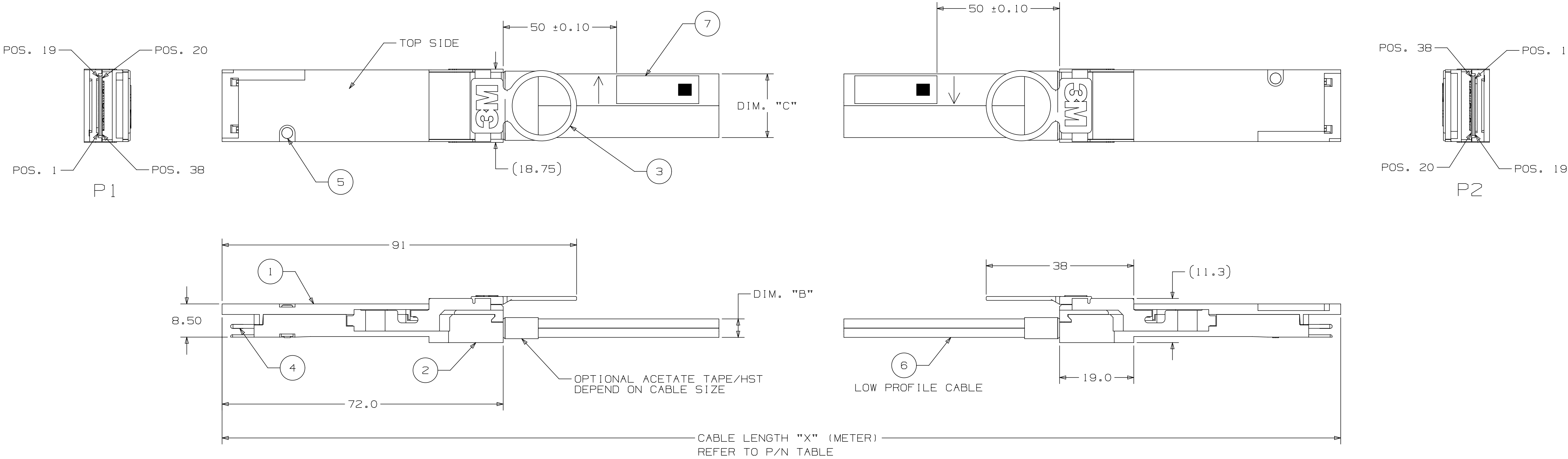
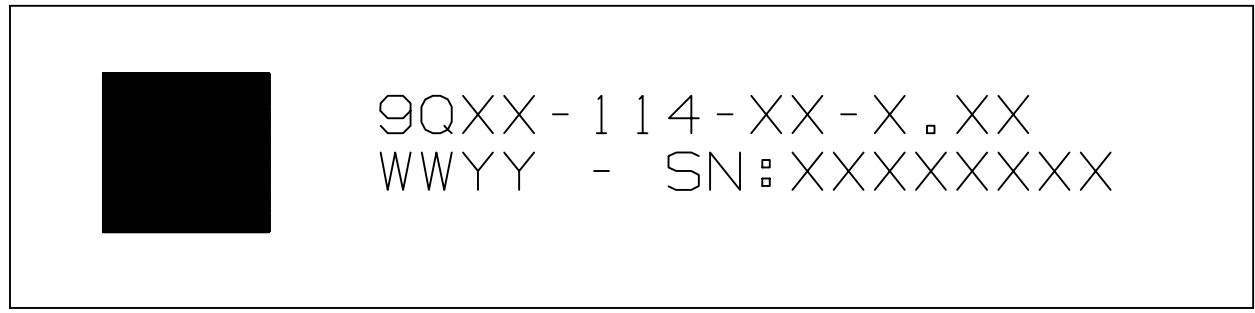


