



**Product:** [9L28020](#)

Flat Gray Ribbon Cable .050" Pitch, 9L280XX Series, #28-20c, PVC Ins

### Product Description

Flat Gray Ribbon Cable .050" Pitch, 9L280XX Series, 20 Conductor, 28 AWG (7x36) Tinned Copper, PVC Insulation

### Technical Specifications

#### Product Overview

|                        |   |
|------------------------|---|
| Suitable Applications: | Internal interconnection, internal wiring of electronic equipment, reliable mass-termination to standard IDC connectors |
|------------------------|---|

#### Physical Characteristics (Overall)

##### Conductor

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

|                  |    |
|------------------|----|
| Conductor Count: | 20 |
|------------------|----|

##### Insulation

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

##### Color Chart

| Color |
|-------|
| Gray  |

|              |                                |
|--------------|--------------------------------|
| Table Notes: | First Conductor has Red Stripe |
|--------------|--------------------------------|

#### Construction and Dimensions

|  |                   |
|--|-------------------|
| Conductor Spacing Center-Center:         | .050 +/- .002 in  |
| Conductor Spacing Center-Center Outside: | .950 +/- .008 in  |
| OuterJacket1, Nominal Width:             | 1.000 +/- .008 in |
| OuterJacket1, Nom Thick Flat Section:    | 0.035 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 $\mu$ H/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: 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: | -40°C to +105°C |
|------------------------------|-----------------|

#### Mechanical Characteristics

|                    |               |
|--------------------|---------------|
| Bulk Cable Weight: | 23 lbs/1000ft |
|--------------------|---------------|

#### Standards

|                          |          |
|--------------------------|----------|
| UL AWM Style Compliance: | AWM 2651 |
| CSA AWM Compliance:      | I A      |

#### Applicable Environmental and Other Programs

|  |     |
|--|-----|
| EU Directive 2000/53/EC (ELV):               | 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 | Length | UPC          |
|-----------------|-------|--------|--------------|
| 9L28020 008H100 | Gray  | 100 ft | 612825221654 |

## History

|                      |  |
|----------------------|--|
| Update and Revision: | Revision Number: 0.331 Revision Date: 02-03-2025 |
|----------------------|--|

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