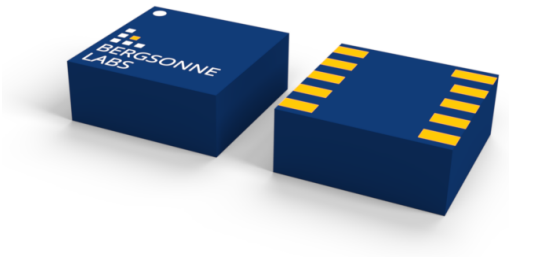




Drive.P

piezoelectric sensor/actuator driver

Built around the Boréas Technologies BOS1921 driver, the advanced DRIVE.P tile provides an ultra-compact, fully-integrated solution for interfacing with piezoelectric sensors and actuators. With a maximum peak-to-peak differential output amplitude of 190V, the ability to drive one or two capacitive loads up to a total of 820nF, a built-in waveform synthesizer and high-speed 1024-sample continuous-playback FIFO, as well as a sensing resolution of just 7.6mV, this tile provides an unparalleled level of integration for next-generation haptics and other piezoactuator solutions.



Overview

Revision	a
Package	T44-10
Power	1.8–5.5V (system), 3–5.5V (drive)
Component	BOS1921
Interfaces	I2C, I3C

Configuration

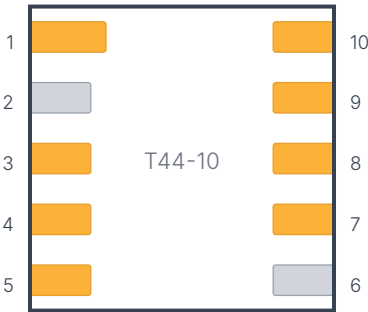
Use GPIO sideband

Pad 3 is the BOS1921 GPIO, routed to a Core pad. Only needed to place two Drive.P on one I2C bus (GPIO-gated re-address, driver §6.3.3). Leave unused for a single Drive.P.

Interface mode

I²C (default) · I3C

Pad Assignments



(top view)

PAD	TYPE	FUNCTION	NOTE
1	power	GND	
3	digital	GPIO	
4	digital	I2C.CLK	when using a non-Core processor, ensure adequate external pull-up resistance.
	digital	I3C.CLK	
5	digital	I2C.DAT	when using a non-Core processor, ensure adequate external pull-up resistance.
	digital	I3C.DAT	
7	drive	OUT+	
8	drive	OUT-	
9	power	V_DRIVE	3.0-5.5V supply for the power stage



10	power	V+	1.8-5.5V
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Interfaces

I2C

I2C

Mode

slave

Max Clock

1MHz

Address

0x44 (default)

Format

7-bit addr, 8-bit data

FUNCTION	REQ	PAD(S)
I2C.CLK	Yes	4
I2C.DAT	Yes	5

I3C

I3C

Mode

slave

FUNCTION

REQ

PAD(S)

I3C.CLK

Yes

4

I3C.DAT

Yes

5

Application Notes

Single Piezo
A single piezo connected across the OUT terminals can be used for both sensing and output, including bipolar output

Dual Piezo
Two piezos can be driven by in a unipolar configuration by connecting the positive lead of each piezo to each of the OUT pads, and the negative terminals to GND. Sensing is not possible in this configuration.