

# 7/8" A

## Ultra Low Loss



### STANDARD

Cable type : **5228 A**  
Reference : **EC5-50-A**

Cable with standard UV resistant PE jacket, halogen free according to IEC 60754

### FLAME RETARDANT

Cable type : **5228A-HLFR**  
Reference : **EC5-50A-FR**

Cable with UV resistant, halogen free, low smoke, flame retardant jacket according to IEC 60754-2, IEC 60332-1-2, IEC 60332-3 Cat. C and IEC 61034-1+2

## CHARACTERISTICS

### Construction

- **Inner conductor**
  - Material smooth copper tube
  - Diameter (mm) 9.3
- **Dielectric**
  - Material gas-injected cellular polyethylene
  - Diameter (mm) 23.5
- **Outer conductor**
  - Material corrugated copper tube
  - Diameter (mm) 25.0
- **Jacket**
  - Material black polyethylene
  - Thickness (mm) 1.4
  - Diameter (mm) 28.0

### Mechanical

- **Minimum bending radius**
  - a) single bending (cm) 10
  - b) 15 repeated bends (cm) 25
- **Maximum pulling strength (daN)** 150
- **Recommended temperature range**
  - Storage -70 to +85 °C
  - Installation -40 to +60 °C
  - Operation -55 to +85 °C
- **Maximum length per hoisting grip (m)** 70
- **Maximum hanger spacing** 1.2
- **Flat Plate Crush resistance (kg/mm)** 1.4
- **Bending moment (Nm)** 11.6
- **Weight (kg/km)** 496

[1]  $a = 0.1107$   
 $b = 0.000333$   
 $\alpha(f) = a \cdot \sqrt{f} + b \cdot f$  [dB/100m]

### Electrical

- **Characteristic impedance ( $\Omega$ )** 50  $\pm$ 1
- **Nominal capacity (pF/m)** 75
- **Relative propagation velocity (%)** 89
- **Inductance ( $\mu$ H/m)** 0.187
- **DC-resistance at 20 °C**
  - inner conductor ( $\Omega$ /km) 1.34
  - outer conductor ( $\Omega$ /km) 1.0
- **RF peak voltage (kV)** 2.9
- **RF peak power (kW)** 86
- **Cut-off-frequency (GHz)** 5.1
- **Insulation resistance (M $\Omega$ .km)** >>5000

### Attenuation [1] and power rating

| Frequency<br>(MHz) | Attenuation at 20 °C <sup>(*)</sup><br>(dB/100m) | Mean power rating <sup>(**)</sup><br>(kW) |
|--------------------|--------------------------------------------------|-------------------------------------------|
| 10                 | 0.35                                             | 25.46                                     |
| 20                 | 0.50                                             | 17.93                                     |
| 30                 | 0.62                                             | 14.60                                     |
| 80                 | 1.02                                             | 8.85                                      |
| 100                | 1.14                                             | 7.89                                      |
| 150                | 1.41                                             | 6.40                                      |
| 200                | 1.63                                             | 5.51                                      |
| 300                | 2.02                                             | 4.46                                      |
| 400                | 2.35                                             | 3.83                                      |
| 450                | 2.50                                             | 3.60                                      |
| 500                | 2.64                                             | 3.41                                      |
| 600                | 2.91                                             | 3.09                                      |
| 700                | 3.16                                             | 2.85                                      |
| 800                | 3.40                                             | 2.65                                      |
| 894                | 3.61                                             | 2.49                                      |
| 960                | 3.75                                             | 2.40                                      |
| 1000               | 3.83                                             | 2.35                                      |
| 1500               | 4.79                                             | 1.88                                      |
| 1700               | 5.13                                             | 1.75                                      |
| 1800               | 5.30                                             | 1.70                                      |
| 1880               | 5.43                                             | 1.66                                      |
| 2000               | 5.62                                             | 1.60                                      |
| 2170               | 5.88                                             | 1.53                                      |
| 2200               | 5.92                                             | 1.52                                      |
| 2300               | 6.07                                             | 1.48                                      |
| 2400               | 6.22                                             | 1.45                                      |
| 2500               | 6.37                                             | 1.41                                      |
| 3000               | 7.06                                             | 1.27                                      |
| 4000               | 8.33                                             | 1.08                                      |
| 6000               | -                                                | -                                         |

