



CTR

High Voltage/High Power/High Energy Resistors

FEATURES

Ceramic Tubular Resistors (CTR) in Series 800 and 1000 are offered in an extensive range of sizes and terminations, spanning from 2" to 24" in length and 1/2" to 2" in diameter. These resistors are capable of handling up to 1000 watts, 165 KJ, and 165 KV, with resistance values ranging from 1 ohm to 1 megohm.



APPLICATIONS

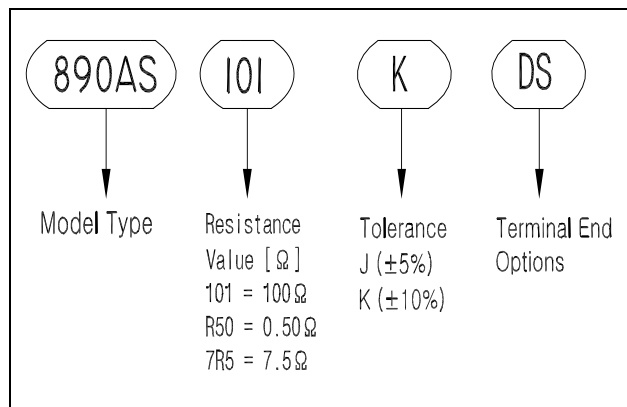
| Type SP | Type AS | Type A |
|---|--|--|
| <ul style="list-style-type: none"> - Motor drive circuits - Snubber circuits - High-frequency circuits - RF dummy loads - Dynamic braking - Transformer Protection - Harmonic filter | <ul style="list-style-type: none"> - Impulse generators - High-voltage circuits - X-ray equipment - High voltage power supplies - Laser/Imaging equipment - Capacitor charge/discharge | <ul style="list-style-type: none"> - Bleeder - Capacitor charge/discharge ... just to name a few uses |

CHARACTERISTICS

| Characteristics | Type SP | Type AS | Type A | |
|----------------------------------|-------------------|-------------------|------------------|--|
| Maximum operating temperature ** | -55°C to +350°C | -55°C to +230°C | -55°C to +230°C | |
| Temperature coefficient(%/°C) | +0.2 to -0.08%/°C | +0.0 to -0.08%/°C | +0.0 to -0.2%/°C | percent per °C, -55°C to maximum rated temperature |
| Voltage coefficient | -1.0% | -1.0% | - | Maximum percent per kilovolt per inch active length (overall length less termination) |
| Short time overload | ± 5% | ± 2% | - | maximum percent change after 5 cycles 10 times rated power, 5 seconds on, 90 seconds off |
| Load Life | ± 5% | ± 5% | - | Max. % change after 1000hours at rated power |
| Thermal Shock | ± 3% | ± 3% | - | |
| Moisture resistance | ± 5% | ± 5% | ± 5% | maximum percent change when tested per MIL-STD-202 Method 103 |

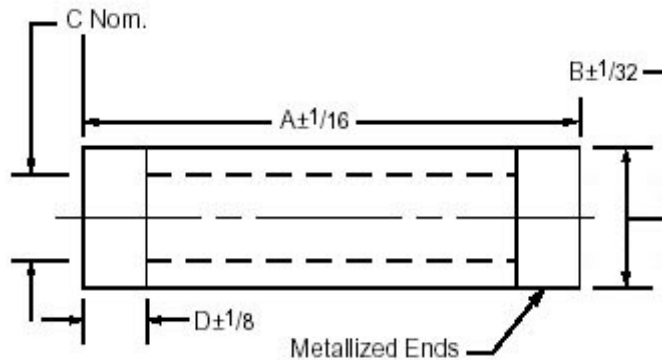
** Note : When required, Type SP material can withstand short periods of use at red-heat conditions, i.e. up to 550°C to 600°C

