

## COAXIAL RF SURGE PROTECTION

### SX Series

Polyphaser's SX series of surge arrestors use a patented spiral inductor design. The almost instantaneous response to a lightning surge minimizes energy let-through and protects critical wireless equipment. Models available with ultra-low PIM and DC Pass (AISG) capability, used in 4G and 5G applications.



TSX-NFF

TSX-4310FM-P

TSXDC-4310FF

#### FEATURES

- Frequency Ranges from DC to 11GHz
- 4.3-10, 7/16" DIN, N-Type, TNC, and SMA
- Available with low PIM
- Repeatable RF performance after surge
- Weatherproof when installed

#### STANDARDS

- Weatherproof : IEC 60529 IP 67
- Bellcore TA-NWT-000487
- Procedure 4.11, Wind Driven (120 MPH)
- CE & RoHS Compliant

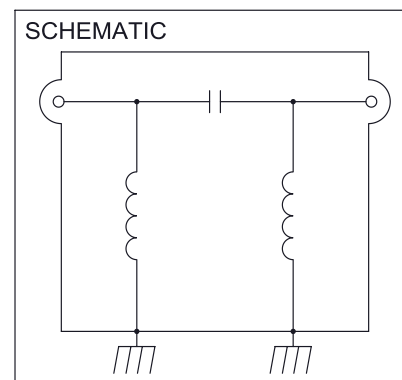
#### GENERAL SPECIFICATIONS\*

|                |                               |
|----------------|-------------------------------|
| Insertion Loss | Typically 0.1 dB              |
| VSWR           | Typically 1.1                 |
| Return Loss    | Typically 26 dB               |
| Typical Surge  | 40 kA 8 x 20 $\mu$ s Waveform |

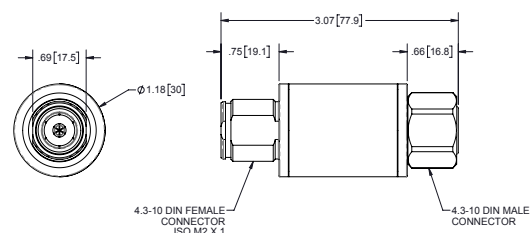
\*Please review engineering specifications on PolyPhaser.com for specific dimensions of each product.

#### POLYPHASER'S LIGHTNING ARRESTOR TECHNOLOGY

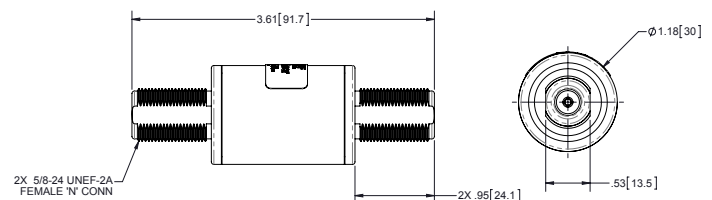
The SX product family is based upon PolyPhaser's patented spiral inductor surge protection technology. This patented spiral inductor allows for an almost instantaneous response to a lightning surge while maintaining the RF performance. This field tested product family is used by major cellular carriers around the world, and in critical wireless communication systems used by fire, police and emergency responders.



#### DIMENSIONS



TSX-4310FM-P



TSX-NFF

### 300 MHZ TO 1.2 GHZ

| Part Number | Max Surge             | Connector                   | PIM Rating              | DC Block or DC Pass | RF Power |
|-------------|-----------------------|-----------------------------|-------------------------|---------------------|----------|
| TUSX-DFF    | 40 kA, 8 x 20 $\mu$ s | 7/16" DIN, Female to Female | -112 dBm Max @ 2 x 20 W | DC Block            | 1000 W   |
| TUSX-DFM    | 40 kA, 8 x 20 $\mu$ s | 7/16" DIN, Male to Female   | -112 dBm Max @ 2 x 20 W | DC Block            | 1000 W   |
| TUSX-NFF    | 40 kA, 8 x 20 $\mu$ s | N-Type, Female to Female    | —                       | DC Block            | 1000 W   |
| TUSX-NFM    | 40 kA, 8 x 20 $\mu$ s | N-Type, Male to Female      | —                       | DC Block            | 1000 W   |

