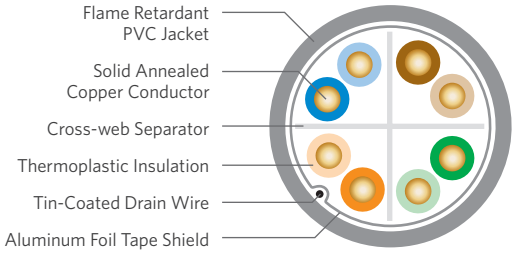
# Category 6A ScTP (F/UTP)

CMR/CMP




## PRODUCT DESCRIPTION

Category 6A ScTP (F/UTP) cable, swept out to 650 MHz, meets or exceeds ANSI/TIA-568-C.2 for CAT 6A cables, a requirement for 10GBASE-T applications. The cable is UL Verified CAT 6A and has a typical Alien Crosstalk margin of 18 dB.

The cable consists of four (4) balanced 23 AWG copper pairs around a flame retardant cross-web. The core is wrapped with a Mylar backed aluminum foil. A drain wire is applied longitudinally against the tape. The cable is then protected with a flexible riser or plenum rated PVC jacket. Standard features include ColorTip™ circuit identification system and QuickCount® length marking system measured in both feet and meters.

## APPLICATIONS

- 10BASE-T through 10GBASE-T Ethernet
- Power over Ethernet (PoE) – IEEE 802.3af
- PoE+ – IEEE 802.3at Type 1 and 2
- ATM and token ring
- Backward compatible to legacy protocols and applications

## SPECIFICATIONS

| | |
|---|---|
| Configuration | Copper pairs surrounded by aluminum PET foil with an outer drain wire and jacket |
| Pair Count | 4 |
| Conductor | Solid annealed copper |
| AWG (mm) | 23 (0.57) |
| Insulation | CMR: Thermoplastic<br>CMP: FEP |
| Insulation Colors | Pair 1: ColorTip Light Blue, Blue<br>Pair 2: ColorTip Light Orange, Orange<br>Pair 3: ColorTip Light Green, Green<br>Pair 4: ColorTip Light Brown, Brown |
| Separator | Cross-web |
| Shield | Aluminum/PET |
| Drain Wire | Tinned copper |
| Jacket | CMR: Flame retardant (FR) PVC<br>CMP: FR, low smoke PVC |
| Characteristic Impedance Ohms | 100 ± 15 |
| Nominal Velocity of Propagation % | CMR: 66<br>CMP: 71 |
| Performance Compliance | UL 444<br>CSA C22.2 No. 214-08<br>UL 1666<br>NFPA 262<br>ANSI/TIA-568-C.2<br>Article 800, NEC (NFPA 70)<br>RoHS-compliant |
| NRTL Programs | UL Verified CAT 6A<br>UL, c(UL) Listed CMR<br>UL, c(UL) Listed CMP |

| FEATURES | BENEFITS |
|---|---|
| • Overall shielded core | • Protects against EMI/RFI<br>• 18 dB typical margin Alien Crosstalk performance |
| • Exceeds ANSI/TIA-568-C.2 specification for CAT 6A cable performance | • Meets all 10GBASE-T application requirements<br>• Exceeds requirements for Alien Crosstalk performance |
| • UL Verified CAT 6A | • Assures CAT 6A performance by a nationally recognized test lab |
| • Riser and plenum rated designs | • Meets all fire safety requirements for either backbone or horizontal applications |
| • CableID® alpha numeric code printed every 2 feet | • Allows both ends of a cable run to be easily identifiable without the need to separately label or tone the cable |
| • QuickCount marking system in feet and meters | • Provides remaining length of cable on reel |
| • ColorTip circuit identification system | • Easily identifiable conductor mates even in low-light environments |

## PART NUMBERS AND PHYSICAL CHARACTERISTICS

| Listing | Part Number[1] | Nominal Diameter in (mm) | Approx. Weight lbs/kft (kg/km) | Package | Packages per Pallet |
|---|---|---|---|---|---|
| CMR | 6F-272-xA | 0.29 (7.3) | 40 (59) | 1,000' Plywood reel | 12 |
| CMR | 6F-273-xA | 0.29 (7.3) | 40 (59) | 2,500' Plywood reel | 12 |
| CMP | 6F-272-xB | 0.30 (7.7) | 46 (69) | 1,000' Plywood reel | 12 |
| CMP | 6F-273-xB | 0.30 (7.7) | 46 (69) | 2,500' Plywood reel | 12 |

## JACKET COLORS

| [1]Replace "x" with: | Blue = 2 | Gray = 3 | White = 4 | Green = 5 | Yellow = 6 | Purple = 7 | Red = 9 | Orange = D |
|---|---|---|---|---|---|---|---|---|



