

# High Ohmic Values (up to 100 G $\Omega$ ), High Voltage Resistors (up to 50 kV) Thick Film Technology



#### **FEATURES**

• Core: high purity ceramic

Coating: epoxy



RoHS

- Termination: standard lead material is solder coated copper
- Climatic category: -55 °C / +155 °C / 56 days
- $\bullet$  High ohmic values: up to 100  $\mbox{G}\Omega$
- High voltage application: up to 50 kV
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

| DIMENSIONS in millimeters     |          |            |        |               |               |           |           |  |  |
|-------------------------------|----------|------------|--------|---------------|---------------|-----------|-----------|--|--|
|                               |          |            | SERIES | Α             | ØВ            | Ø E ± 0.1 | WEIGHT IN |  |  |
| 25 min.                       | Α ,      | 25 min.    | 58     | $7 \pm 0.2$   | 1.6 ± 0.2     | 0.6       | 0.24      |  |  |
| ØE                            | <b>→</b> | Ø a ± 0.02 | 63     | $8.5 \pm 0.5$ | 2.2 ± 0.2     | 0.6       | 0.29      |  |  |
|                               | ØВ       | 4          | 68     | 14 ± 1        | $3.5 \pm 0.3$ | - 0.8     | 0.67      |  |  |
|                               | 1        |            | 523    | 23 ± 2        | 4.5 ± 0.3     |           | 1.23      |  |  |
|                               |          |            | 547    | 47 ± 2        | 4.5 ± 0.3     |           | 4.60      |  |  |
|                               |          |            | 729    | 29 ± 2        | 6.5 ± 0.5     |           | 5.27      |  |  |
| 45° chamfer max. 0.25 mm deep |          |            | 747    | 47 ± 2        | 4.5 ± 0.5     |           | 7.10      |  |  |
|                               |          |            | 923    | 23 ± 2        | 1             |           |           |  |  |
| -                             |          |            | 932    | 32 ± 2        | 1             |           |           |  |  |
|                               |          |            | 947    | 47 ± 2        | 8.5 ± 0.5     |           | 7.18      |  |  |
|                               |          |            | 972    | 72 ± 2        | 1             |           |           |  |  |
| 1                             |          |            | 9100   | 100 ± 2       |               |           |           |  |  |

| STANDARD ELECTRICAL SPECIFICATIONS |                          |                                  |     |                  |  |                               |  |  |  |  |
|------------------------------------|--------------------------|----------------------------------|-----|------------------|--|-------------------------------|--|--|--|--|
| MODEL                              | RESISTANCE<br>RANGE<br>Ω | RANGE P <sub>70 °C</sub> VOLTAGE |     | TOLERANCE<br>± % | TEMPERATURE<br>COEFFICIENT<br>± ppm/°C | CRITICAL<br>RESISTANCE<br>(Ω) |  |  |  |  |
| HTS58                              | 200 to 200M              | 0.25                             | 500 | 0.5, 1, 2, 5, 10 | 150                                    | 1M                            |  |  |  |  |
| HTS63                              | 1K to 500M               | 0.5                              | 1K  | 0.5, 1, 2, 5, 10 | 150                                    | 2M                            |  |  |  |  |
| HTS68                              | 1K to 2.5G               | 1                                | 2K  | 0.5, 1, 2, 5, 10 | 150                                    | 4M                            |  |  |  |  |
| HTS523                             | 1K to 5G                 | 1                                | 5K  | 0.5, 1, 2, 5, 10 | 150                                    | 25M                           |  |  |  |  |
| HTS547                             | 1K to 50G                | 1.5                              | 15K | 0.5, 1, 2, 5, 10 | 150                                    | 150M                          |  |  |  |  |
| HTS729                             | 1K to 15G                | 2                                | 10K | 0.5, 1, 2, 5, 10 | 150                                    | 50M                           |  |  |  |  |
| HTS747                             | 1K to 30G                | 2.5                              | 15K | 0.5, 1, 2, 5, 10 | 150                                    | 90M                           |  |  |  |  |
| HTS923                             | 1K to 15G                | 2                                | 8K  | 0.5, 1, 2, 5, 10 | 150                                    | 32M                           |  |  |  |  |
| HTS932                             | 1K to 30G                | 2.5                              | 15K | 0.5, 1, 2, 5, 10 | 150                                    | 90M                           |  |  |  |  |
| HTS947                             | 1K to 50G                | 3                                | 20K | 0.5, 1, 2, 5, 10 | 150                                    | 133.3M                        |  |  |  |  |
| HTS972                             | 1K to 100G               | 4                                | 30K | 0.5, 1, 2, 5, 10 | 150                                    | 225M                          |  |  |  |  |
| HTS9100                            | 1K to 100G               | 5                                | 50K | 0.5, 1, 2, 5, 10 | 150                                    | 500M                          |  |  |  |  |

