

# Isolators & Circulators

Coaxial circulators & isolators

## COAXIAL CIRCULATORS & ISOLATORS

| Frequency (MHz) | Description & Application | Type                     | Power (Watts) |              |                | V.S.W.R | IL (dB) | Isol (dB) | Package  | Part Number Family |
|-----------------|---------------------------|--------------------------|---------------|--------------|----------------|---------|---------|-----------|----------|--------------------|
|                 |                           |                          | Forward (CW)  | Reverse (CW) | Forward (peak) |         |         |           |          |                    |
| 27              | Commercial                | Circulator               | 60 Watt-CW    | 60 Watt-CW   | NA             | 1.35    | 1.00    | 15        | T0       | BA3038             |
| 62-72           | Commercial                | Isolator                 | 20 Watt-CW    | 20 Watt-CW   | NA             | 1.35    | 1.00    | 17        | T0       | BA1011             |
| 62-72           | Commercial                | Isolator                 | 50 Watt-CW    | 20 Watt-CW   | NA             | 1.35    | 1.00    | 17        | T0       | BA1015             |
| 62-72           | Commercial                | Circulator               | 20 Watt-CW    | 20 Watt-CW   | NA             | 1.35    | 1.00    | 17        | T0       | BA3011             |
| 62-72           | Commercial                | Circulator               | 50 Watt-CW    | 50 Watt-CW   | NA             | 1.35    | 1.00    | 17        | T0       | BA3015             |
| 68-88           | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA             | 1.35    | 1.00    | 17        | T0       | BA3021             |
| 88-108          | Commercial                | Isolator                 | 100 Watt-CW   | 20 Watt-CW   | NA             | 1.35    | 1.00    | 17        | T0       | BA1010             |
| 88-108          | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA             | 1.35    | 1.00    | 17        | T0       | BA3010             |
| 105-145         | Commercial                | Isolator                 | 50 Watt-CW    | 20 Watt-CW   | NA             | 1.40    | 1.00    | 17        | T0       | BA1012             |
| 105-145         | Commercial                | Circulator               | 50 Watt-CW    | 50 Watt-CW   | NA             | 1.25    | 1.00    | 16        | T0       | BA3012             |
| 130-150         | Commercial                | Dual Circulator-Isolator | 250 Watt-CW   | 20 Watt-CW   | NA             | 1.35    | 1.00    | 22        | P0       | BA4113             |
| 138-155         | Commercial                | Circulator               | 250 Watt-CW   | 250 Watt-CW  | NA             | 1.35    | 0.60    | 22        | T0       | BA3040             |
| 155-174         | Commercial                | Circulator               | 250 Watt-CW   | 250 Watt-CW  | NA             | 1.35    | 0.60    | 22        | T0       | BA3013             |
| 165-200         | Commercial                | Isolator                 | 100 Watt-CW   | 20 Watt-CW   | NA             | 1.35    | 1.00    | 17        | T0       | BA1016             |
| 165-200         | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA             | 1.35    | 1.00    | 17        | T0       | BA3016             |
| 174-225         | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA             | 1.35    | 1.00    | 17        | T0       | BA3029             |
| 200-235         | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA             | 1.40    | 0.80    | 17        | T0       | BA3017             |
| 200-320         | Commercial                | Circulator               | 50 Watt-CW    | 50 Watt-CW   | NA             | 1.15    | 0.80    | 17        | Lambda 1 | BB3013             |
| 216-230         | Commercial                | Circulator               | 250 Watt-CW   | 250 Watt-CW  | NA             | 1.25    | 0.50    | 17        | T0       | BA3017             |
| 216-230         | Commercial                | Circulator               | 325 Watt-CW   | 325 Watt-CW  | NA             | 1.40    | 0.40    | 20        | T0       | BA3039             |
| 270-290         | Commercial                | Dual Circulator-Isolator | 100 Watt-CW   | 50 Watt-CW   | NA             | 1.25    | 0.60    | 45        | P2       | BB4140             |
| 225-400         | Defense                   | Isolator                 | 60 Watt-CW    | 15 Watt-CW   | NA             | 1.40    | 0.80    | 16        | Lambda 1 | BB1001             |
| 225-400         | Defense                   | Isolator                 | 100 Watt-CW   | 15 Watt-CW   | NA             | 1.40    | 0.80    | 16        | Lambda 1 | BB1006             |
| 225-400         | Defense                   | Circulator               | 60 Watt-CW    | 60 Watt-CW   | NA             | 1.40    | 0.80    | 16        | Lambda 1 | BB3001             |
| 225-400         | Defense                   | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA             | 1.50    | 0.80    | 17        | Lambda 1 | BB3006             |
| 225-400         | Defense                   | Circulator               | 200 Watt-CW   | 200 Watt-CW  | NA             | 1.60    | 0.90    | 14        | Lambda 2 | BB3007             |
| 225-400         | Defense                   | Circulator               | 300 Watt-CW   | 300 Watt-CW  | NA             | 1.25    | 0.80    | 13        | T56      | BB3011             |
| 350-400         | Commercial                | Isolator                 | 200 Watt-CW   | 50 Watt-CW   | NA             | 1.25    | 0.50    | 20        | T2       | BB1019             |
| 350-400         | Commercial                | Circulator               | 200 Watt-CW   | 200 Watt-CW  | NA             | 1.30    | 0.50    | 20        | T2       | BB3019             |
| 378-512         | Commercial                | Isolator                 | 200 Watt-CW   | 50 Watt-CW   | NA             | 1.30    | 0.60    | 18        | T2       | BB1080             |
| 378-512         | Commercial                | Circulator               | 200 Watt-CW   | 200 Watt-CW  | NA             | 1.25    | 0.60    | 18        | T2       | BB3080             |
| 380-430         | Commercial                | Dual Circulator-Isolator | 100 Watt-CW   | 50 Watt-CW   | NA             | 1.25    | 0.60    | 45        | P2       | BB4110             |
| 400-470         | Commercial                | Isolator                 | 100 Watt-CW   | 50 Watt -CW  | NA             | 1.25    | 0.50    | 20        | T2       | BB1018             |
| 400-470         | Commercial                | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.25    | 0.50    | 20        | T2       | BB3018             |
| 400-470         | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA             | 1.30    | 0.50    | 20        | T2       | BB3018             |
| 400-510         | Commercial                | Circulator               | 200 Watt-CW   | 200 Watt-CW  | NA             | 1.25    | 0.50    | 18        | T2       | BB3018             |
| 405-450         | Commercial                | Isolator                 | 200 Watt-CW   | 50 Watt-CW   | NA             | 1.25    | 0.40    | 20        | T2       | BB1025             |
| 405-470         | Commercial                | Isolator                 | 200 Watt-CW   | 50 Watt-CW   | NA             | 1.25    | 0.50    | 20        | T50      | BB1038             |
| 405-450         | Commercial                | Circulator               | 200 Watt-CW   | 200 Watt-CW  | NA             | 1.25    | 0.40    | 20        | T2       | BB3025             |
| 405-470         | Commercial                | Circulator               | 200 Watt-CW   | 200 Watt-CW  | NA             | 1.25    | 0.50    | 20        | T50      | BB3038             |
| 406-470         | Commercial                | Dual Circulator-Isolator | 100 Watt-CW   | 50 Watt-CW   | NA             | 1.20    | 0.80    | 40        | P2       | BB4111             |
| 415-430         | Commercial                | Isolator                 | 100 Watt-CW   | 50 Watt-CW   | NA             | 1.25    | 0.30    | 22        | T2       | BB1023             |
| 415-454         | Commercial                | Isolator                 | 100 Watt-CW   | NA           | NA             | 1.20    | 0.50    | 20        | T50      | BB1031             |
| 415-430         | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA             | 1.25    | 0.30    | 22        | T2       | BB3023             |
| 415-454         | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA             | 1.25    | 0.50    | 20        | T50      | BB3031             |
| 440-470         | Commercial                | Isolator                 | 200 Watt-CW   | NA           | NA             | 1.25    | 0.50    | 20        | T50      | BB1027             |
| 450-500         | Commercial                | Isolator                 | 200 Watt-CW   | 50 Watt-CW   | NA             | 1.25    | 0.40    | 20        | T2       | BB1026             |
| 450-500         | Commercial                | Circulator               | 200 Watt-CW   | 200 Watt-CW  | NA             | 1.25    | 0.40    | 20        | T2       | BB3026             |