(\*) nominal values

(\*\*) Ambient temperature = 40 °C; Temperature of inner conductor = 100 °C;  
VSWR = 1.0; no solar loading



NM50A78MA



716FV78MA

## CONNECTORS & TOOL

| Reference         | Description                                     |
|-------------------|-------------------------------------------------|
| 716MV78MA         | 7-16 DIN male, O-Ring                           |
| 716FV78MA         | 7-16 DIN female, O-Ring                         |
| 716MA78MA         | 7-16 DIN male, Sealant injection                |
| 716FA78MA         | 7-16 DIN female, Sealant injection              |
| NM50V78MA         | N male, O-Ring                                  |
| NF50V78MA         | N female, O-Ring                                |
| NM50A78MA         | N male, Sealant injection                       |
| NF50A78MA         | N female, Sealant injection                     |
| SPTC50AV78M       | Cable preparation tool                          |
| Inner ring (a)    | Spare parts for cable preparation tool          |
| Outer ring (b)    | (Refer to installation instruction of the tool) |
| Spring (c)        |                                                 |
| Cutting knife (d) |                                                 |
| Peeling knife (e) |                                                 |
| Flaring knife (f) |                                                 |
| SIL-744 90ml      | Sealant for connectors using sealant injection  |
| SIL-744 310 ml    | Sealant for connectors using sealant injection  |

Rem.: • Sealant for connectors using the sealant injection method must be purchased separately.  
• EIA connectors available on request.



SPTC50AV78M

## ACCESSORIES

| Description                            | Reference   |
|----------------------------------------|-------------|
| • Grounding clamp with parallel outlet | GCS78PAR    |
| • Fixing clamps                        | see page 35 |
| • Additional weatherproofing           | see page 41 |
| • Lace-up hoisting grip                | HG-78       |
| Pre-laced hoisting grip                | HG-78-L     |
|                                        | see page 37 |

### Specification of N-connectors 7-16 connectors

#### Electrical

|                                                     |                               |             |
|-----------------------------------------------------|-------------------------------|-------------|
| • Nominal impedance ( $\Omega$ )                    | 50                            | 50          |
| • Reflection coefficient at 2 GHz                   | $\leq 0.02$                   | $\leq 0.02$ |
| • Insulation resistance ( $G\Omega$ )               | $\geq 5$                      | $\geq 10$   |
| • Test voltage (at sea level)<br>(kV rms, 50 Hz)    | 2.5                           | 4           |
| • Working voltage (at sea level)<br>(kV rms, 50 Hz) | 1                             | 2.7         |
| • Screening effectiveness<br>up to 1 GHz (dB)       | $> 128$                       | $> 128$     |
| • Outer contact resistance ( $m\Omega$ )            | $\leq 0.7$                    | $\leq 0.7$  |
| • Inner contact resistance ( $m\Omega$ )            | $\leq 1$                      | $\leq 1$    |
| • PIM ratio (2 x 20 W carrier) (dBc)                | $\leq -155$<br>(Typical -163) |             |

#### Mechanical

|                               |         |          |
|-------------------------------|---------|----------|
| • Torque on coupling nut (Nm) | 8       | 30       |
| • Cable retention (N)         | $> 400$ | $> 1000$ |

#### Environmental

|                                            |            |
|--------------------------------------------|------------|
| • Temperature range ( $^{\circ}\text{C}$ ) | -40 to +85 |
| • Degree of protection (humidity)          | IP68       |

#### Materials

|                  |                                                             |
|------------------|-------------------------------------------------------------|
| • External parts | Passivated silver plated or electroless nickel plated brass |
| • Outer contact  | Passivated silver plated brass                              |
| • Inner contact  | Passivated silver plated<br>Cu-Be and brass                 |
| • Dielectric     | PTFE TPX                                                    |
| • Gaskets        | High quality silicone                                       |



GCS78PAR