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## ELECTRICAL SPECIFICATIONS

| Frequency MHz | Insertion Loss @ 20°C Maximum dB/100 m | | | NEXT Minimum dB/100 m | | | ACR Minimum dB/100 m | | | PSNEXT Minimum dB/100 m | | | PSACR Minimum dB/100 m | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TIA-568-C.2 | Superior Essex | | TIA-568-C.2 | Superior Essex | | TIA-568-C.2 | Superior Essex | | TIA-568-C.2 | Superior Essex | | TIA-568-C.2 | Superior Essex | |
| | Specified | Guar. | Typical | Specified | Guar. | Typical | Calculated | Guar. | Typical | Specified | Guar. | Typical | Calculated | Guar. | Typical |
| 1 | 2.1 | 2.1 | 2.0 | 74.3 | 74.3 | 76.8 | 72.2 | 72.2 | 74.8 | 72.3 | 72.3 | 74.8 | 70.2 | 70.2 | 72.8 |
| 4 | 3.8 | 3.8 | 3.7 | 65.3 | 65.3 | 67.8 | 61.5 | 61.5 | 64.0 | 63.3 | 63.3 | 65.8 | 59.5 | 59.5 | 62.0 |
| 8 | 5.3 | 5.3 | 5.2 | 60.8 | 60.8 | 63.3 | 55.4 | 55.4 | 58.1 | 58.8 | 58.8 | 61.3 | 53.4 | 53.4 | 56.1 |
| 10 | 5.9 | 5.9 | 5.8 | 59.3 | 59.3 | 61.8 | 53.4 | 53.4 | 56.0 | 57.3 | 57.3 | 59.8 | 51.4 | 51.4 | 54.0 |
| 16 | 7.5 | 7.5 | 7.3 | 56.2 | 56.2 | 58.7 | 48.8 | 48.8 | 51.4 | 54.2 | 54.2 | 56.7 | 46.8 | 46.8 | 49.4 |
| 20 | 8.4 | 8.4 | 8.2 | 54.8 | 54.8 | 57.3 | 46.4 | 46.4 | 49.1 | 52.8 | 52.8 | 55.3 | 44.4 | 44.4 | 47.1 |
| 25 | 9.4 | 9.4 | 9.2 | 53.3 | 53.3 | 55.8 | 44.0 | 44.0 | 46.6 | 51.3 | 51.3 | 53.8 | 42.0 | 42.0 | 44.6 |
| 31.25 | 10.5 | 10.5 | 10.3 | 51.9 | 51.9 | 54.4 | 41.4 | 41.4 | 44.1 | 49.9 | 49.9 | 52.4 | 39.4 | 39.4 | 42.1 |
| 62.5 | 15.0 | 15.0 | 14.7 | 47.4 | 47.4 | 49.9 | 32.4 | 32.4 | 35.2 | 45.4 | 45.4 | 47.9 | 30.4 | 30.4 | 33.2 |
| 100 | 19.1 | 19.1 | 18.8 | 44.3 | 44.3 | 46.8 | 25.2 | 25.2 | 28.0 | 42.3 | 42.3 | 44.8 | 23.2 | 23.2 | 26.0 |
| 155 | 24.1 | 24.1 | 23.6 | 41.4 | 41.4 | 43.9 | 17.4 | 17.4 | 20.3 | 39.4 | 39.4 | 41.9 | 15.4 | 15.4 | 18.3 |
| 200 | 27.6 | 27.6 | 27.0 | 39.8 | 39.8 | 42.3 | 12.2 | 12.2 | 15.3 | 37.8 | 37.8 | 40.3 | 10.2 | 10.2 | 13.3 |
| 250 | 31.1 | 31.1 | 30.4 | 38.3 | 38.3 | 40.8 | 7.3 | 7.3 | 10.4 | 36.3 | 36.3 | 38.8 | 5.3 | 5.3 | 8.4 |
| 300 | 34.3 | 34.3 | 33.6 | 37.1 | 37.1 | 39.6 | 2.9 | 2.9 | 6.1 | 35.1 | 35.1 | 37.6 | 0.9 | 0.9 | 4.1 |
| 350 | 37.2 | 37.2 | 36.5 | 36.1 | 36.1 | 38.6 | | | 2.1 | 34.1 | 34.1 | 36.6 | | | 0.1 |
| 400 | 40.1 | 40.1 | 39.3 | 35.3 | 35.3 | 37.8 | | | | 33.3 | 33.3 | 35.8 | | | |
| 450 | 42.7 | 42.7 | 41.9 | 34.5 | 34.5 | 37.0 | | | | 32.5 | 32.5 | 35.0 | | | |
| 500 | 45.3 | 45.3 | 44.4 | 33.8 | 33.8 | 36.3 | | | | 31.8 | 31.8 | 34.3 | | | |

