

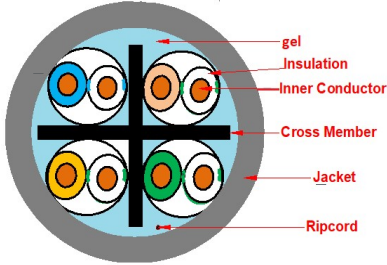
Cable Specification

Product Name: HSYVY Cat 6 U/UTP 4X2X23AWG

S/N: ITI CABLE-014

Date: 26/06/2023

Schema



Product Description

●	gel
●	Insulation
●	Inner Conducto
●	Cross Member
●	Jacket
●	Ripcord

Construction Item Description

Conductor	Construction	AWG	23 AWG
	Material	/	Bare Solid Copper
Insulation	Material	/	HDPE
	Proportion	g/cm ³	2.1
	Outside Diameter	mm	1.04±0.05
	Average Thickness	mm	0.24±0.05
	Color	/	1p: blue stripe + white + blue stripe & blue 2p: orange stripe + white + orange stripe & orange 3p: green stripe + white + green stripe & green 4p: brown stripe + white + brown stripe & brown
Pair Twist	Lay & Direction	/	1p: S=11.5 mm (26%)
			2p: S=12.5 mm (21%)
			3p: S=10.5 mm (30%)
			4p: S=16.0 mm (19%)
Inner Assemble	Lay & Direction	/	S=90 ± 5 mm
	Cross Member	mm	cross member 4.5X4.5X0.4mmT
	Material		LDPE
	Ripcord	/	3*250D
	Material		Polyester
Outside Shield	Filler		gel
	Shield	/	/
	Construction	mm	/
	Material	/	/
Jacket	Coverage	%	/
	Material	/	LDPE
	Hardness	A	30 ± 10
	Outside Diameter	mm	6.1 ± 0.2
	Average Thickness	mm	0.55 ~ 0.60
	Color	/	according to the customer's requirements
Marking Color	/	according to the customer's requirements	
Marking	Jacket	/	according to the customer's requirements

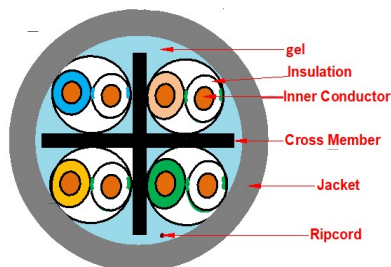
Cable Specification

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Product Description

❶ Filler gel	Type of filler: solidity gel
	Composition : solidity
❷ Insulation	Composition : HDPE
	Diameter : See table below
❸ Inner Conductor	Composition : Solid Bare Copper (BC)
	Diameter : See table below
❹ Filler	Type of filler : Cross-Member
	Composition : Low-Density Polyethylene (LDPE)
❺ Jacket	Composition : LDPE
	Dimensions : See table below
	color : according to the customer's requirements
● Filler	Type of filler : Ripcord
	Composition : Polyester

Dimensional Table

Nb pairs	Section	Diameter of	Diameter of insulated conductor (mm)	Minimal thickness of jacket (mm)	Diameter of outer jacket (mm)
	(AWG)	inner conductor (mm)			
4	23	NA	1.04± 0.05	0.55~ 0.60	6.1 ± 0.2

Diameters of inner conductor and insulated conductor must be designed in order to reach the electrical and transmission properties of CAT6.

Color Table

Pair No.	Conductor 1	Conductor 2
1	blue stripe + white + blue stripe	Blue
2	orange stripe + white + orange stripe	Orange
3	green stripe + white + green stripe	Green
4	brown stripe + white + brown stripe	Brown

Reference Standard

Materials		Fire performance	Electrical performance	Low	Zero Halogen (ZH)		Reach regulation	RoHs Directive
Insulation	Jacket			Smoke Density during combustion	Amount of Halogen acid gas during combustion	Degree of acidity (corrosivity) of gases for materials during combustion		
EN 50290-2-23	EN 50290-2-27	/	ANSI/TIA-568.2-D ISO/IEC 11801 IEC 61156-5 EN 50173	NA	NA	NA	NA	NA

Mechanical Properties

Test Method	According to		
	In Standard	NF EN 60811-1-1 (IEC 60811-501)	
	$L_0=200mm$, speed =100mm/min	$L_0=20mm$, speed =250mm/min (or 25mm/min for PE&PP insulation)	
	INNER CONDUCTOR	INSULATION	JACKET
Tensile Strength (MPa)	-	≥ 10 MPa	≥ 10 MPa
Elongation (%)	9%~24%	≥ 300%	≥ 300 %

Thermal Properties

Operating Temperature Range (°C)	-20°C to +75°C (static)
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Electrical Properties		
Conductor Resistance at 20 °C	NF EN 50289-1-2 / IEC 60189-1	≤ 9.5 Ω/100m
Resistance unbalance within a pair	NF EN 50289- 1-2/ IEC 60708	≤ 2%
Dielectric Strength <i>Test Voltage (cd/cd): 1.00KV DC or 0. 7 KV AC for 1 min</i> <i>Test Voltage (cd/screen): 1.00KV DC or 0. 7 KV AC for 1 min</i>	NF EN 50289-1-3 / IEC 61196-1-105	No breakdown
Insulation Resistance at 20 °C after 2min of electrification under a DC voltage between 100 & 500V	NF EN 50289-1-4 / IEC 60885-1	>1500 MΩ / 100m
Mutual capacitance	NF EN 50289- 1-5 /IEC 60189- 1	5600pF / 100m MAX
Capacitance unbalance pair to ground at 800Hz or 1 kHz	NF EN 50289- 1-5 / IEC 60189- 1	≤ 160 pF / 100m
Characteristic impedance at 100 MHz	NF EN 50289- 1- 11/ IEC 61156- 1	100 ± 15 Ω
Spark Test	UL444	2000 ± 250VOC

