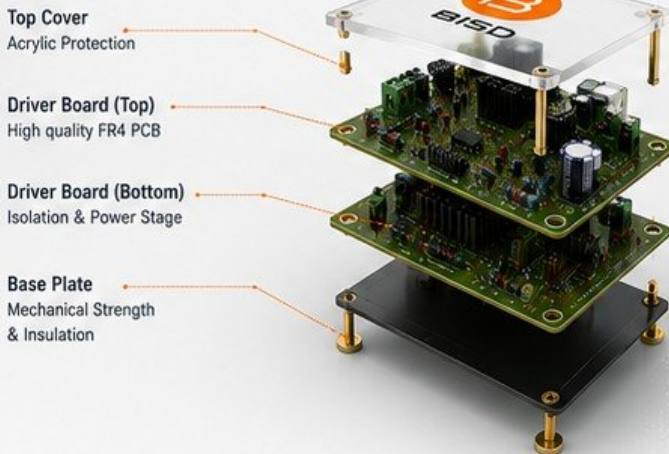
Fully independent isolated channels for driving 4 power switches.



PROTECTION CIRCUITS

UVLO, Short Circuit & Over Current protection for safe and reliable operation.

EXPLODED 3D VIEW



Top Cover
Acrylic Protection

Driver Board (Top)
High quality FR4 PCB

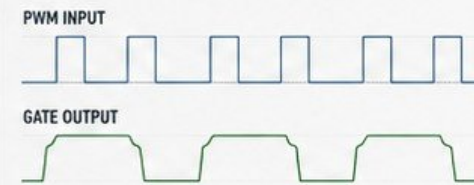
Driver Board (Bottom)
Isolation & Power Stage

Base Plate
Mechanical Strength & Insulation

SIGNAL FLOW & WORKING PRINCIPLE



TYPICAL PWM TO GATE OUTPUT WAVEFORM



- Clean & precise gate pulses
- Optimized rise & fall times
- Built-in dead-time control
- High noise immunity

KEY SPECIFICATIONS

Input Supply 15 - 30V DC	Switching Speed 500ns	UVLO Protection Yes
Output Current (Peak) 2.5A	Operating Temperature -40°C to +100°C	Short Circuit Protection Yes
Isolation Voltage 5000Vrms	Driver Channels 4 Independent	RoHS Compliant Yes

ADVANCED PROTECTION

UVLO Protection
Protects against low voltage conditions

Over Current Protection
Prevents damage due to excessive current

Short Circuit Protection
Instant shutdown in case of short circuit

Thermal Protection
Ensures safe operation under high temperature

BUILT FOR INNOVATION. DESIGNED FOR IMPACT.

A reliable platform for learning, prototyping and developing next generation power electronic solutions.

EV Powertrains

Solar Inverters

Industrial Drives

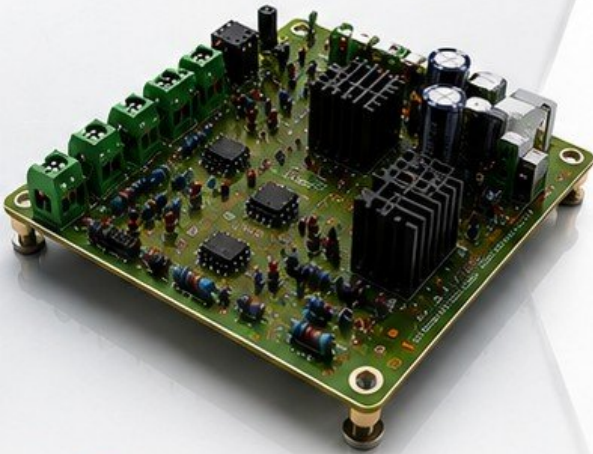
Robotics

Energy Storage

R&D & Education

POWERING INNOVATION ACROSS INDUSTRIES

The BISD Gate Driver Kit is engineered for high efficiency and reliability in modern power electronic systems.



Designed for students, engineers and innovators to build practical skills for tomorrow's technologies.



