Specialist components & intelligent support for harsh & high-end applications

Charcroft: Challenge Accepted

www.charcroft.com

Passives, Power, E-mech, Sensors & more...
As an independent specialist distributor of components for harsh and high-end applications, Charcroft provides intelligence-led technical and commercial support to customers in the most demanding sectors.

Intelligence-led specialist distribution
- Franchised by leading global and specialist manufacturers
- Exceptional knowledge of demanding applications
- Responsive to customers and open to innovation
- Expert support from field-based Product Specialists
  - Design-in, production, upgrades, legacy
- Simplifying procurement with intelligent quoting
- Custom IT and traceability systems
  - Export management including ITAR controls
  - Archiving all CoFC & delivery notes
  - Library of legacy datasheets
- Key supplier to Defence OEMs for over 40 years

UK-based ISO9001:2015 approved manufacturing facility
- Vishay Approved Precision Centre
  - ‘Any value’ Bulk Metal® & Z-foil resistors
  - Precision Express® shipping in under 5 days
  - COTS, industrial or CECC release
  - Tolerance down to ±0.005%
- In-house custom design & manufacturing
  - Custom solutions for harsh applications
  - Component customisation, labelling & printing
  - In-house component screening
  - Low-volume manual assembly
  - ‘Can do’ approach to customer requests
  - Liaison with third-party suppliers
- Legacy passives
  - Silver mica capacitors to 250°C: axial/radial to ±0.5pF tolerance
  - Foil resistors down to ±0.005% tolerance
  - Ceramic capacitors: radial to BS/CECC, ±1% tolerance
With components which operate at the highest temperature ratings, Charcroft’s range also offers components which are capable of withstanding extreme shock, vibration and environmental contaminants.

**Passives to 200°C+**

- Capacitors
  - Electrolytic for wide temperature & long-life
  - Film for HV, DC-link, EMC, safety-rated X/Y
  - Ceramic for high frequency, voltage & pulse-energy
  - Tantalum: wet, polymer and MnO₂
  - Silver mica to 250°C
- Resistors
  - High energy, pulse rated or high voltage to 100kV
  - Precision: low-TCR foil, high-value film or glass
- Filters & magnetics
  - High-power magnetics
  - EMC/EMI filter assemblies

**Power supplies**

- Rugged, encapsulated AC/DC converters: 5 to 150W
- IP67 AC/DC converters up to 250W
- DIN-rail power supplies up to 1000W
- Programmable battery chargers

**Electromechanical**

- Thermal circuit breakers up to 200A
- Hydraulic magnetic circuit breakers
- Bi-metallic thermostats from -53 to 287°C
- Pressure switches for harsh environments
- Pressure sensors up to 5000psi
- Thermal and motor protectors including self-hold
- Electrolytic tilt sensors, inclinometers and tilt switches
- PCB hardware, test-points & spring-loaded contacts

**Opto-electronics & sensors**

- Discrete near-infrared emitters/detectors
- Slotted switches, reflective sensors
- HV opto-isolators to 50kV: high dV/dt, IEC-Ex
- Fibre-optic 850nm, multimode, ST-packaged
- LED/photodiode arrays: -40°C to 100°C
- Discrete Hall-effect components & sensors
- Thermocouples, PT100 thermometers to 1700°C
- Pressure sensors/transmitters to 1000/600 bar
- Rotary position sensors & panel potentiometers

**Semiconductors**

- Discrete semiconductors in high-reliability packaging
- ICs with high-temperature capability to 230°C
- IGBT/diode power modules: Aerospace qualified
- Microelectronic/hybrid assemblies in LTCC/HTCC
Space-grade components and QPL devices from ESA- and ESCC-qualified manufacturers are backed by product specialists to help with component selection from breadboard (BB) to flight model (FM).

**Passives: Space-grade & ESA/ESCC qualified**
- Capacitors
  - Tantalum: wet, polymer & solid with high CV, low ESR
  - Ceramic: HV, stacked, pulse-energy rated
  - Film: HV, power, multi-module, filtering
  - Mica: long-term stability, voltage up to 10kV
- Resistors: precision, stable, current-sense & power
- Filters & magnetics
  - Ferrite beads, inductors, power transformers
  - Filter assemblies: feed-through, bulkhead, coax, discoidal
- Solid-body current-limiting fuses, QPL MIL-PRF-23419/12

**Electromechanical**
- Bi-metallic thermostats: NASA and MIL-spec approved
- Slip-rings: multi-channel power, signal & fibre combined
- Precision rotary/linear potentiometers and encoders
- Torque/LAT motors, actuators

**RF & microwave**
- High-Q ceramic capacitors
- Microwave ferrites 0.1 to 30GHz
- INVAR screws, self-locking for HF narrow bandwidth

**Opto-electronics & sensors**
- To MIL-PRF-19500 TX, TXV, S-level
- Fibre-optic components, multimode, ST-packaged
- Radiation-capable opto-coupler
- Hall-effect and optical slotted-switch sensors

**Semiconductors**
- Screened in accordance with Space-flows
- Discrete semiconductors in hi-reliability packages
- Multi-chip arrays: small-signal, power device options
- Microelectronic/hybrid assemblies in LTCC/HTCC
Meeting the demands of the Aerospace sector for 40+ years, Charcroft’s COTS, BS/CECC, DSCC, MIL-PRF product range is supported by specialist skills such as qualified tin-whisker mitigation.

