

# Xtra Long Life Transfer Switch

50Ω DC to 18 GHz 12 Volt

## MTS-18-12B+



CASE STYLE: DS810

| Connectors | Model       | Price    | Qty.  |
|------------|-------------|----------|-------|
| SMA        | MTS-18-12B+ | \$279.95 | (1-9) |

**+RoHS Compliant**

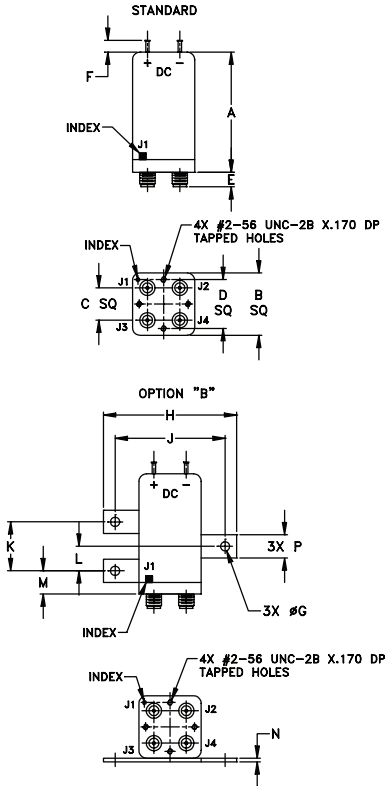
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Maximum Ratings

|                            |                |
|----------------------------|----------------|
| Operating Temperature      | -15°C to +45°C |
| Storage Temperature        | -15°C to +45°C |
| RF Power (any single port) | 10W            |
| Control Voltage            | 26VDC          |

Permanent damage may occur if any of these limits are exceeded.

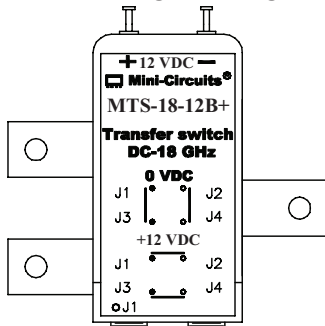
### Outline Drawing



### Outline Dimensions (inch/mm)

|       |       |       |       |      |      |       |       |
|-------|-------|-------|-------|------|------|-------|-------|
| A     | B     | C     | D     | E    | F    | G     | H     |
| 1.97  | 1.02  | .53   | .800  | .240 | .19  | .150  | 2.18  |
| 50.04 | 25.91 | 13.46 | 20.32 | 6.10 | 4.83 | 3.81  | 55.37 |
| J     | K     | L     | M     | N    | P    | wt    |       |
| 1.800 | .800  | .400  | .380  | .06  | .38  | grams |       |
| 45.72 | 20.32 | 10.16 | 9.65  | 1.52 | 9.65 | 70    |       |

### Marking Drawing



### Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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### Features

- low insertion loss, 0.2 dB typ.
- high isolation, 85 dB typ.
- high power handling, 10W
- ultra reliable
- break-before-make configuration
- failsafe microwave transfer switch
- protected by US Patents 5,272,458; 6,414,577; 6,650,210; 7,633,361; 7,843,289

### Applications

- (ATE) automatic test equipment
- reliable "sleeptime" switching
- redundancy switching for microwave radio

### Electrical Specifications

| FREQUENCY (GHz) | INSERTION LOSS (dB) |      | ISOLATION (dB) |      | VSWR (:1) |      | DC CURRENT @+12V (mA) |      | RF POWER COLD SWITCHING (W) |        | RF POWER HOT SWITCHING (W) |  |
|-----------------|---------------------|------|----------------|------|-----------|------|-----------------------|------|-----------------------------|--------|----------------------------|--|
|                 | Typ.                | Max. | Typ.           | Min. | Typ.      | Max. | Typ.                  | Max. | Max.                        | Note 1 | Note 2                     |  |
| DC - 1          | 0.10                | 0.15 | 100            | 85   | 1.05      | 1.10 |                       |      |                             |        |                            |  |
| 1 - 8           | 0.10                | 0.25 | 90             | 75   | 1.15      | 1.20 |                       |      |                             |        |                            |  |
| 8 - 12          | 0.20                | 0.36 | 86             | 70   | 1.15      | 1.30 | 350                   | 430  | 10                          | 0.1    | 1.0                        |  |
| 12 - 18         | 0.25                | 0.45 | 76             | 60   | 1.15      | 1.30 |                       |      |                             |        |                            |  |

