What kind of Application are you using this driver for?

- Automotive
- Commercial
- Motor Drive
Automotive Drivers

- Low Side
  - Single Output
  - Dual Output
- Half Bridge
Automotive Single Output

18V
- 0.5A
- 1.5A
- 3.0A
- 4.5A
- 6.0A
- 9.0A
- 12.0A

30V
- 1.5A
- TC4431/2
Automotive Single 0.5A Output

18V

0.5A

MCP1401/2

MCP14A0051/2
Automotive Single 1.5A Output

18V

1.5A

MCP1415/6

MCP14A0151/2
Automotive Single 3.0A Output

18V

3.0A

MCP14A0301/2
Automotive Single 4.5A Output

18V

4.5A

MCP14A0451/2
Automotive Single 6.0A Output

18V

6.0A

MCP14A0601/2

MCP1406/7
Automotive Single 9.0A Output

18V

9.0A

MCP14A0901/2

TC4421/2A
Automotive Single 12.0A Output

18V

12.0A

MCP14A1201/2

TC4451/2
Automotive Half Bridge Driver

36V

MIC4605

85V

MCP14700
Automotive Dual Output

18V
- 1.5A
- 3.0A
- 4.0A
- 4.5A

20V
- 3.0A
- MAQ4123/4/5
Automotive Dual 1.5A Output

18V

1.5A

TC4426/7/8A

MCP14A0153/4/5

<< BACK
Automotive Dual 3.0A Output

18V

3.0A

MCP14A0303/4/5

TC4423/4/5A
Automotive Dual 4.0A Output

18V

4.0A

MCP14E3/4/5
Automotive Dual 4.5A Output

18V

4.5A

MCP14A0453/4/5

MCP1403/4/5
Commercial Drivers

- Low Side
  - Single Output
  - Dual Output
  - Quad Output

- High or Low Side

- Half Bridge
Commercial Low Side Single Output

- **6V**
  - 2A
  - TC4626/7

- **13V**
  - 6A
  - MIC44F18/9/20

- **20V**
  - 6A
  - MIC4120/9

- **16V**
  - TC1410N
  - TC1411N
  - TC1412N
  - TC1413N

- **18V**
  - MIC4416/7
  - MIC4414/5
  - MIC4420/9
  - MIC4421/2A
  - MIC4451/2

- **50V**
  - MIC5020
Commercial Low Side Dual Output

18V

1.5A
- TC4404/5
- MIC4426/7/8

2.0A
- MCP14E6/7/8

3.0A
- MCP14E9/10/11

4.0A
- MIC4223/4/5
Commercial Low Side Quad Output

18V

1.2A

MIC4467/8/9

TC4467/8/9
Commercial High/Low Side Drivers

- **9V**
  - MIC5018
  - MIC5019

- **30V**
  - MIC5014/5
  - MIC5060

- **32V**
  - MIC5011
  - MIC5013

- **36V**
  - MIC5021
Commercial Half Bridge Drivers

- **28V**: MIC4600
- **36V**: MCP14628
- **85V**: MIC4604
- **100V**: MIC4100/1, MIC4102, MIC4103/4
Motor Drivers

36V
- MCP14700
- MCP14628

85V
- MIC4604
- MIC4605
Features:
• 11V to 50V operation
• 175ns rise/fall time driving 2000pF
• TTL compatible input with internal pull – down resistor
• Overcurrent limit
• Fault output indication
• Gate to source protection
• Compatible with current sensing – MOSFETs
**Features:**
- High Peak Output Current: 1.5A
- Wide Operating Range: 4.5V to 30V
- High Capacitive Load Drive – Capability: 1000pF in 25ns
- Short Delay Times: < 78ns (typ.)
- Low Supply Current:
  - With Logic ‘1’ Input: 2.5mA
  - With Logic ‘0’ Input: 300µA
- Low Output Impedance: 7Ω (typ.)
- Latch-Up Protected: Will Withstand -> 300mA Reverse Current
- ESD Protected: 4kV
- Recommended for Automotive Design (TC4431)
MIC4120/9
6A-Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

Features:
• Latch-up protected: will withstand >200mA – reverse output current
• Logic input withstands negative swing of up to 5V
• Matched rise and fall times of 25ns
• High peak output current at 6A
• Wide operating range from 4.5V to 20V
• High capacitive load drive of 10,000pF
• Logic high input for any voltage from 2.4V to VS
• Low equivalent input capacitance (typ) at 6pF
• Low supply current is 450µA with logic 1 input
• Low output impedance is 2.5Ω
• Output voltage swing within 25mV of ground or VS
• Exposed backside pad packaging reduces heat
  • ePad SOIC-8L (θJA = 58°C/W)
  • 3mm x 3mm MLF®-8L (θJA = 60°C/W)
Features List:

- High Peak Output Current: 12.0A (typical)
- Wide Input Supply Voltage Operating Range:
  - 4.5V to 18V
- Low Shoot-Through/Cross-Conduction Current in Output Stage
- High Capacitive Load Drive Capability:
  - 15,000 pF in 25 ns (typical)
- Short Delay Times: 28 ns (tD1), 28 ns (tD2) (typical)
- Low Supply Current: 360 µA (typical)
- Low-Voltage Threshold Input and Enable with Hysteresis
- Latch-Up Protected: Withstands 500 mA Reverse Current
- Space-Saving Packages:
  - 8-Lead MSOP
  - 8-Lead SOIC
  - 8-Lead 2 x 3 TDFN
MIC4451/2
12A Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

