



Product Brief

Point of Care Devices

Passive electronics components solutions for medical diagnostics and personal healthcare

Point of Care (PoC) devices are very valuable as they provide the ability to perform diagnostic tests close to the individual. An electronic PoC device needs reliable components during its development and subsequent validation by the manufacturer for its performance. Some of these devices include glucose testing meters, blood analyzers, blood pressure monitors, disease testing devices, etc. TDK offers a wide variety of electronic components for use in many different PoC devices.

Applications

- Coagulation testing devices
- Glucose testing meters
- Blood analyzers
- Handheld ultrasound units
- Pulse oximeters
- DNA analyzers
- Cholesterol/lipid test devices
- Infectious disease testing devices
- Blood pressure monitors
- Alcohol and drug testing units

Products

Ceramic Capacitors

- Disc ceramic for EMI
- General purpose MLCCs
- 3-terminal filters

Protection Devices

- Surge arresters
- Multilayer varistors
- TVS diodes
- Chip NTC thermistors
- PTC limit temperature sensors

Sensors

- BioMEMS
- Temperature sensors
- Pressure sensors
- Humidity sensors

RF Components

- Chip antennas
- Bandpass filters
- Baluns
- Diplexers/triplexers

Power Products

- Solar cells
- Wireless charging coils
- μ POL™ DC-DC converters

Piezo Products

- Haptic actuators
- Buzzers & sounders
- Stack actuators

Magnetics

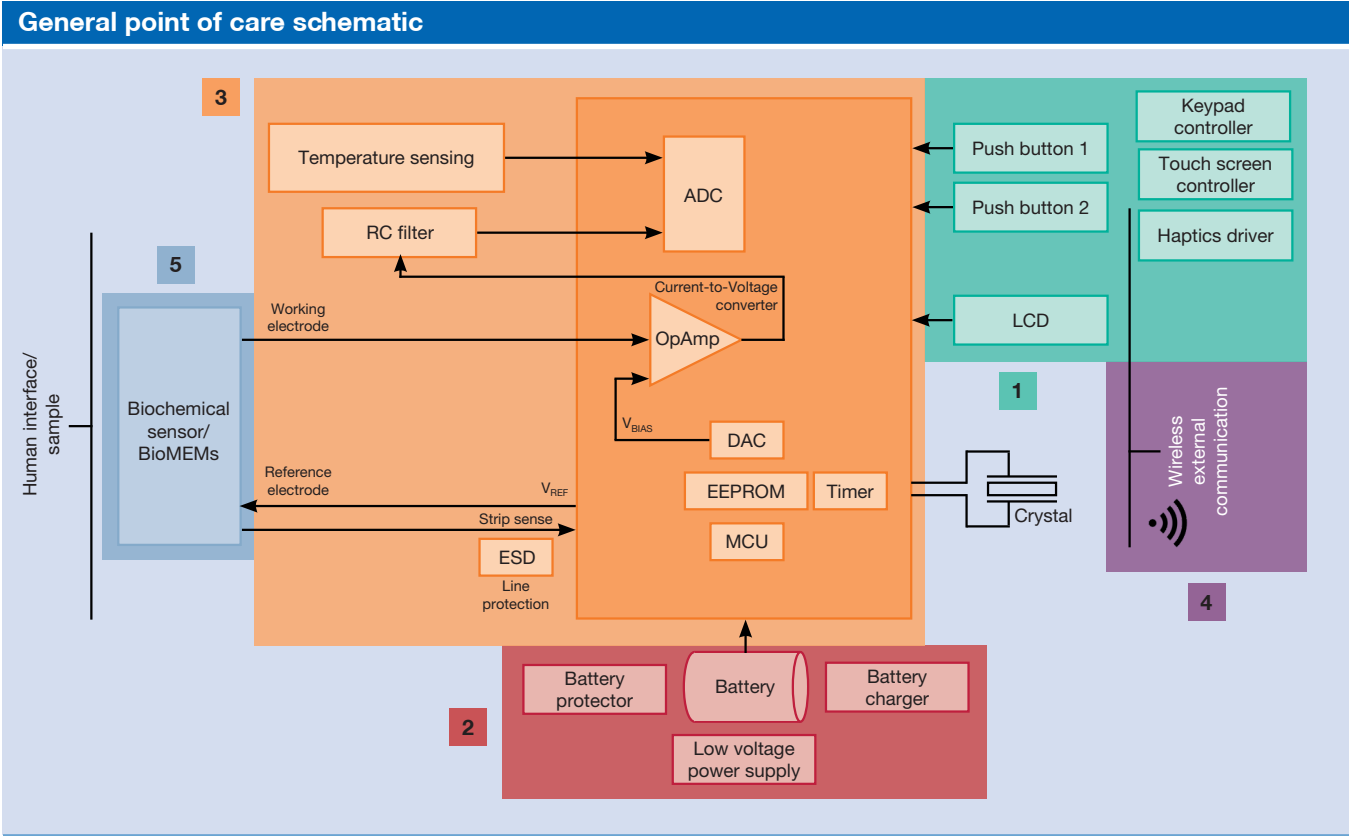
- Transformers
- Power inductors
- Filters



