

# MOSFET DRIVER IC'S

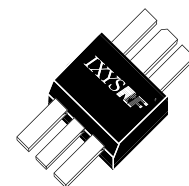
SWITCH MODE POWER SUPPLIES &amp; RF GENERATORS

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These ultra-fast high current drivers are optimized to drive IXYS RF MOSFETs and IXYS IGBTs for high efficiency performance in RF generators, laser diode drivers, pulse generators, motor drive and power conversion applications. They are designed to switch the largest MOSFETs and IGBTs with minimum switching times. The IXDD series drivers are manufactured in industry standard outlines which include TO-263 and TO-220 packages. The innovative DEIC420 is manufactured in IXYS RF's patented low-inductance RF package, offering superior thermal performance and continuous operating frequencies to 45MHz.

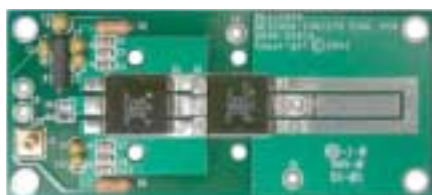
## Features

- Wide operating voltage range from 4.5V to 25V
  - Very Low output impedance
  - Latch-up protected to rated reverse current
  - Very low thermal impedance for DEIC420, TO-263 & TO-220 packages, output current up to 20A peak
  - ENABLE pin option on some drivers for emergency shutdown
  - TTL or CMOS input signals
  - Grounded base tab in TO-263 and TO-220 packages for direct mounting
- Applications



## DRIVER IC & MOSFET EVALUATION BOARDS

The EV-Series MOSFET Gate Drive Modules are general purpose gate drive circuits for the IXYS RF MOSFETs as well as industry-standard MOSFETs and IGBTs. They are designed to serve as a system development tool for the design engineer, and as a convenient platform for the evaluation of the IXYS RF MOSFET portfolio. See the Evaluation Board Column in the driver selector guide for the appropriate board. Detailed data sheets can be down loaded at [www.ixysrf.com](http://www.ixysrf.com).



## FEATURES

- MOSFET/IGBT can be easily attached to a heat sink
- Can be used for both single ended & push pull designs
- Can be used as pulse width agile switching module
- Control gate input controls the width & frequency of the output

## Single

| Part Type | tON/tOFF (ns) | Logic   | PEAK (A)<br>Current | Zout<br>(Ohms) | Package         | P <sub>D</sub> (W)<br>THS<=25oC | Enable<br>Feature | Evaluation<br>Board |
|-----------|---------------|---------|---------------------|----------------|-----------------|---------------------------------|-------------------|---------------------|
| IXDD408PI | 38 / 34       | Non-Inv | 8                   | 0.8            | 8-Pin DIP       | 0.975                           | yes               | EVDD408             |
| IXDD408SI | 38 / 34       | Non-Inv | 8                   | 0.8            | 8-Pin SOIC      | 1.055                           | yes               | EVDD408             |
| IXDD408YI | 38 / 34       | Non-Inv | 8                   | 0.8            | 5-Lead TO-263   | 1.055                           | yes               | EVDD408             |
| IXDD408CI | 38 / 34       | Non-Inv | 8                   | 0.8            | 5-Lead TO-220   | 17                              | yes               | EVDD408             |
| IXDD409PI | 36 / 33       | Non-Inv | 9                   | 1.5            | 8 pin DIP       | 0.975                           | yes               | EVDD409             |
| IXDI409PI | 36 / 33       | Inv     | 9                   | 1.5            | 8 pin DIP       | 0.975                           | no                | EVDI409             |
| IXDN409PI | 36 / 33       | Non-Inv | 9                   | 1.5            | 8 pin DIP       | 0.975                           | no                | EVDN409             |
| IXDD409SI | 36 / 33       | Non-Inv | 9                   | 1.5            | 8 pin SOIC      | 1.05                            | yes               | EVDD409             |
| IXDI409SI | 36 / 33       | Inv     | 9                   | 1.5            | 8 pin SOIC      | 1.05                            | no                | EVDI409             |
| IXDN409SI | 36 / 33       | Non-Inv | 9                   | 1.5            | 8 pin SOIC      | 1.05                            | no                | EVDN409             |
| IXDD409CI | 36 / 33       | Non-Inv | 9                   | 1.5            | 5-leaded TO-220 | 17                              | yes               | EVDD409             |
| IXDD409YI | 36 / 33       | Non-Inv | 9                   | 1.5            | 5-leaded TO-263 | 17                              | yes               | EVDD409             |
| IXDI409CI | 36 / 33       | Inv     | 9                   | 1.5            | 5-leaded TO-220 | 17                              | no                | EVDI409             |
| IXDI409YI | 36 / 33       | Inv     | 9                   | 1.5            | 5-leaded TO-263 | 17                              | no                | EVDI409             |
| IXDN409CI | 36 / 33       | Non-Inv | 9                   | 1.5            | 5-leaded TO-220 | 17                              | no                | EVDN409             |
| IXDN409YI | 36 / 33       | Non-Inv | 9                   | 1.5            | 5-leaded TO-263 | 17                              | no                | EVDN409             |
| IXDD414PI | 30 / 31       | Non-Inv | 14                  | 0.6            | 8-Pin DIP       | 0.975                           | yes               | EVDD414             |
| IXDI414PI | 30 / 31       | Inv     | 14                  | 1.0            | 8-pin DIP       | 0.975                           | no                | EVDI414             |
| IXDN414PI | 30 / 31       | Non-Inv | 14                  | 1.0            | 8-pin DIP       | 0.975                           | no                | EVDN414             |
| IXDI414CI | 30 / 31       | Inv     | 14                  | 1.0            | 5-leaded TO-220 | 2                               | no                | EVDI414             |
| IXDI414YI | 30 / 31       | Inv     | 14                  | 1.0            | 5-leaded TO-263 | 2                               | no                | EVDI414             |
| IXDN414CI | 30 / 31       | Non-Inv | 14                  | 1.0            | 5-leaded TO-220 | 2                               | no                | EVDN414             |
| IXDN414YI | 30 / 31       | Non-Inv | 14                  | 1.0            | 5-leaded TO-263 | 2                               | no                | EVDN414             |
| IXDD414CI | 30 / 31       | Non-Inv | 14                  | 0.6            | 5-Lead TO-220   | 12                              | yes               | EVDD414             |
| IXDD414YI | 30 / 31       | Non-Inv | 14                  | 0.6            | 5-Lead TO-263   | 12                              | yes               | EVDD414             |
| DEIC420   | 3 / 4         | Non-Inv | 20                  | 0.8            | DE-275A RF      | 100                             | no                | EVIC420             |

