

Use of ring varistors

Consumer use: 70 - 80% (Mainly for VTRs and audio equipment:
loading for reel, capstan motor for drum.)

Industrial Use: 20 - 30% (OA equipment)

About 75% of ceramic varistors are the ZnO.

Production of ZnO Ceramic Varistors by Manufacturer

(a) Volume

(Unit: million pcs.)

| Manufacturer | Year | 1982 | 1983 | 1984 | 1985 (prospect) |
|-------------------------|------|------|------|------|--------------------|
| Matsushita Denshi Buhin | | - | - | 3 | 4 |
| | | 4 | 5 | 5 | 6 |
| Ishizuka Denshi | | 2 | 3 | 4 | 4 |
| | | 1 | 1 | 2 | 2 |
| Taiyo Yuden | | 2 | 3 | 4 | 5 |
| | | - | - | - | - |
| Marukon Denshi | | - | - | - | - |
| | | 2 | 2 | 3 | 4 |
| T D K | | | 1 | 1 | 2 |
| | | - | - | - | - |
| Unison | | - | - | - | 1 |
| | | - | 1 | 1 | 1 |
| Others | | 1 | 1 | 3 | 4 |
| | | 1 | 1 | 1 | 1 |
| Total | | 13 | 19 | 27 | 35 |

* Ceramic varistors produced by Taiyo Yuden are the tin oxide type (SnO).

** Upper column shows ring varistors surge lower column: absorber

Note: Others include 5 to 7 companies such as Hokuriku Electric Industry Sanken Electric, Mitsubishi Mining & Cement and Ohizumi Seisakusyo.

Taiyo Yuden and TDK put emphasis on low prices ring varistors

(Taiyo Yuden recently developed circuit use varistors.)

While Marukon Denshi is specialized in circuit use ones, Matsushita Denki and Ishizuka Denshi, produce both types. In response to the market needs, production of ZnO ceramic varistors by these manufacturers is gradually on the increase.