

Metal Carbon Composite Tubular Resistors
Non-Inductive, Ultra High Voltage, High Energy Type

ET; Energy Tube; High Voltage, High Energy, High Frequency at Low Ohmic

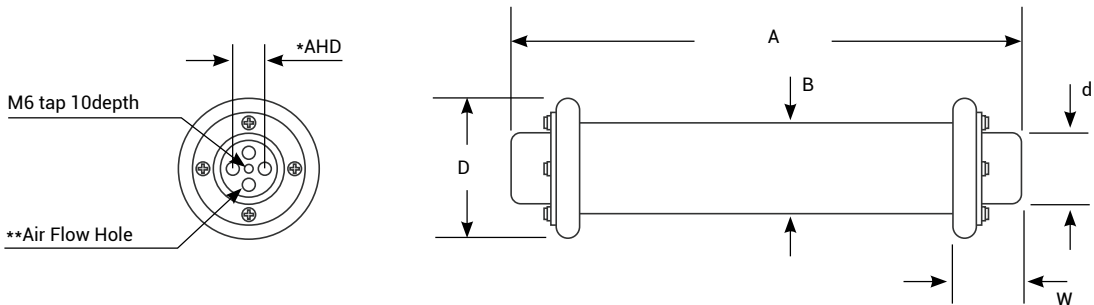
ET is furnaceed in a hydrogen environment for a long time .
While using the individual-resistors, Oil and Air fluently flow through the inner & outside of resistors especially in the R-tank and RC-tank.

Advanced of Anti Corona Contact Systems. between Caps and Resistives in axial Adhesive

It is able to build up Mega Joules Energy
Pulse Modulators
Ultra Surge Absorb
HV Cap Charging / Discharging
Nuclear, Nuclear Fusion
High Voltage Plasma De-Pollution Gas Systems
High Voltage Rectifier, Diode
High Frequency
Military; High Voltage Ultra Energy Dummy Loads



DIMENSIONS[mm]



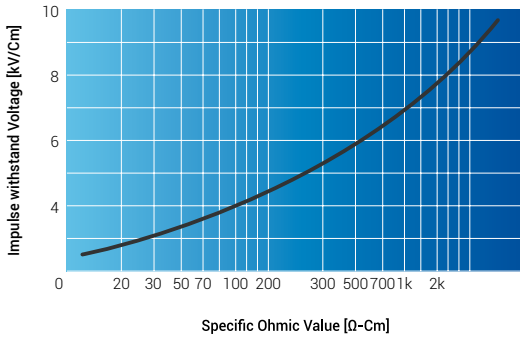
*AHD	E T-150	20mm	**AH	E T-150	Ø8
	E T-270	26mm		E T-270	Ø10

Model Nr.	1)Power [W]	2)Energy [J] Max.	3)Max.Impulse [kV] 1.2/50uSec	Ohmic Rating [Ω]			Dimensions in millimeters				
				Std. Rating	Low Extend	High Extend	L	B	D	d	W
ET-150	150	14500	100	10~500	2	20k	312+/- 2	45+/- 1.5	67+/- 0.5	38+/- 0.5	35+/- 1
ET-270	270	30000	150	10~500	2	20k	423+/- 3	60+/- 2.0	81.5+/- 0.5	48+/- 0.5	40+/- 1

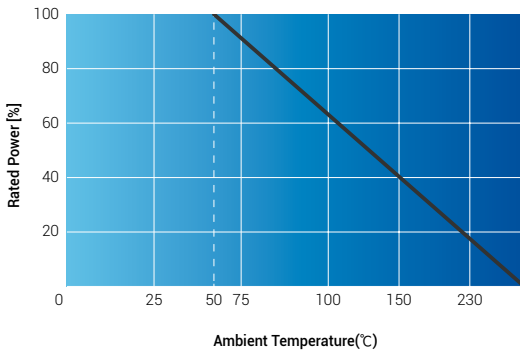
* Custom design and specifications are available upon requests related to your order quantit
Notes : "1)" limited by chart 2 & chart 3 & Specification. "2)" "3)" limited by chart 1 & chart 4 & Specification

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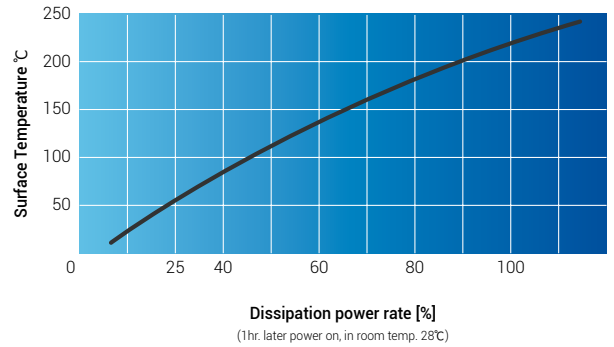
Specific ohmic vs withstand voltage [1.2/50μSec] Co-relations (chart 1)



