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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 nearly 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: 20mA to 200mA, -75° C (-103° F) to +204° C (400° F)**
- **Minimum shunt current for regulation: 2mA, 0° C to 75° C (167° F)**
- **Maximum shunt current: 500mA, -75° C (-103° F) to +177° C (350° F)**
- **Recommended operating current: 100mA**
- **Excellent peak current rating**
- **Stable at all operating currents by design**
- **Precision tolerance**
- **Excellent voltage regulation 20mA to 500mA**
- **Low noise generation and no self-oscillation**
- **Near zero temperature coefficient (can be tailored to customer specifications)**

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. Near zero 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[5]	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 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)		1	2	%
Temperature Coefficient[2]	100µA, Over 200°C Range[3]		±10	±15	ppm/°C
Load regulation[4]	Over Temperature Range		200	1000	µV/µA

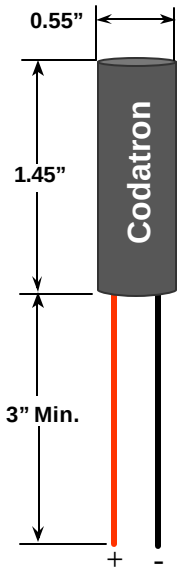
Notes:
1. Ta = -55°C (-67°F) to +177°C (350°F) for standard models, unless otherwise specified.
2. TC can be tailored by special order for slight positive or slight negative characteristics.
3. TC is lower over narrower temperature range.
4. From 25°C (77°F) at 20µA to 177°C (350°F) at 500µA (absolute worst case scenario).
5. Specifications are preliminary and subject to change. Beware of "tin pest" at very low temperatures.

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 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)		1	2	%
Temperature Coefficient[3]	100µA, Over 200°C Range		±15	±30	ppm/°C
Load regulation[4]	Over Temperature Range		300	1000	µV/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. From 25°C (77°F) at 20µA to 204°C (400°F) at 500µA (absolute worst case scenario).
5. Specifications are preliminary and subject to change. Beware of "tin pest" at very low temperatures.

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 temperature solder.
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 may be used for custom temperature range devices.

*Formerly called the TitanTwo.