### 698 MHZ TO 2.7 GHZ

| Part Number  | Max Surge             | Connector                   | PIM Rating               | DC Block or DC Pass | RF Power |
|--------------|-----------------------|-----------------------------|--------------------------|---------------------|----------|
| TSX-4310FF-P | 40 kA, 8 x 20 $\mu$ s | 4.3-10, Female to Female    | Typ: -173 dBc @ 2 x 20 W | DC Block            | 500 W    |
| TSX-4310FM-P | 40 kA, 8 x 20 $\mu$ s | 4.3-10, Male to Female      | Typ: -173 dBc @ 2 x 20 W | DC Block            | 500 W    |
| TSXDC-4310FF | 20 kA, 8 x 20 $\mu$ s | 4.3-10, Female to Female    | Typ: -173 dBc @ 2 x 20 W | DC Pass (AISG)      | 500 W    |
| TSXDC-4310FM | 20 kA, 8 x 20 $\mu$ s | 4.3-10, Male to Female      | Typ: -173 dBc @ 2 x 20 W | DC Pass (AISG)      | 500 W    |
| TSX-DFF      | 40 kA, 8 x 20 $\mu$ s | 7/16" DIN, Female to Female | Max: -155 dBc @ 2 x 20 W | DC Block            | 500 W    |
| TSX-DFM      | 40 kA, 8 x 20 $\mu$ s | 7/16" DIN, Male to Female   | Max: -155 dBc @ 2 x 20 W | DC Block            | 500 W    |
| TSXDC-DFF    | 20 kA, 8 x 20 $\mu$ s | 7/16" DIN, Female to Female | Max: -155 dBc @ 2 x 20 W | DC Pass (AISG)      | 1000 W   |
| TSXDC-DFM    | 20 kA, 8 x 20 $\mu$ s | 7/16" DIN, Male to Female   | Max: -155 dBc @ 2 x 20 W | DC Pass (AISG)      | 1000 W   |
| TSX-NFF      | 40 kA, 8 x 20 $\mu$ s | N-Type, Female to Female    | —                        | DC Block            | 500 W    |
| TSX-NFF-P    | 40 kA, 8 x 20 $\mu$ s | N-Type, Female to Female    | Max: -155 dBc @ 2 x 20 W | DC Block            | 500 W    |
| TSX-NFM      | 40 kA, 8 x 20 $\mu$ s | N-Type, Male to Female      | —                        | DC Block            | 500 W    |
| TSX-NFM-P    | 40 kA, 8 x 20 $\mu$ s | N-Type, Male to Female      | Max: -155 dBc @ 2 x 20 W | DC Block            | 500 W    |

### 1.8 GHZ TO 3.8 GHZ AND 4.2 GHZ TO 6.0 GHZ

| Part Number | Max Surge             | Connector                | PIM Rating | DC Block or DC Pass | RF Power |
|-------------|-----------------------|--------------------------|------------|---------------------|----------|
| LSXL        | 18 kA, 8 x 20 $\mu$ s | N-Type, Female to Female | —          | DC Block            | 10 W     |
| LSXL-ME     | 18 kA, 8 x 20 $\mu$ s | N-Type, Male to Female   | —          | DC Block            | 10 W     |

### 2 GHZ TO 6 GHZ

| Part Number | Max Surge             | Connector                | PIM Rating | DC Block or DC Pass | RF Power |
|-------------|-----------------------|--------------------------|------------|---------------------|----------|
| AL-LSXM     | 10 kA, 8 x 20 $\mu$ s | N-Type, Female to Female | —          | DC Block            | 10 W     |
| AL-LSXM-MA  | 10 kA, 8 x 20 $\mu$ s | N-Type, Male to Female   | —          | DC Block            | 10 W     |
| AL-LSXM-ME  | 10 kA, 8 x 20 $\mu$ s | N-Type, Male to Female   | —          | DC Block            | 10 W     |

### 6 GHZ TO 10 GHZ

| Part Number | Max Surge             | Connector                | PIM Rating | DC Block or DC Pass | RF Power |
|-------------|-----------------------|--------------------------|------------|---------------------|----------|
| WSXM        | 10 kA, 8 x 20 $\mu$ s | N-Type, Female to Female | —          | DC Block            | 10 W     |

### 10 GHZ TO 11 GHZ

| Part Number | Max Surge             | Connector                | PIM Rating | DC Block or DC Pass | RF Power |
|-------------|-----------------------|--------------------------|------------|---------------------|----------|
| AL-WSXM-CBB | 10 kA, 8 x 20 $\mu$ s | N-Type, Female to Female | —          | DC Block            | 10 W     |