## Dual

| Part Type    | tON/tOFF (ns) | Logic         | PEAK (A)<br>Current | Zout<br>(Ohms) | Package                 | P <sub>D</sub> (W)<br>THS<=25oC | Enable<br>Feature | Evaluation<br>Board |
|--------------|---------------|---------------|---------------------|----------------|-------------------------|---------------------------------|-------------------|---------------------|
| IXDF402PI    | 28 / 26       | Inv & Non-Inv | 2                   | 4.0            | 8 pin DIP               |                                 | no                | EVDF402             |
| IXDF402SI    | 28 / 26       | Inv & Non-Inv | 2                   | 4.0            | 8 pin SOIC              |                                 | no                | EVDF402             |
| IXDF402SI-16 | 28 / 26       | Inv & Non-Inv | 2                   | 4.0            | 16 pin SOIC             |                                 | no                | EVDF402             |
| IXDI402PI    | 28 / 26       | Inv           | 2                   | 4.0            | 8 pin DIP               |                                 | no                | EVDI402             |
| IXDI402SI    | 28 / 26       | Inv           | 2                   | 4.0            | 8 pin SOIC              |                                 | no                | EVDI402             |
| IXDI402SI-16 | 28 / 26       | Inv           | 2                   | 4.0            | 16 pin SOIC             |                                 | no                | EVDI402             |
| IXDN402PI    | 28 / 26       | Non-Inv       | 2                   | 4.0            | 8 pin DIP               |                                 | no                | EVDN402             |
| IXDN402SI    | 28 / 26       | Non-Inv       | 2                   | 4.0            | 8 pin SOIC              |                                 | no                | EVDN402             |
| IXDN402SI-16 | 28 / 26       | Non-Inv       | 2                   | 4.0            | 16 pin SOIC             |                                 | no                | EVDN402             |
| IXDD404PI    | 34 / 30       | Non-Inv       | 4                   | 1.5            | 8-Pin DIP               | 0.975                           | yes               | EVDD404             |
| IXDD404SI    | 34 / 30       | Non-Inv       | 4                   | 1.5            | 8-Pin SOIC              | 1.055                           | yes               | EVDD404             |
| IXDD404SI-16 | 34 / 30       | Non-Inv       | 4                   | 1.5            | 16-Pin SOIC             | 1.055                           | yes               | EVDD404             |
| IXDD404SIA   | 34 / 30       | Non-Inv       | 4                   | 3.0            | 8 pin SOIC(no base pad) |                                 | yes               | EVDD404             |
| IXDF404PI    | 34 / 30       | Inv & Non-Inv | 4                   | 3.0            | 8 pin DIP               |                                 | no                | EVDF404             |
| IXDF404SI    | 34 / 30       | Inv & Non-Inv | 4                   | 3.0            | 8 pin SOIC              |                                 | no                | EVDF404             |
| IXDF404SI-16 | 34 / 30       | Inv & Non-Inv | 4                   | 3.0            | 16 pin SOIC             |                                 | no                | EVDF404             |
| IXDI404PI    | 34 / 30       | Inv           | 4                   | 3.0            | 8 pin DIP               |                                 | no                | EVDI404             |
| IXDI404SI    | 34 / 30       | Inv           | 4                   | 3.0            | 8 pin SOIC              |                                 | no                | EVDI404             |
| IXDI404SI-16 | 34 / 30       | Inv           | 4                   | 3.0            | 16 pin SOIC             |                                 | no                | EVDI404             |
| IXDN404PI    | 34 / 30       | Non-Inv       | 4                   | 3.0            | 8 pin DIP               |                                 | no                | EVDN404             |
| IXDN404SI    | 34 / 30       | Non-Inv       | 4                   | 3.0            | 8 pin SOIC              |                                 | no                | EVDN404             |
| IXDN404SI-16 | 34 / 30       | Non-Inv       | 4                   | 3.0            | 16 pin SOIC             |                                 | no                | EVDN404             |
| IXDD415SI    | 3 / 4         | Non-Inv       | 15                  | 0.8            | 5-Lead TO-263           | 12                              | yes               | EVDD415             |

## IXLDO2 2A ULTRA HIGH SPEED LASER DIODE DRIVER IC

### Features

- Q and Q-Bar output transition at 600 picoseconds
- Frequency agility
- Packaged in the high power SO-28 providing 0-2 Amps of output current
- Pulse Width & Current can be modulated in real time to >10MHz

| IC       | Max. Current | Rise Time | Pulse Width   | Max. Freq. | Evaluation Board |
|----------|--------------|-----------|---------------|------------|------------------|
| IXLD02SI | 2A           | 600ps     | 1.5ns to >1us | 17MHz      | EVLD02           |