EV POWERTRAINS
Efficient motor control for Electric Vehicles



SOLAR INVERTERS
Optimized power conversion for solar energy systems



R&D & PROTOTYPING
Ideal platform for power electronics research and development



WHERE BISD GATE DRIVER KIT IS USED



INDUSTRIAL DRIVES
Reliable control for VFDs and industrial motor applications



BATTERY SYSTEMS
High performance BMS and energy storage applications



ROBOTICS & AUTOMATION
Precise motion control for advanced automation and robotics



LEARNING OUTCOMES

Build skills that power your future



PWM CONTROL
Understand PWM generation, dead-time and modulation techniques.



IGBT / MOSFET SWITCHING
Learn high-speed switching principles and gate driving techniques.



ISOLATION CONCEPTS
Explore optical isolation and its importance in power electronics.



GATE PULSE ANALYSIS
Analyze gate signals using oscilloscope and measurement tools.



HARDWARE DEBUGGING
Develop troubleshooting skills for real-world power circuits.



POWER ELECTRONICS FUNDAMENTALS
Strengthen core concepts of power conversion and protection.



Learn. Build. Innovate.
From classroom to real-world power electronics.

COMPATIBLE WITH WIDE RANGE OF SYSTEMS

- ✓ IGBT Modules
- ✓ MOSFET Power Stages
- ✓ 3-Phase Inverters
- ✓ DC-DC Converters
- ✓ AC Drives
- ✓ Custom Power Circuits



PERFECT FOR



Engineering Students



Technical Training Institutes



R&D Engineers



Innovation Labs



Skill Development Programs

**Real Hardware.
Real Learning.
Real Impact.**



High Efficiency Switching



Advanced Protection



Optical Isolation



Industrial Grade Reliability



Designed for Learning.
Built for Performance.





EXPERIENCE. PRACTICE. MASTER POWER ELECTRONICS.

A complete hands-on learning ecosystem that bridges theory and practice using the BISD Gate Driver Kit.

THE BISD LEARNING WORKFLOW

1 LEARN



Understand power electronics concepts and gate driver theory.

2 SIMULATE



Simulate circuits & PWM signals using industry standard software.

3 BUILD



Implement and test circuits using the BISD Gate Driver Kit.

4 MEASURE



Capture waveforms, analyze signals and measure performance.

5 ANALYZE



Interpret results, optimize performance and validate design.

6 APPLY



Apply knowledge to real-world projects and innovations.



PRACTICAL LEARNING

Gain real-world skills with industry relevant experiments.



REAL-TIME ANALYSIS

Observe, measure and understand switching behavior in real-time.



INDUSTRY READY

Build the expertise demanded in EV, solar, industrial automation and more.

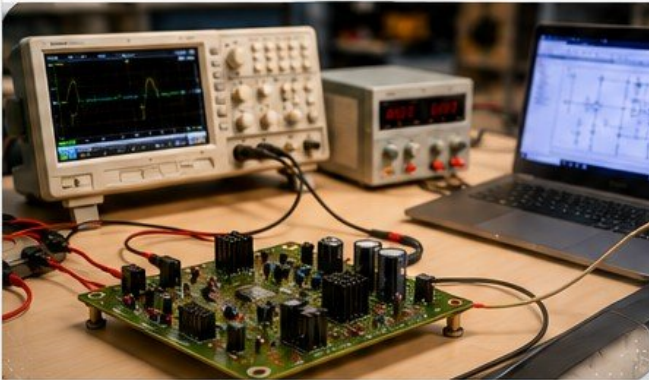


MENTORED BY EXPERTS

Learn from industry professionals and power electronics specialists.

HANDS-ON LEARNING

Work with real hardware. Build real skills.



Safe Low Voltage Testing



Protected Circuits for Reliable Use



Modular Design for Easy Experiments



Designed for Learning & Labs

SIGNALS YOU WILL WORK WITH

Understand every pulse that drives power.

PWM INPUT



Control signal from MCU / DSP with variable frequency & duty.

DEAD-TIME INSERTION



Prevent shoot-through by inserting precise dead-time.

GATE OUTPUT



Isolated & amplified gate drive for high speed switching.

SWITCH NODE



Observe switching transitions & ringing behavior.

PHASE CURRENT



Measure load current & analyze system performance.

TOOLS & SOFTWARE ECOSYSTEM

Integrated learning with professional tools.



CIRCUIT SIMULATION

Design & simulate using PSIM, LTspice, MATLAB/Simulink.



