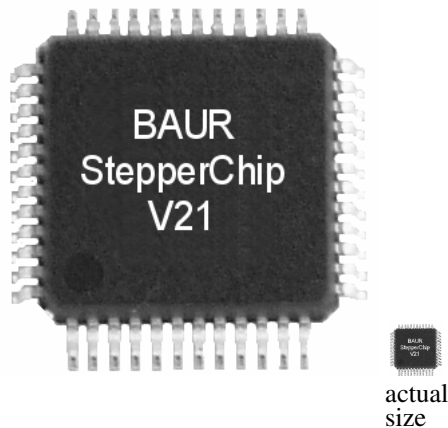


## Product info StepperChip-Vx1

- Controller-Chip for 2(3)-phase stepper motors
- A multitude of onboard functionality
- From 200 to 10000 steps/revolution



- Automatic motor set up at power on
- automatische Anpassung der Betriebsparameter
- Highly precise current controller for high and constant torque from step to step
- Variable boost function at acceleration
- Stand-By Mode (very low noise emission)
- Automatic current reduction at stand still
- Active ballast circuit protects from over-voltage
- Extensive device status information
- **Inputs:** (digital: CMOS 3.3V to 5V)  
PULSE, DIRECTION, IN1[Off, Reset, Gate]  
4 Bit Set phase current  
3 Bit Steps/revolution  
1 Bit Current reduction at stand still (on/off)  
1 Bit Over current (short circuit) detection
- **Inputs:** (analog: 0V bis 3.3V)  
Set current value for phase A and B  
Supply voltage, temperature
- **Outputs:** (CMOS 3.3V)  
READY, BALLAST, DIAGNOSTICS  
PWM for power drive stage
- 32 Pin LQFP Housing

### Variants / Order Code

StepperChip-V21      2-Phase Chip  
StepperChip-V31      3-Phase Chip



### Chip with Stepper Motor Know How

The StepperChip sets new standards for the digital control of stepper motor drives. Utilizing a state-of-the-art digital signal processor (DSP) made it possible to develop new procedures and control technologies. All necessary functionality to operate a stepper motor are on board the chip. So even without having specific know how it is now possible to simply design a high performance stepper drive. The StepperChip is a series product already implemented in a complete line of digital power drives. The application field of the chip are OEM-markets that design their own stepper drives. The target sales groups are high volume OEMs or manufacturers of application oriented controls such as hose pumps, pin stampers, lab and measuring devices etc.

**Automatic Controller Setup** At power on, the drive electronically analyzes the motor. Next the operating parameters are automatically tuned to achieve optimal dynamic and smooth run drive performance. Consequently the power drive adjusts itself to the respective motor. Specific power drive know how is therefore not required.

**Boost and Current Reduction** A variable boost function is enabled depending on the actual acceleration rate, i.e. an additional current offset is added to the set current value. With this, higher acceleration rates are possible. The current reduction reduces the motor current at stand still to 60% of the set current value.

#### Dynamic Operating Parameter Adjustment

Several conditions are continuously monitored during operation and the operating parameters are automatically adjusted. As a result the constant motor torque range stretches and dynamic positioning moves are also possible in the higher speed range.

**StandBy Mode** With lower speeds down to stand still the power drive gradually switches to the stand by mode. The motor is absolutely quiet and this with full torque. A big advantage for office and lab environments.

**Digital Phase Current Controller** The power drive design is fully digital and the phase current is measured directly in the motor windings. The strict focus was here to achieve optimal operating performance such as low resonance run, high step angle accuracy and high and constant torque from step to step.