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|-----------------|---------------------------|--------------------------|---------------|--------------|---------------------|---------|---------|-----------|----------|--------------------|
|                 |                           |                          | Forward (CW)  | Reverse (CW) | Forward (peak)      |         |         |           |          |                    |
| 470-570         | Commercial                | Isolator                 | 100 Watt-CW   | NA           | NA                  | 1.30    | 0.50    | 20        | T2       | BC1042             |
| 610-960         | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA                  | 1.30    | 0.70    | 19        | TD       | BC3019             |
| 700-860         | Commercial                | Isolator                 | 200 Watt-CW   | 50 Watt-CW   | NA                  | 1.30    | 0.60    | 18        | T2       | BC1041             |
| 700-860         | Commercial                | Circulator               | 200 Watt-CW   | 200 Watt-CW  | NA                  | 1.30    | 0.60    | 18        | T2       | BC3041             |
| 760-960         | Commercial                | Circulator               | 50 Watt-CW    | 50 Watt-CW   | NA                  | 1.30    | 0.50    | 18        | TD       | BC3019             |
| 760-960         | Commercial                | Isolator                 | 50 Watt-CW    | 50 Watt-CW   | NA                  | 1.30    | 0.50    | 18        | TD       | BC1019             |
| 810-960         | Commercial                | Isolator                 | 60 Watt-CW    | 20 Watt-CW   | NA                  | 1.30    | 0.50    | 18        | T3       | BC1006             |
| 860-890         | Commercial                | Isolator                 | 60 Watt-CW    | 20 Watt-CW   | NA                  | 1.25    | .03     | 20        | T3       | BC1006             |
| 860-960         | Commercial                | Dual Circulator-Isolator | 50 Watt-CW    | 3 Watt-CW    | NA                  | 1.20    | 0.50    | 45        | P4       | BC4107             |
| 920-960         | Commercial                | Isolator                 | 60 Watt-CW    | 50 Watt-CW   | NA                  | 1.20    | 0.30    | 23        | T59      | BC1060             |
| 920-960         | Commercial                | Isolator                 | 50 Watt-CW    | 50 Watt-CW   | NA                  | 1.20    | 0.30    | 23        | T15      | BC1062             |
| 920-960         | Commercial                | Circulator               | 60 Watt-CW    | 60 Watt-CW   | NA                  | 1.20    | 0.30    | 23        | T59      | BC3060             |
| 650-900         | Commercial                | Circulator               | 50 Watt-CW    | 50 Watt-CW   | NA                  | 1.25    | 0.40    | 20        | T15      | BC3041             |
| 960-1215        | Defense/IFF               | Isolator                 | 50 Watt-CW    | 1 Watt-CW    | 1kWatt-peak.2% DC   | 1.30    | 0.50    | 18        | T3       | BD1003             |
| 960-1215        | Defense/IFF               | Isolator                 | 100 Watt-CW   | 1 Watt-CW    | 1kWatt-peak.2% DC   | 1.30    | 0.50    | 18        | T2       | BD1040             |
| 960-1215        | Defense/IFF               | Circulator               | 50 Watt-CW    | 50 Watt-CW   | 1kWatt-peak.2% DC   | 1.30    | 0.50    | 18        | T3       | BD3003             |
| 960-1215        | Defense/IFF               | Circulator               | 100 Watt-CW   | 100 Watt-CW  | 1kWatt-peak.2% DC   | 1.30    | 0.50    | 18        | T2       | BD3040             |
| 960-1215        | Defense/IFF               | Dual Circulator-Isolator | 100 Watt-CW   | 100 Watt-CW  | 1kWatt-peak.2% DC   | 1.35    | 1.20    | 35        | P2       | BD4013             |
| 1030-1090       | Defense/IFF               | Circulator               | 250 Watt-CW   | 250 Watt-CW  | 5kWatt-peak.2% DC   | 1.25    | 0.30    | 22        | N53      | BD3031             |
| 1200-1400       | Defense                   | Circulator               | 250 Watt-CW   | 250 Watt-CW  | 1kWatt-peak.5% DC   | 1.25    | 0.30    | 20        | N53      | BD3039             |
| 1200-1400       | Defense                   | Isolator                 | 100 Watt-CW   | 3 Watt-CW    | 5kWatt-peak.5% DC   | 1.25    | 0.30    | 20        | T1       | BD1037             |
| 1200-1400       | Defense                   | Circulator               | 100 Watt-CW   | 100 Watt-CW  | 10kWatt-peak.5% DC  | 1.25    | 0.30    | 20        | T3       | BD3017             |
| 1200-1400       | Defense                   | Circulator               | 200 Watt-CW   | 200 Watt-CW  | 3.5kWatt-peak.5% DC | 1.25    | 0.30    | 20        | N53      | BD3039             |
| 1200-1400       | Defense                   | Circulator               | 100 Watt-CW   | 100 Watt-CW  | 1kWatt-peak.5% DC   | 1.25    | 0.30    | 20        | Specific | BD3141             |
| 1370-1450       | Commercial                | Isolator                 | 100 Watt-CW   | 20 Watt-CW   | NA                  | 1.25    | 0.30    | 20        | Specific | BD1160             |
| 1060-1120       | Space                     | Isolator                 | 55 Watt-CW    | 55 Watt-CW   | NA                  | 1.25    | 0.30    | 20        | T3 space | BD1160             |
| 1550-1600       | Space                     | Isolator                 | 75 Watt-CW    | 75 Watt-CW   | NA                  | 1.20    | 0.30    | 20        | T3 space | BD1160             |
| 1395-1405       | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA                  | 1.30    | 0.30    | 23        | Specific | BD1014             |
| 1100-1220       | Space                     | Isolator                 | 20 Watt-CW    | 20Watt-CW    | NA                  | 1.25    | 0.30    | 20        | T3 space | BD1141             |
| 1400-1700       | Commercial                | Isolator                 | 50 Watt-CW    | 15 Watt -CW  | 1kWatt-peak         | 1.30    | 0.50    | 18        | T3       | BD1018             |
| 1400-1700       | Commercial                | Circulator               | 50 Watt-CW    | 50 Watt-CW   | 1kWatt-peak         | 1.20    | 0.50    | 18        | T3       | BD3018             |
| 1550-1600       | Space                     | Isolator                 | 75 Watt-CW    | 20 Watt -CW  | NA                  | 1.20    | 0.30    | 23        | Specific | BD1060             |
| 1670-1700       | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA                  | 1.30    | 0.30    | 23        | Specific | BD1060             |
| 1700-2100       | Commercial                | Isolator                 | 50 Watt-CW    | 10 Watt -CW  | 1kWatt-peak         | 1.30    | 0.50    | 18        | T6       | BD1015             |
| 1700-2100       | Commercial                | Circulator               | 50 Watt-CW    | 50 Watt-CW   | 1kWatt-peak         | 1.30    | 0.50    | 18        | T6       | BD3015             |
| 1700-2100       | Commercial                | Isolator                 | 10 Watt-CW    | 10 Watt -CW  | 500 Watt-peak       | 1.25    | 0.50    | 18        | T6       | BE1019             |
| 1700-1900       | Commercial                | Circulator               | 10 Watt-CW    | 10 Watt -CW  | 500 Watt-peak       | 1.20    | 0.30    | 20        | T59      | BD3067             |
| 1800-2000       | Commercial                | Circulator               | 10 Watt-CW    | 10 Watt -CW  | 500 Watt-peak       | 1.20    | 0.30    | 20        | T59      | BD3068             |
| 2150-2250       | Space                     | Isolator                 | 150 Watt -CW  | 150 Watt -CW | NA                  | 1.20    | 0.25    | 23        | E1       | BE1131             |
| 1805-1880       | Commercial                | Isolator                 | 100 Watt-CW   | 50 Watt-CW   | NA                  | 1.20    | 0.30    | 22        | T15      | BD1062             |
| 1805-1880       | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA                  | 1.20    | 0.30    | 22        | T15      | BD3062             |
| 1805-1880       | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA                  | 1.25    | 0.30    | 22        | T12      | BD3067             |
| 1900-2300       | Space                     | Isolator                 | 40 Watt-CW    | 20 Watt -CW  | NA                  | 1.20    | 0.40    | 20        | Specific | BE1061             |
| 1930-1990       | Commercial                | Isolator                 | 100 Watt-CW   | 20 Watt -CW  | NA                  | 1.20    | 0.30    | 22        | T15      | BD1062             |
| 1930-1990       | Commercial                | Isolator                 | 100 Watt-CW   | 20 Watt -CW  | NA                  | 1.20    | 0.30    | 22        | T12      | BD1067             |
| 1930-1990       | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA                  | 1.20    | 0.30    | 22        | T15      | BD3062             |
| 1930-1990       | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA                  | 1.25    | 0.30    | 22        | T12      | BD3067             |