**Defence & Avionics**

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<tr>
<td>• COTS, BS/CECC, DSCC, MIL-PRF</td>
<td>• Bi-metallic thermostats: MIL-spec approved</td>
<td>• High-Q ceramic capacitors</td>
<td>• MIL-PRF-19500 TX, TXV, S-level</td>
<td>• Screened in accordance with DSCC</td>
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<td>• Capacitors</td>
<td>• Circuit breakers: thermal &amp; hydraulic magnetic</td>
<td>• Microwave ferrites 0.1 to 30GHz</td>
<td>• Fibre-optic components, multimode, ST-packaged</td>
<td>• Custom diode/IGBT power modules for actuation</td>
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<td>- Tantalum: wet, polymer and solid with high CV, low ESR</td>
<td>• Precision switches: miniature, rugged, hermetic seal</td>
<td>• Dielectric and coaxial resonators</td>
<td>• Opto-isolators to 50kV</td>
<td>• Discrete semiconductors in hi-reliability packages</td>
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<tr>
<td>- Ceramic: HV, high temp, stacked, pulse-energy rated</td>
<td>• Aircraft motor protectors: single- &amp; three-phase</td>
<td>• Microwave tuning elements, trimmer capacitors</td>
<td>• Hall-effect and optical slotted-switch sensors</td>
<td>• SiC current-limiting diode for lightning protection</td>
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<td>- Film: up to 25kV, DC-link modules, multi-module, filtering</td>
<td>• Slip-rings: multi-channel, power/signal/fibre</td>
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<td>• ICs for power-management up to 230°C</td>
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<td>- Mica: long-term stability, high voltage, high temperature</td>
<td>• PCB hardware, test-points &amp; spring-loaded contacts</td>
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<td>• Microelectronic/hybrid assemblies in LTCC/HTCC</td>
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<td>- Aluminium electrolytic: high CV, long life, low profile</td>
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Rugged off-the-shelf components for rail, off-road or specialist vehicles in addition to semi-custom and full custom parts for new designs and Maintenance Refurbishment or Overhaul (MRO) projects.

Passives
- Rail approved & AEC-Q200
- Capacitors
  - Aluminium electrolytic: power conversion & traction DC-LINK
  - HV film, filtering, COTS and custom DC-LINK
  - Ceramic: high-temperature, flexible terminations
  - Polymer tantalum, high CV, low ESR
- Resistors
  - High power, surge rated & high voltage to 100kV
  - Precision shunts for current measurement
- Moulded magnetic inductors & transformers
  - High-current, low emissions
- Inductors & transformers
  - Multi-phase, high power, high current, IP rated
- Filter assemblies for EMC, smoothing

Power supplies
- EN50155-qualified DC/DC converters: 14 to 2000W
- RIA12 front-end modules
- High DC-input converters: 450 to 1100VDC

Electromechanical
- Hydraulic magnetic circuit breakers
- Bi-metallic thermostats
- Pressure sensors: ECE-R110 (CNG) approved
- Temperature/pressure sensor: ECE-R110 / ECE-R67
- Pressure switches: robust construction

Sensors
- Electrolytic tilt sensors, inclinometers and tilt switches
- Crash sensors: resettable, range of G forces
- Hall-effect sensors
- Slotted switch for position sensing
- Precision potentiometers
- EPS sensors: torque angle and position

Opto-electronics
- Fibre-optic components for HV systems & comms
- Slotted switch & reflective near-infrared sensors
- HV opto-isolator to 50kV for power-electronics drivers

Semiconductors
- Custom IGBT/diode power modules
- Discrete power semiconductor devices
- High-temperature ICs up to 230°C
Passives

- Resistors
  - Low-noise, high-stability precision foil
  - Tight-tracking resistor divider/networks
  - ‘Any value’ foil in non-standard values/tolerance
  - High-value to Tera-ohms
  - High energy, pulse rated or high voltage to 100kV
  - National laboratory-standard resistors

- Capacitors
  - High-stability mica: high-purity silver construction
  - C0G ceramics: high stability, tolerance screening
  - High energy, pulse rated or high voltage to 25kV
  - Self-healing film for filtering/crossover networks

- Moulded magnetic inductors & transformers

Electromechanical

- Hydraulic magnetic circuit breakers
- Bi-metallic thermostats
- Temperature/pressure sensors
- Pressure switches
- Precision motors and actuators

Sensors

- Electrolytic tilt sensors, inclinometers and tilt switches
- Hall-effect sensors
- Precision potentiometers

Opto-electronics

- Fibre-optic components for HV & data
- Slotted switch & reflective near-infrared sensors
- HV opto-isolator to 50kV

Power supplies

- Universal-input AC/DC converters to 350W
- Wide-input DC/DC converters: 1 to 600W

Specialist audio components

- ‘Naked’ foil resistors
- Low-ohmic value precision power resistor
- Analogue potentiometers
- Silver-leaded mica capacitors
- Slit-foil electrolytic
- Paired/matched discrete semiconductors

Instrumentation/Audio

Delivering accuracy and stability for high-end instruments in addition to the unique ‘naked’ resistor and other specialist components and services which add impact to high-value Audio systems.
Bringing together a mix of global leaders and specialist manufacturers, Charcroft's product range is focused on rugged components for harsh and high-end applications.

Email: sales@charcroft.com  Tel: 01591 610408