Features:
• BiCMOS/DMOS construction
• Latch-up proof: fully isolated process is –
  - inherently immune to any latch-up.
• Input will withstand negative swing of –
  - up to 5V
• Matched rise and fall times 25ns
• High peak output current 12A peak
• Wide operating range 4.5V to 18V
• High capacitive load drive 62,000pF
• Low delay time 30ns typ.
• Logic high input for any voltage from 2.4V to VS
• Low equivalent input capacitance (typ.) 7pF
• Low supply current 450µA with logic 1 input
• Low output impedance 1.0Ω
• Output voltage swing to within 25mV of ground or VS
**TC4451/4452**
12A High-Speed MOSFET Drivers

**Features:**
- High Peak Output Current: 13A (typ.)
- Wide Input Supply Voltage Operating Range:
  - 4.5V to 18V
- High Continuous Output Current:
  - 2.6A (max.)
- Matched Fast Rise and Fall Times:
  - 21ns with 10,000 pF Load
  - 42ns with 22,000 pF Load
- Matched Propagation Delays: 44ns (typ.)
- Low Supply Current:
  - With Logic ‘1’ Input: 140µA (typ.)
  - With Logic ‘0’ Input: 40µA (typ.)
- Low Output Impedance: 0.9Ω (typ.)
- Latch-Up Protected: Will Withstand 1.5A – Output Reverse Current
- Input Will Withstand Negative Inputs up to 5V
- Pin-Compatible with the TC4420/TC4429, TC4421/TC4422 and TC4421A/TC4422A
- Space-Saving, Thermally-Enhanced, 8-Pin DFN Package
- Recommended for Automotive Design (TC4451)
MIC4421A/2A
12A Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

Features:
• High peak-output current: 9A peak (typ.)
• Wide operating range: 4.5V to 18V (typ.)
• Minimum pulse width: 50ns
• Input will withstand negative swing of up to 5V
• High capacitive load drive: 47,000pF
• Low delay time: 15ns (typ.)
• Logic high input for any voltage from 2.4V to VS
• Low equivalent input capacitance (typ.): 7pF
• Low supply current: 500µA (typ.)
• Latch-up proof: fully isolated process is inherently immune to any latch-up.
• Output voltage swing to within 25mV of ground or VS
**Features:**

- **High Peak Output Current:** 9A
- **Wide Input Supply Voltage Operating Range:**
  - 4.5V to 18V
- **High Continuous Output Current:** 2A (max.)
- **Fast Rise and Fall Times:**
  - 30ns with 4,700pF Load
  - 180ns with 47,000pF Load
- **Short Propagation Delays:** 30ns (typ.)
- **Low Supply Current:**
  - With Logic ‘1’ Input: 200μA (typ.)
  - With Logic ‘0’ Input: 55μA (typ.)
- **Low Output Impedance:** 1.4Ω (typ.)
- **Latch-Up Protected:** Will Withstand 1.5A
  - Output Reverse Current
- **Input Will Withstand Negative Inputs up to 5V**
- **Pin-Compatible with the TC4420/TC4429**
- **Space-saving 8-Pin 6x5 DFN Package**
- **Recommended for Automotive Design**
MCP14A0901/2
9A MOSFET Driver with Low Threshold Input and Enable

Features:
• High Peak Output Current: 9.0A (typical)
• Wide Input Supply Voltage Operating Range: -4.5V to 18V
• Low Shoot-Through/Cross-Conduction Current in Output Stage
• High Capacitive Load Drive Capability: -10,000 pF in 24 ns (typical)
• Short Delay Times: 27 ns (tD1), 27 ns (tD2) (typical)
• Low Supply Current: 360 μA (typical)
• Low-Voltage Threshold Input and Enable with Hysteresis
• Latch-Up Protected: Withstands 500 mA Reverse Current
• Space-Saving Packages:
  - 8-Lead MSOP
  - 8-Lead SOIC
  - 8-Lead 2 x 3 TDFN

* Includes Exposed Thermal Pad (EP)
MCP1406/7
6A High-Speed Power MOSFET Drivers

Features:
• High Peak Output Current: 6.0A (typ.)
• Wide Input Supply Voltage Operating Range:
  • 4.5V to 18V
• High Capacitive Load Drive Capability:
  • 2500pF in 20ns
  • 6800pF in 40ns
• Short Delay Times: 40ns (typ.)
• Matched Rise/Fall Times
• Low Supply Current:
  • With Logic ‘1’ Input: 130μA (typ.)
  • With Logic ‘0’ Input: 35μA (typ.)
• Latch-Up Protected: Will Withstand 1.5A
• Reverse Current
• Logic Input Will Withstand Negative Swing up to 5V
• Pin compatible with the TC4420/TC4429
• Space-saving 8-Pin SOIC, PDIP and 8-Pin
• 6x5 DFN Packages
• Recommended for Automotive Design
MIC4420/9
6A-Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

Features:
• CMOS construction
• Latch-up protected: will withstand >500mA – reverse output current
• Logic input withstands negative swing of up to 5V
• Matched rise and fall times of 25ns
• High peak output current at 6A
• Wide operating range from 4.5V to 18V
• High capacitive load drive of 10,000pF
• Low delay time of 55ns typical
• Low delay time 55ns typ.
• Logic high input for any voltage from 2.4V to VS
• Low equivalent input capacitance (typ.) 6pF
• Low supply current 450µA with logic 1 input
• Low output impedance 2.5Ω
• Output voltage swing within 25mV of ground or VS
MCP14A0601/2
6A MOSFET Driver with Low Threshold Input and Enable

