



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

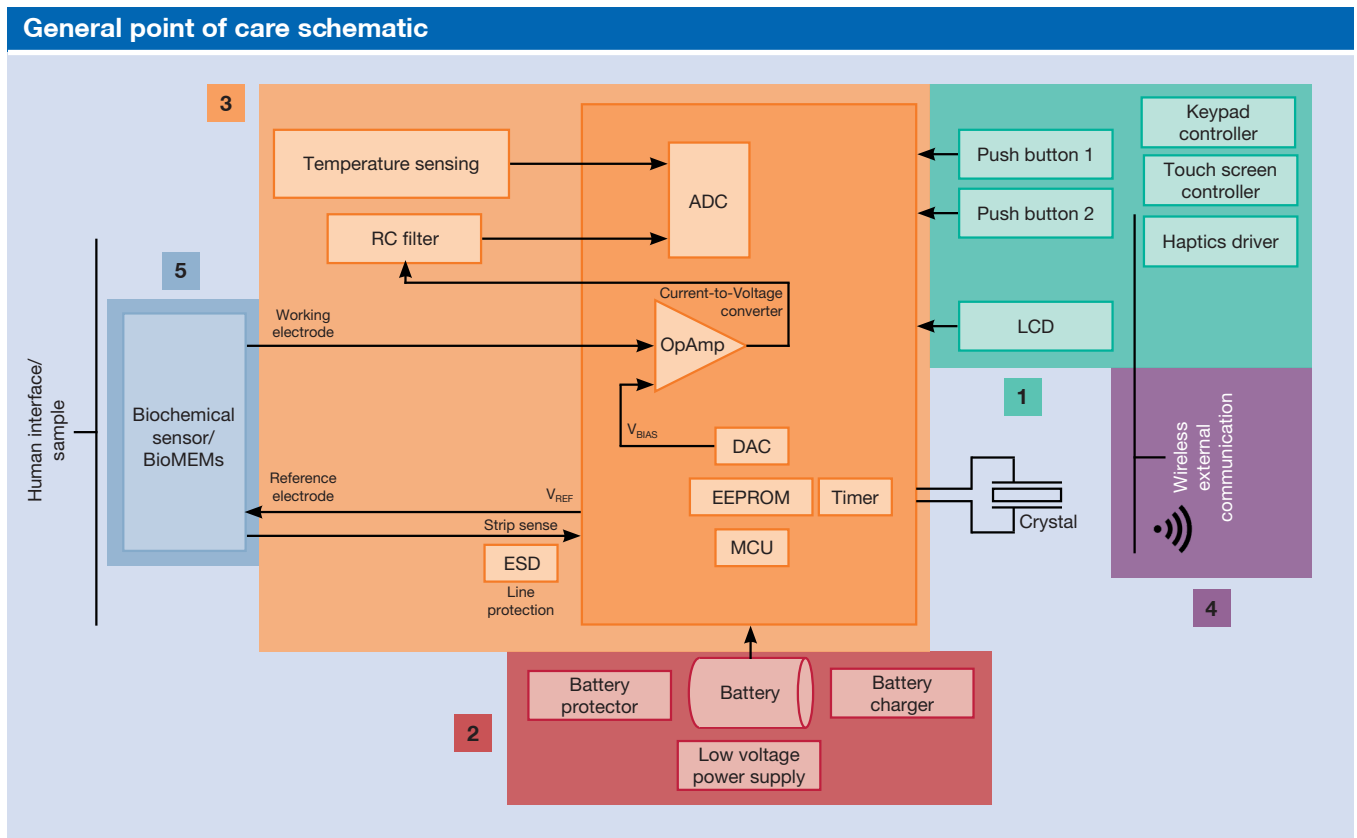
- Transformers
- Power inductors
- Filters



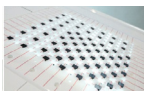


More information
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or contact your local sales office

Point of Care Devices: Passive Solutions for Medical Diagnostics and Personal Healthcare