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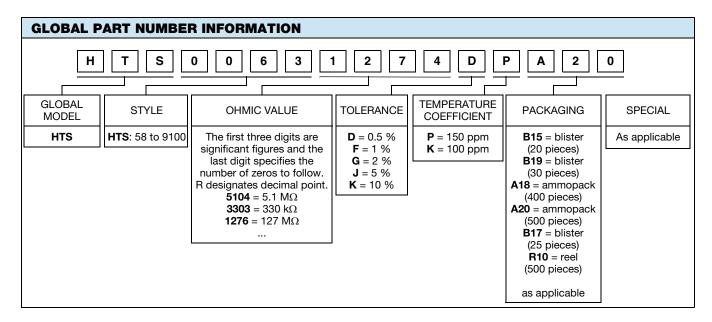


| TECHNICAL SPECIFICATIONS  |                 |                 |                |                |                |                |                |                |                |                |                  |                |                |
|---|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|----------------|----------------|
| SERIES AND STYLES   |                 | HTS<br>58       | HTS<br>63      | HTS<br>68      | HTS<br>523     | HTS<br>547     | HTS<br>729     | HTS<br>747     | HTS<br>923     | HTS<br>932     | HTS<br>947       | HTS<br>972     | HTS<br>9100    |
| Power Rating at +70 °C  |                 | 0.25 W          | 0.5 W          | 1 W            | 1 W            | 1.5 W          | 2 W            | 2.5 W          | 2 W            | 2.5 W          | 3 W              | 4 W            | 5 W            |
| Ohmic Range in Relation to • Temperature Coefficient ± 150 ppm/°C • Tolerance | ± 0.5 %         | 200 Ω<br>100 MΩ | 1 kΩ<br>100 MΩ   | 1 kΩ<br>100 MΩ | 1 kΩ<br>100 MΩ |
|   | ± 1 %           |                 | 1 kΩ<br>250 MΩ | 1 kΩ<br>500 MΩ | 1 kΩ<br>500 MΩ | 1 kΩ<br>1 GΩ     | 1 kΩ<br>1 GΩ   | 1 kΩ<br>1 GΩ   |
|   | ± 2 %           | 1 kΩ<br>200 MΩ  | 1 kΩ<br>500 MΩ | 1 kΩ<br>2.5 GΩ | 1 kΩ<br>5 GΩ   | 1 kΩ<br>10 GΩ  | 1 kΩ<br>10 GΩ  | 1 kΩ<br>10 GΩ  | 1 kΩ<br>10 GΩ  | 1 kΩ<br>10 GΩ  | 1 kΩ<br>10 GΩ    | 1 kΩ<br>10 GΩ  | 1 kΩ<br>10 GΩ  |
|   | ± 5 %<br>± 10 % |                 |                |                |                | 1 kΩ<br>50 GΩ  | 1 kΩ<br>15 GΩ  | 1 kΩ<br>30 GΩ  | 1 kΩ<br>15 GΩ  | 1 kΩ<br>30 GΩ  | 1 kΩ<br>50 GΩ    | 1 kΩ<br>100 GΩ | 1 kΩ<br>100 GΩ |
| Limiting Element<br>Voltage   |                 | 0.5 kV          | 1 kV           | 2 kV           | 5 kV           | 15 kV          | 10 kV          | 15 kV          | 8 kV           | 15 kV          | 20 kV            | 30 kV          | 50 kV          |
| Critical Resistance   |                 | 1 ΜΩ            | 2 ΜΩ           | 4 MΩ           | 25 MΩ          | 150 MΩ         | 50 MΩ          | 90 MΩ          | 32 MΩ          | 90 MΩ          | 133.3 M $\Omega$ | 225 M $\Omega$ | 500 MΩ         |

#### **MARKING**

GEKA trade-mark, series, style, nominal resistance (in  $\Omega$ ), tolerance (in %), letter P for TCR  $\pm$  150 ppm/°C, manufacturing date. Because of lack of space, small styles are marked with ohmic value (in  $\Omega$ ), tolerance (in %) and letter P.

| ORDERING INFORMATION |      |             |           |   |           |                |  |  |  |  |
|----------------------|------|-------------|-----------|---|-----------|----------------|--|--|--|--|
| HTS                  | 63   | 1M27        | 0.5 %     | 150 ppm/°C  | AM500     | e1             |  |  |  |  |
| MODEL                | SIZE | OHMIC VALUE | TOLERANCE | TEMPERATURE<br>COEFFICIENT<br>P: Standard: ± 150 ppm/°C | PACKAGING | LEAD (Pb)-FREE |  |  |  |  |





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