Features:
• Peak Output Current: 6 A (typical)
• Wide Supply Voltage Range: 4.5 V to 18 V
• Low Shoot-Through/Cross-Conduction Current –
  - in Output Stage
• High Capacitive Load Drive Capability:
  • 2500 pF in 10 ns (typ.)
  • Short Delay: 22 ns (tD1), 22 ns (tD2) (typ.)
• Low Supply Current: 375 μA (typ.)
• Low Voltage Threshold Input and Enable
  • Hysteresis: 1.2 to 1.6 V
• Latch-Up Protected:
  • Withstands 500 mA Reverse Current
• Small Packages:
  • 8- Lead MSOP
  • 8- Lead SOIC
  • 8- Lead 2x3 TDFN
Features:
• Peak Output Current: 4.5 A (typical)
• Wide Supply Voltage Range: 4.5 V to 18 V
• Low Shoot-Through/Cross-Conduction – Current in Output Stage
• High Capacitive Load Drive Capability:
  • 2200 pF in 9.5 ns (typ.)
  • Short Delay: 16 ns (tD1), 19.5 ns (tD2) – (typ.)
• Low Supply Current: 355 µA (typ.)
• Low Voltage Threshold Input and Enable
  • Hysteresis: 1.2 to 1.6 V
• Latch-Up Protected:
  • Withstands 500 mA Reverse Current
• Small Packages:
  • 8- Lead MSOP
  • 8- Lead SOIC
  • 8- Lead 2x2 WDFN
MCP14A0301/2
3A MOSFET Driver with Low Threshold Input and Enable

Features:
- Peak Output Current: 3.0 A (typical)
- Wide Supply Voltage Range: 4.5 V to 18 V
- Low Shoot-Through/Cross-Conduction – Current in Output Stage
- High Capacitive Load Drive Capability:
  - 1800 pF in 13 ns (typ.)
  - Short Delay: 15 ns (tD1), 18 ns (tD2) – (typ.)
- Low Supply Current: 360 μA (typ.)
- Low Voltage Threshold Input and Enable with Hysteresis
- Latch-Up Protected:
  - Withstands 500 mA Reverse Current
- Small Packages:
  - 8- Lead MSOP
  - 8- Lead SOIC
  - 8- Lead 2x2 WDFN

Package Types

* Includes Exposed Thermal Pad (EP)
Features:
- Ultra-small 4-pin 1.2mm x 1.2mm thin QFN – package
- +4.5V to +18V operating supply voltage range
- 1.5A peak current
  - 3.5Ω output resistance at 18V
  - 9Ω output resistance at 5V
- Low steady-state supply current
  - 77µA control input low
  - 445µA control input high
- 12ns rise and fall times into 1000pF load
- MIC4414 (non-inverting)
- MIC4415 (inverting)
- -40ºC to +125ºC junction temperature
- MIC4414 (non-inverting)
- MIC4415 (inverting)
MCP1415/6
Dual Input Synchronous MOSFET Driver

Features:
• High Peak Output Current:
  • 1.5A (typ.)
• Wide Input Supply Voltage Operating Range:
  • 4.5V to 18V
• Low Shoot-Through/Cross-Conduction -
  - Current in Output Stage
• High Capacitive Load Drive Capability:
  • 470pF in 13ns (typ.)
  • 1000pF in 20ns (typ.)
• Short Delay Times: 41ns (t_{D1}), 48ns (t_{D2}), (typ.)
• Low Supply Current:
  • With Logic ‘1’ Input: 0.65mA (typ.)
  • With Logic ‘0’ Input: 0.1mA (typ.)
• Latch-Up Protected: Will Withstand 500mA –
  - Reverse Current
• Logic Input Withstands Negative Swing up to 5V
• Space-saving 5-SOT-23 Package
• Recommended for Automotive Design
MCP14A0151/2
1.5A MOSFET Driver with Low Threshold Input And Enable

Features:
- Peak Output Current: 1.5 A (typical)
- Wide Supply Voltage Range: 4.5 V to 18 V
- Low Shoot-Through/Cross-Conduction Current – in Output Stage
- High Capacitive Load Drive Capability:
  - 1000 pF in 11.5 ns (typ.)
  - Short Delay: 33 ns (t_{D1}), 24 ns (t_{D2}) (typ.)
- Low Supply Current: 375 μA (typ.)
- Low Voltage Threshold Input and Enable
  - Hysteresis: 1.2 to 1.6 V
- Latch-Up Protected:
  - Withstands 500 mA Reverse Current
- Small Packages: 6-lead SOT-23 and 2x2 DFN
MIC4416/7
IttyBitty® Low-Side MOSFET Driver

