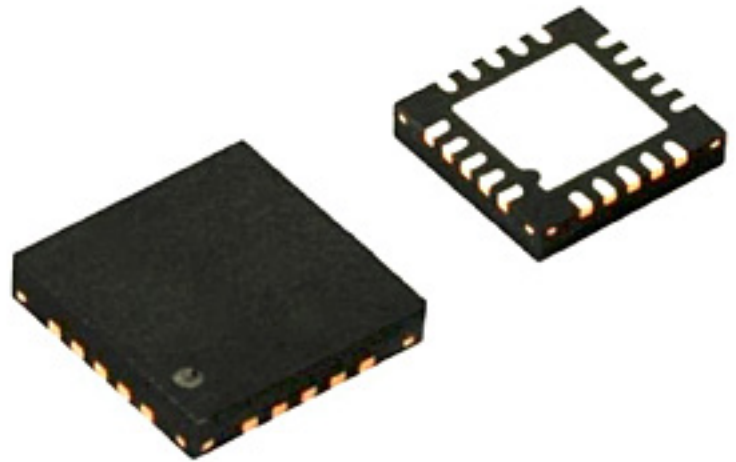# CSI021

4-Channel High Voltage Programmable Current Sink/Source

CSI021 NeuroStim ASSP Datasheet Rev. 1.3

Cirtec
MEDICAL

FEATURES

- 4 Output Channels per IC
- Independent 8 Bit DAC Programmability
- SPI Programmable Output Current Range
- High Output Current [up to 6mA]
- High Output Voltage [up to 18V]
- Programmable Pulse Widths
- Programmable Pulse Frequencies
- Programmable On/Off Periods
- Programmable Amplitude Ramp-Up
- Integrated Charge Ba lancing
- Low Voltage SPI Interface [2.SV]
- Low Overhead Power[< l0mW]
- Ultra-Low Standby Power[< 25µW]
- Real time status bits for all four channels
- SPI Writable Trigger Register to synchronize channels & multiple ICs

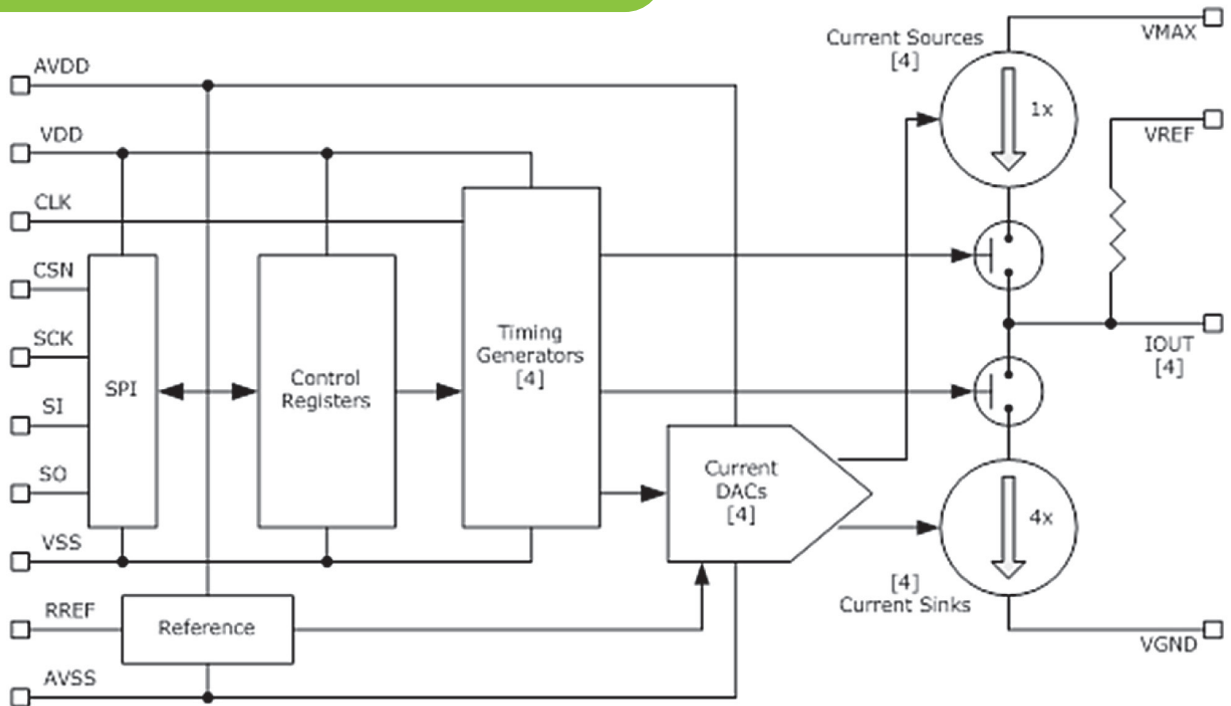## APPLICATIONS

- Neurostimulation/Neuromodulation
- Implantable Pulse Generator/IPG
- MEMs and Sendor Applications
- Battery Powered Applicaitons

GENERAL DESCRIPTION

The CSI021 features 4 independent 8-bit linear DAC programmable current sink/source outputs with up to 6mA full-scale sink, and l.SmA full-scale source currents. Full-scale current ranges are also adjustable via an external reference resistor. An 18V supply voltage allows for 6mA output currents into 1.SkO loads. The CSI021 pulse timing is fully programmable via a 10MHz, 2.SV SPI, such that all timing parameters are proportional to the input clock period. Programmable parameters include sink/source pulse widths, pulse frequencies, stimulation on/off periods, and amplitude ramp rates. Internal timing generators in the CSI021 use the programmed parameters to create therapy profiles with only minimal intervention from a host processor, and a 4:1 sink to source current ratio provides for easy stimulation charge balancing.

cirtecmed.com

FUNCTIONAL DIAGRAM

TYPICAL APPLICATION DIAGRAM

cirtecmed.com