

Product Summary Sheet

MD2131

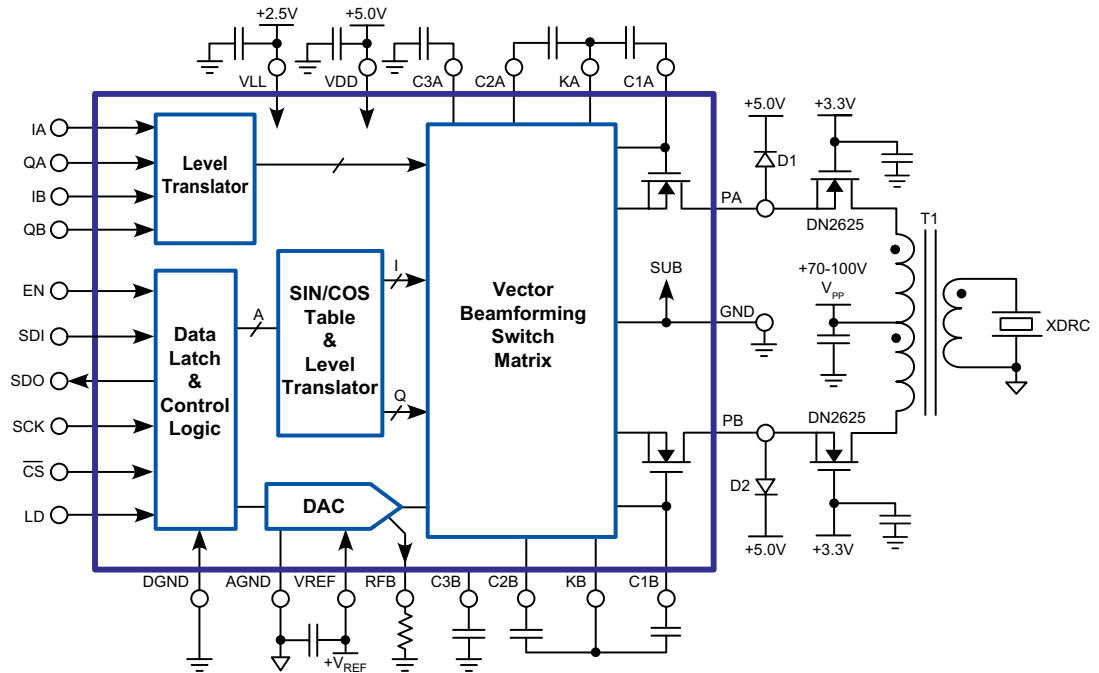
High Speed Ultrasound Beamforming Source Driver

Applications:

- ▶ Medical imaging ultrasound beamforming transmitter
- ▶ High resolution NDT and Sonar phase array driver
- ▶ Ultrasonic phase array focusing transmitter
- ▶ Piezoelectric & MEMS transducer waveform drivers
- ▶ High speed arbitrary waveform generator



40-Lead QFN (K7)



Functional Block Diagram

Product Overview:

The MD2131 is a high-speed, arbitrary waveform, push-pull source driver. It is designed for medical ultrasound imaging and HIFU beamforming applications. It also can be used in NDT, Sonar and other ultrasound phase-array focusing beamforming applications.

The IC circuit consists the CMOS digital logic input circuits, 8-bit current DAC for the waveform amplitude control and four PWM current-sources. These current sources are constructed with the high-speed in-phase and quadrature current-switch matrix and the built-in sine and cosine angle-to-vector look-up table. The angular resolution of the vector table is 7.5° per step with total range of 48 steps. There are four logic input signals to control the in-phase and quadrature PWM push-pull current-source's output timing, frequency, cycle in the burst and waveform envelope.

The MD2131 output stage is designed to drive two DN2625 depletion N-type MOSFETs as the source-driver. The MOSFET drains are connected to a center-tap ultrasound frequency pulse transformer. The secondary winding of the transformer can connect to the ultrasound piezo or capacitive transducer via cable and with a good impedance match. The MD2131 has the high-speed SPI compatible interface to achieve per-scan-line fast updating the data register for changing the beamforming phase angles and apodization amplitudes.

Features:	Benefits:
Source-driving & push pull circuit topology	Very fast switching current source PZT driver
DAC & Phase via SPI interface	Accurate ultrasound beamforming & focus scan
Dual N-FET & transformer coupled output	Low harmonic distortion and good isolation
PWM control method	Small propagation delay & very little time jitter

Supertex inc.



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Ordering Information / Availability

<u>Part Number</u>	<u>Package Option</u>	<u>Samples</u>	<u>Lead Time</u>
MD2131K7-G	40-Lead QFN (Green)	Now	4-5 Weeks

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



Product Contact

For any questions regarding the MD2131 please contact your local area Supertex sales office, or contact the main office in the US at:

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