Features:
• +4.5V to +18V operation
• Low steady-state supply current
  • 50µA typical, control input low
  • 370µA typical, control input high
• 1.2A nominal peak output
  • 3.5Ω typical output resistance at 18V supply
  • 7.8Ω typical output resistance at 5V supply
• Operates in low-side switch circuits
• TTL-compatible input withstands -20V
• ESD protection
• 25mV maximum output offset from supply or ground
• Inverting and noninverting versions
Features:
• High Peak Output Current: 500mA (typ.)
• Wide Input Supply Voltage Operating Range:
  • 4.5V to 18V
• Low Shoot-Through/Cross-Conduction –
  - Current in Output Stage
• High Capacitive Load Drive Capability:
  • 470pF in 19ns (typ.)
  • 1000pF in 34ns (typ.)
• Short Delay Times: 35ns (typ.)
• Matched Rise/Fall Times
• Low Supply Current:
  • With Logic ‘1’ Input – 0.85mA (typ.)
  • With Logic ‘0’ Input – 0.10mA (typ.)
• Latch-Up Protected: Will Withstand 500mA –
  - Reverse Current
• Logic Input Will Withstand Negative Swing –
  - Up To 5V
• Packages: 5-Pin SOT-23
• Recommended for Automotive Design (MCP1401)
Features:
- Peak Output Current: 0.5 A (typical)
- Wide Supply Voltage Range: 4.5 V to 18 V
- Low Shoot-Through/Cross-Conduction – CURRENT in Output Stage
- High Capacitive Load Drive Capability:
  - 1000 pF in 40 ns (typ.)
  - Short Delay: 33 ns (t_{D1}), 24 ns (t_{D2}) (typ.)
- Low Supply Current: 375 μA (typ.)
- Low Voltage Threshold Input and Enable
  - Hysteresis: 1.2 to 1.6 V
- Latch-Up Protected:
  - Withstands 500 mA Reverse Current
- Small Packages: 6-lead SOT-23 and 2x2 DFN
Features:
• High Peak Output Current: 3A
• Latch-Up Protected: Will Withstand –
  - 500mA Reverse Current
• Input Will Withstand Negative Inputs –
  - Up to 5V
• ESD Protected: 4kV
• Wide Operating Range: 4.5V to 16V
• High Capacitive Load Drive Capability:
  • 1800pF in 20ns
• Short Delay Time: 35ns (typ.)
• Matched Delay Times
• Low Supply Current:
  • With Logic ‘1’ Input: 500µA
  • With Logic ‘0’ Input: 100µA
• Low Output Impedance: 2.7Ω
• Pinout Same as TC1410/11/12
• Space Saving 8-Pin MSOP Package
Features:
• High Peak Output Current: 2A
• Latch-Up Protected: Will Withstand – 500mA Reverse Current
• Input Will Withstand Negative – Inputs Up to 5V
• ESD Protected: 4kV
• Wide Operating Range: 4.5V to 16V
• High Capacitive Load Drive Capability:
  • 1000pF in 18ns
• Short Delay Time: 35ns (typ.)
• Matched Delay Times
• Low Supply Current:
  • With Logic ‘1’ Input: 500µA (typ.)
  • With Logic ‘0’ Input: 100µA (typ.)
• Low Output Impedance: 4Ω (typ.)
• Pinout Same as TC1410/11/13
• Space Saving 8-Pin MSOP Package
Features:
- Latch-Up Protected: Will Withstand 500mA – Reverse Current
- Input Will Withstand Negative Inputs Up to 5V
- ESD Protected: 4kV
- High Peak Output Current: 1A
- Wide Input Supply Voltage Operating
  - Range: 4.5V to 16V
- High Capacitive Load Drive Capability:
  - 1000pF in 25ns (typ.)
- Short Delay Time: 30ns (typ.)
- Matched Delay Times
- Low Supply Current
  - With Logic ‘1’ Input: 500µA
  - With Logic ‘0’ Input: 100µA
- Low Output Impedance: 8Ω
- Available in Space-Saving 8-pin MSOP Package
- Pinout Same as TC1410/TC1412/TC1413
Features:

- Latch-Up Protected:
  - Will Withstand 500mA Reverse Current
- Input Will Withstand Negative Inputs Up to 5V
- ESD Protected: 4kV
- High Peak Output Current: 0.5A
- Wide Input Supply Voltage Operating Range:
  - 4.5V to 16V
- High Capacitive Load Drive Capability:
  - 500pF in 25ns (typ.)
- Short Delay Time: 30ns (typ.)
- Consistent Delay Times With Changes in –
  - Supply Voltage
- Matched Delay Times
- Low Supply Current
  - With Logic ‘1’ Input: 500µA
  - With Logic ‘0’ Input: 100µA
- Low Output Impedance: 16Ω
- Pinout Same as TC1411/TC1412/TC1413
- Packages: 8-pin MSOP
MIC44F18/19/20
6A High Speed MOSFET Drivers in 2mm x 2mm Package

Features:
• 4.5V to 13.2V input operating range
• 6A peak output current
• High accuracy ±5% enable input threshold
• High speed switching capability:
  • 10ns rise time in 1000pF load
  • <15ns propagation delay time
• Flexible UVLO function:
  • 4.2V internally set UVLO
  • Programmable with external resistors
• Latch-up protection to >500mA reverse –
  - current on the output pin
• Enable function
• Thermally enhanced ePad MSOP-8 package option
• Miniature 2mm x 2mm MLF®-8 package option
• Pb-free packaging
Features:
• Power Driver With On Board Voltage Booster
• Low $I_{DD}$: <4mA
• Small Package: 8-Pin PDIP
• Under-Voltage Circuitry
• Fast Rise-Fall Time: <40ns @1000pF
• Below-Rail Input Protection
MAQ4123/4/5
Automotive AEC-Q100 Qualified Dual 3A Peak Low-Side MOSFET Driver