REAL-TIME MEASUREMENT

Analyze signals using oscilloscope & data acquisition tools.



EMBEDDED CONTROL

Program PWM, read signals and control with popular MCU / DSP platforms.



DATA ANALYTICS

Log, visualize & optimize performance with advanced analytics.



WHAT YOU WILL BUILD



Inverters



Motor Drives



DC-DC Converters



Power Supplies



Solar Systems



EV Powertrains



Custom Projects

EXPERIMENT. ANALYZE. INNOVATE.

Step-by-step guided experiments covering basic to advanced power electronics.

- ✓ Single Phase Inverter
- ✓ DC-DC Buck / Boost
- ✓ BLDC Motor Control
- ✓ Three Phase Inverter
- ✓ Soft Switching Concepts
- ✓ Protection & Fault Handling
- ✓ Advanced PWM Techniques
- ✓ Real-World Applications



LEARNING THAT POWERS INNOVATION

The BISD Gate Driver Kit empowers students and engineers to explore, experiment and excel in power electronics.



05 ENGINEERED FOR PERFORMANCE. BUILT FOR RELIABILITY.

Every detail of the BISD Gate Driver Kit is designed to deliver precision, protection and long-term stability.

HIGH PERFORMANCE GATE DRIVER KIT
Precision Control for Advanced Power Electronics

QUALITY IN EVERY LAYER

High quality components, robust PCB design and advanced protection make this kit ideal for demanding industrial and research applications.

INDUSTRIAL GRADE RELIABILITY
Designed to operate continuously in harsh environments.

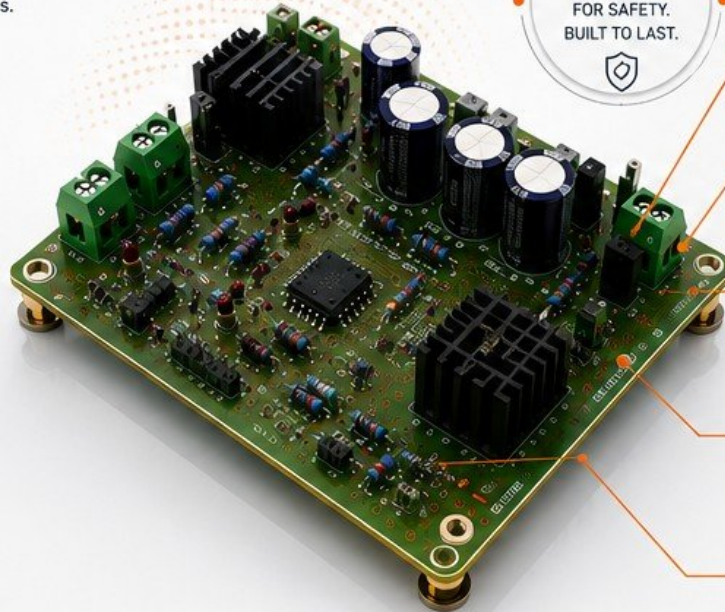
ADVANCED PROTECTION
UVLO, OCP, SCP and OTP ensure safe and reliable operation.

OPTICAL ISOLATION
5000Vrms isolation for superior noise immunity and safety.

PRECISE & STABLE SWITCHING
Low propagation delay and accurate dead-time control for high efficiency.

THERMAL RESILIENCE
Efficient heat management for consistent high performance.

RIGOROUSLY TESTED FOR SAFETY. BUILT TO LAST.



DESIGNED WITH PRECISION



SECURE CONNECTIONS
Industrial grade connectors for strong, vibration resistant and maintenance friendly wiring.



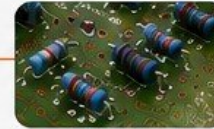
EFFICIENT POWER STAGE
Optimized layout with high quality MOSFET/IGBT drivers for low loss and high efficiency.



HIGH QUALITY COMPONENTS
Premium capacitors, precision resistors and reliable semiconductors ensure long life and stability.



INTELLIGENT CONTROL
Advanced driver ICs provide fast response, accurate isolation and robust protection.



CLEAN & ROBUST DESIGN
Carefully engineered PCB layout minimizes noise and maximizes operational reliability.