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|-----------------|---------------------------|--------------------------|---------------|--------------|----------------|---------|---------|-----------|----------|--------------------|
|                 |                           |                          | Forward (CW)  | Reverse (CW) | Forward (peak) |         |         |           |          |                    |
| 2000-2200       | Commercial                | Isolator                 | 100 Watt-CW   | 10 Watt -CW  | NA             | 1.25    | 0.40    | 20        | T6       | BE1024             |
| 2000-2200       | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA             | 1.20    | 0.40    | 20        | T6       | BE3024             |
| 2070-2090       | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.30    | 23        | Specific | BD1013             |
| 2200-2300       | Space                     | Isolator                 | 1Watt-CW      | 1 Watt -CW   | NA             | 1.20    | 0.25    | 20        | Specific | BE1061             |
| 2025-2120       | Space                     | Isolator                 | 40 Watt-CW    | 40 Watt -CW  | NA             | 1.20    | 0.22    | 20        | Specific | BE1061             |
| 2200-2400       | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | 500 Watt-peak  | 1.25    | 0.40    | 20        | T6       | BE3019             |
| 2700-3100       | Commercial                | Isolator                 | 100 Watt-CW   | 1 Watt -CW   | 1kWatt-peak    | 1.20    | 0.30    | 20        | T6       | BE1062             |
| 2700-2900       | Defense                   | Isolator                 | 200 Watt-CW   | 20 Watt -CW  | 1kWatt-peak    | 1.20    | 0.30    | 22        | N52      | BE1068             |
| 2700-2900       | Defense                   | Isolator                 | 160 Watt-CW   | 20 Watt -CW  | 1kWatt-peak    | 1.25    | 0.30    | 22        | N52      | BE1069             |
| 2700-3100       | Commercial                | Circulator               | 100 Watt-CW   | 100 Watt-CW  | 1kWatt-peak    | 1.20    | 0.30    | 22        | T6       | BE3062             |
| 2700-2900       | Defense                   | Circulator               | 200 Watt-CW   | 200 Watt-CW  | 1kWatt-peak    | 1.20    | 0.30    | 22        | N52      | BE3068             |
| 2700-2900       | Defense                   | Circulator               | 160 Watt-CW   | 160 Watt-CW  | 1kWatt-peak    | 1.25    | 0.30    | 22        | N52      | BE3069             |
| 2800-3300       | Defense                   | Isolator                 | 100 Watt-CW   | 10 Watt-CW   | 1kWatt-peak    | 1.25    | 0.30    | 20        | T6       | BF1004             |
| 2800-3300       | Defense                   | Circulator               | 100 Watt-CW   | 100 Watt-CW  | 1kWatt-peak    | 1.25    | 0.30    | 20        | T6       | BF3004             |
| 2900-3300       | Defense                   | Isolator                 | 200 Watt-CW   | 1 Watt -CW   | 1kWatt-peak    | 1.25    | 0.30    | 20        | N52      | BE1062             |
| 2900-3300       | Defense                   | Circulator               | 200 Watt-CW   | 200 Watt-CW  | 1kWatt-peak    | 1.25    | 0.30    | 20        | N52      | BE3062             |
| 3000-3400       | Defense                   | Circulator               | 200 Watt-CW   | 200 Watt-CW  | 2kWatt-peak    | 1.25    | 0.30    | 20        | T6       | BF3062             |
| 3100-3500       | Defense                   | Isolator                 | 50 Watt-CW    | 10 Watt-CW   | 500Watt-peak   | 1.25    | 0.30    | 20        | T9       | BF1005             |
| 3100-3500       | Defense                   | Circulator               | 50 Watt-CW    | 50 Watt-CW   | 500Watt-peak   | 1.25    | 0.30    | 20        | T9       | BF3005             |
| 2900-3300       | Defense                   | Dual Circulator-Isolator | 200 Watt-CW   | 200 Watt-CW  | 2kWatt-peak    | 1.25    | 0.60    | 35        | Specific | BF4007             |
| 3300-3700       | Space                     | Isolator                 | 30 Watt-CW    | 20 Watt -CW  | NA             | 1.30    | 0.30    | 20        | Specific | BG1019             |
| 3400-4200       | Space                     | Isolator                 | 30 Watt-CW    | 20 Watt -CW  | NA             | 1.30    | 0.50    | 18        | Specific | BG1019             |
| 3400-4200       | Space                     | Circulator               | 30 Watt-CW    | 30 Watt-CW   | NA             | 1.18    | 0.50    | 18        | Specific | BG3019             |
| 3400-3800       | Space                     | Circulator               | 110 Watt-CW   | 110 Watt-CW  | NA             | 1.18    | 0.15    | 25        | Specific | BG3022             |
| 3600-4200       | Space                     | Circulator               | 110 Watt-CW   | 110 Watt-CW  | NA             | 1.18    | 0.15    | 25        | Specific | BG3022             |
| 4200-4400       | Space                     | Circulator               | 110 Watt-CW   | 110 Watt-CW  | NA             | 1.25    | 0.15    | 25        | Specific | BG3022             |
| 3600-4200       | Space                     | Isolator                 | 20 Watt-CW    | 20 Watt -CW  | NA             | 1.25    | 0.40    | 20        | T6       | BF1018             |
| 3700-4200       | Space                     | Isolator                 | 30 Watt-CW    | 20 Watt -CW  | NA             | 1.25    | 0.40    | 20        | T9       | BF1007             |
| 3700-4200       | Space                     | Circulator               | 30 Watt-CW    | 30 Watt-CW   | NA             | 1.25    | 0.40    | 20        | T9       | BF3007             |
| 3700-4200       | Space                     | Isolator                 | 30 Watt-CW    | 20 Watt -CW  | NA             | 1.25    | 0.40    | 20        | Specific | BG1019             |
| 3700-4200       | Space                     | Circulator               | 30 Watt-CW    | 30 Watt-CW   | NA             | 1.20    | 0.40    | 20        | Specific | BG3019             |
| 4000-4200       | Space                     | Isolator                 | 20 Watt-CW    | 20 Watt -CW  | NA             | 1.20    | 0.30    | 22        | Specific | BG1019             |
| 4400-4800       | Space                     | Circulator               | 30 Watt-CW    | 30 Watt-CW   | NA             | 1.25    | 0.40    | 20        | Specific | BG3019             |
| 5050-5150       | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.40    | 20        | T13      | BG1022             |
| 4200-4400       | defense & all             | Isolator                 | 20 Watt-CW    | 20 Watt -CW  | 500 Watt-peak  | 1.25    | 0.30    | 23        | Specific | BG1016             |
| 5300-5300       | Space                     | Isolator                 | 1 Watt-CW     | 1 Watt -CW   | NA             | 1.20    | 0.30    | 23        | Specific | BG1020             |
| 5300-5300       | Space                     | Isolator                 | 2 0Watt-CW    | 20 Watt -CW  | NA             | 1.20    | 0.30    | 23        | Specific | BG1020             |
| 5300-5300       | Space                     | Circulator               | 2 0Watt-CW    | 2 0Watt-CW   | NA             | 1.25    | 0.30    | 23        | Specific | BG3020             |
| 5200-5900       | Defense                   | Isolator                 | 30 Watt-CW    | 20 Watt -CW  | NA             | 1.20    | 0.30    | 20        | T11      | BG1008             |
| 5900-6400       | Commercial                | Isolator                 | 30 Watt-CW    | 15 Watt -CW  | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BH1005             |
| 5900-6400       | Commercial                | Circulator               | 30 Watt-CW    | 30 Watt-CW   | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BH3005             |
| 6400-7100       | Commercial                | Isolator                 | 30 Watt-CW    | 15 Watt -CW  | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BH1006             |
| 6400-7100       | Commercial                | Circulator               | 30 Watt-CW    | 30 Watt-CW   | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BH3006             |
| 6600-7200       | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.40    | 20        | T13      | BH1007             |
| 7100-7800       | Commercial                | Isolator                 | 30 Watt-CW    | 15 Watt -CW  | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BH1007             |
| 7100-7800       | Commercial                | Circulator               | 30 Watt-CW    | 30 Watt-CW   | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BH3007             |
| 7250-7750       | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | 100 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BH1007             |
| 7800-8700       | defense & all             | Isolator                 | 30 Watt-CW    | 15 Watt -CW  | 300 Watt-peak  | 1.25    | 0.4     | 20        | T11      | BI1003             |