3M™ 100G QSFP28 DIRECT ATTACH COPPER CABLE ASSEMBLIES, 9Q SERIES



| WIRING LIST | | | |
|-------------|----------|--------|----------|
| P1 END | | P2 END | |
| POS | SIGNAL | POS | SIGNAL |
| 1 | GND (TX) | 20 | GND (RX) |
| 2 | TX2n | 21 | RX2n |
| 3 | TX2P | 22 | RX2p |
| 4 | GND (TX) | 23 | GND (RX) |
| 5 | TX4n | 24 | RX4n |
| 6 | TX4P | 25 | RX4p |
| 7 | GND (TX) | 26 | GND (RX) |
| 13 | GND (RX) | 32 | GND (TX) |
| 14 | RX3p | 33 | TX3p |
| 15 | RX3n | 34 | TX3n |
| 16 | GND (RX) | 35 | GND (TX) |
| 17 | RX1p | 36 | TX1p |
| 18 | RX1n | 37 | TX1n |
| 19 | GND (RX) | 38 | GND (TX) |
| 20 | GND (RX) | 1 | GND (TX) |
| 21 | RX2n | 2 | TX2n |
| 22 | RX2p | 3 | TX2P |
| 23 | GND (RX) | 4 | GND (TX) |
| 24 | RX4n | 5 | TX4n |
| 25 | RX4p | 6 | TX4P |
| 26 | GND (RX) | 7 | GND (TX) |
| 32 | GND (TX) | 13 | GND (RX) |
| 33 | TX3p | 14 | RX3p |
| 34 | TX3n | 15 | RX3n |
| 35 | GND (TX) | 16 | GND (RX) |
| 36 | TX1p | 17 | RX1p |
| 37 | TX1n | 18 | RX1n |
| 38 | GND (TX) | 19 | GND (RX) |

| LOW SPEED SIGNALS | |
|-------------------|---------|
| P1 & P2 | |
| POS | SIGNAL |
| 8 | ModSelL |
| 9 | ResetL |
| 10 | VccRx |
| 11 | SCL |
| 12 | SDA |
| 27 | ModPrsL |
| 28 | IntL |
| 29 | VccTx |
| 30 | VccI |
| 31 | LPMoDe |



STANDARD PRODUCT LABEL DESCRIPTION
(CUSTOM AVAILABLE UPON REQUEST)

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| BALLOON ITEM | DESCRIPTION | QTY |
|-----------------|-------------------------------------|-----|
| 7 | PRODUCT LABEL | 2 |
| 6 | 3M™ LOW PROFILE TWIN AXIAL CABLE | 4 |
| 5 | RIVET | 2 |
| 4 | PADDLE CARD | 2 |
| 3 | LATCH WITH PULL TAB | 2 |
| 2 | BOTTOM SHELL | 2 |
| 1 | UPPER SHELL | 2 |

| DESIGN REFERENCE | NEXT ASSEMBLY |
|------------------------|----------------------------------|
| 7 | 9QXX-114-XX-X.XX |
| 6 | 3M™ LOW PROFILE TWIN AXIAL CABLE |
| 5 | RIVET |
| 4 | PADDLE CARD |
| 3 | LATCH WITH PULL TAB |
| 2 | BOTTOM SHELL |
| 1 | UPPER SHELL |
| DO NOT SCALE DRAWING | SCALE 1 |
| THIRD ANGLE PROJECTION | INTERPRET PER ASME Y14.5 - 2009 |
| MAX. SURFACE ROUGHNESS | 0.00 ± 0.005 |
| ALL SURFACES | MARKED ONLY |
| ANGLES | ± 1 |

| REV | ECO | ISSUE DATE AND DESCRIPTION | DRFT | CHKD |
|---|--------------|--|-------------------|-------------------|
| C | 86392 | SEP 26, 2019 REVISE NOTES | JNC | DLT |
| B | 84769 | JUL 17, 2019 ADDED CL2 CABLE OPTIONS | JNC | DLT |
| A | 74404 | JUN 22, 2017 NEW RELEASE | YL | YL |
| DRFT | YUNLONG | DATE MAR 02, 2017 | DATE MAR 02, 2017 | DATE MAR 02, 2017 |
| CHKD | YUNLONG | DATE MAR 02, 2017 | DATE MAR 02, 2017 | DATE MAR 02, 2017 |
| 3M Center St. Paul, MN 55144 | | | | |
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| TITLE 100G QSFP28 DIRECT ATTACH COPPER CABLE ASSEMBLIES, 9Q SERIES | | | | |
| CAGE NUMBER | SIZE D | DRAWING NO. 78-5100-2672-3 | REV. C | |
| MODEL QSFP28 | DET LISTS | YES | NO | SHT 1 OF 2 |

