

# OX/OY Series

## Ceramic Composition 10% Tolerance

The OX/OY Series of fixed ceramic resistors are ideal for circuitry associated with surges, high peak power or high energy. They offer enhanced performance in high voltage power supplies, R-C snubber circuits, and inrush limiters. The OX/OY resistors can often replace carbon composition resistors which can be difficult to source.

### FEATURES

- Replaces 1 and 2 watt carbon composition resistors
- Meets high energy density demands
- High peak power
- 10% Tolerance



### SERIES SPECIFICATIONS

| Series | Watts max.* | Resistance range | Joules max.** | Max. working volts |
|--------|-------------|------------------|---------------|--------------------|
| OX     | 1           | 3.3Ω-100K        | 50            | 300                |
| OY     | 2           | 3.3Ω-1M          | 80            | 400                |

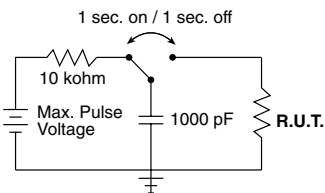
\* at 70°C. \*\*For a single impulse.

### CHARACTERISTICS

|                                |                                         |
|--------------------------------|-----------------------------------------|
| <b>Terminals</b>               | Pb-free solder-coated axial             |
| <b>Coating</b>                 | Silicone ceramic                        |
| <b>Derating</b>                | Linear from 100% @ +70°C to 0% @ +200°C |
| <b>Operating Temp. Range</b>   | -40°C to +220°C                         |
| <b>Tolerance</b>               | ±10% standard                           |
| <b>Power Rating</b>            | Based on 70°C free air rating           |
| <b>Temperature Coefficient</b> | -1300 ±300ppm/°C.                       |

|                                      | OX                         | OY                        |
|--------------------------------------|----------------------------|---------------------------|
| <b>Max Working Voltage</b>           | 300V                       | 400V                      |
| <b>Dielectric Strength</b>           | 500V                       | 700V                      |
| <b>Max Overload Voltage</b>          | 600V                       | 800V                      |
| <b>Max Pulse Voltage<sup>1</sup></b> | 14KV                       | 20KV                      |
| <b>Pulse Tolerance, 100 pulses</b>   | 1240V @ 52μF, 40J/ 35 sec. | 1640V @ 52μF, 70J/35 sec. |

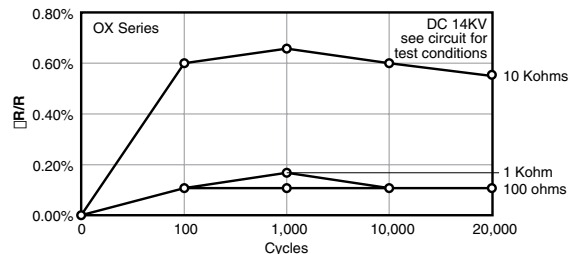
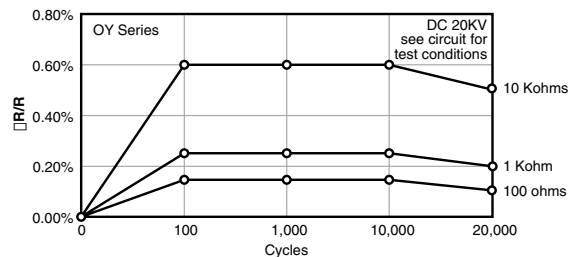
<sup>1</sup>See figures



14KV and 20KV values used in circuit as shown; full voltage not applied directly to resistor.

| Test                                   | Condition                                      | Maximum ΔR   |
|----------------------------------------|------------------------------------------------|--------------|
| <b>Life Test</b>                       | MIL-STD-202, Method 108                        | ±5%          |
| <b>Short Time Overload</b>             | 2x rated V, 5 sec ON @ 70°C                    | ±(2% +0.05Ω) |
| <b>Resistance to Pulse<sup>1</sup></b> | 20,000 cycles. See circuit for test conditions | ±5%          |
| <b>Thermal Shock</b>                   | MIL-STD-202, Method 107                        | ±(2% ±0.05Ω) |
| <b>Moisture Resistance</b>             | 1000 hrs @ 40°C, 90 - 95% RH                   | ±5%          |

### Resistance to Pulse



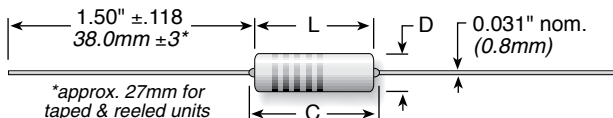
(continued)