**COAXIAL CIRCULATORS & ISOLATORS**

| Frequency (MHz) | Description & Application | Type                     | Power (Watts) |              |                | V.S.W.R | IL (dB) | Isol (dB) | Package  | Part Number Family |
|-----------------|---------------------------|--------------------------|---------------|--------------|----------------|---------|---------|-----------|----------|--------------------|
|                 |                           |                          | Forward (CW)  | Reverse (CW) | Forward (peak) |         |         |           |          |                    |
| 7800-8700       | defense & all             | Circulator               | 30 Watt-CW    | 30 Watt-CW   | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BI3003             |
| 7900-8400       | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | 100 Watt-peak  | 1.25    | 0.40    | 20        | Specific | BI1003             |
| 7900-8500       | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | 100 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BI1007             |
| 8500-9600       | Defense                   | Isolator                 | 100 Watt-CW   | 10 Watt -CW  | 300 Watt-peak  | 1.25    | 0.50    | 20        | T11      | BI1004             |
| 8500-8600       | Defense                   | Circulator               | 100 Watt-CW   | 100 Watt-CW  | 300 Watt-peak  | 1.25    | 0.50    | 20        | T11      | BI3004             |
| 8700-9400       | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | 100 Watt-peak  | 1.25    | 0.30    | 20        | T11      | BI1003             |
| 9200-10300      | Defense                   | Isolator                 | 35 Watt-CW    | 35 Watt -CW  | 350 Watt-peak  | 1.25    | 0.40    | 20        | P22      | BJ1022             |
| 9200-10300      | Defense                   | Dual Circulator-Isolator | 35 Watt-CW    | 35 Watt-CW   | 350 Watt-peak  | 1.25    | 0.80    | 38        | P22      | BJ4112             |
| 9500-10400      | Defense                   | Isolator                 | 30 Watt-CW    | 15 Watt -CW  | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BJ1011             |
| 9600-10600      | Defense                   | Isolator                 | 30 Watt-CW    | 15 Watt -CW  | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BJ1011             |
| 10200-10360     | Defense                   | Isolator                 | 30 Watt-CW    | 15 Watt -CW  | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BJ1011             |
| 9500-10400      | Defense                   | Circulator               | 30 Watt-CW    | 30 Watt-CW   | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BJ3011             |
| 9600-10600      | Defense                   | Circulator               | 30 Watt-CW    | 30 Watt-CW   | 300 Watt-peak  | 1.25    | 0.40    | 20        | T11      | BJ3011             |
| 10200-10360     | Defense                   | Circulator               | 30 Watt-CW    | 30 Watt-CW   | 300 Watt-peak  | 1.20    | 0.35    | 21        | T11      | BJ3011             |
| 10700-11700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.20    | 0.35    | 23        | T11      | BJ1012             |
| 11700-12700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.20    | 0.35    | 23        | T11      | BJ1012             |
| 10700-12500     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.40    | 20        | T11      | BJ1012             |
| 10700-12700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.40    | 20        | T11      | BJ1012             |
| 10700-11700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.20    | 0.35    | 23        | T13      | BJ1013             |
| 11700-12700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.20    | 0.35    | 23        | T13      | BJ1013             |
| 10700-12700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.40    | 20        | T13      | BJ1013             |
| 10700-11700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.20    | 23        | T10      | BJ1010             |
| 11700-12700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.20    | 23        | T10      | BJ1010             |
| 10700-12700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.20    | 0.25    | 20        | T10      | BJ1010             |
| 10700-11700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.20    | 0.30    | 23        | T11E     | BJ1011             |
| 11700-12700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.20    | 0.30    | 23        | T11E     | BJ1011             |
| 10700-12700     | Space                     | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.40    | 20        | T11E     | BJ1011             |
| 10700-11700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.20    | 0.35    | 23        | T11      | BJ3012             |
| 11700-12700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.20    | 0.35    | 23        | T11      | BJ3012             |
| 10700-12500     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.25    | 0.40    | 20        | T11      | BJ3012             |
| 10700-12700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.25    | 0.40    | 20        | T11      | BJ3012             |
| 10700-11700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.20    | 0.35    | 23        | T13      | BJ3012             |
| 11700-12700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.20    | 0.35    | 23        | T13      | BJ3012             |
| 10700-12700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.25    | 0.40    | 20        | T13      | BJ3012             |
| 10700-11700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.25    | 0.20    | 23        | T10      | BJ3012             |
| 11700-12700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.25    | 0.20    | 23        | T10      | BJ3012             |
| 10700-12700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.20    | 0.25    | 20        | T10      | BJ3012             |
| 10700-11700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.20    | 0.30    | 23        | T11E     | BJ3012             |
| 11700-12700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.20    | 0.30    | 23        | T11E     | BJ3012             |
| 10700-12700     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.25    | 0.40    | 20        | T11E     | BJ3012             |
| 12500-13500     | Commercial                | Circulator               | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.40    | 20        | T11      | BJ3012             |
| 12500-13500     | Commercial                | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.25    | 0.40    | 20        | T11      | BJ3012             |
| 13000-15000     | Commercial                | Isolator                 | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.40    | 18        | T11      | BJ3012             |
| 13500-14500     | Commercial                | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.25    | 0.40    | 20        | T11      | BJ3012             |
| 13500-14500     | Commercial                | Circulator               | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.40    | 20        | T11      | BJ3012             |
| 13500-14500     | Commercial                | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.25    | 0.40    | 20        | T11      | BJ3012             |
| 13700-14500     | Commercial                | Circulator               | 10 Watt-CW    | 1 Watt -CW   | NA             | 1.25    | 0.40    | 20        | T11      | BJ3012             |
| 13950-14550     | Space                     | Circulator               | 10 Watt-CW    | 10 Watt-CW   | NA             | 1.25    | 0.40    | 20        | T11      | BJ3012             |

