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Codatron HTZ™* Low TC High Voltage Regulators

General Description - Codatron HTZ high voltage shunt regulators are designed to give superior regulation over rapid temperature changes, and are for use in high and low temperature environments. The Codatron HTZ regulator acts like a high voltage zener, but with low noise and a very low temperature coefficient (TC). The regulated voltages offered include those available for the original, now discontinued, Victoreen Corotron, as well as custom voltages. The Codatron HTZ regulator has been optimized to operate at approximately 100 microamps, but functions well over a wide range of currents up to a maximum current rating of 500 microamps. A much higher pulse or transient current rating is allowed due to the unique electrical characteristics of the Codatron HTZ. A near zero temperature coefficient is achievable, but the temperature coefficient can be tailored for slight positive or slight negative characteristics. The Codatron HTZ can be used as a direct replacement for the Victoreen Corotron in applications demanding a very low temperature coefficient. Shunt capacitors may be used, since the Codatron HTZ has a positive resistance characteristic at all operating currents. The Codatron HTZ is the low temperature coefficient member of the Codatron family, a different design than the original Codatron, and with extended temperature capability.

- Available in standard Victoreen Corotron voltages (custom voltages also)
- *Standard* model specifications good from -55°C (-67°F) to +177°C (350°F)
- *Grade "A"* model specifications good from -75°C (-103°F) to +204°C (400°F)
- Nominal voltage rating specified at 20°C (68°F)
- Operating current range: 20µA to 200µA, -75°C (-103°F) to +204°C (400°F)
- Minimum shunt current for regulation: 2µA, 0°C (32°F) to 75°C (167°F)
- Maximum shunt current: 500µA, -75°C (-103°F) to +177°C (350°F)
- Suggested operating current: 100µA
- Excellent peak current rating
- Stable at all operating currents by design
- Precision tolerance
- Excellent voltage regulation from 20µA to 500µA
- Low noise generation and no self-oscillation
- Very low temperature coefficient (can be tailored to customer specifications)

Well Logging & Wireline Related Services

Society of Petrophysicists & Well Log Analysts (SPWLA), Mineral & Geotechnical Logging Society (MGLS), Society of Petroleum Engineers (SPE), Health Physics Society (HPS), Kentucky Oil & Gas Association (KOGA), International Society of Explosives Engineers (ISEE), and Association of Energy Service Companies (AESC)

FEIN: 61-1258888 Kentucky Sales Tax: 196584 DUNS: 15-982-7740 CAGE/NCAGE: 37HD2 USDOT: 625045
BATF Explosives Manufacturers License: 4-KY-091-20-5H-12220 Kentucky Permit: 06112405 Blasters License: 99372
Kentucky NRC Agreement State Radioactive Materials License: 201-456-41



ORDERING GUIDE

Model ^{1,2,3}	Voltage ⁴	Part Number
Codatron HTZ	100 Volts	Codatron HTZ - 100
Codatron HTZ	In 25 Volt Steps To	Codatron HTZ - xxx
Codatron HTZ	700 Volts	Codatron HTZ - 700
Codatron HTZ ³	725 Volts	Codatron HTZ - 725
Codatron HTZ ³	In 25 Volt Steps To	Codatron HTZ - xxxx
Codatron HTZ ³	1450 Volts	Codatron HTZ - 1450

Notes:

1. Specify **Standard** to 177°C (350°F), or **Grade "A"** to 204°C (400°F).
2. Very low temperature coefficient standard, but TC can be tailored.
3. A surcharge applies to models over 700 volts.
4. Custom voltages available on special order.

ELECTRICAL CHARACTERISTICS

Standard Models

Parameter ⁴	Conditions ¹	Min	Typ	Max	Units
Temperature Range	Standard Models	-55/-67		177/350	°C/°F
Operating Current Range	-55°C to +177°C (350°F)	20	100	500	μA
Minimum Shunt Current	0°C (32°F) to 75°C (167°F)		2		μA
Maximum Shunt Current	-55°C to +177°C (350°F)		500		μA
Suggested Current			100		μA
Peak Current	PW<300μSec, <0.1% Duty			+30	mA
Voltage Tolerance	100μA, 20°C (68°F)		0.5	1	%
Temperature Coefficient ²	100μA, Over 200°C Range ³		±10	±15	ppm/°C
Load Regulation	30 to 200μA, 20°C (68°F)		0.7	1	mV/μA

Notes:

1. Ta = -55°C (-67°F) to +177°C (350°F) for standard models, unless otherwise specified.
2. TC can be tailored by special order for slight positive or slight negative characteristics.
3. TC is lower over narrower temperature ranges.
4. Specifications are preliminary and subject to change.

ELECTRICAL CHARACTERISTICS

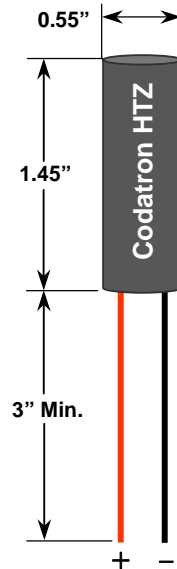
Grade "A" Models

Parameter ⁵	Conditions ¹	Min	Typ	Max	Units
Temperature Range	Grade "A" Models	-75/-103		204/400	°C/°F
Operating Current Range	-75°C to +204°C (400°F)	20	100	200	μA
Minimum Shunt Current	0°C (32°F) to 75°C (167°F)		2		μA
Maximum Shunt Current ²	-75°C to +177°C (350°F)		500		μA
Suggested Current			100		μA
Peak Current	PW<300μSec, <0.1% Duty			+30	mA
Voltage Tolerance	100μA, 20°C (68°F)		0.5	1	%
Temperature Coefficient ³	100μA, Over 200°C Range ⁴		±10	±15	ppm/°C
Load Regulation	30 to 200μA, 20°C (68°F)		0.7	1	mV/μA

Notes:

1. Ta = -75°C (-103°F) to +204°C (400°F) for grade "A" models, unless otherwise specified.
2. From -75°C (-103°F) to +177°C (250°F); derate to 200μA above 177°C (350°F).
3. TC can be tailored by special order for slight positive or slight negative characteristics.
4. TC is lower over narrower temperature ranges.
5. Specifications are preliminary and subject to change.

PACKAGING INFORMATION



Depth Dimension:

Up to 700 volt models 0.24".

725-1450 volt models 0.36".

Notes:

1. 24 gauge stranded EE grade Teflon insulated leads (colors may vary).
2. Ends stripped and tinned with lead-free high temp. solder on special order.
3. Custom lead lengths available on special order.
4. Dimensions may vary on custom units.
5. Viton shrink tubing with Kapton over-wrap standard packaging, but special packaging used for custom temperature range devices.