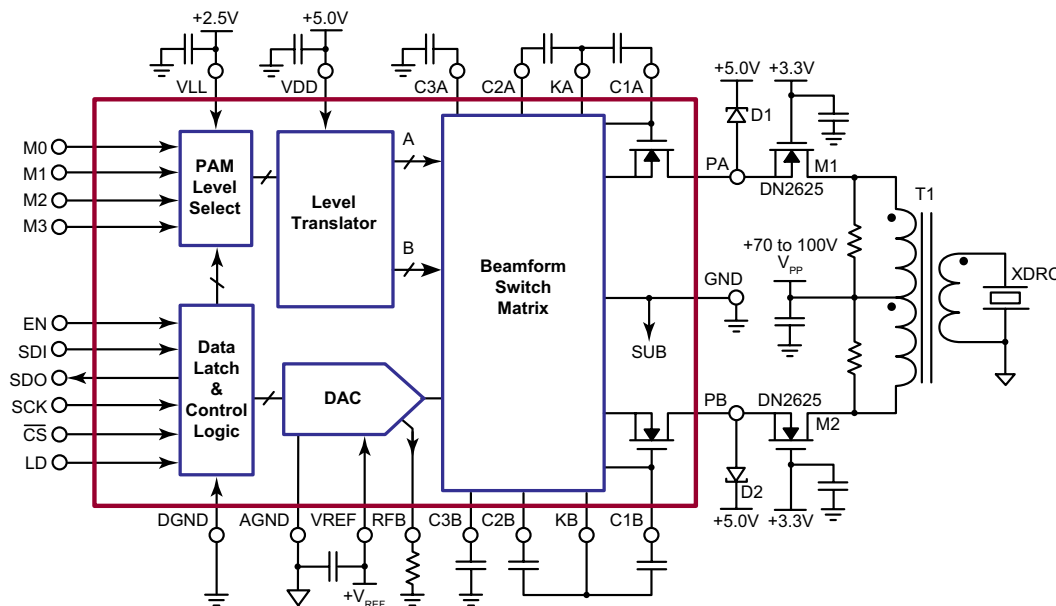


**Product
Summary
Sheet**

**High Speed Ultrasound
Beamforming Source Driver**

Applications:

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



Functional Block Diagram

Product Overview:

The MD2134 is a high-speed source driver for use in a pulsed current waveform generator. This programmable, fast, arbitrary current level driver is designed for medical ultrasound imaging beamforming applications. It also can be used in HIFU, NDT ultrasound and other instrument applications.

The MD2134 consists of CMOS digital logic input circuits, an 8-bit current DAC for aperture weighting amplitude control, and a programmable 7-level plus sign fast pulse amplitude modulation (PAM) current-sources. The fast current sources are constructed with current-switch array, controlled by the LV0~LV15 level-register as the waveform data points. Four logic inputs M[3:0] are used for transmit data level selecting, as well as the transmitting timing control pins. Each level can be programmed to a resolution of +/-127 including zero (8-bit) in addition to an 8-bit SPI apodization DAC. The outputs PA and PB are controlled by M[3:0] pins directly, as well as the polarity-flip bit S1 in the SPI register. The high-speed SPI interface will achieve per-scan-line fast data updating for dynamically changing delay time, weighting and waveforms.

The MD2134 outputs are designed to drive two very low-threshold, high-voltage depletion N-MOSFETs, such as Supertex's DN2625s, as source drivers. The two DN2625 drains are connected to a center-tap RF pulse transformer. The transformer's secondary output connects to a cable and piezoelectric or capacitive transducer as a load with a good impedance match.

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



40-Lead QFN (K7)



High Speed Ultrasound Beamforming Source Driver

Ordering Information / Availability

<u>Part Number</u>	<u>Package Option</u>	<u>Samples</u>	<u>Lead Time</u>
MD21314K7-G	40-Lead QFN (Green)	Now	4-6 Weeks

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



Product Contact

For any questions regarding the MD2134 please contact your local area Supertex sales office, or contact the main office in the US at:

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