# Isolators & Circulators

Dropin circulators & isolators

## DROPIN CIRCULATORS & ISOLATORS

| Frequency (MHz) | Description & Application | Type                                | Power (Watts) |              |                   | V.S.W.R | I.L (dB) | Isol (dB) | Package | Part Number Family |
|-----------------|---------------------------|-------------------------------------|---------------|--------------|-------------------|---------|----------|-----------|---------|--------------------|
|                 |                           |                                     | Forward (CW)  | Reverse (CW) | Forward (peak)    |         |          |           |         |                    |
| 380-430         | PMR-UHF                   | Isolator                            | 100 Watt -CW  | 30 Watt -CW  | NA                | 1.15    | 0.35     | 23        | T58     | NB1040             |
| 380-430         | PMR-UHF                   | Isolator                            | 120 Watt -CW  | 120 Watt -CW | NA                | 1.15    | 0.35     | 23        | T58     | NB1040             |
| 380-430         | PMR-UHF                   | Circulator                          | 100 Watt -CW  | 100 Watt -CW | NA                | 1.15    | 0.35     | 23        | T58     | NB3040             |
| 400-450         | radar-UHF                 | Circulator                          | 700 Watt -CW  | 700 Watt -CW | 2kWatt-peak.5% DC | 1.15    | 0.35     | 23        | T58     | NB3040             |
| 403-433         | PMR-UHF                   | Circulator                          | 100 Watt -CW  | 100 Watt -CW | NA                | 1.15    | 0.25     | 23        | T58     | NB3040             |
| 410-470         | PMR-UHF                   | Isolator                            | 60 Watt -CW   | 60 Watt -CW  | NA                | 1.15    | 0.35     | 23        | T58     | NB1040             |
| 410-470         | PMR-UHF                   | Isolator                            | 30 Watt -CW   | 30 Watt -CW  | NA                | 1.15    | 0.35     | 23        | T58     | NB1040             |
| 410-470         | radar-UHF                 | Circulator                          | 100 Watt -CW  | 100 Watt -CW | 1kWatt-peak       | 1.15    | 0.35     | 23        | T58     | NB3040             |
| 450-470         | PMR-UHF                   | Isolator                            | 60 Watt -CW   | 60 Watt -CW  | NA                | 1.15    | 0.25     | 23        | T58     | NB1040             |
| 470-580         | PMR-UHF                   | Isolator                            | 60 Watt -CW   | 60 Watt -CW  | NA                | 1.2     | 0.4      | 20        | T58     | NB1040             |
| 860-960         | GSM                       | Isolator                            | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.15    | 0.35     | 23        | T42 L   | NC1106-300         |
| 869-894         | GSM                       | Isolator                            | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.15    | 0.25     | 23        | T42 L   | NC1105-100         |
| 869-894         | GSM                       | Circulator                          | 200 Watt -CW  | 200 Watt -CW | NA                | 1.15    | 0.25     | 22        | T42 S   | NC3105-100         |
| 876-960         | GSM                       | Circulator                          | 200 Watt -CW  | 200 Watt -CW | NA                | 1.25    | 0.25     | 22        | T42 S   | NC3104-300         |
| 890-960         | GSM                       | Isolator                            | 200 Watt -CW  | 40 Watt -CW  | NA                | 1.25    | 0.35     | 23        | T42 L   | NC1104-100         |
| 920-960         | GSM                       | Dual Circulator-Isolator (Att:30dB) | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.15    | 0.5      | 45        | P42 M   | NC4116-200         |
| 925-960         | GSM                       | Isolator                            | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.15    | 0.25     | 23        | T42 L   | NC1106-200         |
| 925-960         | GSM                       | Dual Circulator-Isolator            | 200 Watt -CW  | 80 Watt -CW  | NA                | 1.15    | 0.5      | 45        | P42 L   | NC4112-200         |
| 925-960         | GSM                       | Circulator                          | 200 Watt -CW  | 200 Watt -CW | NA                | 1.15    | 0.25     | 22        | T42 S   | NC3106-200         |
| 960-1215        | Defense/IFF               | Isolator                            | 10 Watt -CW   | 10 Watt -CW  | 1kWatt-peak.2% DC | 1.35    | 0.6      | 17        | T42 L   | ND1100-100         |
| 960-1215        | Defense/IFF               | Circulator                          | 20 Watt -CW   | 20 Watt -CW  | 1kWatt-peak.2% DC | 1.35    | 0.6      | 17        | T42 S   | ND3100-100         |
| 960-1215        | Defense/IFF               | Circulator                          | 20 Watt -CW   | 20 Watt -CW  | 2kWatt-peak.2% DC | 1.35    | 0.6      | 17        | T42 S   | ND3100-200         |