| | | | | | | | |
|--|---|---|---|---|-----------------------|---------------------|----------------|
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 3M™ 100G QSFP28 DIRECT ATTACH COPPER CABLE ASSEMBLIES, 9Q SERIES | | | | | | | |
| D | NOTES: | | | | TABLE 1 | | |
| | 1. ORDERING INFORMATION: | | | | ORDERING INFORMATION | ASSY LENGTH="X" (m) | CABLE SIZE |
| | 9QXX-114-XX-X.XX | | | | LENGTH TOLERANCE (mm) | B NOMINAL (mm) | C NOMINAL (mm) |
| | ASSEMBLY LENGTH X IN METERS SEE TABLE 1 | | | | 9QJ0-114-22-0.50 | 0.50 | 30AWG |
| | EEPROM MEMORY MAP | | | | 9QJ0-114-22-1.00 | 1.00 | 30AWG |
| | 22= IEEE Std 802.3bJ-2014 100GBASE-CR4 | | | | 9QJ0-114-22-2.00 | 2.00 | 30AWG |
| | XX= CUSTOMIZATION(SEE 3M SALES REP) | | | | 9QH6-114-22-2.00 | 2.00 | 26AWG |
| | AWG | | | | 9QH6-114-22-3.00 | 3.00 | 26AWG |
| | 0= 30AWG (only for below and 2 meters) | | | | 9QH6-114-22-4.00 | 4.00 | 26AWG |
| | 6= 26AWG (only for 2 meters and above) | | | | 9QN0-114-22-1.00 | 1.00 | 30AWG CL2 |
| C | CABLE TYPE | | | | 9QM6-114-22-3.00 | 3.00 | 26AWG CL2 |
| | J= 30AWG UTJ PVC JACKET WITH SHIELD (UP TO 2 METERS) | | | | | | |
| | N= 30AWG CL2 JACKET WITH SHIELD (UP TO 2 METERS) | | | | | | |
| | H= 26AWG UTJ PVC JACKET WITH SHIELD (2 TO 4.5 METERS) | | | | | | |
| | M= 26 AWG CL2 JACKET WITH SHIELD (2 TO 4.5 METERS) | | | | | | |
| | 2. REFER TO TABLE 1 FOR CABLE LENGTH, WIDTH, THICKNESS AND WIRE AWG | | | | | | |
| | 3. PCB PINOUT DESIGNED TO SFF8436 SPECIFICATION | | | | | | |
| | 4. CABLE ASSEMBLY DESIGNED TO SFF 8661 & IEEE 802.3bJ SPECIFICATION | | | | | | |
| | 5. JACKET FOR CABLE TYPE J AND H: PVC, COLOR: BLACK | | | | | | |
| | JACKET FOR CABLE TYPE N AND M: HALOGEN-FREE* CL2, COLOR: BLACK | | | | | | |
| B | METAL SHELL: NICKEL PLATED ZINC ALLOY | | | | | | |
| | PULL TAB: HALOGEN-FREE* THERMOPLASTIC, COLOR: BLACK | | | | | | |
| | PCB FOR CABLE TYPE J AND H: HALOGENATED FLAME RETARDANT | | | | | | |
| | PCB FOR CABLE TYPE N AND M: HALOGEN-FREE* FLAME RETARDANT | | | | | | |
| | ASSEMBLIES WITH CABLE TYPE N AND M ARE FULLY HALOGEN-FREE* | | | | | | |
| | 6. UNLESS OTHERWISE NOTED,REFERENCES TO INDUSTRY SPECIFICATIONS ARE INTENDED TO INDICATE SUBSTANTIAL COMPLIANCE TO THE MATERIAL ELEMENTS OF THE SPECIFICATION. SUCH REFERENCES SHOULD NOT BE CONTRUED AS A GUARANTEE OF COMPLIANCE TO ALL REQUIREMENTS IN A GIVEN SPECIFICATION. | | | | | | |
| | 7. PRODUCT SPECIFICATION REFER TO 3M DOCUMENT: 78-5102-0262-1 | | | | | | |
| | 8. CABLE RETURN LOSS PERFORMANCE IS VALID FOR CABLE ASSEMBLIES OF A MINIMUM OF 1.00 METER IN LENGTH. CABLE ASSEMBLIES LESS THAN 1.00 METER IN LENGTH MAY NOT ACHIEVE THE RETURN LOSS PERFORMANCE IN IEEE802.3bJ. CABLE RETURN LOSS PERFORMANCE IS SUBJECT TO CHANGE WITH DIFFERENT CABLE ASSEMBLY LENGTHS. END USER WILL NEED TO DETERMINE WHETHER THIS PRODUCT IS SUITABLE FOR THEIR INTENDED APPLICATION. | | | | | | |
| | 9. FOR CUSTOM LENGTHS CONTACT A 3M SALES REPRESENTATIVE | | | | | | |
| | 10 * HALOGEN-FREE IS DEFINED AS BOTH (1) NO HALOGEN COMPOUNDS ARE INTENTIONALLY ADDED TO THE PRODUCT OR USED IN THE MANUFACTURING PROCESS FOR THE PRODUCT, AND (2) ANY IMPURITIES PRESENT ARE LESS THAN 900 PPM BROMINE, LESS THAN 900 PPM CHLORINE, AND/OR LESS THAN 1500 PPM TOTAL BROMINE AND CHLORINE. | | | | | | |
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| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