# OX/OY Series

**Ceramic Composition**  
**10% Tolerance**

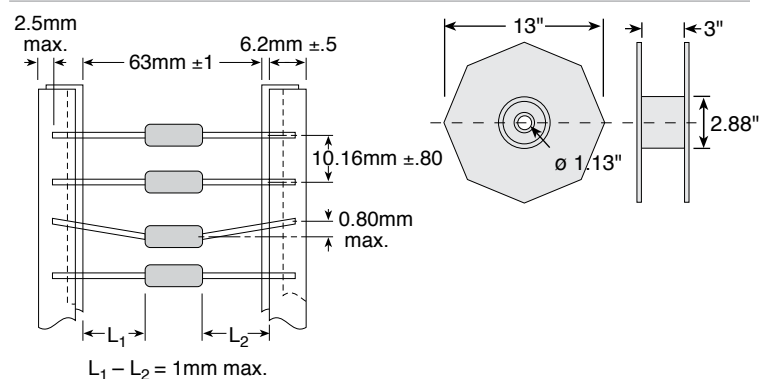
## DIMENSIONS

in./mm



| Series | Length L<br>±.039 (±1.0) | Length C<br>max. | Diameter D<br>±.039 (±1.0) | Qty. per<br>reel |
|--------|--------------------------|------------------|----------------------------|------------------|
| OX     | 0.65 / 16.5              | 0.748 / 19.0     | 0.217 / 5.5                | 1000             |
| OY     | 0.748 / 19.0             | 0.886 / 22.5     | 0.276 / 7.0                | 500              |

## Tape and Reel Dimensions



## ORDERING INFORMATION

### Standard part numbers for OX/OY Series

| Ohmic value | Part No.<br>Prefix ><br>Suffix ▼ | Wattage<br>1 2 | Ohmic value | Part No.<br>Prefix ><br>Suffix ▼ | Wattage<br>1 2 | Ohmic value | Part No.<br>Prefix ><br>Suffix ▼ | Wattage<br>1 2 | Ohmic value | Part No.<br>Prefix ><br>Suffix ▼ | Wattage<br>1 2 | Ohmic value | Part No.<br>Prefix ><br>Suffix ▼ | Wattage<br>1 2 |
|-------------|----------------------------------|----------------|-------------|----------------------------------|----------------|-------------|----------------------------------|----------------|-------------|----------------------------------|----------------|-------------|----------------------------------|----------------|
| 3.3         | —33GKE                           | ✓ ✓            | 27          | —270KE                           | ✓ ✓            | 220         | —221KE                           | ✓ ✓            | 1800        | —182KE                           | ✓ ✓            | 15000       | —153KE                           | ✓ ✓            |
| 3.9         | —39GKE                           | ✓ ✓            | 33          | —330KE                           | ✓ ✓            | 270         | —271KE                           | ✓ ✓            | 2200        | —222KE                           | ✓ ✓            | 18000       | —183KE                           | ✓ ✓            |
| 4.7         | —47GKE                           | ✓ ✓            | 39          | —390KE                           | ✓ ✓            | 330         | —331KE                           | ✓ ✓            | 2700        | —272KE                           | ✓ ✓            | 22000       | —223KE                           | ✓ ✓            |
| 5.6         | —56GKE                           | ✓ ✓            | 47          | —470KE                           | ✓ ✓            | 390         | —391KE                           | ✓ ✓            | 3300        | —332KE                           | ✓ ✓            | 27000       | —273KE                           | ✓ ✓            |
| 6.8         | —68GKE                           | ✓ ✓            | 56          | —560KE                           | ✓ ✓            | 470         | —471KE                           | ✓ ✓            | 3900        | —392KE                           | ✓ ✓            | 33000       | —333KE                           | ✓ ✓            |
| 8.2         | —82GKE                           | ✓ ✓            | 68          | —680KE                           | ✓ ✓            | 560         | —561KE                           | ✓ ✓            | 4700        | —472KE                           | ✓ ✓            | 39000       | —393KE                           | ✓ ✓            |
| 10          | —100KE                           | ✓ ✓            | 82          | —820KE                           | ✓ ✓            | 680         | —681KE                           | ✓ ✓            | 5600        | —562KE                           | ✓ ✓            | 47000       | —473KE                           | ✓ ✓            |
| 12          | —120KE                           | ✓ ✓            | 100         | —101KE                           | ✓ ✓            | 820         | —821KE                           | ✓ ✓            | 6800        | —682KE                           | ✓ ✓            | 56000       | —563KE                           | ✓ ✓            |
| 15          | —150KE                           | ✓ ✓            | 120         | —121KE                           | ✓ ✓            | 1000        | —102KE                           | ✓ ✓            | 8200        | —822KE                           | ✓ ✓            | 68000       | —683KE                           | ✓ ✓            |
| 18          | —180KE                           | ✓ ✓            | 150         | —151KE                           | ✓ ✓            | 1200        | —122KE                           | ✓ ✓            | 10000       | —103KE                           | ✓ ✓            | 82000       | —823KE                           | ✓ ✓            |
| 22          | —220KE                           | ✓ ✓            | 180         | —181KE                           | ✓ ✓            | 1500        | —152KE                           | ✓ ✓            | 12000       | —123KE                           | ✓ ✓            | 100000      | —104KE                           | ✓ ✓            |
|             |                                  |                |             |                                  |                |             |                                  |                |             |                                  |                |             |                                  | 1 MEG —105KE ✓ |

**OX82GKE-TR**  
 RoHS Compliant  
 Packaging: TR = tape & reel, B = bulk  
 Size: OX = 1W, OY = 2W  
 Ohm Value: Example: 33G = 3.3 Ohms, 330 = 33 Ohms, 331 = 330 Ohms  
 Tolerance: K = 10% Standard

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