| 960-1215        | Defense/IFF               | Circulator                          | 80 Watt -CW   | 80 Watt -CW  | 4kWatt-peak.2% DC | 1.35    | 0.6      | 17        | T42 S   | ND3100-400         |
| Space           | Space/L-band              | Isolator                            | 15 Watt-CW    | 15 Watt-CW   | 30 Watt-CW        | 1.2     | 0.3      | 25        | T42 S   | ND1165-500         |
| Space           | Space/L-band              | Circulator                          | 15 Watt-CW    | 15 Watt-CW   | 30 Watt-CW        | 1.2     | 0.25     | 25        | T42 S   | ND3100-500         |
| 1020-1100       | Defense/IFF               | Circulator                          | 10 Watt -CW   | 10 Watt -CW  | 1kWatt-peak.2% DC | 1.25    | 0.3      | 20        | T42 S   | ND3100-110         |
| 1020-1100       | Defense/IFF               | Circulator                          | 20 Watt -CW   | 20 Watt -CW  | 2kWatt-peak.2% DC | 1.25    | 0.3      | 20        | T42 S   | ND3100-210         |
| 1020-1100       | Defense/IFF               | Circulator                          | 80 Watt -CW   | 80 Watt -CW  | 4kWatt-peak.2% DC | 1.25    | 0.3      | 20        | T42 S   | ND3100-410         |
| 1200-1400       | Defense/radar             | Isolator                            | 60 Watt -CW   | 60 Watt -CW  | 600Watt-peak      | 1.25    | 0.4      | 20        | T42L    | ND1140-100         |
| 1200-1400       | Defense/radar             | Isolator                            | 60 Watt -CW   | 60 Watt -CW  | 600Watt-peak      | 1.25    | 0.4      | 20        | T42L    | ND1140-300         |
| 1200-1400       | Defense/radar             | Isolator                            | 60 Watt -CW   | 60 Watt -CW  | 600Watt-peak      | 1.25    | 0.4      | 20        | T42L    | ND1140-500         |
| 1200-1400       | Defense/radar             | Isolator                            | 60 Watt -CW   | 60 Watt -CW  | 600Watt-peak      | 1.25    | 0.4      | 20        | T42L    | ND1140-800         |
| 1200-1400       | Defense/radar             | Circulator                          | 60 Watt -CW   | 60 Watt -CW  | 600Watt-peak      | 1.25    | 0.4      | 20        | T42 S   | ND3140-100         |
| 1200-1400       | Defense/radar             | Circulator                          | 60 Watt -CW   | 60 Watt -CW  | 600Watt-peak      | 1.25    | 0.4      | 20        | T42 S   | ND3140-200         |
| 1200-1400       | Defense/radar             | Circulator                          | 60 Watt -CW   | 60 Watt -CW  | 600Watt-peak      | 1.25    | 0.4      | 20        | T42 S   | ND3140-300         |
| 1200-1400       | Defense/radar             | Circulator                          | 60 Watt -CW   | 60 Watt -CW  | 600Watt-peak      | 1.25    | 0.4      | 20        | T42 S   | ND3140-400         |
| 1200-1400       | Defense/radar             | Circulator                          | 60 Watt -CW   | 60 Watt -CW  | 600Watt-peak      | 1.25    | 0.4      | 20        | T42 S   | ND3140-500         |
| 1200-1400       | Defense/radar             | Circulator                          | 60 Watt -CW   | 60 Watt -CW  | 600Watt-peak      | 1.25    | 0.4      | 20        | T42 S   | ND3140-600         |
| 1525-1660       | Defense/radar             | Circulator                          | 60 Watt -CW   | 60 Watt -CW  | 600Watt-peak      | 1.25    | 0.4      | 20        | T42 S   | ND3262-100         |
| 1525-1660       | Defense/radar             | Isolator                            | 2 Watt -CW    | 2 Watt -CW   | 100Watt-peak      | 1.25    | 0.4      | 20        | T42 L   | ND1162-600         |
| 1710-1785       | GSM                       | Isolator                            | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.2     | 0.25     | 23        | T44 L   | ND1183-100         |
| 1710-1785       | GSM                       | Circulator                          | 200 Watt -CW  | 200 Watt -CW | NA                | 1.2     | 0.25     | 22        | T44 L   | ND3183-100         |
| 1805-1880       | GSM                       | Isolator                            | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.2     | 0.25     | 22        | T42 S   | ND1181-200         |
| 1805-1880       | GSM                       | Isolator                            | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.2     | 0.25     | 22        | T44 L   | ND1184-200         |
| 1805-1880       | GSM                       | Dual Circulator-Isolator            | 200 Watt -CW  | 80 Watt -CW  | NA                | 1.2     | 0.5      | 40        | P44     | ND4224-200         |
| 1805-1880       | GSM                       | Circulator                          | 200 Watt -CW  | 200 Watt -CW | NA                | 1.2     | 0.25     | 22        | T42 S   | ND3181-200         |
| 1805-1880       | GSM                       | Circulator                          | 200 Watt -CW  | 200 Watt -CW | NA                | 1.2     | 0.25     | 22        | T44 S   | ND3184-200         |
| 1805-1990       | GSM                       | Isolator                            | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.2     | 0.3      | 22        | T42 L   | ND1181-500         |