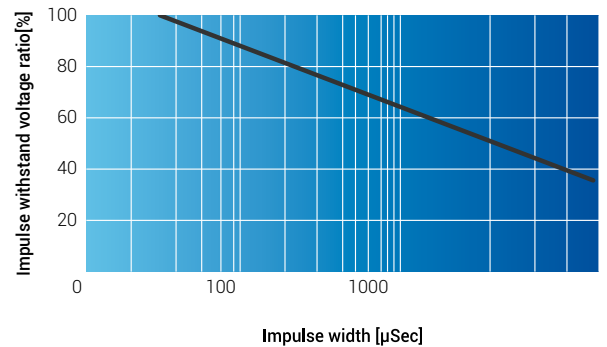
Power derating at continuous loading (chart 2)



Surface temp. rising & power rate (chart 3)



Voltage reduction curve compare to std. impulse 1.2/50μSec (chart 4)



SPECIFICATIONS

STANDARD RESISTANCE OF TOLERANCE	20% (15%, 10%, 5% if in stocked)
RATED POWER AND POWER DERATED	It's rated power working at 40°C. In case of exceed 40 or the individual resistors are on thermal radiation, the continuous working power must be reduced to 10% ~ 90% of the rated power typ. recommended.
CONTROL OF SURFACE TEMPERATURE	In case of continuous working condition, the surface temperature should be controlled, maintained at 100 °C max. An enforced coolant fan or other air coolant must be operate before the resistors work. Water or other chemical liquid substances are prohibited from touching the surface of the resistors.
SHORT-TERM OPERATIONAL SURFACE TEMPERATURE	250°C max. for several mins. High temperature to break on resistance is 500°C max. for 30 mins. (It must slowly increase for 20 mins.) However, the core shaft is made of epoxy-coated material and bent out order from 230°C.

<p>CORONA RING AND CAP</p>	<p>ET-series supplied in the resistors put on standard corona ring and cap. It is the specified standard cap and corona ring system to optimize at 50% of the rated V-peak on $\leq 1.5/50\mu\text{S}$ pulse. Therefore, it would be better to use a specific corona ring and cap if the voltage is high and the pulse is long. For individual resistors less than 20R, it is particularly recommended that they are optimized for custom rings and caps/electrodes, Please contact 3Rlab Engineers.</p>
<p>GAP DISTANCE OF MULTI CONNECTION IN PARALLEL AND POWER DERATE</p>	<p>More than 4ea, each resistor must keep a distance because each resistor hits radiation on themselves $gd=1.5 \times B$; Derated to 60% of rated power $gd=2.0 \times B$; Derated to 70% of rated power $gd=2.5 \times B$; Derated to 80% of rated power cf. gd= Distance from center to center to center between each resistor B = Diameter of resistor body</p>
<p>LOAD LIFE STABILITY</p>	<p>$\Delta R5\%$ max. at dissipation(less than 50% of rated max power), $\Delta R7\%$ at 100% of rated power, for 500h. Long-life stability on Load and power yield is one of the very co-related factors. It is recommended that the dissipation of electric power/energy is from 10% to 50% of rated power and energy, voltage. For example, a long life of several years is required; load on resistors is clearly less than rated power, energy and voltage. Otherwise, a long life of several years is required; load on resistors is clearly less than rated power, energy and voltage.</p>
<p>SHORT TIME OVER LOAD</p>	<p>$\Delta R2\%$ typ. for 10 times of rated Wattage for 5 secs.</p>
<p>SHORT TIME ALLOWABLE DISSIPATION OF ENERGY</p>	<p>90J/cm³ Max.</p>
<p>RESISTIVES IN BULK OF DENSITY</p>	<p>2.55 typ.</p>
<p>SPECIFIC HEAT OF BULK RESISTIVES</p>	<p>500~1200J/kg-K typ.</p>
<p>THERMAL CONDUCTIVITY</p>	<p>1.2W[m-K]</p>
<p>CUSTOM WATER COOLANT TYPE OR OIL COOLANT TYPE</p>	<p>Please contact 3Rlab Engineers</p>
<p>CUSTOM DESIGN AND SPECIFICATIONS</p>	<p>Please contact 3Rlab Engineers</p>
<p>CAP AND CORONA RING OF MATERIALS</p>	<p>std. Aluminum</p>

cf. The described specifications & dimensions may be subject to change without notice