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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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									
 <p>Surge Arresters</p>	DC spark-over voltage: 75 ... 500 V Nom. discharge current 8/20 μs: 0.5; 2; 5; 20 kA	<ul style="list-style-type: none"> • 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		●	●	●		
 <p>SMD Varistors</p>	Size (IEC): 0402 ... 2012 Voltage: 6.8 (4.76 ... 8.84) ... 39 (35 ... 43) V DC (1 mA)	<ul style="list-style-type: none"> • No polarity, due to symmetrical current-voltage characteristics • Excellent electrostatic absorption capability 	B72530, B72540 B72500, B72590 B72660 AVRH, AVRМ		●	●	●		
 <p>TVS Diodes</p>	ESD protection to IEC 61000-4-2 Maximum contact discharge voltage up to 24 kV	<ul style="list-style-type: none"> • Bidirectional protection of I/O devices • Low clamping voltage type available 	B74111, B74121	●	●	●	●		
 <p>Chip NTC Thermistors</p>	B constant: 3250 ... 4750 K ±1% (+25/+125 °C) Nominal resistance value: 22 Ω ... 1 MΩ (@ 25 °C)	<ul style="list-style-type: none"> • Lead-less terminal electrodes and electroplating (Ni-Sn) • Good stability of resistance value after soldering 	NTCSP, NTCG, B57**	●	●	●	●		
 <p>Voltage Protection</p>	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	<ul style="list-style-type: none"> • Outstanding ESD absorption and protection characteristic (based on IEC 61000-4-2, Contact-8 kV) 	SGNE		●	●	●		
 <p>PTC Limit Temperature Sensors</p>	Max. voltage: 30 V Rated resistance: <100 ... ≤330 V T _{sense} : +60 ... +160 °C	<ul style="list-style-type: none"> • Available as SMD 	B59421, B59641, B59721, B59404, B59601, B59701				●		
Ceramic Capacitors									
 <p>General High Cap</p>	Size (IEC): 0402 ... 5750 Rated voltage: 4 ... 50 V Capacitance: 0.5 pF ... 100 μF	<ul style="list-style-type: none"> • Wide range of case size and superior dimension precision • Available rating up to 50 V 	C (SMD)	●	●	●	●		
 <p>MEGACAP</p>	Size (IEC): 3225 ... 7563 Rated voltage: 16 ... 1 kV Capacitance: 1 nF ... 100 μF	<ul style="list-style-type: none"> • Advanced design for 2 to 3x capacitance for greater efficiency • Improved vibration and thermal/mechanical stress performance 	CKG, CAA (SMD)	●	●	●	●		
 <p>Mid/High Voltage</p>	Rated voltage E _{ac} : X1: 440 V, Y1: 400 V/300 V Capacitance: 3 pF ... 10 nF	<ul style="list-style-type: none"> • Flame-resistant, reinforced outer insulation prevents potential hazards • Halogen-free external resin coating 	CS, CD, CK45 (Leaded)	●	●	●	●		
 <p>3-terminal Filters</p>	Size (IEC): 1005 ... 3216 Rated voltage: 4 ... 100 V Capacitance: 22 pF ... 22 μF	<ul style="list-style-type: none"> • Reduction in ESR, ESL, and impedance due to the feed-through structure 	CKD, YFF	●	●	●	●		


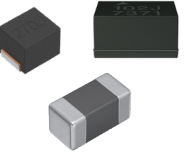


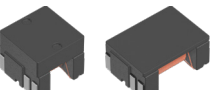

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RF Components									
 Chip Antennas	Size (l x w x t): 0.65 x 0.5 x 0.3 ... 1.6 x 0.8 x 0.4 mm	<ul style="list-style-type: none"> • Single and Dual band versions • Compact, low-profile design • Omni-directional 	ANT					●	
 Filters (BPF, HPF, LPF)	Size (l x w x t): 0.65 x 0.5 x 0.3 ... 2.5 x 2.0 x 1.0 mm	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Multiple band combinations • Low loss, high isolation 	TPX					●	
 RF Inductors	Size (IEC): 0402 ...1005 Rated current: 50 ... 1200 mA Inductance: 0.2 ... 560 nH	<ul style="list-style-type: none"> • 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 μAh Rated voltage: 1.4 V	<ul style="list-style-type: none"> • Easy placement and processing using reflow soldering techniques 	B7318		●				
 Solar Cells	Thickness: 0.2 mm Sheet bending capability: Ø20 mm	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • High current density of more than 1000 A per cubic inch • Scalable and highly configurable with multi-time programmable memory 	FS14		●		●		


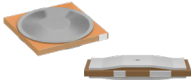
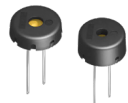
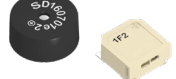