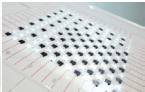
More information
product.tdk.com

or contact your local sales office

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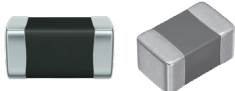
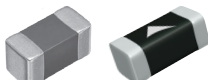
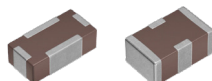


This schematic represents a general PoC device, listed components offer guidance that could help during the design and development of these devices.

Product overview									
Product details		Technical data	Features	Series	1	2	3	4	5
Sensors									
 BioMEMs	Micro and nano meter structures in silicon, glass, and flexible substrates Multiple metal and coating types	Foundry services and design support	Custom design	●					●
 Pressure Sensor Dies	Pressure: 0 ... 40 bar Operating temperature: -40 ... +150 °C Size: 0.65 x 0.65 mm ... 2.05 x 2.05 mm	- Available for absolute, gauge and back side absolute measurements - Various features on request	B58600, B58601			●			
 Humidity Sensors	Accuracy assurance: 20 ... 85% RH at +25 °C Nominal accuracy: ±5% RH Operating voltage: 5 V DC	- Sensor units with built-in circuits - Highly accurate - Characteristics are stable over a wide temperature range	CHS-MSS				●		

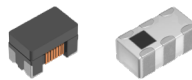
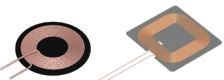
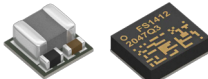
1 User interface 2 Power management 3 Main unit 4 Connectivity 5 MemS