## DROPIN CIRCULATORS & ISOLATORS

| Frequency (MHz) | Description & Application | Type                     | Power (Watts) |              |                   | V.S.W.R | I.L (dB) | Isol (dB) | Package    | Part Number Family |
|-----------------|---------------------------|--------------------------|---------------|--------------|-------------------|---------|----------|-----------|------------|--------------------|
|                 |                           |                          | Forward (CW)  | Reverse (CW) | Forward (peak)    |         |          |           |            |                    |
| 1805-1990       | PHS                       | Isolator                 | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.2     | 0.25     | 25        | T44 L      | ND1186-400         |
| 1805-1990       | PHS                       | Circulator               | 200 Watt -CW  | 200 Watt -CW | NA                | 1.2     | 0.25     | 25        | T44 L      | ND3186-400         |
| 1930-1990       | GSM                       | Isolator                 | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.2     | 0.25     | 22        | T44 L      | ND1186-300         |
| 1930-1990       | GSM                       | Isolator                 | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.2     | 0.25     | 22        | T42 S      | ND1182-300         |
| 1930-1990       | GSM                       | Dual Circulator-Isolator | 200 Watt -CW  | 60 Watt -CW  | NA                | 1.2     | 0.5      | 40        | P44        | ND4224-300         |
| 1930-1990       | GSM                       | Circulator               | 200 Watt -CW  | 200 Watt -CW | NA                | 1.2     | 0.25     | 22        | T42 S      | ND3182-300         |
| 1930-1990       | GSM                       | Circulator               | 200 Watt -CW  | 200 Watt -CW | NA                | 1.2     | 0.25     | 22        | T44 S      | ND3186-300         |
| 2000-2020       | Space                     | Isolator                 | 100 Watt-CW   | 100 Watt-CW  | NA                | 1.2     | 0.2      | 21        | T44 L      | ND1175-100         |
| 2080-2200       | UMTS                      | Isolator                 | 100 Watt-CW   | 100 Watt-CW  | NA                | 1.2     | 0.2      | 21        | T44 L      | NE1101-100         |
| 2080-2200       | UMTS                      | Isolator(Att:20dB)       | 100 Watt-CW   | 100 Watt-CW  | NA                | 1.2     | 0.2      | 23        | T44 L(Att) | NE1101-200         |
| 2080-2200       | UMTS                      | Isolator                 | 100 Watt-CW   | 2 Watt -CW   | NA                | 1.2     | 0.2      | 21        | T44 S      | NE1101-300         |
| 2080-2200       | UMTS                      | Circulator               | 100 Watt-CW   | 100 Watt-CW  | NA                | 1.2     | 0.2      | 21        | T44 S      | NE3101-100         |
| 2110-2170       | UMTS                      | Isolator                 | 100 Watt-CW   | 100 Watt-CW  | NA                | 1.2     | 0.2      | 21        | T44 L      | NE1101-150         |
| 2110-2170       | UMTS                      | Isolator                 | 100 Watt-CW   | 100 Watt-CW  | NA                | 1.2     | 0.2      | 21        | T44 L      | NE1101-150         |
| 2110-2170       | UMTS                      | Isolator                 | 100 Watt-CW   | 2 Watt -CW   | NA                | 1.2     | 0.2      | 21        | T44 S      | NE1101-350         |
| 2300-2500       | Commercial                | Isolator                 | 50 Watt -CW   | 50 Watt -CW  | 100Watt-peak      | 1.25    | 0.3      | 21        | T44S       | NE1120-100         |
| 2300-2700       | Commercial                | Isolator                 | 50 Watt -CW   | 50 Watt -CW  | 100Watt-peak      | 1.25    | 0.4      | 20        | T44S       | NE1120-200         |
| 2700-2900       | Defense/radar             | Circulator               | 100 Watt -CW  | 100 Watt -CW | 1k Watt-peak      | 1.25    | 0.4      | 20        | T44S       | NF3100-100         |
| 2700-2900       | Defense/radar             | Circulator               | 100 Watt -CW  | 100 Watt -CW | 1k Watt-peak      | 1.25    | 0.4      | 20        | T44S       | NF3100-200         |
| 2700-2900       | Defense/radar             | Isolator                 | 100 Watt -CW  | 30 Watt -CW  | 1k Watt-peak      | 1.25    | 0.4      | 20        | T44L       | NF1100-100         |
| 2700-3100       | Defense/radar             | Circulator               | 100 Watt -CW  | 100 Watt -CW | 1k Watt-peak      | 1.25    | 0.4      | 20        | T44S       | NF3100-250         |
| 2700-3100       | Defense/radar             | Isolator                 | 100 Watt -CW  | 30 Watt -CW  | 1k Watt-peak      | 1.25    | 0.4      | 20        | T44L       | NF1100-200         |
| 2900-3300       | Defense/radar             | Circulator               | 100 Watt -CW  | 100 Watt -CW | 1k Watt-peak      | 1.25    | 0.4      | 20        | T44S       | NF3100-300         |
| 2900-3300       | Defense/radar             | Isolator                 | 100 Watt -CW  | 50 Watt -CW  | 1k Watt-peak      | 1.25    | 0.4      | 20        | T44L       | NF1100-300         |
| 3000-3400       | Defense/radar             | Circulator               | 100 Watt -CW  | 100 Watt -CW | 1k Watt-peak      | 1.25    | 0.4      | 20        | T44S       | NF3100-350         |
| 3000-3400       | Defense/radar             | Isolator                 | 100 Watt -CW  | 50 Watt -CW  | 1k Watt-peak      | 1.25    | 0.4      | 20        | T44L       | NF1100-350         |
| 3100-3500       | Defense/radar             | Circulator               | 100 Watt -CW  | 100 Watt -CW | 1k Watt-peak      | 1.25    | 0.4      | 20        | T44S       | NF3100-400         |
| 3100-3500       | Defense/radar             | Isolator                 | 100 Watt -CW  | 50 Watt -CW  | 1k Watt-peak      | 1.25    | 0.4      | 20        | T44L       | NF1100-400         |
| 3400-3600       | All and WIMAX             | Circulator               | 15 Watt -CW   | 15 Watt -CW  | NA                | 1.25    | 0.4      | 20        | T44L       | NF3106-100         |
| 3400-3600       | All and WIMAX             | Isolator                 | 15 Watt -CW   | 15 Watt -CW  | NA                | 1.25    | 0.4      | 20        | T44L       | NF1106-100         |
| 3400-3800       | All and WIMAX             | Circulator               | 15 Watt -CW   | 15 Watt -CW  | NA                | 1.25    | 0.4      | 20        | T44L       | NF3106-200         |
| 3400-3800       | All and WIMAX             | Isolator                 | 15 Watt -CW   | 15 Watt -CW  | NA                | 1.25    | 0.4      | 20        | T44L       | NF1106-200         |
| 3500-3700       | All and WIMAX             | Circulator               | 15 Watt -CW   | 15 Watt -CW  | NA                | 1.25    | 0.4      | 20        | T44L       | NF3106-200         |
| 3500-3700       | All and WIMAX             | Isolator                 | 15 Watt -CW   | 15 Watt -CW  | NA                | 1.25    | 0.4      | 20        | T44L       | NF1106-200         |
| 4200-4400       | Defense& Space/Altimetry  | Isolator                 | 10 Watt -CW   | 2 Watt -CW   | 50Watt-peak       | 1.25    | 0.4      | 21        | T44 space  | NG1140-200         |
| 5250-5350       | Space                     | Circulator               | 20 Watt -CW   | 20 Watt -CW  | NA                | 1.25    | 0.4      | 21        | T44 space  | NG3140-500         |
| 5300-5500       | Defense& Space/Altimetry  | Isolator                 | 20 Watt -CW   | 20 Watt -CW  | NA                | 1.25    | 0.4      | 21        | T44 space  | NG1140-500         |
| 5650-5800       | Defense& Space/Altimetry  | Isolator                 | 10 Watt -CW   | 2 Watt -CW   | 50Watt-peak       | 1.25    | 0.4      | 21        | T44 space  | NG1140-00          |
| 5650-5800       | Defense& Space/Altimetry  | Isolator                 | 10 Watt -CW   | 2 Watt -CW   | 50Watt-peak       | 1.25    | 0.4      | 21        | T44 space  | NG1140-100         |
| 7900-8700       | Defense&Space             | Isolator                 | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63        | NJ1183-517         |
| 7925-8575       | Defense&Space/radar       | Circulator               | 10 Watt -CW   | 10 Watt -CW  | 40Watt-peak       | 1.25    | 0.5      | 20        | T61        | NJ3123-100         |
| 7900-10100      | Defense&Space             | Isolator                 | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.3     | 0.5      | 18        | T60        | NJ1119-00          |
| 8000-8500       | Defense&Space             | Isolator                 | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63        | NJ1183-504         |
| 8300-10100      | Defense&Space             | Isolator                 | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.3     | 0.5      | 18        | T60        | NJ1129-00          |
| 8400-8700       | Defense&Space             | Isolator                 | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63        | NJ1183-050         |
| 8400-8550       | Defense&Space             | Isolator                 | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63        | NJ1183-503         |
| 8700-9400       | Defense&Space             | Isolator                 | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T60        | NJ1109-00          |
| 8700-10400      | Defense&Space/radar       | Isolator                 | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak       | 1.3     | 0.6      | 18        | NJ1        | NJ1110-100         |