ORDERING PROCEDURE EXAMPLE & Terminal End Options



| | |
|----|--|
| SP | No Suffix=Standard aluminum Metalized ends |
| | No-arc terminal not available on SP products |
| | G=Radial tab, riveted and soldered G1=Radial tab, riveted and no solder |
| AS | DS=Standard dielectric coating and silver metalized ends |
| | N=No-arc terminal and dielectric coating NO=No-arc terminal with oil resistant coating |
| | DG=Radial tab, riveted and soldered with dielectric coating DG1=Radial tab, riveted and no solder with dielectric coating GO=Radial tab, riveted and soldered with oil resistant coating |
| | TO=Soldered end and oil resistant coating |
| | |
| A | No Suffix=Standard nickel metalized ends |
| | D=Dielectric coating DG=Radial tab, riveted and soldered with dielectric coating |
| | N=No-arc terminal and dielectric coating NO=No-arc terminal with oil resistant coating |
| | DG=Radial tab, riveted and soldered with dielectric coating DG1=Radial tab, riveted and no solder with dielectric coating GO=Radial tab with oil resistant coating |
| | TO=Soldered end and oil resistant coating |
| | |

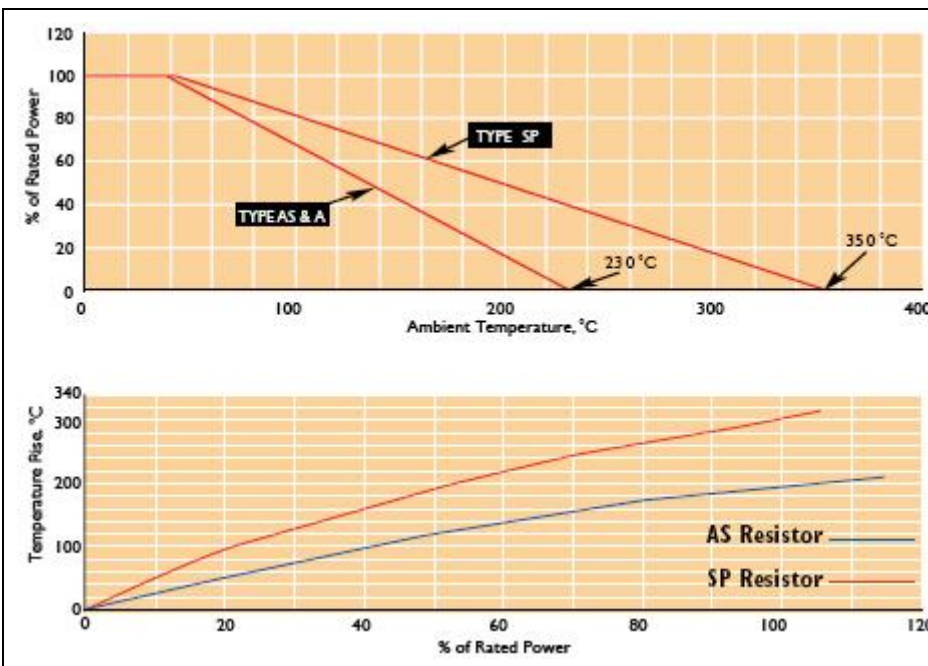
■ DEMENSIONS - Inches(Millimeter)



Special sizes are available; consult factory.

| Type | A | B | C(SP & AS) | C(A) | D |
|----------------|-------------|-------------|-------------|-----------|-------------|
| 884SP | 2.0(50.8) | 0.50(12.7) | 0.22(5.58) | - | 0.25(6.35) |
| 885 SP, AS & A | 2.5(63.5) | 0.75(19.05) | 0.50(12.7) | 0 | 0.50(12.7) |
| 886 SP, AS & A | 5.0(127) | 0.75(19.05) | 0.50(12.7) | 0 | 0.62(15.74) |
| 887SP, AS & A | 6.0(152.4) | 1.00(25.4) | 0.75(19.05) | 0.5(12.7) | 0.50(12.7) |
| 888 SP, AS & A | 8.0(203.2) | 1.00(25.4) | 0.75(19.05) | 0.5(12.7) | 0.88(22.35) |
| 889 SP, AS & A | 12.0(304.8) | 1.00(25.4) | 0.75(19.05) | 0.5(12.7) | 0.88(22.35) |
| 890 SP, AS & A | 18.0(457.2) | 1.00(25.4) | 0.75(19.05) | 0.5(12.7) | 0.88(22.35) |
| 891 SP | 18.0(457.2) | 2.00(50.8) | 1.50(38.1) | - | 1.00(25.4) |
| 892 SP | 24.0(609.6) | 2.00(50.8) | 1.50(38.1) | - | 1.00(25.4) |
| 1026 AS | 6.0(152.4) | 1.50(38.1) | 1.00(25.4) | - | 0.50(12.7) |
| 1028 AS | 8.0(203.2) | 1.50(38.1) | 1.00(25.4) | - | 0.88(22.35) |
| 1032 AS | 12.0(304.8) | 1.50(38.1) | 1.00(25.4) | - | 0.88(22.35) |
| 1038 AS | 18.0(457.2) | 1.50(38.1) | 1.00(25.4) | - | 0.88(22.35) |
| 1044 AS | 24.0(609.6) | 1.50(38.1) | 1.00(25.4) | - | 0.88(22.35) |

