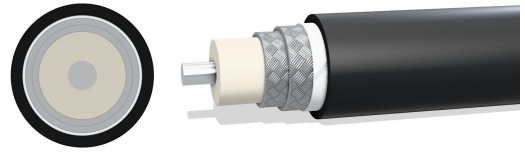


## Application

RG223 U-ZH is the halogen-free version of the compact, double-screened 50 Ω RG223 coaxial cable. It is used for RF patch leads, equipment and instrument wiring, measurement set-ups and communication links where a thin coax with a high screening performance is needed, and where the cable runs through spaces in which smoke and corrosive gases in a fire must be kept to a minimum. The designation follows the RG223 type of the MIL-C-17 coaxial cable family. The construction is a silver-plated copper inner conductor of 0.90 mm, a low-density polyethylene dielectric, two silver-plated copper wire braids (98 % and 97 % coverage), a non-migrating polyester tape and a black, flame-retardant, non-corrosive, UV-resistant halogen-free (LSZH) jacket with an outer diameter of 5.40 mm. The jacket complies with IEC 60754-1, IEC 60754-2 and IEC 61034-2 and the cable is classified Eca under the Construction Products Regulation (EN 50575). Attenuation and maximum power figures from 5 to 5800 MHz are given in the table below.



## CONSTRUCTION

|                        |                                                                                                           |
|------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Inner conductor</b> | Silver-plated copper, diameter $0.90 \pm 0.025$ mm.                                                       |
| <b>Dielectric</b>      | Low-density polyethylene (LDPE), diameter $2.95 \pm 0.10$ mm.                                             |
| <b>First braid</b>     | Silver-plated copper wire braid, $112 \times 0.13$ mm, coverage 98 %; diameter over first braid 3.50 mm.  |
| <b>Second braid</b>    | Silver-plated copper wire braid, $112 \times 0.13$ mm, coverage 97 %; diameter over second braid 4.00 mm. |
| <b>Tape</b>            | Non-migrating polyester tape over the second braid.                                                       |
| <b>Outer jacket</b>    | Flame-retardant, non-corrosive, UV-resistant, halogen-free thermoplastic (LSZH).                          |
| <b>Jacket colour</b>   | Black.                                                                                                    |
| <b>Outer diameter</b>  | $5.40 \pm 0.10$ mm.                                                                                       |

## ELECTRICAL AND TRANSMISSION PROPERTIES AT 20 °C

|                                    |                                   |
|------------------------------------|-----------------------------------|
| <b>Characteristic impedance</b>    | $50 \pm 2$ Ω.                     |
| <b>Capacitance</b>                 | 100 pF/m.                         |
| <b>Velocity ratio</b>              | 66 %.                             |
| <b>Resistance, inner conductor</b> | 28.0 Ω/km.                        |
| <b>Resistance, braid</b>           | 8.0 Ω/km.                         |
| <b>Operating voltage</b>           | Max. 2.5 kV.                      |
| <b>Test voltage (50 Hz, 1 min)</b> | Max. 5 kV.                        |
| <b>Sheath spark test</b>           | 3.5 kV.                           |
| <b>Screening effectiveness</b>     | > 78 dB (100 to 900 MHz).         |
| <b>Attenuation and max. power</b>  | See table below (5 to 5800 MHz).  |
| <b>Structural return loss</b>      | See table below (30 to 5800 MHz). |

## MECHANICAL AND THERMAL PROPERTIES

|                                      |                      |
|--------------------------------------|----------------------|
| <b>Min. bending radius, single</b>   | 5 × outer diameter.  |
| <b>Min. bending radius, repeated</b> | 10 × outer diameter. |
| <b>Temperature range</b>             | -40 °C to +80 °C.    |
| <b>Weight, copper</b>                | 38.5 kg/km.          |
| <b>Weight, total</b>                 | 60.7 kg/km.          |

## FIRE BEHAVIOUR

**Halogen-free, low smoke**

Compliant with IEC 60754-1, IEC 60754-2 and IEC 61034-2.

**Reaction to fire (CPR)**

Eca (EN 50575:2014 + A1:2016).

## ATTENUATION AND MAXIMUM POWER RATING

| Frequency (MHz) | Attenuation (dB/100 m) | Max. power (W) | Frequency (MHz) | Attenuation (dB/100 m) | Max. power (W) |
|-----------------|------------------------|----------------|-----------------|------------------------|----------------|
| 5               | 2.6                    | 1131           | 900             | 44.5                   | 84             |
| 10              | 3.8                    | 800            | 1000            | 47.4                   | 80             |
| 30              | 7.1                    | 462            | 1500            | 60.5                   | 65             |
| 50              | 9.2                    | 358            | 1800            | 67.4                   | 60             |
| 150             | 16.6                   | 207            | 2000            | 72.2                   | 57             |
| 220             | 20.3                   | 171            | 2500            | 82.6                   | 51             |
| 450             | 30.1                   | 119            | 3000            | 90.5                   | 46             |
| 600             | 35.4                   | 103            | 5200            | 126.3                  | 35             |
| 800             | 41.6                   | 89             | 5800            | 136.7                  | 34             |

## STRUCTURAL RETURN LOSS

| Frequency band (MHz) | Return loss (dB) | Frequency band (MHz) | Return loss (dB) |
|----------------------|------------------|----------------------|------------------|
| 30 to 450            | > 28             | 2000 to 3000         | > 23             |
| 450 to 1000          | > 25             | 3000 to 4000         | > 22             |
| 1000 to 2000         | > 24             | 4000 to 5800         | > 21             |

Green code CU/PE/SCWB/SCWB/LSZH: silver-plated copper inner conductor, polyethylene dielectric, two silver-plated copper wire braids (SCWB), halogen-free LSZH jacket. All values are nominal manufacturer values for the halogen-free version; indicative and non-binding.