



**Product:** [9R28010](#)

Rainbow Ribbon Cable .050" Pitch, 9R280XX Series, #28-10c, PVC Ins

### Product Description

Rainbow Ribbon Cable .050" Pitch, 9R280XX Series, 10 Conductor, 28 AWG (7x36) Tinned Copper, PVC Insulated Conductors on PVC Substrate

### Technical Specifications

#### Product Overview

|                        |   |
|------------------------|---|
| Suitable Applications: | Internal interconnection, internal wiring of electronic equipment, color-coded for quick identification & circuit tracing, easy breakouts for circuit routing, designed for mass-termination with standard IDC connectors |
|------------------------|---|

#### Physical Characteristics (Overall)

##### Conductor

| AWG | Stranding | Material           |
|-----|-----------|--------------------|
| 28  | 7x36      | TC - Tinned Copper |

|                  |    |
|------------------|----|
| Conductor Count: | 10 |
|------------------|----|

##### Insulation

| Material                 | Nominal Wall Thickness |
|--------------------------|------------------------|
| PVC - Polyvinyl Chloride | 0.010 in               |

##### Color Chart

| Number | Color  |
|--------|--------|
| 1      | Brown  |
| 2      | Red    |
| 3      | Orange |
| 4      | Yellow |
| 5      | Green  |
| 6      | Blue   |
| 7      | Purple |
| 8      | Gray   |
| 9      | White  |
| 10     | Black  |

#### Construction and Dimensions

|  |                    |
|--|--------------------|
| Conductor Spacing Center-Center:         | .050 +/- .003 in   |
| Conductor Spacing Center-Center Outside: | .450 +/- .006 in   |
| Substrate Thickness and Material:        | .010 in, Clear PVC |
| OuterJacket1, Nominal Width:             | .500 +/- .006 in   |
| OuterJacket1, Nom Thick Flat Section:    | 0.036 in           |

#### Electrical Characteristics

##### Conductor DCR

| Nominal Conductor DCR |
|-----------------------|
| 68.2 Ohm/1000ft       |

## Capacitance

| Element       | Nom. Capacitance Conductor to Conductor |
|---------------|---|
| @ 1 kHz (GSG) | 18 pF/ft                                |
| @ 1 MHz (GS)  | 10 pF/ft                                |
| @ 1 MHz (GSG) | 15 pF/ft                                |

Min Insulation Resistance: 10,000 MOhm

## Inductance

| Element       | Nominal Inductance |
|---------------|--------------------|
| @ 1 MHz (GS)  | 0.29 µH/ft         |
| @ 1 MHz (GSG) | 0.2 µH/ft          |

## Impedance

| Nominal Balanced Characteristic Impedance Description | Nominal Characteristic Impedance | Nominal Characteristic Impedance Description |
|---|----------------------------------|--|
| (GS)  | 150 Ohm                          | (GS)   |
| (GSG)   | 105 Ohm                          | (GSG)  |

## High Frequency (Nominal/Typical)

| Frequency [MHz] | Nom. Insertion Loss |
|-----------------|---------------------|
| 10 MHz          | 2.8 dB/100ft        |
| 20 MHz          | 4.8 dB/100ft        |
| 30 MHz          | 6.5 dB/100ft        |
| 40 MHz          | 8.3 dB/100ft        |
| 50 MHz          | 9.8 dB/100ft        |
| 60 MHz          | 12 dB/100ft         |
| 70 MHz          | 13 dB/100ft         |
| 80 MHz          | 14 dB/100ft         |
| 90 MHz          | 15.8 dB/100ft       |
| 100 MHz         | 17 dB/100ft         |

Table Notes: GS=Ground-Signal Mode; GSG=Ground-Signal-Ground Mode

## Delay

| Nominal Delay | Nominal Velocity of Propagation (VP) [%] |
|---------------|--|
| 1.40 ns/ft    | 72%                                      |

## Unbalanced Crosstalk

| Element              | Typical Unbalanced NEXT % | Typical Unbalanced FEXT % | Typical Cross Talk Pulse Rise Time (ns) |
|----------------------|---------------------------|---------------------------|---|
| 10 ft. sample length | 4.8                       | 7                         | 3 ns                                    |
| 10 ft. sample length | 3.5                       | 4.7                       | 5 ns                                    |
| 10 ft. sample length | 3                         | 3                         | 7 ns                                    |

## Current

| Max. Recommended Current [A] |
|------------------------------|
| 1 Amp per Conductor at 20°C  |

## Voltage

| Dielectric Withstand Voltage | UL Voltage Rating |
|------------------------------|-------------------|
| 2000 V                       | 300 V             |

## Temperature Range

Operating Temperature Range: -20°C to +105°C

## Mechanical Characteristics

|                                       |               |
|---------------------------------------|---------------|
| Bulk Cable Weight:                    | 12 lbs/1000ft |
| Min. Bend Radius During Installation: | 1.5 in        |
| Min. Bend Radius/Minor Axis:          | 0.5 in        |

## Standards

UL AWM Style Compliance: AWM 20932

## Applicable Environmental and Other Programs

EU Directive 2000/53/EC (ELV): Yes

|  |     |
|--|-----|
| EU Directive 2003/11/EC (BFR):               | Yes |
| EU Directive 2011/65/EU (RoHS 2):            | Yes |
| EU Directive 2012/19/EU (WEEE):              | Yes |
| EU Directive 2015/863/EU (RoHS 2 amendment): | Yes |
| EU Directive Compliance:                     | Yes |
| EU CE Mark:                                  | Yes |
| CA Prop 65 (CJ for Wire and Cable):          | Yes |
| MII Order #39 (China RoHS):                  | Yes |

## Suitability

|                       |     |
|-----------------------|-----|
| Suitability - Indoor: | Yes |
|-----------------------|-----|

## Flammability, LS0H, Toxicity Testing

|                    |       |
|--------------------|-------|
| UL Flammability:   | VW-1  |
| UL voltage rating: | 300 V |

## Plenum/Non-Plenum

|               |    |
|---------------|----|
| Plenum (Y/N): | No |
|---------------|----|

## Related Part Numbers

### Variants

| Item #         | Color | Put-Up Type | Length | UPC          |
|----------------|-------|-------------|--------|--------------|
| 9R28010 000100 | None  | Reel        | 100 ft | 612825221791 |

## History

|                      |  |
|----------------------|--|
| Update and Revision: | Revision Number: 0.324 Revision Date: 05-05-2023 |
|----------------------|--|

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