■ DERATING CURVE & SURFACE TEMPERATURE RISE VERSUS POWER



Derating Curve

Power ratings are based on maximum allowable surface temperature in still air at 40°C ambient temperature.

Surface temperature rise versus Power

(Curve is Typical for Resistor Midpoint with Horizontal Orientation in stillAir)

■ Electrical Specifications

| Length & Diameter (inches) | Type | Resistance Available (Ohms) Min. to Max. | Average Power @ 40°C (watts) | Peak* Energy (joules) | Peak* Voltage** (volts) |
|----------------------------|------------|--|------------------------------|-----------------------|-------------------------|
| 2 x 1/2 | 884SP | 1.0-200 | 22.5 | 250 | 1,000 |
| 2-1/2 x 3/4 | 885SP | 1.0-130 | 45 | 250 | 1,000 |
| | 885AS...DS | 6.0-1200 | 15 | 2,800 | 8,000 |
| | 885A | 1500-220K | 15 | 750 | 3,750 |
| 5 x 3/4 | 886SP | 1.0-330 | 90 | 500 | 4,000 |
| | 886AS..DS | 15.0-3300 | 30 | 7,500 | 20,000 |
| | 886A | 3900-390K | 30 | 1,500 | 10,000 |
| 6 x 1 | 887SP | 1.0-330 | 150 | 1,600 | 4,000 |
| | 887AS...DS | 12.0-3300 | 50 | 13,000 | 30,000 |
| | 887A | 3900-390K | 50 | 6,000 | 12,000 |
| 6 x 1-1/2 | 1026AS..DS | 5.0-1200 | 70 | 30,000 | 30,000 |
| 8 x 1 | 888SP | 1.0-390 | 190 | 2,100 | 6,000 |
| | 888AS..DS | 15.0-3900 | 75 | 16,500 | 45,000 |
| | 888A | 4700-470K | 60 | 7,500 | 15,000 |
| 8 x 1-1/2 | 1028AS..DS | 6.5-1875 | 100 | 46,000 | 45,000 |
| 12 x 1 | 889SP | 1.0-680 | 275 | 3,200 | 10,000 |
| | 889AS..DS | 25.0-6800 | 100 | 27,000 | 75,000 |
| | 889A | 8200-680K | 90 | 12,500 | 25,000 |
| 12 x 1-1/2 | 1032AS..DS | 9.0-2500 | 150 | 75,000 | 75,000 |
| 18 x 1 | 890SP | 1.0-1000 | 375 | 4,200 | 16,000 |
| | 890AS..DS | 40.0-10K | 150 | 43,000 | 120,000 |
| | 890A | 12K-1M | 125 | 20,000 | 40,000 |
| 18 x 1-1/2 | 1038AS..DS | 15.0-3800 | 225 | 119,000 | 120,000 |
| 18 x 2 | 891SP | 1.0-450 | 750 | 15,000 | 16,000 |
| 24 x 2 | 892SP | 1.0-600 | 1000 | 17,500 | 22,000 |
| 24 x 1-1/2 | 1044AS | 20.0-4800 | 300 | 164,000 | 165,000 |

*Allowable peak energy/voltage will depend on the resistance value; consult factory

**Derate by 50% with oil resistant coating on Type AS resistors. Energy ratings are based on pulses <10 milliseconds. Type SP ratings can be substantially greater for longer pulses. Consult factory.