High Speed, High Current Low Side Gate Drivers

Clare's line of ultra-fast, high current MOSFET and IGBT gate drivers are optimized for high efficiency performance in motor drive and power conversion applications. With output current ratings of 2 A to 30 A, they are designed to switch the largest MOSFETs and IGBTs with minimum switching times and at frequencies up to 10 MHz. Depending on the output current rating, these gate drivers are offered in DFN, SOIC, Power SOIC, DIP, TO-220 and TO-263 packages.

Features

- 2 A to 30 A Peak Source/Sink Drive Current
- Wide Operating Voltage Range: 4.5 V to 35 V
- -40°C to +125°C Extended Operating Temperature Range
- Logic Input Withstands Negative Swing of up to 5 V
- Matched Rise and Fall Times
- Low Propagation Delay Time
- Low 10 µA Supply Current
- Low Output Impedance

Applications

- Efficient Power MOSFET and IGBT Switching
- Switch Mode Power Supplies
- Motor Controls
- DC to DC Converters
- Class-D Switching Amplifires
- Pulse Transformer Driver

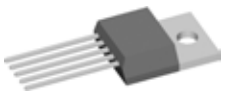
Low Side MOSFET / IGBT Gate Driver Selection Guide

Part Number	Output Type	I_{PK} T_C = 25°C A	Output Resistance Ω	Enable Function	non-inverting	inverting	UVLO V	Package	Fig. No.
IXDF602D2	Dual	2	4		1x	1x	-	8-Pin DFN	X532
IXDF602PI					1x	1x		8-Pin DIP	X502
IXDF602SI					1x	1x		8-Pin Power SOIC	X512b
IXDF602SIA					1x	1x		8-Pin SOIC	X512a
IXDI602D2						2x		8-Pin DFN	X532
IXDI602PI						2x		8-Pin DIP	X502
IXDI602SI						2x		8-Pin Power SOIC	X512b
IXDI602SIA						2x		8-Pin SOIC	X512a
IXDN602D2					2x			8-Pin DFN	X532
IXDN602PI					2x			8-Pin DIP	X502
IXDN602SI					2x			8-Pin Power SOIC	X512b
IXDN602SIA					2x			8-Pin SOIC	X512a
IXDD604D	Dual	4	2.5	●	1x	1x	-	8-Pin DFN	X532
IXDD604PI				●	1x	1x		8-Pin DIP	X502
IXDD604SI				●	1x	1x		8-Pin Power SOIC	X512b
IXDD604SIA				●	1x	1x		8-Pin SOIC	X512a
IXDF604PI					1x	1x		8-Pin DIP	X502
IXDF604SI					1x	1x		8-Pin Power SOIC	X512b
IXDF604SIA					1x	1x		8-Pin SOIC	X512a
IXDI604PI						2x		8-Pin DIP	X502
IXDI604SI						2x		8-Pin Power SOIC	X512b
IXDI604SIA						2x		8-Pin SOIC	X512a
IXDN604PI					2x			8-Pin DIP	X502
IXDN604SI					2x			8-Pin Power SOIC	X512b
IXDN604SIA					2x			8-Pin SOIC	X512a
IXDD609D2	Single	9	1	●	●		-	8-Pin DFN	X532
IXDD609SI				●	●			8-Pin Power SOIC	X512b
IXDD609SIA				●	●			8-Pin SOIC	X512a
IXDD609PI				●	●			8-Pin DIP	X502
IXDD609CI				●	●			5-Pin TO-220	X006
IXDD609YI				●	●			5-Pin TO-263	X012a
IXDI609SI						●		8-Pin Power SOIC	X512b
IXDI609SIA						●		8-Pin SOIC	X512a
IXDI609PI						●		8-Pin DIP	X502
IXDI609CI						●		5-Pin TO-220	X006
IXDI609YI						●		5-Pin TO-263	X012a
IXDN609SI					●			8-Pin Power SOIC	X512b
IXDN609SIA					●			8-Pin SOIC	X512a
IXDN609PI					●			8-Pin DIP	X502
IXDN609CI					●			5-Pin TO-220	X006
IXDN609YI					●			5-Pin TO-263	X012a

Outline drawings on pages O-30...O-52

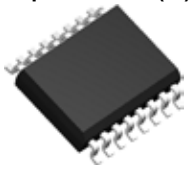
X502 **8-pin DIP**

X006 **TO-220**



X512a **8-pin SOIC**
X512b **8-pin PowerSOIC**
with exposed metal back

X515a
16-pin SOIC-CT(W)



X532 **8-pin DFN**

High Speed, High Current Low Side Gate Drivers

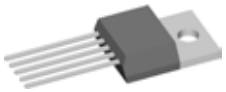
The 30 A IXD_630 additionally offers undervoltage lockout (UVLO) that locks out the source and sink drivers until a sufficient level of V_{CC} is present.