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Magnetics								
 <p>SMT Power Inductors</p>	<p>Size (IEC): 3012 ... 12577 Inductance: 0.18 ... 470 μH Rated current: 280 mA ... 46 A Temperature: up to +150 °C</p>	<ul style="list-style-type: none"> • High rated DC current • High reliability with welding connection • Ferrite shielded component 	<p>CLF, SPM, VLS, MLP, MLH, TFM, TMS, PLEA B82477, B82559, B82462, B82464, B82472</p>	•	•	•		
 <p>SMD / SMT Inductors (Coils)</p>	<p>Size (IEC): 1005 ... 3225 Inductance: 0.047 ... 680 μH Rated current: 2 ... 1150 mA Temperature: up to +150 °C</p>	<ul style="list-style-type: none"> • 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 	<p>B82422 MLF, MLZ NLV, NLCV, NLFV</p>	•	•	•	•	
 <p>Common Mode Filters</p>	<p>Size (IEC): 1211 ... 2520 Impedance: 300 ... 1000 V (100 MHz) Rated current: 0.15 ... 8 A</p>	<ul style="list-style-type: none"> • Miniaturized wire-wound chip-type filter • Extremely effective noise suppression 	<p>ACM1211, ACM2520</p>	•	•	•	•	
 <p>Power Line Chokes</p>	<p>Rated current: 0.4 ... 2.8 A Rated inductance: 0.4 ... 47 mH Rated voltage: 250 V</p>	<ul style="list-style-type: none"> • High resonance frequency due to special winding technique • VDE and UL approvals 	<p>B82721, B82723</p>	•	•	•	•	
 <p>Signal Transformers</p>	<p>Size (IEC): 3232, 4532 Inductance (at 100 kHz/DC bias = 8 mA) 170 ... 200 μH min.</p>	<ul style="list-style-type: none"> • Compatible with 10BASE-T, 100BASE-TX, and 1000BASE-T 	<p>ALT3232, ALT4532</p>	•	•	•	•	
 <p>Flexield Noise Suppression Ferrite Shield</p>	<p>Dimensions: 300 x 200 mm Thickness: 0.025 ... 0.2 mm Recommended frequency range: 0.1 MHz ... 10 GHz</p>	<ul style="list-style-type: none"> • Highly flexible and shock-resistant • Noise suppression across a wide frequency range • Also available in Heat-resistant and Hybrid types 	<p>IFL, IFF, IFM</p>	•	•	•	•	

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Piezo Products and Buzzers									
 <p>PiezoHapt™ Haptic Actuators</p>	<p>Vibration plate: 30 x 15 x 0.1 mm Operation voltage: 12 V P-P (±6 V) max.</p>	<ul style="list-style-type: none"> • Clear response/low-voltage drive • Response in an instant • Variegated vibration pattern 	PHUA3015	●					
 <p>PowerHap™ Haptic Actuators</p>	<p>Acceleration (100 g mass): 2.5 ... 35 G peak Operating voltage: -10 ... 120 V Max. displacement: 32 ... 230 µm Multiple sizes available</p>	<ul style="list-style-type: none"> • Specific actuator feedback adjustable • Supports bipolar driving mode • Low power consumption • Qualified to AEC-Q200 	B5410	●					
 <p>Piezoelectric Buzzers</p>	<p>Sound pressure: 60 ... 70 dBA/10 cm min. (4 kHz)</p>	<ul style="list-style-type: none"> • Extremely low power consumption compared to electromagnetic units 	PS1240	●					
 <p>Electromagnetic Buzzers</p>	<p>Rated voltage: 3 ... 12 V (Eo-p) Operating temperature: -40 ... +85/-10 ... +70 °C</p>	<ul style="list-style-type: none"> • Good frequency response and high quality sound 	SD16, SDR08540	●					
 <p>Piezo Stacks for Medical Dosing</p>	<p>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 %</p>	<ul style="list-style-type: none"> • Highly efficient actuator design • Robust design avoids polarization cracks • High melting metal bond & reliability 	B58004			●			

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Important information: Some parts of this publication contain statements about the suitability of our products for certain areas of application. These statements are based on our knowledge of typical requirements that are often placed on our products. We expressly point out that these statements cannot be regarded as binding statements about the suitability of our products for a particular customer application. It is incumbent on the customer to check and decide whether a product is suitable for use in a particular application. This publication is only a brief product survey which may be changed from time to time. Our products are described in detail in our data sheets. The Important notes (www.tdk-electronics.tdk.com/ImportantNotes) and the product-specific Cautions and warnings must be observed. All relevant information is available through our sales offices.