Features:
- Automotive AEC-Q100 qualified
- High ±3A peak output current
- Wide 4.5V to 20V supply voltage range
- Low 2.3Ω output resistance
- Logic input withstands swing to -5V
- Output voltage swings within 25mV of ground or VS
- Low supply current
  - 2.0mA with logic 1 input (maximum over – temperature)
  - 300μA with logic 0 input (maximum over – temperature)
- '426/7/8-, '1426/7/8-, '4426/7/8 industry standard pin out
- Fast 10ns rise/fall times with 1800pF capacitive load
- TTL/CMOS logic inputs independent of supply voltage
- Inverting, non-inverting, and differential configurations
- -40ºC to +125ºC temperature range
- Recommended for Automotive Design
MIC4126/7/8
Dual 1.5A-Peak Low-Side MOSFET Drivers in Advanced Packaging

Features:
• Dual 1.5A-peak drivers
• 4.5V to 20V operating range
• Exposed backside pad packaging reduces heat
  • ePad SOIC-8L (θJA = 58°C/W)
  • ePad MSOP-8L (θJA = 60°C/W)
  • 3mm x 3mm MLF®-10L (θJA = 60°C/W)
• Bipolar/CMOS/DMOS construction
• 25mV maximum output offset from supply or ground
• Latch-up protection to >500mA reverse current
• Switches 1000pF in 25ns
• Logic-input threshold independent of supply voltage
• Logic-input protection to -5V
• 6pF typical equivalent input capacitance
• -40°C to +125°C operating junction temperature range
MCP1403/4/5
4.5A Dual High-Speed Power MOSFET Drivers

Features:

- High Peak Output Current: 4.5A
- Wide Input Supply Voltage Operating – Range: 4.5V to 18V
- High Capacitive Load Drive Capability:
  - 2200pF in 15ns
- Short Delay Times: 40ns (typ.)
- Low Supply Current:
  - With Logic ‘1’ Input: 1.0mA (max.)
  - With Logic ‘0’ Input: 150μA (max.)
- Latch-Up Protected: Will Withstand 1.5A
- Reverse Current
- Logic Input Will Withstand Negative Swing up to 5V
- Packages: 8-Pin SOIC, PDIP, 6x5 DFN, and 16-Pin SOIC
- Recommended for Automotive Design (MCP1404/5)
Features:

• High Peak Output Current: 4.5A
• Wide Input Supply Voltage Operating – Range: 4.5V to 18V
• High Capacitive Load Drive Capability: 1800pF in 12ns
• Short Delay Times: 40ns (typ.)
• Matched Rise/Fall Times
• Low Supply Current:
  • With Logic ‘1’ Input: 1.0mA (max.)
  • With Logic ‘0’ Input: 150μA (max.)
• Low Output Impedance: 2.5Ω (typ.)
• Latch-up protected: will withstand – 1.5A reverse current
• Logic input will withstand negative – swing up to 5V
• Pin compatible with the TC4423/24/25 – and TC4426A/27A/28A
• Packages: 8-Pin SOIC, 8-Pin 6x5 DFN
• Recommended for Automotive Design (TC4424A)
MCP14A0453/4/5
4.5A Dual MOSFET Driver with Low Threshold Input and Enable

Features:
• Peak Output Current: 4.5 A
• Wide Supply Voltage Range: 4.5 V to 18 V
• Low Shoot-Through / Cross-Conduction Current in Output Stage
• High Capacitive Load Drive Capability:
  • 2200 pF in 12 ns, (tr and tf, typ.)
  • Short Delay: 16 ns (tD1), 19 ns (tD2, typ.)
• Low Supply Current: 620 μA (typ.)
• Low Voltage Threshold Input and Enable, with hysteresis, for use with low-voltage MCUs
  • 1.3 V to 1.6 V
• Latch-Up Protected:
  • Withstands 500 mA Reverse Current
• Small Packages:
  • 8- Lead MSOP
  • 8- Lead SOIC
  • 8- Lead 2x3 TDFN
MIC4223/4/5
Dual 4A 4.5V to 18V 15ns Switch Time Low-Side MOSFET Drivers with Enable

Features:
• 4.5V to 18V supply voltage operating range
• High peak source/sink current
  • ±3A at $V_{DD} = 8V$
  • ±4A at $V_{DD} = 12V$
• 15ns/15ns rise and fall times with 2000pF load
• 25ns/35ns (rising/falling) input propagation delay
• 20ns/45ns (rising/falling) enable propagation delay
• Active-high driver enable inputs with 100kΩ pull-ups
• Output latch-up protection to >500mA reverse current
• Industry standard pin out with two package options
  • ePad MSOP-8 ($\theta_JA = 60^\circ C/W$)
  • 8-pin SOIC ($\theta_JA = 120^\circ C/W$)
• Available in dual-inverting (MIC4223), dual non-inverting –
  - (MIC4224) and complementary (MIC4225)
• -40ºC to +125ºC operating junction temperature range
Features:
• High Peak Output Current: 4.0A
• Independent Enable Function for –
  - Each Driver Output
• Low Shoot-Through/Cross –
  - Conduction Current in Output –
  - Stage
• Wide Input Supply Voltage –
  - Operating Range: 4.5V to 18V
• High Capacitive Load Drive Capability:
  • 2200pF in 15ns (typ.)
  • 5600pF in 26ns (typ.)
• Short Delay Times: 50ns (typ.)
• Latch-Up Protected: Will Withstand –
  - 1.5A Reverse Current
• Logic Input Will Withstand Negative –
  - Swing Up To 5V
• Packages: 8-Pin 6x5 DFN, PDIP, SOIC
• Recommended for Automotive Design (MCP14E4)
MIC4423/4/5
Dual 3A-Peak Low-Side MOSFET Driver
Bipolar/CMOS/DMOS Process