| Frequency MHz | Return Loss Minimum dB/100 m | | | ACRF Minimum dB/100 m | | | PSACRF Minimum dB/100 m | | | PSANEXT Minimum dB/100 m | | | PSAACRF Minimum dB/100 m | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TIA-568-C.2 | Superior Essex | | TIA-568-C.2 | Superior Essex | | TIA-568-C.2 | Superior Essex | | TIA-568-C.2 | Superior Essex | | TIA-568-C.2 | Superior Essex | |
| | Specified | Guar. | Typical | Specified | Guar. | Typical | Specified | Guar. | Typical | Specified | Guar. | Typical | Specified | Guar. | Typical |
| 1 | 20.0 | 20.0 | 22.0 | 67.8 | 67.8 | 70.3 | 64.8 | 64.8 | 67.3 | 67.0 | 67.0 | 67.0 | 67.0 | 67.0 | 67.0 |
| 4 | 23.0 | 23.0 | 25.0 | 55.8 | 55.8 | 58.3 | 52.8 | 52.8 | 55.3 | 67.0 | 67.0 | 67.0 | 66.2 | 67.0 | 67.0 |
| 8 | 24.5 | 24.5 | 26.5 | 49.7 | 49.7 | 52.2 | 46.7 | 46.7 | 49.2 | 67.0 | 67.0 | 67.0 | 60.1 | 63.1 | 67.0 |
| 10 | 25.0 | 25.0 | 27.0 | 47.8 | 47.8 | 50.3 | 44.8 | 44.8 | 47.3 | 67.0 | 67.0 | 67.0 | 58.2 | 61.2 | 65.2 |
| 16 | 25.0 | 25.0 | 27.0 | 43.7 | 43.7 | 46.2 | 40.7 | 40.7 | 43.2 | 67.0 | 67.0 | 67.0 | 54.1 | 57.1 | 61.1 |
| 20 | 25.0 | 25.0 | 27.0 | 41.8 | 41.8 | 44.3 | 38.8 | 38.8 | 41.3 | 67.0 | 67.0 | 67.0 | 52.2 | 55.2 | 59.2 |
| 25 | 24.3 | 24.3 | 26.3 | 39.8 | 39.8 | 42.3 | 36.8 | 36.8 | 39.3 | 67.0 | 67.0 | 67.0 | 50.2 | 53.2 | 57.2 |
| 31.25 | 23.6 | 23.6 | 25.6 | 37.9 | 37.9 | 40.4 | 34.9 | 34.9 | 37.4 | 67.0 | 67.0 | 67.0 | 48.3 | 51.3 | 55.3 |
| 62.5 | 21.5 | 21.5 | 23.5 | 31.9 | 31.9 | 34.4 | 28.9 | 28.9 | 31.4 | 65.6 | 67.0 | 67.0 | 42.3 | 45.3 | 49.3 |
| 100 | 20.1 | 20.1 | 22.1 | 27.8 | 27.8 | 30.3 | 24.8 | 24.8 | 27.3 | 62.5 | 65.5 | 67.0 | 38.2 | 41.2 | 45.2 |
| 155 | 18.8 | 18.8 | 20.8 | 24.0 | 24.0 | 26.5 | 21.0 | 21.0 | 23.5 | 59.6 | 62.6 | 66.6 | 34.4 | 37.4 | 41.4 |
| 200 | 18.0 | 18.0 | 20.0 | 21.8 | 21.8 | 24.3 | 18.8 | 18.8 | 21.3 | 58.0 | 61.0 | 65.0 | 32.2 | 35.2 | 39.2 |
| 250 | 17.3 | 17.3 | 19.3 | 19.8 | 19.8 | 22.3 | 16.8 | 16.8 | 19.3 | 56.5 | 59.5 | 63.5 | 30.2 | 33.2 | 37.2 |
| 300 | 16.8 | 16.8 | 18.8 | 18.3 | 18.3 | 20.8 | 15.3 | 15.3 | 17.8 | 55.3 | 58.3 | 62.3 | 28.7 | 31.7 | 35.7 |
| 350 | 16.3 | 16.3 | 18.3 | 16.9 | 16.9 | 19.4 | 13.9 | 13.9 | 16.4 | 54.3 | 57.3 | 61.3 | 27.3 | 30.3 | 34.3 |
| 400 | 15.9 | 15.9 | 17.9 | 15.8 | 15.8 | 18.3 | 12.8 | 12.8 | 15.3 | 53.5 | 56.5 | 60.5 | 26.2 | 29.2 | 33.2 |
| 450 | 15.5 | 15.5 | 17.5 | 14.7 | 14.7 | 17.2 | 11.7 | 11.7 | 14.2 | 52.7 | 55.7 | 59.7 | 25.1 | 28.1 | 32.1 |
| 500 | 15.2 | 15.2 | 17.2 | 13.8 | 13.8 | 16.3 | 10.8 | 10.8 | 13.3 | 52.0 | 55.0 | 59.0 | 24.2 | 27.2 | 31.2 |