### Additional Specifications

|                          |                                 |
|--------------------------|---------------------------------|
| Operating Voltage Range  | 12V (nom) ±1V                   |
| Switching Time (Typ.)    | 20ms                            |
| Life <sup>3</sup> (Min.) | 1 year/10 million switch cycles |

### Notes

- To achieve specified life, hot switching RF power must not exceed this level.
- Degradation in life (min.) to typically 3 million switch cycles for hot switch at this RF power level.
- Tested at 0 dBm RF power.

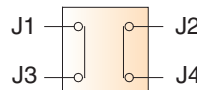
**10 YEAR EXTENDED WARRANTY**

10 Yr. 100 Million Cycles\*  
\$19.95/yr.  
for a total of \$199.50

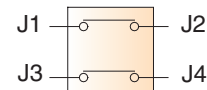
\*10 year agreement required  
[Click Here for details](#)

### Switching States

DE-ENERGIZED DC=0V



ENERGIZED DC=12V



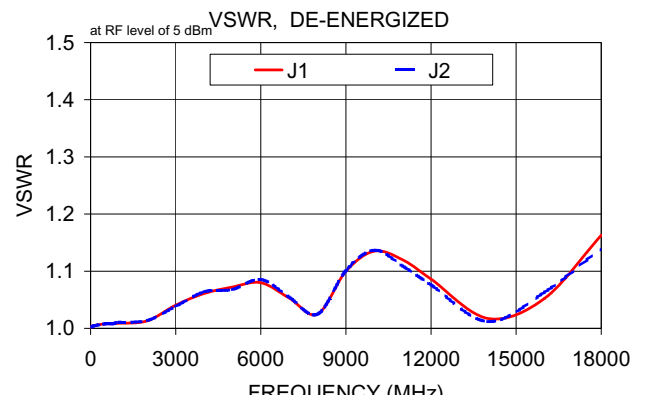
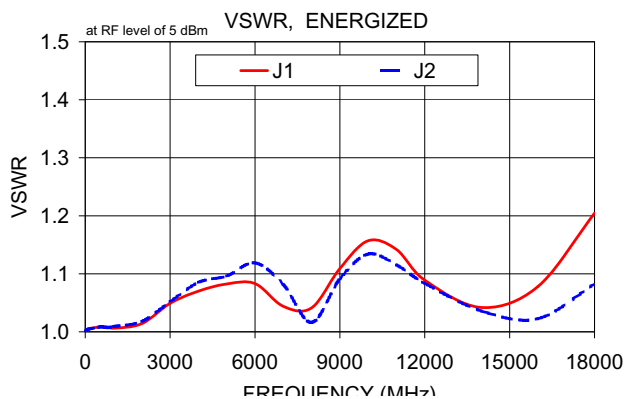
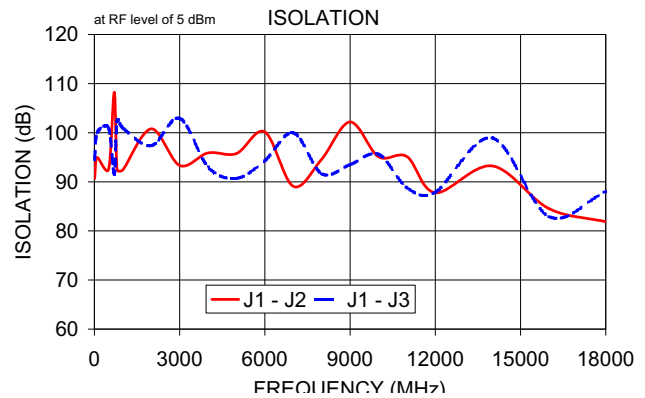
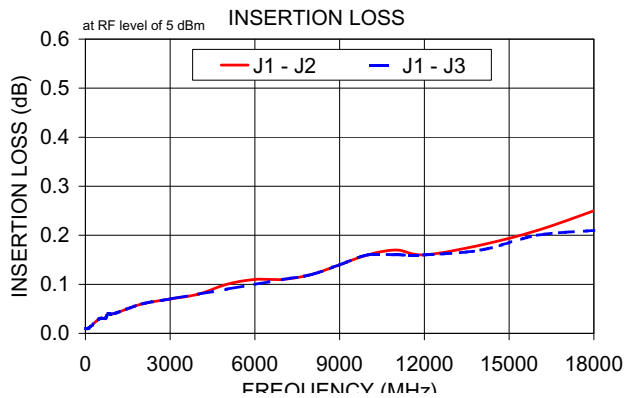
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REV. OR  
M13355  
MTS-18-12B+  
AR/TH/CP  
120321  
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## Typical Performance Data