KEY BENEFITS

HIGH EFFICIENCY
Reduces switching losses and improves system performance.

MAXIMUM PROTECTION
Multiple protection layers keep your system and hardware safe.

INDUSTRIAL DURABILITY
Built with rugged components for long term industrial use.

ACCURATE CONTROL
Consistent gate signals for stable and efficient operation.

EASY INTEGRATION
User friendly design for quick testing and system integration.

PERFECT FOR LEARNING
Bridges theory and practice for real world skill development.

“ Engineered with care. Tested for excellence. Built for innovators. ”

KEY DIFFERENTIATORS



500ns
SWITCHING SPEED



2.5A PEAK
OUTPUT CURRENT



5000Vrms
OPTICAL ISOLATION



UVLO & OCP
PROTECTION



-40°C TO +100°C
OPERATING RANGE



4 INDEPENDENT
DRIVER CHANNELS

QUALITY ASSURANCE

Every BISD Gate Driver Kit undergoes stringent testing for performance, safety and reliability.

- ✓ 100% Functionally Tested
- ✓ Thermal & Load Testing
- ✓ Signal Integrity Verified
- ✓ Protection Circuits Validated

CERTIFICATIONS & COMPLIANCE



RoHS COMPLIANT



REACH COMPLIANT



ISO 9001:2015 CERTIFIED



PROUDLY MADE IN INDIA

BUILT TO DRIVE THE FUTURE

From labs to industries, powering innovations that move the world.



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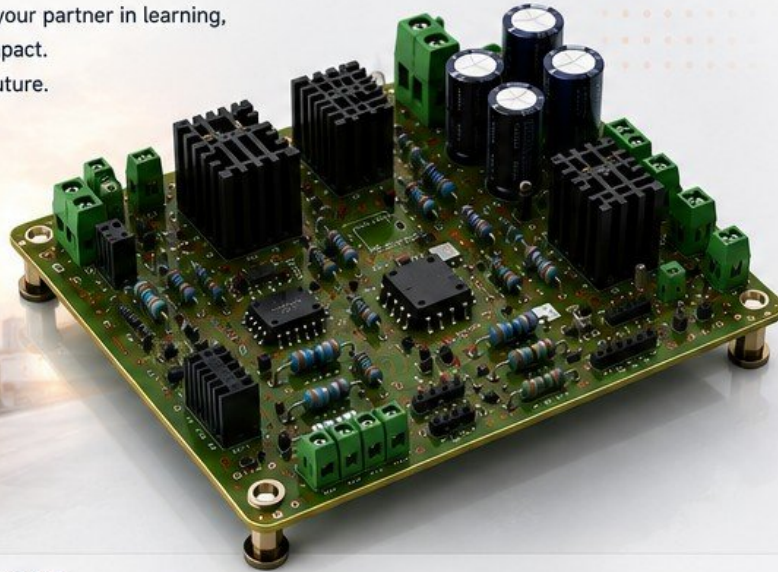
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LEARN • BUILD • INNOVATE

HIGH PERFORMANCE GATE DRIVER KIT
Precision Control for Advanced Power Electronics

EMPOWERING TOMORROW'S POWER INNOVATORS.

The BISD Gate Driver Kit is your partner in learning, innovation and real-world impact. Build the skills. Create the future.



BUILT FOR REAL-WORLD IMPACT



High Reliability & Safety



High Speed Switching



Advanced Protection



Thermal Excellence



Industrial Grade Quality



Long Term Durability

EVERY KIT. ENDLESS POSSIBILITIES.



LEARN

Master power electronics concepts with hands-on experience.



BUILD

Design, test and optimize real power electronic circuits.



INNOVATE

Turn ideas into high performance solutions that make impact.



LEAD

Be industry ready. Be future ready. Lead the change.

Build. Innovate. Lead.

BISD High Performance Gate Driver Kit

₹ 4000 Only

 **BUY NOW**



QUALITY YOU CAN TRUST.
PERFORMANCE YOU CAN RELY ON.
YOUR JOURNEY STARTS HERE.

GET IN TOUCH



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LEARN
Deep Concepts



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Real Solutions



INNOVATE
For Impact



LEAD
The Future

CONTINUOUS LEARNING. | PRACTICAL SKILLS. | REAL IMPACT.

BISD