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Protection Devices									
 Surge Arresters	DC spark-over voltage: 75 ... 500 V Nom. discharge current 8/20 μ s: 0.5; 2; 5; 20 kA	2-electrode square design - Low capacitance - High insulation resistance - Available in EIA 1812, 1206, 0805, 2.8 x 3.5 mm, and 4.1 x 6.2 mm	S15, S20, S30, G30, S80		•	•	•		
 SMD Varistors	Size (IEC): 0402 ... 2012 Voltage: 6.8 (4.76 ... 8.84) ... 39 (35 ... 43) V DC (1 mA)	- No polarity, due to symmetrical current-voltage characteristics - Excellent electrostatic absorption capability	B72530, B72540 B72500, B72590 B72660 AVRH, AVRМ		•	•	•		
 TVS Diodes	ESD protection to IEC 61000-4-2 Maximum contact discharge voltage up to 24 kV	- Bidirectional protection of I/O devices - Low clamping voltage type available	B74111, B74121	•	•	•	•		
 Chip NTC Thermistors	B constant: 3250 ... 4750 K $\pm 1\%$ (+25/+125 °C) Nominal resistance value: 22 Ω ... 1 M Ω (@ 25 °C)	- Lead-less terminal electrodes and electroplating (Ni-Sn) - Good stability of resistance value after soldering	NTCSP, NTCG, B57**	•	•	•	•		
 Voltage Protection	Breakdown voltage (1 mA): 8 (6.4 ... 9.6) V/8 (6.4 ... 9.6), 27 (21.6 ... 32.4) V ESD clamp voltage: 25/25, 60 max. V	Outstanding ESD absorption and protection characteristic (based on IEC 61000-4-2, Contact-8 kV)	SGNE		•	•	•		
 PTC Limit Temperature Sensors	Max. voltage: 30 V Rated resistance: <100 ... $\leq$ 330 Ω T _{sense} : +60 ... +160 °C	Available as SMD	B59421, B59641, B59721, B59404, B59601, B59701			•			
Ceramic Capacitors									
 General High Cap	Size (IEC): 0402 ... 5750 Rated voltage: 4 ... 50 V Capacitance: 0.5 pF ... 100 μ F	- Wide range of case size and superior dimension precision - Available rating up to 50 V	C (SMD)	•	•	•	•		
 MEGACAP	Size (IEC): 3225 ... 7563 Rated voltage: 16 ... 1 kV Capacitance: 1 nF ... 100 μ F	- Advanced design for 2 to 3x capacitance for greater efficiency - Improved vibration and thermal/mechanical stress performance	CKG, CAA (SMD)	•	•	•	•		
 Mid/High Voltage	Rated voltage E _{ac} : X1: 440 V, Y1: 400 V/300 V Capacitance: 3 pF ... 10 nF	- Flame-resistant, reinforced outer insulation prevents potential hazards - Halogen-free external resin coating	CS, CD, CK45 (Leaded)	•	•	•	•		
 3-terminal Filters	Size (IEC): 1005 ... 3216 Rated voltage: 4 ... 100 V Capacitance: 22 pF ... 22 μ F	Reduction in ESR, ESL, and impedance due to the feed-through structure	CKD, YFF	•	•	•	•		

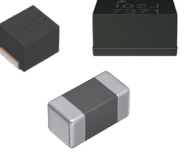
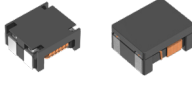
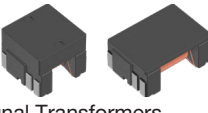
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RF Components								
 Chip Antennas	Size (l x w x t): 0.65 x 0.5 x 0.3 ... 1.6 x 0.8 x 0.4 mm	• Single and Dual band versions • Compact, low-profile design • Omni-directional	ANT				●	
 Filters (BPF, HPF, LPF)	Size (l x w x t): 0.65 x 0.5 x 0.3 ... 2.5 x 2.0 x 1.0 mm	• Low loss versions • High attenuation versions • Passbands from 900 MHz to 8 GHz	DEA, TFS				●	
 Baluns	Size (l x w x t): 0.65 x 0.5 x 0.3 ... 3.2 x 2.5 x 2.3 mm	• Chip balun transformers developed for 50, 75, 100 Ω impedance	ATB, HHM				●	
 Diplexers	Size (l x w x t): 1.0 x 0.5 x 0.33 ... 2.5 x 2.0 x 1.0 mm	• Multiple band combinations • High attenuation/low loss options • Typical usage 2.4 GHz / 5 GHz	DPX, TFS				●	
 Triplexers	Size (l x w x t): 2.0 x 1.25 x 0.75 ... 2.5 x 2.0 x 1.0 mm	• Multiple band combinations • Low loss, high isolation	TPX				●	
 RF Inductors	Size (IEC): 0402 ... 1005 Rated current: 50 ... 1200 mA Inductance: 0.2 ... 560 nH	• Achieves high Q characteristics • Equivalent to an air-core wire wound inductor	MHQ, MLG				●	
Power Management								
 CeraCharge® SMD Solid State Batteries	EIA 1812 package size Capacitance of 100 μ Ah Rated voltage: 1.4 V	• Easy placement and processing using reflow soldering techniques	B7318		●			
 Solar Cells	Thickness: 0.2 mm Sheet bending capability: $\varnothing$ 20 mm	• Thin, lightweight, flexible • Output stability in low and dim light • Customizable to various shapes	BCS		●			
 Wireless Power Transfer	WPT coils available in various sizes Electrical characteristics vary by size	• Flexible sheet type is used • Custom design is available based on requirements	WT, WR	●	●			
 μPOL™ Power Module	Very small footprint Output current rated at 3 to 12A Operating temperature range from -40 ... +125 °C Size (l x w x t): 3.3 x 3.3 x 1.62 mm, 5.8 x 4.9 x 1.71 mm	• High current density of more than 1000 A per cubic inch • Scalable and highly configurable with multi-time programmable memory	FS14		●		●	

