Product Brief 2019

PowerHap – Piezo Actuators for Active Haptic Feedback

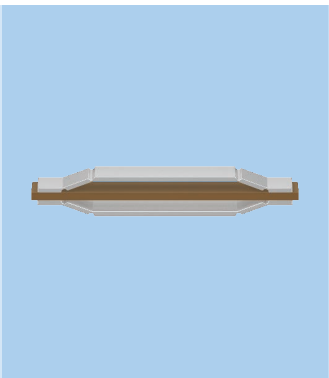
PowerHap™ is a family of powerful actuators for active haptic feedback in a very compact design. They are available in different sizes and designs and are therefore suitable for many applications from lightweight mobile devices to heavy industrial or automotive displays. The PowerHap piezo actuators are based on PZT piezo ceramics. Additional mechanical elements are used to amplify the feedback. In addition PowerHap can be also used as a sensor that provides an output voltage on its terminals when external force is applied.

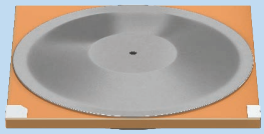
Sample applications

- Multifunctional automotive HMIs
- Displays
- Medical appliances
- Household appliances
- Smartphones
- ATM's and vending machines
- Industrial equipment
- Game controllers

Key benefits and features

- Compact design
- Low insertion height down to 1.1 mm
- Multilayer structure enables high acceleration ≥ 50 *g* and high force ≥ 50 N
- Large displacement ≥ 280 µm
- Fast response time < 1 ms
- Low power consumption
- Flexible and programmable waveforms
- Integrated sensor functionality
- Qualified based on AEC-Q200
- Bipolar driving mode allows low operating voltage (e.g. ±10 V)





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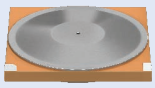
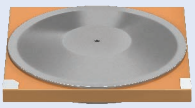
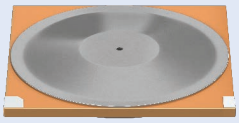
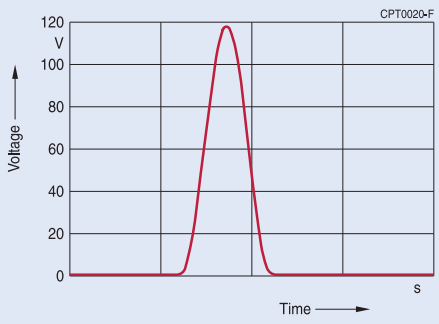
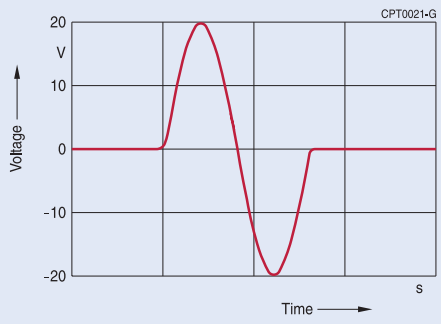
Specifications

				
Type	0909H011V060	1313H018V120	2626H023V120	
Size l × w × h	9 × 9 × 1.1	12.7 × 12.7 × 1.8	26 × 26 × 2.3	mm
Ordering code	B54103H2020A001	B54102H1020A001	B54101H1020A001	
Operating temperature (powered)		–40 … +85		°C
Custom waveforms		Yes		
Force sensing		Yes		
Unipolar driving mode				
Voltage	0 … 60	0 … 120	0 … 120	V
Acceleration (20 g mass @ single pulse, sine wave 200 Hz)	2.5 (pk) 5 (pk-pk)	7 (pk) 17 (pk-pk)		*g*
Acceleration (100 g mass @ single pulse, sine wave 200 Hz)	2.5 (pk) 5.2 (pk-pk)	7 (pk) 13 (pk-pk)	35 (pk) 87 (pk-pk)	*g*
Acceleration (500 g mass @ single pulse, sine wave 200 Hz)			6 (pk) 18 (pk-pk)	*g*
Displacement	35	65	230	µm
Loading charge	0.09	0.19	0.8	mC
Bipolar driving mode				
Voltage	–10 … 10	–20 … 20	–20 … 20	V
Acceleration (20 g mass @ single pulse, sine wave 200 Hz)	2 (pk) 4.5 (pk-pk)	5.5 (pk) 11 (pk-pk)	14 (pk) 28 (pk-pk)	*g*
Acceleration (100 g mass @ single pulse, sine wave 200 Hz)	0.8 (pk) 1.5 (pk-pk)	0.8 (pk) 1.5 (pk-pk)	16 (pk) 32 (pk-pk)	*g*

Unipolar driving mode (example)



Bipolar driving mode (example)



For further information please contact your local sales office.
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