



**Product:** [9V28014](#)

Flat Vari-Twist Cable .050" Pitch, 9V280XX Series, #28-14c, PVC Ins on PVC Substrate

**Product Description**

Flat Vari-Twist Cable .050" Pitch, 9V280XX Series, 14 Conductors, 28 AWG (7x36) Tinned Copper, PVC Insulated Conductors on PVC Substrate

**Technical Specifications**

**Product Overview**

Suitable Applications:	Internal interconnection, internal wiring of electronic equipment, reduced crosstalk in balanced mode, can be mass-terminatable in flat sections with standard IDC connectors
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**Physical Characteristics (Overall)**

**Conductor**

AWG	Stranding	Material	No. of Pairs
28	7x36	TC - Tinned Copper	7

Conductor Count:	14
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**Insulation**

Material	Nominal Wall Thickness
PVC - Polyvinyl Chloride	0.010 in

**Color Chart**

Number	Color
1	Brown/Tan
2	Red/Tan
3	Orange/Tan
4	Yellow/Tan
5	Green/Tan
6	Blue/Tan
7	Purple/Tan

**Construction and Dimensions**

Conductor Spacing Center-Center Flat Section:	.050 +/- .005 in
Conductor Spacing Center-Center Outside:	.650 +/- .015 in
Substrate Thickness and Material:	.010 in, Clear PVC
Twisted Pair Spacing Center-Center:	0.100 in
Overall Flat Section Length:	2.0 +.50 - 0 in
Overall Twisted Length:	18 in
OuterJacket1, Nominal Width:	0.726 in
OuterJacket1, Nom Thick Flat Section:	0.042 in
OuterJacket1, Nom Thick Twisted Section:	0.084 in

**Electrical Characteristics**

**Conductor DCR**

Nominal Conductor DCR
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68.2 Ohm/1000ft
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Capacitance

Element	Nom. Capacitance Conductor to Conductor
@ 1 kHz	20 pF/ft
@ 1 MHz	16 pF/ft

Min Insulation Resistance:	10,000 MOhm
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Inductance

Element	Nominal Inductance
@ 1 MHz	0.24 µH/ft

Impedance

Nominal Balanced Characteristic Impedance []	Nominal Characteristic Impedance	Nominal Characteristic Impedance Description	Nominal Unbalanced Characteristic Impedance
115 Ohm	115 Ohm	Balanced	100 Ohm
	100 Ohm	Unbalanced	

High Frequency (Nominal/Typical)

Frequency [MHz]	Nom. Insertion Loss
10 MHz	3.5 dB/100ft
20 MHz	5.5 dB/100ft
30 MHz	7.2 dB/100ft
40 MHz	8.8 dB/100ft
50 MHz	10.2 dB/100ft
60 MHz	12 dB/100ft
70 MHz	13 dB/100ft
80 MHz	14.2 dB/100ft
90 MHz	15 dB/100ft
100 MHz	16 dB/100ft

Table Notes:	18" of twisted pairs and 2" of flat section. The transition area is included in the twisted length to assure a full 2 inches of flat termination area.
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Delay

Nominal Delay	Nominal Velocity of Propagation (VP) [%]
1.6 ns/ft	64%

Balanced Crosstalk

Description	Start Frequency [MHz]	Stop Frequency [MHz]	dB Suppression
10 ft. sample length	10 MHz	100 MHz	35 dB

Unbalanced Crosstalk

Element	Typical Unbalanced NEXT %	Typical Unbalanced FEXT %	Typical Cross Talk Pulse Rise Time (ns)
10 ft. sample length all grounds connected together.	5.8	5.2	3 ns
10 ft. sample length all grounds connected together.	4	3.2	5 ns
10 ft. sample length all grounds connected together.	2.5	2.8	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
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Mechanical Characteristics

Bulk Cable Weight:	29 lbs/1000ft
Min. Bend Radius/Minor Axis:	1.25 in

Standards

UL AWM Style Compliance:	AWM 2693, AWM 2697
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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
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Flammability, LS0H, Toxicity Testing

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

Plenum/Non-Plenum

Plenum (Y/N):	No
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Related Part Numbers

Variants

Item #	Color	Length	UPC
9V28014 000H100	None	100 ft	612825222125

Footnote:	E - MAY CONTAIN MORE THAN 1 PIECE. MINIMUM LENGTH OF ANY ONE PIECE IS 25'.
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History

Update and Revision:	Revision Number: 0.331 Revision Date: 12-22-2023
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