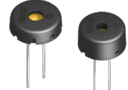
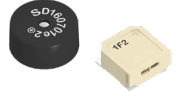
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Magnetics									
 SMT Power Inductors	Size (IEC): 3012 ... 12577 Inductance: 0.18 ... 470 μH Rated current: 280 mA ... 46 A Temperature: up to +150 °C	• High rated DC current • High reliability with welding connection • Ferrite shielded component	CLF, SPM, VLS, MLP, MLH, TFM, TMS, PLEA, B82477, B82559, B82462, B82464, B82472	•	•	•			
 SMD / SMT Inductors (Coils)	Size (IEC): 1005 ... 3225 Inductance: 0.047 ... 680 μH Rated current: 2 ... 1150 mA Temperature: up to +150 °C	• Magnetically shielded / suitable for high-density mounting • Very high current handling • Best DC superimposition characteristics • Lowest DC resistance • Excellent effect mainly on the decoupling of power circuits	B82422, MLF, MLZ, NLV, NLCV, NLFV	•	•	•	•		
 Common Mode Filters	Size (IEC): 1211 ... 2520 Impedance: 300 ... 1000 V (100 MHz) Rated current: 0.15 ... 8 A	• Miniaturized wire-wound chip-type filter • Extremely effective noise suppression	ACM1211, ACM2520	•	•	•	•		
 Power Line Chokes	Rated current: 0.4 ... 2.8 A Rated inductance: 0.4 ... 47 mH Rated voltage: 250 V	• High resonance frequency due to special winding technique • VDE and UL approvals	B82721, B82723	•	•	•	•		
 Signal Transformers	Size (IEC): 3232, 4532 Inductance (at 100 kHz/DC bias = 8 mA): 170 ... 200 μH min.	• Compatible with 10BASE-T, 100BASE-TX, and 1000BASE-T	ALT3232, ALT4532	•	•	•	•		
 Flexield Noise Suppression Ferrite Shield	Dimensions: 300 x 200 mm Thickness: 0.025 ... 0.2 mm Recommended frequency range: 0.1 MHz ... 10 GHz	• Highly flexible and shock-resistant • Noise suppression across a wide frequency range • Also available in Heat-resistant and Hybrid types	IFL, IFF, IFM	•	•	•	•		

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Piezo Products and Buzzers									
 PiezoHapt™ Haptic Actuators	Vibration plate: 30 x 15 x 0.1 mm Operation voltage: 12 V P-P (±6 V) max.	• Clear response/low-voltage drive • Response in an instant • Variegated vibration pattern	PHUA3015	●					
 PowerHapt™ Haptic Actuators	Acceleration (100 g mass): 2.5 ... 35 G peak Operating voltage: -10 ... 120 V Max. displacement: 32 ... 230 µm Multiple sizes available	• Specific actuator feedback adjustable • Supports bipolar driving mode • Low power consumption • Qualified to AEC-Q200	B5410	●					
 Piezoelectric Buzzers	Sound pressure: 60 ... 70 dBA/10 cm min. (4 kHz)	• Extremely low power consumption compared to electromagnetic units	PS1240	●					
 Electromagnetic Buzzers	Rated voltage: 3 ... 12 V (Eo-p) Operating temperature: -40 ... +85/-10 ... +70 °C	• Good frequency response and high quality sound	SD16, SDR08540	●					
 Piezo Stacks for Medical Dosing	Voltage: -10 ... +180 V Current: -30 ... +30 A Stroke at 160 V (s): 59 µm ±10 % Charge at 160 V (Q): 1.0 mC ±10 %	• Highly efficient actuator design • Robust design avoids polarization cracks • High melting metal bond & reliability	B58004			●			

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