Features:
• Reliable, low-power bipolar/CMOS/DMOS – construction
• Latch-up protected to >500mA reverse current
• Logic input withstands swing to -5V
• High 3A peak output current
• Wide 4.5V to 18V operating range
• Drives 1800pF capacitance in 25ns
• Short <40ns typical delay time
• Low equivalent 6pF input capacitance
• 3.5mA with logic 1 input
• 350μA with logic 0 input
• Low 3.5Ω typical output impedance
• Output voltage swings within 25mV of ground or VS.
• '426/7/8-, '1426/7/8-, '4426/7/8-compatible pinout
• Inverting, noninverting, and differential configurations
MCP14E9/10/11
3.0A Dual High-Speed Power MOSFET Driver With Enable

Features:
• High peak output Current: 3A (typ.)
• Dual Outputs (E9/10/11):
  • Dual inverting: MCP14E9
  • Dual non-inverting: MCP14E10
  • Complementary outputs: MCP14E11
• Enable Function for each Driver
• Low Shoot-Through/Cross-Conduction - Current Wide Input Operating Range:
  • 4.5v to 18V
• High Capacitive Load drive Capability:
  • 1800 pF in 17 nsec (typ.)
• Short Delay Times: 45 nsec (typ.)
• Latch-up Protected Passed JEDEC – JESD78A
• Input are TTL/CMOS compatible – and will withstand negative swings – Up To 5V
• ESD Protected: 4kV
• Packages: 8-Pin 6x5 DFN, PDIP, SOIC
Features:
• High Peak Output Current: 4.5A
• Wide Input Supply Voltage Operating – Range: 4.5V to 18V
• High Capacitive Load Drive Capability:
  • 1800pF in 12ns
• Short Delay Times: 40ns (typ.)
• Matched Rise/Fall Times
• Low Supply Current:
  • With Logic ‘1’ Input: 1.0mA (max.)
  • With Logic ‘0’ Input: 150μA (max.)
• Low Output Impedance: 2.5Ω (typ.)
• Latch-up protected: will withstand – 1.5A reverse current
• Logic input will withstand negative – swing up to 5V
• Pin compatible with the TC4423/24/25 – and TC4426A/27A/28A
• Packages: 8-Pin SOIC, 8-Pin 6x5 DFN
• Recommended for Automotive Design (TC4424A)
MCP14A0303/4/5
3.0A Dual MOSFET Driver with Low Threshold Input and Enable

Features:
• Peak Output Current: 3.0 A
• Wide Supply Voltage Range: 4.5 V to 18 V
• Low Shoot-Through / Cross-Conduction Current in Output Stage
• High Capacitive Load Drive Capability:
  • 1800 pF in 12 ns, (tr and tf, typ.)
  • Short Delay: 17 ns (tD1), 21 ns (tD2, typ.)
• Low Supply Current: 620 µA (typ.)
• Low Voltage Threshold Input and Enable, with hysteresis, for use with low-voltage MCUs
  • 1.3 V to 1.6 V
• Latch-Up Protected:
  • Withstands 500 mA Reverse Current
• Small Packages:
  • 8- Lead MSOP
  • 8- Lead SOIC
  • 8- Lead 2x3 TDFN
Features:
• High peak output Current: 2A (typ.)
• Dual Outputs:
  • Dual inverting: MCP14E6
  • Dual non-inverting: MCP14E7
  • Complementary outputs: MCP14E8
• Enable Function for each Driver
• Low Shoot-Through/Cross-Conduction – Current in output Stage
• Wide Input Operating Range: 4.5v to 18V
• High Capacitive Load drive Capability:
  • - 1000 pF in 15 nsec (typ.)
• Short Delay Times: 45 nsec (typ.)
• Latch-up Protected Passed JEDEC – JESD78A
• Input are TTL/CMOS compatible and – will withstand negative swings up to 5V
• ESD Protected: 4kV
• Packages: 8-Pin 6x5 DFN, PDIP, SOIC
MIC4426/7/8
Dual 1.5A-Peak Low-Side MOSFET Driver

Features:
• Latch-up protection to >500mA reverse current
• 1.5A peak output current
• 4.5V to 18V operating range
• Low quiescent supply current
  • 4mA at logic 1 input
  • 400μA at logic 0 input
• Switches 1000pF in 25ns
• 7Ω output impedance
• <40ns typical delay
• 6pF typical equivalent input capacitance
• 25mV max. output offset from supply or ground
• Replaces MIC426/427/428 and MIC1426/1427/1428
• Dual inverting, dual noninverting, and inverting/- noninverting configurations
• ESD protection
Features:
• Independently-Programmable Rise – and Fall Times
• Low Output Impedance: 7Ω (typ.)
• High Speed \( t_{R}, t_{F} \):
  • < 30ns with 1000pF Load
• Short Delay Times: < 30ns
• Wide Operating Range: 4.5V to 18V
• Latch-Up Protected:
  • Will Withstand > 500mA
  • Reverse Current (Either Polarity)
• Input Withstands Negative Swings – Up to -5V
Features:
• High Peak Output Current: 1.5A
• Wide Input Supply Voltage Operating Range:
  • 4.5V to 18V
• High Capacitive Load Drive Capability:
  • 1000pF in 25ns (typ.)
• Short Delay Times: 30ns (typ.)
• Matched Rise, Fall and Delay Times
• Low Supply Current:
  • With Logic ‘1’ Input: 1mA (typ.)
  • With Logic ‘0’ Input: 100μA (typ.)
• Low Output Impedance: 7Ω (typ.)
• Latch-Up Protected: Will Withstand 0.5A –
  - Reverse Current
• Input Will Withstand Negative Inputs Up to 5V
• ESD Protected: 4kV
• Pin-compatible with TC426/27/28 and -
  - TC4426/27/28
• 8-Pin MSOP and 8-Pin 6x5 DFN Packages
• Recommended for Automotive Design (TC4426A/27/28)
**MCP14A0153/4/5**

