

Draloric / Beyschlag Resistors

Thin Film Resistors – TNPW / TNPV

VISHAY

The DNA of tech™

▶ WHERE TO HUNT

Look-alike Targets: Aumovio, Schaeffler, Tesla, BorgWarner, Aptiv, Eaton, Rivian, Cisco, Ford, GM, Continental, ZF, Rockwell Automation, Tektronix, Keithley, SpaceX, Amazon, Raytheon, Collins, BAE, Honeywell, Nvidia, Waymo, Texas Instrument, Intel, Veoneer, Lear, Schweitzer, Molex, GarminDoor

Opener Questions:

- Do you need **high voltage measurement with < 1 % drift over lifetime?**
- How many components are you using today to build a **voltage divider above 800 V?**
- Are you constrained by **board space and creepage requirements?**
- Do you need **non-China COO** for automotive or defense programs?

Key Applications:

High voltage dividers in BMS, DC/DC converters, inverters, e-compressors, e-superchargers, OBC / wall chargers, server and AI power supplies, UPS

Primary Segments:

Automotive • Industrial • AMS • AI Infrastructure • DC Grids

▶ HOW TO SELL: Sell the Solution, not the component

“Vishay thin film enables precise, stable high voltage measurement with fewer components, smaller boards, and lower system cost.”

- TNPV handles up to 700 V per component → fewer resistors required
- Range extension to 10 MΩ enables further reduction of components
- Green / PFAS-free
- Best in class long term stability (< 0.05 %)
- 2x lower total error budget vs competitors in high voltage thin film
- 3x board space reduction and up to 55 % cost savings at the circuit level
- COO outside Greater China (Germany / Israel)

▶ HOW TO CLOSE: Advancing the opportunity

“Let’s replace your multi-resistor divider with a simpler, more accurate TNPV solution.”

- Show Vishay vs competitor error budget comparison
- Quantify component reduction, space savings, and assembly cost
- Lock design-in early for BMS, inverter, and charger platforms
- Reinforce with white papers and application notes on creepage and drift

Draloric / Beyschlag Resistors

Thick Film Resistors – CRCW-HP

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▶ WHERE TO HUNT

Look-alike Targets : Tesla, BorgWarner, Valeo, ZF, Vitesco, Rivian, Ford, GM, Magna, Cisco, Rockwell Automation, Raytheon, Lockheed, BAE, SpaceX, Amazon, Waymo; Lear, Delta, Aumovio, Veoneer, Garmin, Molex, Schweitzer

Opener Questions:

- Are your **gate resistors limiting switching speed, efficiency, or reliability**?
- How many resistors are you using today to handle **pulse energy**?
- Are **SiC or fast switching MOSFETs** stressing your current solution?
- Would reducing resistor **count improve yield and reliability**?

Key Applications:

Gate resistors, snubber circuits, DC/DC converters, inverters, e-fuses, motor drives, server and AI power supplies, LED lighting, BMS, OBC, wall chargers

Primary Segments:

Automotive • Industrial • Telecom • AMS • Medical

▶ HOW TO SELL: Sell the Solution, not the component

“CRCW-HP enables higher pulse and continuous power in smaller footprints — reducing parts, space, and failure points.”

- Double-sided resistive element → superior pulse handling
- Rated power 2x–6x higher than standard chip resistors (same size)
- Fewer resistors required in gate and snubber circuits
- Specification upgrades make performance advantages visible
- Lower drift under pulses application than competition
- Lead (Pb)-bearing termination for AMS applications
- Non-China manufacturing with expanded capacity

▶ HOW TO CLOSE: Advancing the opportunity

“Let’s simplify your gate and snubber design with CRCW-HP.”

- Map resistor reduction in inverter, motor driver, or DC/DC topologies
- Position CRCW-HP as technically unmatched vs standard R-chips
- Anchor on reduced component count and higher reliability
- Support with updated datasheets and benchmark positioning

Draloric / Beyschlag Resistors

Wirewound Resistors – AC-AT / AC-CS

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▶ WHERE TO HUNT

Look-alike Targets : Tesla, BorgWarner, Eaton, Rivian, Dana TM4, Ford, Whirlpool, GE Appliances, Electrolux, Sensus, Itron, GM, Waymo, Schaeffler, Honeywell / Elster, Landis & Gyr, Aclara/Hubbell, IUSA, MABE, Electrolux, Robertshaw

Opener Questions:

- How are you handling **pre-charge or discharge energy today**?
- Are you using **multiple components** where one could do the job?
- Do you need **safe-open failure behavior** for functional safety?
- Do you need **predictable fusing in combination with a resistor** without flame or explosion?
- Is thermal management limiting your design?

Key Applications:

Pre-charge and discharge circuits in inverters, DC/DC converters, OBCs, PDUs, power meters, domestic appliances

Primary Segments:

Automotive EV • Industrial • Consumer

▶ HOW TO SELL: Sell the Solution, not the component

“AC-AT delivers the most cost-effective, automotive-qualified solution for pre-charge and discharge applications.”

- Only AEC-Q200 qualified wirewound resistor
- Extremely high energy handling: up to 100 J / 100 kW for 1 ms
- Safe-open failure mode for automotive safety
- SMD-compatible with non-inductive options
- High surge of 6 kV 1.2/50 μ s plus predictable fusing
- Lowest space and cost vs alternative technologies

▶ HOW TO CLOSE: Advancing the opportunity

“Let’s replace complex discharge networks with a single AC-AT.”

- Compare space and cost vs thick film, MELF, or encased solutions
- Highlight automotive qualification + reliability
- Use Vishay thermal simulation support to speed design-in
- Secure platform wins in EV and energy storage designs