Transmission Properties									
ANSI/TIA-568.2-D ISO/IEC 1 1801/IEC 61156-5/EN 50173									
No.	Frequency	Attenuation (Max)	Propagation Delay (MAX)	Propagation Delay Skew (MAX)	Return Loss (Min)	NEXT (Min)	PS NEXT (Min)	EL-FEXT (Min)	PS EL-FEXT (Min)
	MHz	dB/100m	ns/100m	ns/100m	dB(on 100m)	dB(on 100m)	dB(on 100m)	dB(on 100m)	dB(on 100m)
1	4	3.78	552	45	23.01	66.27	63.27	55.96	52.96
2	8	5.32	546.73	45	24.52	61.75	58.75	49.94	46.94
3	10	5.95	545.38	45	25	60.3	57.3	48	45
4	16	7.55	543	45	25	57.24	54.24	43.92	40.92
5	20	8.47	542.05	45	25	55.78	52.78	41.98	38.98
6	25	9.51	541.2	45	24.32	54.33	51.33	40.04	37.04
7	31.25	10.67	540.44	45	23.64	52.88	49.88	38.1	35.1
8	50	13.66	539.09	45	22.21	49.82	46.82	34.02	31.02
9	62.5	15.38	538.55	45	21.54	48.36	45.36	32.08	29.08
10	100	19.8	537.6	45	20.11	45.3	42.3	28	25
11	125	22.36	537.22	45	19.43	43.85	40.85	26.06	23.06
12	200	28.98	536.55	45	18	40.78	37.78	21.98	18.98
13	250	32.85	536.28	45	17.32	39.33	36.33	20.04	17.04
14	350 *	39.8	/	45	16.3	36.1	34.1	16.9	13.9
15	400 *	43	/	45	15.9	35.3	33.7	15.7	12.7
16	450 *	46.3	/	45	15.5	34.5	32.5	14.7	11.7
17	500 *	48.9	/	45	15.2	33.8	31.8	13.8	10.8
18	550 *	51.8	/	45	14.9	33.2	31.2	12.9	9.9

Remarks: * are the reference values.

Application	
The cable must support class E applications and must be compatible POE, POE+	

Marking	
Type	ink
Color	According to the customer's requirements
Text	According to the customer's requirements

Packing					
Type of Packing	Dimension (mm)	Qt of per Packing (m)	Label Type	Cut Allowed	Tolerance Length (%)
Inner Box	According to the customer's requirements	305	according to the customer's requirements...	No	0
Master Carton	According to the customer's requirements	305	according to the customer's requirements...	No	0

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Product Design Card

Product Description : Cat 6 U/UTP 4 X 2 X 23AWG

Rev. : A

ECN Description :

Construction		Item Description	Electrical Property			
Conductor	Material	Bare Solid Copper (elongation : 19-24%)	Conductor Resistance at 20 °C	≤ 9.5 Ω / 100m		
	OD	23 AWG	Resistance unbalance within a pair	≤ 2%		
Insulation	Material	HDPE	Insulation Resistance at 20 °C after 2 min of electrification under a DC voltage between 100 & 500V	> 1500 MΩ / 100m		
	OD	1.04 ± 0.05 mm	Mutual capacitance	5600 pF / 100m MAX		
	Average THK	0.24 mm	Capacitance unbalance pair to ground at 800Hz or 1 kHz	≤ 160 pF / 100m		
	Color	1p: white + 2 blue stripes & blue	Characteristic impedance at 100 MHz	100 ± 15 Ω		
		2p: white + 2 orange stripes & orange		Dielectric Strength Test Voltage (cd/cd,cd/screen): 1.00KV DC or 0.7 KV AC for 1 min	No breakdown	
3p: white + 2 green stripes & green		Mechanical Property				
Pair Twist	Lay & Direction	1p: S=11.5 mm (26%)	insulation	elongation before aging	≥ 300%	
		2p: S=12.5 mm (21%)		tensile strength before aging	≥ 10 MPa	
		3p: S=10.5 mm (30%)	jacket	elongation before aging	≥ 300 %	
		4p: S=16.0 mm (19%)		tensile strength before aging	≥ 10 MPa	
Inner Assemble	OD	/				
	Lay	S=90±5 mm				
	Direction	according to the drawing				
	Filler	cross member 4.5X4.5X0.4mmT	Packing			
Filler	OD	/	Inner Box	<i>According to the customer's requirements</i>		
	Ripcord	250D*3	Master Carton	<i>According to the customer's requirements</i>		
	Material	Polyester				
Outside Shield	Filler gel	solidity				
	Shield	/				
	Construction	/				
Jacket	Material	/				
	Material	/				
	Coverage	/				
	Material	LDPE				
	Hardness	30 ±5				
	OD	6.1± 0.2				
Marking	Average THK	0.55~0.60				
	Color	according to the customer's requirements				
	Marking Color	according to the customer's requirements				
Marking		according to the customer's requirements...				

