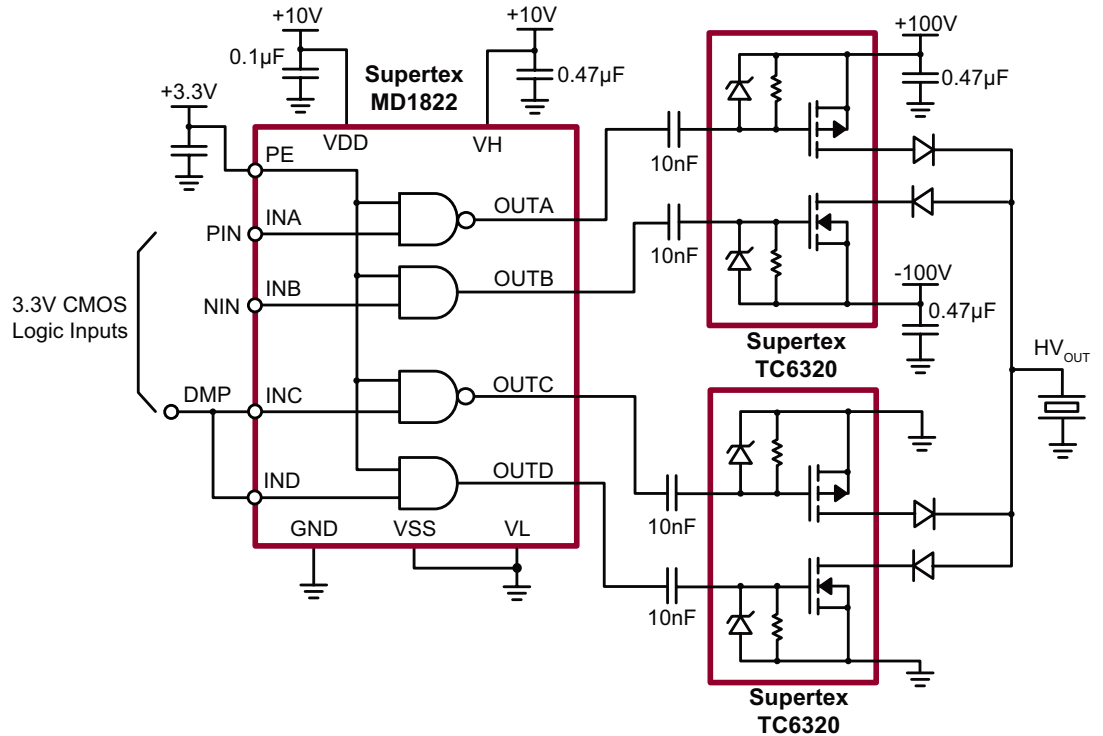


Product Summary Sheet

MD1820, MD1821, MD1822

High Speed, Four Channel MOSFET Drivers



Typical Application Circuit

Product Overview:

The Supertex MD1820, MD1821, and MD1822 are high speed, four channel MOSFET drivers designed to drive high voltage P- and N-channel MOSFETs for medical ultrasound applications and other applications requiring a high output current for a capacitive load. The MD1820 has four non-inverting outputs while the MD1821 has four inverting outputs. The MD1822 has two inverting and two non-inverting outputs. The high-speed input stage can operate from a 1.8 to 5.0V logic interface with an optimum operating input signal range of 1.8 to 3.3V. An adaptive threshold circuit is used to set the level translator switch threshold to the average of the input logic 0 and logic 1 levels. The input logic levels may be ground referenced, even though the drivers are putting out bipolar signals. The level translator uses a proprietary circuit, which provides DC coupling together with high-speed operation.

The output stage has separate power connections enabling the output signal L and H levels to be chosen independently from the supply voltages used for the majority of the circuit. As an example, the input logic levels may be 0 and 1.8V, the control logic may be powered by +5.0 and -5.0V, and the output L and H levels may be varied anywhere over the range of -5.0 to +5.0V. The output stage is capable of peak currents of up to $\pm 2.0A$, depending on the supply voltages used and load capacitance present. The PE pin serves a dual purpose. First, its logic H level is used to compute the threshold voltage level for the channel input level translators. Second, when PE is low, the outputs are disabled, with the A & C output high and the B & D output low. This assists in properly precharging the AC coupling capacitors that may be used in series in the gate drive circuit of an external PMOS and NMOS transistor pair.

Features:	Benefits:
6ns rise and fall time with 1000pF load	Better imaging
Outputs can swing below ground	Simple to drive P & N- channel MOSFETs
Low jitter design	Accurate Doppler measurement
Four matched channels	Accurate beam focusing

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Applications:

- ▶ Medical ultrasound imaging
- ▶ Piezoelectric transducer drivers
- ▶ Non-Destructive Testing (NDT)
- ▶ PIN diode driver
- ▶ CCD clock driver/buffer
- ▶ High speed level translator



QFN-16 (K6)



011812

High Speed, Four Channel MOSFET Drivers

Ordering Information / Availability

<u>Part Number</u>	<u>Package Option</u>	<u>Samples</u>	<u>Lead Time</u>
MD1820K6-G	16-Lead 3x3x1 QFN (Green)	Now	4-5 Weeks ARO
MD1821K6-G	16-Lead 3x3x1 QFN (Green)	Now	4-5 Weeks ARO
MD1822K6-G	16-Lead 3x3x1 QFN (Green)	Now	4-5 Weeks ARO

-G indicates the part is RoHS compliant (Green).



Product Contact

For any questions regarding the MD1822, please contact your local area Supertex sales office, or contact the main office in the US at:

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