



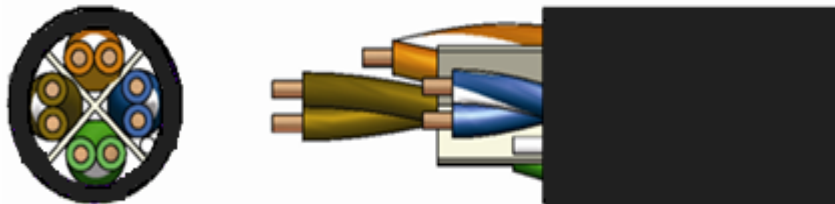
Page	1/4
Edition	1.1

Category 6	4 X 23AWG – 250MHz U-UTP PVC Cable	66504
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A - APPLICATION :

For horizontal network and voice application in a structured cabling system , including IEEE802.3 1000 Base-T, 100 Base-Tx, 10 Base-T, 1000 Base-Tx (ANSI/TIA/EIA-854-2001), 155Mb/s ATM, 4/16 Mb/s Token ring etc..

B – CONSTRUCTION :



Solid bare copper conductors insulated with polyolefin. Two insulated conductors twisted together to form a pair and four such pairs cabled to form the basic unit. A cross filler is cabled in between to separate the 4 pairs insulated conductors Overall jacket with PVC compound.

C - REFERENCE STANDARDS :

International: IEC 61156-5 edit 2.0
North American: TIA-568-C.2 Cat.6

D - CERTIFICATION :

Delta EC ,ETL

E - CABLE DESCRIPTION :

<u>1 – CONDUCTOR</u>	
Size	23AWG
Type	Solid bare copper
Diameter (mm)	0.55± 0.01
<u>2 – INSULATION</u>	
Type	PE
Diameter (mm)	0.973± 0.05
Min. thickness (mm)	0.186

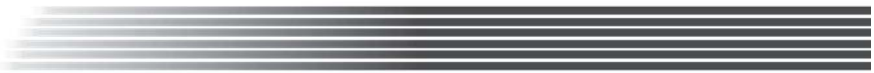
Design : Will Huang	Checked : Ken Chao	Approved : Jim Fan	App. Date : 2010/11
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Page	2/4
Edition	1.1

E. CABLE DESCRIPTION :		
3 – PAIRS		
Color code		
	Pair 1 -	Blue / White – blue strip
	Pair 2 -	Orange / White – orange strip
	Pair 3 -	Green / White – green strip
	Pair 4 -	Brown / White – brown strip
4 – CENTRAL ELEMENT		
	Type	PE cross separator
5 – JACKET		
	Type	PVC
	Overall Diameter (mm)	6.1 ± 0.3
F. TECHNICAL DATA – PHYSICAL :		
1. Cold bend test	-20 ± 2°C X 4hrs no. crack	
2. Dielectric strength	AC 1.7 KV for 2S.	
3. Insulation	Before Aging	After aging
Min. Tension strength (psi)	2400	75% before aging (100°C X 48hrs)
Min elongation (%)	300	75% before aging (100°C X 48hrs)
4. Jacket		
Min. Tension strength (psi)	2000	85% before aging (100°C X 168hrs)
Min elongation (%)	100	50% before aging (100°C X 168hrs)
5. Min. bending radius (mm)	50	
6. Max. pulling tension (lbs)	25	
7. Installation temperature	-10°C to +60°C	
8. Operating temperature	-10°C to +60°C	
G. PACKING :		
305/500/1000m on a wooden drum overall wrapped over by PE film		

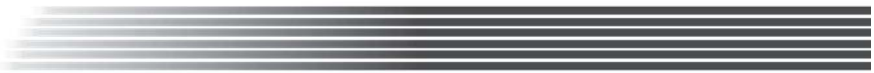
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Page	3/4
Edition	1.1

H. TECHNICAL DATA - ELECTRICAL			
1. Conductor resistance ($\Omega/100m @ 20^{\circ}C$)	Max.	9.5	
2. DC resistance unbalance (%)	Max.	4	
3. Pair-to-ground capacitance unbalance (pF/km)	Max.	1600	
4. Delay skew (ns/100m)	Max.	45	$4 \leq f \leq 250MHz$
5. Insertion Loss (dB/100m)	Max.	$1.82\sqrt{f} + 0.0169 * f + 0.25/\sqrt{f}$	$1 \leq f \leq 250MHz$
6. Pair to Pair NEXT (dB/100m)	Min.	$75.3 - 15 * \log(f)$	$1 \leq f \leq 250MHz$
7. PowerSum pr-pr NEXT (dB/100m)	Min.	$72.3 - 15 * \log(f)$	$1 \leq f \leq 250MHz$
8. ELFEXT (dB/100m)	Min.	$68 - 20 * \log(f)$	$1 \leq f \leq 250MHz$
9. PowerSum ELFEXT (dB/100m)	Min.	$65 - 20 * \log(f)$	$1 \leq f \leq 250MHz$
10. Return Loss (dB)	Min.	$20 + 5 * \log(f)$	$1 \leq f < 10MHz$
		25	$10 \leq f < 20MHz$
		$25 - 7 * \log(f / 20)$	$20 \leq f \leq 250MHz$
11. Propagation Delay (ns/100m)	Max.	$534 + 36 / \sqrt{f}$	$1 \leq f \leq 250MHz$
12. Input Impedance (Ω)		$100 \pm 15\%$	$1 \leq f \leq 100MHz$
		$100 \pm 22\%$	$100 < f \leq 250MHz$

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Page	4/4
Edition	1.1

IEC 61156-5 ed2.0 Category 6 horizontal cable parameters							
Freq. (MHz)	Ins. Loss (dB/100m)	RL (dB)	Pair to Pair		Power Sum		Po. Delay (ns/100)
			NEXT	ELFEXT	NEXT	ELFEXT	
			(dB/100m)		(dB/100m)		
	Max.	Min.	Min.	Min.	Min.	Min.	Max.
1	2.1	20	75.0	68.0	72.3	65.0	570.0
4	3.8	23	66.3	56.0	63.3	53.0	552.0
10	6.0	25	60.3	48.0	57.3	45.0	545.4
16	7.6	25	57.2	43.9	54.2	40.9	543.0
20	8.5	25	55.8	42.0	52.8	39.0	542.0
31.25	10.7	23.6	52.9	38.1	49.9	35.1	540.4
62.5	15.5	21.5	48.4	32.1	45.4	29.1	538.6
100	19.9	20.1	45.3	28.0	42.3	25.0	537.6
200	29.1	18	40.8	22.0	37.8	19.0	536.5
250	33.0	17.3	39.3	20.0	36.3	17.0	536.3

Note1: All tests include 401 points swept frequency measurements.

Note2: All electrical characteristics are given at 20°C

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