1.5A Dual MOSFET Driver with Low Threshold Input and Enable

**Features:**

- **High Peak Output Current:**
  - 1.5A (typical)

- **Wide Input Supply Voltage Operating Range:**
  - 4.5V to 18V

- **Low Shoot-Through/Cross-Conduction – Current in Output Stage**

- **High Capacitive Load Drive Capability:**
  - 1000 pF in 11.5 ns (typical)

- **Short Delay Times:** 25 ns ($t_{D1}$), 24 ns ($t_{D2}$) – (typical)

- **Low Supply Current:** 750 μA (typical)

- **Low-Voltage Threshold Input and Enable – with Hysteresis**

- **Latch-Up Protected:** Withstands 500 mA – Reverse Current

- **Space-Saving Packages:**
  - 8-Lead MSOP
  - 8-Lead SOIC
  - 8-Lead 2x3 TDFN
### Features:
- **Built using reliable, low power CMOS processes**
- **Latchproof: withstands 500mA inductive kickback**
- **Three input logic choices**
- **Symmetrical rise and fall times 25ns**
- **Short, equal delay times 75ns**
- **High peak output current 1.2A**
- **Wide operating range 4.5 to 18V**
- **Low equivalent input capacitance (typ) 6pF**
- **Inputs = Logic 1 for any input from 2.4V to VS**
- **ESD protected**
Features:
• High Peak Output Current: 1.2A
• Wide Operating Range: 4.5V to 18V
• Symmetrical Rise/Fall Times: 25ns
• Short, Equal Delay Times: 75ns
• Latch-proof. Will Withstand 500mA – Inductive Kickback
• 3 Input Logic Choices: AND / NAND / - AND + Inv
• ESD Protection on all pins: 2kV
**Features:**
- High Peak Output Current: 1.2A
- Wide Operating Range: 4.5V to 18V
- Symmetrical Rise/Fall Times: 25ns
- Short, Equal Delay Times: 75ns
- Latch-proof. Will Withstand 500mA – Inductive Kickback
- 3 Input Logic Choices: AND / NAND / AND + Inv
- ESD Protection on all pins: 2kV
Features:
• +4.75V to +32V operation
• Less than 1µA current in the "off" state
• Internal charge pump to drive the gate of an N-channel power FET above supply
• Available in small outline SOIC packages
• Internal Zener clamp for gate protection
• Minimum external parts count
• Can be used to boost drive to low-side power FETs – operating on logic supplies
• 25µs typical turn-on time with optional external capacitors
• Implements high- or low-side drivers
MIC5013
Protected High- or Low-Side MOSFET Driver

Features:
• +7.0V to +32V operation
• Less than 1µA current in the "off" state
• Internal charge pump to drive the gate of an N–channel power FET above supply
• Available in small outline SOIC packages
• Internal Zener clamp for gate protection
• 60µs typical turn-on time to 50% gate overdrive
• Programmable over-current sensing
• Dynamic current threshold for high in-rush loads
• Fault output pin indicates current faults
• Implements high- or low-side switches
**MIC5014/15**

Low-Cost High- or Low-Side MOSFET Driver

**Features:**

- +2.75V to +30V operation
- 100µA maximum supply current (5V supply)
- 15µA typical off-state current
- Internal charge pump
- TTL compatible input
- Withstands 60V transient (load dump)
- Reverse battery protected to −20V
- Inductive spike protected to −20V
- Overvoltage shutdown at 35V
- Internal 15V gate protection
- Minimum external parts
- Operates in high-side or low-side configurations
- 1µA control input pull-off
- MIC5015: Inverting
- MIC5014: Non-inverting versions
Features:
• 2.75V to 30V operation
• 100µA maximum supply current (5V supply)
• 15µA typical off-state current
• Internal charge pump
• TTL-compatible input
• Withstands 60V transient (load dump)
• Reverse battery protected to -20V
• Inductive spike protected to -20V
• Overvoltage shutdown at 35V
• Internal 15V gate protection
• Minimum external parts
• Operates in high-side or low-side configurations
• 1µA control input pull-off
• Available in 8-pin 3mm x 3mm MLF® package
Features:
• +2.7V to +9V operation
• 150µA typical supply current at 5V supply
• ≤1µA typical standby (off) current
• Charge pump for high-side low-voltage applications
• Internal Zener diode gate-to-ground MOSFET – protection
• Operates in low- and high-side configurations
• TTL compatible input
• ESD protected
MIC5019
Ultra Small High-Side N-Channel MOSFET Driver
with Integrated Charge Pump

Features:
• 4-pin 1.2mm x 1.2mm Thin QFN Package
• +2.7V to +9V supply voltage range
• 16V gate drive at $V_{DD} = 9V$
• 8V gate drive at $V_{DD} = 2.7V$
• Operates in low and high side configurations
• 150μA (typical) supply current at $V_{DD} = 5V$
• <1μA shutdown supply current
• -40ºC to +125ºC Junction Temperature Range
MIC4100/1
100V Half Bridge MOSFET Drivers