Part Number	Output Type	I_{PK} T_C = 25°C A	Output Resis-tance Ω	Enable Function	non-inverting	inverting	UVLO V	Package	Fig. No.
IXDD614PI	Single	14	0.8	●	●		-	8-Pin DIP	X502
IXDD614SI				●	●			8-Pin Power SOIC	X512b
IXDD614CI				●	●			5-Pin TO-220	X006
IXDD614YI				●	●			5-Lead TO-263	X012a
IXDI614PI						●		8-Pin DIP	X502
IXDI614SI						●		8-Pin Power SOIC	X512b
IXDI614CI						●		5-Pin TO-220	X006
IXDI614YI						●		5-Lead TO-263	X012a
IXDN614PI					●			8-Pin DIP	X502
IXDN614SI					●			8-Pin Power SOIC	X512b
IXDN614CI					●			5-Pin TO-220	X006
IXDN614YI					●			5-Lead TO-263	X012a
IXDD630CI	Single	30	0.4	●	●		11.75	5-Pin TO-220	X006
IXDD630MCI				●	●		8.50	5-Pin TO-220	X006
IXDD630YI				●	●		11.75	5-Pin TO-263	X012a
IXDD630MYI				●	●		8.50	5-Pin TO-263	X012a
IXDI630CI						●	11.75	5-Pin TO-220	X006
IXDI630MCI						●	8.50	5-Pin TO-220	X006
IXDI630YI						●	11.75	5-Pin TO-263	X012a
IXDI630MYI						●	8.50	5-Pin TO-263	X012a
IXDN630CI					●		11.75	5-Pin TO-220	X006
IXDN630MCI					●		8.50	5-Pin TO-220	X006
IXDN630YI					●		11.75	5-Pin TO-263	X012a
IXDN630MYI					●		8.50	5-Pin TO-263	X012a

Outline drawings on pages O-30...O-52

X502 **8-pin DIP**

X006 **TO-220**



X012a **TO-263**

X512a **8-pin SOIC**
X512b **8-pin PowerSOIC**
with exposed metal back

IX2127 600 V High-Side MOSFET and IGBT Driver

The IX2127 is a high-voltage, high-speed power MOSFET and IGBT driver. The device's high-voltage level-shift technique enables it to operate at up to 600 V. Clare's proprietary common-mode design techniques provide stable operation in high dV/dt noise environments.

The IX2127 detects an over-current condition in the driven MOSFET or IGBT device, and shuts down drive to that device. An open-drain output, the FAULT output, indicates that an over-current shutdown has occurred. The gate driver output typically can source 250 mA and sink 500 mA, which is suitable for fl uorescent lamp ballast, motor control, SMPS, and other converter drive topologies. Available in 8-pin DIP and 8-pin SOIC packages.

Features

- Floating Channel Designed for Bootstrap Operation up to 600 V
- Tolerant to Negative Transient Voltages; dV/dt Immune
- Undervoltage Lockout
- 3.3 V, 5 V, and 12 V Input Logic Compatible
- Open-Drain FAULT Indicator Pin Shows Over-Current Shutdown
- Output in Phase with the Input

Applications

- High Speed Gate Driver
- Motor Drive Inverter
- Automotive

Outline drawings on pages O-30...O-52

X502 **8-pin DIP**

X512a **8-pin SOIC**

Part Number New	V_{offset} V	I_O Source/Sink ± mA	V_{CSth} Comparator Threshold mV	t_{on} / t_{off} typ. ns	Package	Fig. No.
IX2127G	600	250/500	250	100	8-Pin DIP	X502
IX2127N					8-Pin SOIC	X512a