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| | | | | |
|---------------------------------|--------|--|----------------|------------------|
| C | 86392 | SEP 26,2019 | JNC | DLD |
| B | 84769 | JUL 17,2019 | JNC | DLD |
| A | 74404 | JUN 22,2017 | YL | YL |
| REV | ECO | ISSUE DATE AND DESCRIPTION | DRFT | CHKD |
| DRFT | YUNLON | DATE MAR 02,2017 | APPR E. CHEN | DATE MAR 02,2017 |
| CHKD | YUNLON | DATE MAR 02,2017 | APPR S. BANDHU | DATE MAR 02,2017 |
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| DO NOT SCALE DRAWING | | 100G QSFP28 DIRECT ATTACH COPPER CABLE ASSEMBLIES, 9Q SERIES | | |
| SCALE 2/1 | | CAGE NUMBER D78-5100-2672-3 | | |
| TOLERANCES EXCEPT AS NOTED | | REV. C | | |
| INCHES | | MODEL QSFP28 | | |
| THIRD ANGLE PROJECTION | | LISTS <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | |
| INTERPRET PER ASME Y14.5 - 2009 | | SHT 2 OF 2 | | |
| MAX SURFACE ROUGHNESS | | | | |
| ALL SURFACES | | | | |
| MARKED ONLY | | | | |
| ANGLES | | | | |

| TABLE 1 | | | | | |
|----------------------|-------------------------|---------------|-----------------------------|----------------------|----------------------|
| ORDERING INFORMATION | ASSY LENGTH= "X" (m) | CABLE SIZE | LENGTH TOLERANCE (mm) | B NOMINAL (mm) | C NOMINAL (mm) |
| 9QJ0-114-22-0.50 | 0.50 | 30AWG | +10/-0 | (2.8) | (15.0) |
| 9QJ0-114-22-1.00 | 1.00 | 30AWG | +50/-0 | | |
| 9QJ0-114-22-2.00 | 2.00 | 30AWG | | | |
| 9QH6-114-22-2.00 | 2.00 | 26AWG | | | |
| 9QH6-114-22-3.00 | 3.00 | 26AWG | | (3.8) | (16.0) |
| 9QH6-114-22-4.00 | 4.00 | 26AWG | | | |
| 9QN0-114-22-1.00 | 1.00 | 30AWG CL2 | +50/0 | (3.5) | (17.8) |
| 9QM6-114-22-3.00 | 3.00 | 26AWG CL2 | | (6.0) | (18.5) |

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|--|--|--|----------------------------|-------|-----------|---|
| C | | 86392 | SEP 26,2019 | | JNC | DLD |
| B | | 84769 | JUL 17,2019 | | JNC | DLD |
| A | | 74404 | JUN 22,2017 | | YL | YL |
| | | | NEW RELEASE | | | |
| REV | | ECO | ISSUE DATE AND DESCRIPTION | | DRFT | CHKD |
| | | | DATE | | | |
| YUNLONG | | | MAR 02,2017 | | E. CHEN | MAR 02,2017 |
| CHKD | | YUNLONG | DATE | | | |
| | | | MAR 02,2017 | | S. BANDHU | MAR 02,2017 |
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| St. Paul, MN 55144 | | | | | | |
| TITLE | | | | | | |
| 100G QSFP28 DIRECT ATTACH COPPER CABLE ASSEMBLIES, 9Q SERIES | | | | | | |
| CAGE NUMBER | | DRAWING NO. | | | | REV. |
| D | | 78-5100-2672-3 | | | | C |
| MODEL | | QSFP28 | | DET. | | |
| | | | | LISTS | | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> |
| | | | | | | SHT 2 OF 2 |