Features:
• Bootstrap supply max voltage to 118V DC
• Supply voltage up to 16V
• Drives high- and low-side N-Channel MOSFETs – with independent inputs
• CMOS input thresholds (MIC4100)
• TTL input thresholds (MIC4101)
• On-chip bootstrap diode
• Fast 30ns propagation times
• Drives 1000pF load with 10ns rise and fall times
• Low power consumption
• Supply under-voltage protection
• 3Ω pull up, 3Ω pull down output resistance
• Space saving SOIC-8L package
• -40°C to +125°C junction temperature range
MIC4102
100V Half Bridge MOSFET Driver with Anti-Shoot-Through Protection

Features:
• Drives high- and low-side N-Channel MOSFETs – with single input
• Adaptive anti-shoot-through protection
• Low side drive disable pin
• Bootstrap supply voltage to 118V DC
• Supply voltage up to 16V
• TTL input thresholds
• On-chip bootstrap diode
• Fast 30ns propagation times
• Drives 1000pF load with 10ns rise and fall times
• Low power consumption
• Supply under-voltage protection
• 2.5Ω pull up, 1.5Ω pull down output resistance
• Space saving SOIC-8L package
• -40°C to +125°C junction temperature range
Features:
• Asymmetrical, low impedance outputs drive –
  - 1000pF load with 10ns rise times and 6ns –
    - fall times
• Bootstrap supply max voltage to 118V DC
• Supply voltage up to 16V
• Drives high- and low-side N-Channel MOSFETs –
  - with independent inputs
• CMOS input thresholds (MIC4103)
• TTL input thresholds (MIC4104)
• On-chip bootstrap diode
• Fast 24ns propagation times
• Low power consumption
• Supply under-voltage protection
• Typical 2.5Ω pull up and 1.25Ω pull down output –
  - driver resistance
• -40°C to +125°C junction temperature range
Features:
• Independent PWM Input Control for –
  - High-Side and Low-Side Gate Drive
• Logic Level Threshold 3.0V TTL Compatible
• Dual Output MOSFET Drive for Synchronous Applications
• High Peak Output Current: 2A (typ.)
• Internal Bootstrap Blocking Device
• +36V BOOT Pin Maximum Rating
• Low Supply Current: 45μA (typ.)
• High Capacitive Load Drive Capability:
  • 3300pF in 10.0ns (typ.)
• Under voltage Lockout Protection
• Over temperature Protection
• Packages: 8-Lead SOIC, 8-Lead 3x3 DFN
• Recommended for Automotive Design
MCP14628
2A Synchronous Buck Power MOSFET Driver

Features:
• Dual Output MOSFET Driver for –
  - Synchronous Applications
• High Peak Output Current: 2A (typ.)
• Adaptive Cross Conduction Protection
• Internal Bootstrap Blocking Device
• +36V BOOT Pin Maximum Rating
• Enhanced Light Load Efficiency Mode
• Low Supply Current: 80μA (typ.)
• High Capacitive Load Drive Capability:
  • 3300pF in 10ns (typ.)
• Tri-State PWM Pin for Power Stage Shutdown
• Input Voltage Under voltage Lockout Protection
• Space Saving Packages:
  • 8-Lead SOIC, 8-Lead 3x3 DFN
MIC4600

28V Half-Bridge MOSFET Driver

Features:

• Adjustable dead time circuitry
• Anti-shoot-through protection
• Internal LDO for single supply operation
• Input voltage range: 4.5V to 28V
• Fast propagation delay: 20ns
• Up to 1.5 MHz operation
• Low voltage logic level inputs for μC or –
  - FPGA driven power solutions
• Independent inputs for low and high side –
  - drivers
• 2Ω gate drive capable of driving 3000pF –
  - load with 15ns rise and fall times
• Low 450µA typical quiescent current
• 3mm x 3mm QFN package
• -40°C to +125°C junction temperature range
MIC4605
85V Half-Bridge MOSFET Driver, Adaptive Dead Time, Shoot-Thru Protection

Features:
- 5.5V to 16V gate drive supply voltage – range
- Advanced adaptive-dead-time
- Intelligent shoot-through protection
- MIC4605-1: Dual TTL inputs
- MIC4605-2: Single PWM input
- Enable input for on/off control
- On-chip bootstrap diode
- Fast 35ns propagation times
- Drives 1000pF load with 20ns rise – and fall times
- Low power consumption: 135µA quiescent current
- Separate high- and low-side under-voltage protection
- -40°C to +125°C junction temperature range

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MIC4604
85V Half Bridge MOSFET Drivers with Programmable Gate Drive

Features:
• 5.5V to 16V gate drive supply voltage range
• Drives high-side and low-side N-Channel — MOSFETs with independent inputs
• TTL input thresholds
• On chip bootstrap diode
• Fast 39ns propagation times
• Drives 1000pF load with 20ns rise and — fall times
• Low power consumption
• Supplies under-voltage protection
• -40°C to +125°C junction temperature range
Features:
• Power Driver With On Board Voltage Booster
• Low $I_{DD}$: <4mA
• Small Package: 8-Pin PDIP
• Under-Voltage Circuitry
• Fast Rise-Fall Time: <40ns @1000pF
• Below-Rail Input Protection
MIC5021
High-Speed High-Side MOSFET Driver

Features:
• 12V to 36V operation
• 550ns rise/fall time driving 2000pF
• TTL compatible input with internal pull-down – resistor
• Overcurrent limit
• Gate to source protection
• Internal charge pump
• 100kHz operation guaranteed over full – temperature and operating voltage range
• Compatible with current sensing MOSFETs
• Current source drive reduces EMI