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1200V High-Current, Half-Bridge, Gate-Driver IC (HVIC)

FAN73912A

Public Information



FAN73912A : 1200V 2A-Source / 3A-Sink High & Low Side Gate Driver

Value Proposition

The FAN73912A is a monolithic high and low-side gate-drive IC designed for high-voltage and high-speed driving for MOSFETs and IGBTs that operate up to 1200V. The advanced input filter of HIN provides protection against short-pulsed input signals caused by noise. An advanced level-shift circuit offers highside gate driver operation up to VS=-9.8 V (typical) for VBS=15 V. The UVLO circuit prevents malfunction when VCC and VBS are lower than the specified threshold voltage.

Unique Features	Benefits	Typical Application Diagram
 Separate logic supply (VDD) from 3V to 20 V Built-in advanced input filter 	 Strong immunity for dV/dt Adjustable input threshold Reliable design 	Up to 1200V
Other features		$ \begin{array}{c c} \hline \\ \hline $
 Typically IO+ source 2A / IO- sink 3A capability for both channels Gate driver supply (VCC) range from 12 to 20 V Cycle-by-cycle edge-triggered shutdown logic UVLO functions for VDD/VBS Matched propagation delay below 35ns Outputs in-phase with input signal Logic and power ground +/- 10 V offset 		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
Market & Applications		Ordering information and packaging
Electrical ContactorIndustrial Motor Driver		Part Number Operating Temp Package

- Industrial Motor Driver
- UPS & Solar Inverter
- Ballast
- Half-bridge Converter

SOIC-16

FAN73912AMX

(-40;125)[°C]

SOIC-16 WB

FAN73912A Motor Control Demo

Specifications and Features

- Separate logic supply(VDD) from 3 V to 20 V
- Built-in advanced input filter
- Typically IO+ 2A / IO- 3A capability for both channels
- Gate driver supply (VCC) range from 12 to 20 V
- Cycle-by-cycle edge-triggered shutdown logic
- UVLO functions for VDD/VBS
- Matched propagation delay below 35ns
- Outputs in-phase with input signal
- Logic and power ground +/- 10 V offset

Market & Applications

- Electrical Contactor
- Industrial Motor Driver
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Demo Board Photo





Setup Connected to FAN73912A Motor Control Demo



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FAN73912A Motor Control Demo & LAB Setups





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FAN73912A – Motor Control Evaluation Board Schematics





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FAN73912A Gate Driver Competitive Landscape

Differentiated Specs

Similar Specifications						
	Competitor	FAN73912A				
Qual Level	Industrial	Industrial				
MSL	3	3				
Output Phase	In Phase with Input	In Phase with Input				
Package	16 Wide-SOP	16 Wide-SOP				
Channels	2	2				
Two stage turn-on for di/dt control	NO	NO				
Shoot-Through Prevention	NO	NO				
Shut down	YES	YES				
VDD for Logic supply	YES	YES				
VIH @ VDD=15V [V]	Min 9.5	Min 9.5				
VIL @ VDD=15V [V]	Max 6.0	Max 6.0				

	Competitor (Referenced to T _A @25°C)	FAN73912A (Referenced to Tj@Full Temp)	FAN73912 (Referenced to T _A @25°C)
Max TJ	125 °C	150 °C	
VB-GND [V]	Max 1225 @ T _A =25°C	Max 1225 @ T _J =25°C Max 1225 @ T _J =150°C Max 1100 @ T _J =-40°C	
Advanced Input filter	NO	Yes (Typ 150ns)	
Shoot-Through Prevention	NO	NO	Yes
IO+/IO- [A]	Тур 2.0 / -2.5	Typ 2.0 / -3.0	
VCCUV- / VBSUV- [V]	7.9/9.3/10.7	9.2/10.5/11.4	
VCCUV+ / VBSUV+ [V]	8.7/10.2/11.7	9.7/11.0/12.0	
VCCUVH/ VBSUVH [V]	Тур 0.9	Тур 0.5	
ILK [uA]	Max 50	Max 100	Max 50
IQCC [uA]	Typ 180/ max 340	Typ 170/ max 350	Typ 170/ max 300
IQDD [uA]	Typ 15/max 30	Max 20	Max 10
IQBS [uA]	Typ 125 / max 130	Typ 50 / max 100	
Separate Power and Logic Ground [V]	Yes (+/- 5V offset)	Yes (+/- 10V offset)	
Logic input voltage [V] (HIN, LIN and SD)	Min VSS	Min VSS+VDD-20	
Negative Vs [V]	-5V	8-VCC	
T on propagation delay [ns]	Тур 280	Typ 500 (influenced by Advanced input filter)	
Toff propagation delay [ns]	Тур 225	Typ 550 (influenced by Advanced input filter)	

st All voltage parameters are absolute voltages referenced to COM unless otherwise specified.

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