| FREQ.<br>(MHz) | ON INSERTION<br>LOSS<br>(dB) |       | OFF ISOLATION<br>(dB) |        | VSWR energized<br>(:1) |      | VSWR de-energized<br>(:1) |      |
|----------------|------------------------------|-------|-----------------------|--------|------------------------|------|---------------------------|------|
|                | J1-J2                        | J1-J3 | J1-J2                 | J1-J3  | J1                     | J2   | J1                        | J2   |
| 10.00          | 0.01                         | 0.01  | 90.66                 | 94.50  | 1.00                   | 1.00 | 1.00                      | 1.00 |
| 100.00         | 0.01                         | 0.01  | 94.93                 | 100.05 | 1.00                   | 1.00 | 1.00                      | 1.00 |
| 500.00         | 0.03                         | 0.03  | 92.59                 | 100.93 | 1.01                   | 1.01 | 1.01                      | 1.01 |
| 700.00         | 0.03                         | 0.03  | 108.21                | 91.48  | 1.01                   | 1.01 | 1.01                      | 1.01 |
| 800.00         | 0.04                         | 0.04  | 92.52                 | 102.45 | 1.01                   | 1.01 | 1.01                      | 1.01 |
| 1000.00        | 0.04                         | 0.04  | 92.45                 | 100.96 | 1.01                   | 1.01 | 1.01                      | 1.01 |
| 2000.00        | 0.06                         | 0.06  | 100.79                | 97.34  | 1.01                   | 1.02 | 1.01                      | 1.01 |
| 3000.00        | 0.07                         | 0.07  | 93.32                 | 102.92 | 1.05                   | 1.05 | 1.04                      | 1.04 |
| 4000.00        | 0.08                         | 0.08  | 95.89                 | 93.03  | 1.07                   | 1.09 | 1.06                      | 1.06 |
| 5000.00        | 0.10                         | 0.09  | 95.75                 | 90.70  | 1.08                   | 1.10 | 1.07                      | 1.07 |
| 6000.00        | 0.11                         | 0.10  | 100.15                | 94.32  | 1.08                   | 1.12 | 1.08                      | 1.09 |
| 7000.00        | 0.11                         | 0.11  | 89.08                 | 99.96  | 1.04                   | 1.08 | 1.05                      | 1.05 |
| 8000.00        | 0.12                         | 0.12  | 94.59                 | 91.64  | 1.04                   | 1.02 | 1.02                      | 1.02 |
| 9000.00        | 0.14                         | 0.14  | 102.19                | 93.50  | 1.11                   | 1.09 | 1.10                      | 1.10 |
| 10000.00       | 0.16                         | 0.16  | 95.10                 | 95.63  | 1.16                   | 1.13 | 1.14                      | 1.14 |
| 11000.00       | 0.17                         | 0.16  | 95.14                 | 88.79  | 1.14                   | 1.12 | 1.12                      | 1.11 |
| 12000.00       | 0.16                         | 0.16  | 87.77                 | 87.85  | 1.09                   | 1.08 | 1.09                      | 1.08 |
| 14000.00       | 0.18                         | 0.17  | 93.24                 | 98.95  | 1.04                   | 1.04 | 1.02                      | 1.01 |
| 16000.00       | 0.21                         | 0.20  | 84.54                 | 82.94  | 1.08                   | 1.02 | 1.05                      | 1.06 |
| 18000.00       | 0.25                         | 0.21  | 81.87                 | 88.03  | 1.20                   | 1.08 | 1.16                      | 1.14 |



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