# Isolators & Circulators

Dropin circulators & isolators  
SMD circulators & isolators

## DROPIN CIRCULATORS & ISOLATORS

| Frequency (MHz) | Description & Application       | Type     | Power (Watts) |              |                   | V.S.W.R | I.L (dB) | Isol (dB) | Package | Part Number Family |
|-----------------|---------------------------------|----------|---------------|--------------|-------------------|---------|----------|-----------|---------|--------------------|
|                 |                                 |          | Forward (CW)  | Reverse (CW) | Forward (peak)    |         |          |           |         |                    |
| 9000-10000      | Defense&Space/radar             | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak       | 1.25    | 0.5      | 20        | NJ1     | NJ1110-000         |
| 9100-10000      | Defense&Space/radar             | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak       | 1.25    | 0.5      | 20        | NJ1     | NJ1124-000         |
| 9200-10300      | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-060         |
| 9300-9900       | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T60     | NJ1129-100         |
| 9360-9840       | Defense&Space/radar             | Isolator | 10 Watt -CW   | 1 Watt -CW   | 10Watt-peak       | 1.25    | 0.5      | 20        | T61     | NJ1129-500         |
| 9500-9800       | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-070         |
| 9500-9800       | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-080         |
| 9900-10900      | Defense&Space/radar             | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak       | 1.25    | 0.5      | 20        | NJ1     | NJ1124-100         |
| 10000-12500     | Defense&Space/Telecommunication | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.3     | 0.6      | 18        | NJ1     | NJ1130-000         |
| 10700-12700     | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.4      | 20        | T63     | NJ1183-150         |
| 10700-12700     | Defense&Space                   | Isolator | 10 Watt -CW   | 5 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.4      | 20        | T64     | NJ1184-150         |
| 10900-11700     | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-090         |
| 10900-11700     | Defense&Space                   | Isolator | 10 Watt -CW   | 5 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T64     | NJ1184-090         |
| 11000-12000     | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-100         |
| 11000-12000     | Defense&Space                   | Isolator | 10 Watt -CW   | 5 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T64     | NJ1184-100         |
| 12750-13250     | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-200         |
| 12750-13250     | Defense&Space                   | Isolator | 10 Watt -CW   | 5 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T64     | NJ1184-200         |
| 13000-14000     | Defense&Space/Telecommunication | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.5      | 20        | NJ1     | NJ1140-000         |
| 13200-13400     | Defense&Space/Telecommunication | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | NJ1     | NJ1140-100         |
| 14250-15350     | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-300         |
| 14250-15350     | Defense&Space                   | Isolator | 10 Watt -CW   | 5 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T64     | NJ1184-300         |
| 14300-15600     | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-400         |
| 14300-15600     | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-500         |
| 14300-15600     | Defense&Space                   | Isolator | 10 Watt -CW   | 5 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T64     | NJ1184-400         |
| 14500-15500     | Ku-band All ap                  | Isolator | 2 Watt -CW    | 2 Watt -CW   | NA                | 1.25    | 0.5      | 20        | T80     | NJ1180-600         |
| 14500-15500     | Defense&Space                   | Isolator | 10 Watt -CW   | 5 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-600         |
| 14500-15500     | Defense&Space                   | Isolator | 10 Watt -CW   | 5 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T64     | NJ1184-600         |
| 16000-17300     | Ku-band All ap                  | Isolator | 2 Watt -CW    | 2 Watt -CW   | NA                | 1.25    | 0.5      | 20        | T80     | NJ1180-701         |
| 16800-18000     | Ku-band All ap                  | Isolator | 2 Watt -CW    | 2 Watt -CW   | NA                | 1.25    | 0.5      | 20        | T80     | NJ1180-700         |
| 16800-18000     | Defense&Space                   | Isolator | 10 Watt -CW   | 5 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-700         |
| 16800-18000     | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T64     | NJ1184-700         |
| 17700-19700     | Ku-band All ap                  | Isolator | 2 Watt -CW    | 2 Watt -CW   | NA                | 1.3     | 0.6      | 18        | T80     | NJ1180-600         |
| 17700-19700     | Ku-band All ap                  | Isolator | 2 Watt -CW    | 2 Watt -CW   | NA                | 1.3     | 0.6      | 18        | T80     | NJ1180-800         |
| 17700-19700     | Defense&Space                   | Isolator | 10 Watt -CW   | 5 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T63     | NJ1183-800         |
| 17700-19700     | Defense&Space                   | Isolator | 10 Watt -CW   | 2 Watt -CW   | 40Watt-peak.2% DC | 1.25    | 0.3      | 21        | T64     | NJ1184-800         |



**SMD CIRCULATORS & ISOLATORS**

| Frequency (MHz) | Description & Application | Type                     | Power (Watts) |              |                   | V.S.W.R | I.L (dB) | Isol (dB) | Package | Part Number Family |
|-----------------|---------------------------|--------------------------|---------------|--------------|-------------------|---------|----------|-----------|---------|--------------------|
|                 |                           |                          | Forward (CW)  | Reverse (CW) | Forward (peak)    |         |          |           |         |                    |
| 300-310         | PMR                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.25    | 0.7      | 17        | U12     | UB1140-100         |
| 330-360         | PMR                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.4     | 1.00     | 15        | U12     | UB1140-200         |
| 360-400         | PMR                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.4     | 1.2      | 15        | U12     | UB1140-300         |
| 380-400         | PMR                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.65    | 1.00     | 12        | U10     | UB1103-100         |
| 380-430         | PMR                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.3     | 1.00     | 14        | U12     | UB1140-400         |
| 403-433         | PMR                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.65    | 1.00     | 12        | U10     | UB1103-200         |
| 406-470         | PMR                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.5     | 1.2      | 14        | U12     | UB1140-500         |
| 450-458         | CDMA                      | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.25    | 0.7      | 18        | U10     | UB1103-300         |
| 450-470         | CDMA                      | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.35    | 0.8      | 16        | U10     | UB1103-400         |
| 806-870         | GSM                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.4     | 0.8      | 16        | U10     | UC1130-200         |
| 819-854         | GSM                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.4     | 0.8      | 16        | U10     | UC1130-600         |
| 865-870         | GSM                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.25    | 0.5      | 18        | U10     | UC1130-300         |
| 869-894         | GSM                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.35    | 0.7      | 16        | U10     | UC1130-100         |
| 880-915         | GSM                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.35    | 0.7      | 16        | U10     | UC1130-400         |
| 880-950         | GSM                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.4     | 0.8      | 15        | U10     | UC1130-700         |
| 915-945         | GSM                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.4     | 0.7      | 15        | U10     | UC1130-800         |
| 925-960         | GSM                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.35    | 0.7      | 16        | U10     | UC1130-500         |
| 960-1215        | Defense/IFF               | Circulator               | 20 Watt-CW    | 10 Watt -CW  | 1kWatt-peak.2% DC | 1.35    | 0.6      | 17        | T42 L   | CD3100-100         |
| 1020-1080       | Defense/IFF               | Circulator               | 20 Watt-CW    | 10 Watt -CW  | 1kWatt-peak.2% DC | 1.35    | 0.6      | 17        | T42 L   | CD3100-200         |
| 1080-1100       | Defense/IFF               | Circulator               | 20 Watt-CW    | 10 Watt -CW  | 1kWatt-peak.2% DC | 1.35    | 0.6      | 17        | T42 L   | CD3100-210         |
| 1025-1150       | others                    | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.35    | 0.7      | 16        | U10     | UD1131-100         |
| 1273-1293       | others                    | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.35    | 0.7      | 16        | U10     | UD1131-200         |
| 1626-1660       | others                    | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.4     | 0.8      | 15        | U10     | UD1131-300         |
| 1710-1785       | GSM                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.35    | 0.7      | 16        | U10     | UD1131-400         |
| 1805-1880       | GSM                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.35    | 0.7      | 16        | U10     | UD1131-500         |
| 1930-1990       | GSM                       | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.35    | 0.7      | 16        | U10     | UD1131-600         |
| 2090-2190       | UMTS                      | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.35    | 0.7      | 16        | U10     | UE1133-100         |
| 2100-2170       | UMTS                      | Isolator                 | 10 Watt-CW    | 2 Watt -CW   | NA                | 1.35    | 0.7      | 16        | U10     | UE1133-200         |
| 8400-10400      | Defense                   | Circulator               | 10 Watt-CW    | 10 Watt-CW   | 20Watt-peak       | 1.25    | 0.3      | 20        | CJ9     | CJ3109             |
| 8400-10400      | Defense                   | Isolator                 | 10 Watt-CW    | 1 Watt-CW    | 20Watt-peak       | 1.25    | 0.3      | 20        | CJ9     | CJ1109             |
| 8400-10400      | Defense                   | Circulator               | 10 Watt-CW    | 10 Watt-CW   | 20Watt-peak       | 1.25    | 0.3      | 20        | CJ8     | CJ3108             |
| 8400-10400      | Defense                   | Circulator               | 10 Watt-CW    | 1 Watt-CW    | 20Watt-peak       | 1.25    | 0.3      | 20        | CJ8     | CJ3108             |
| 8400-10400      | Defense                   | Dual Circulator-Isolator | 10 Watt-CW    | 1 Watt-CW    | 20Watt-peak       | 1.25    | 0.3      | 20        | PCJ9    | CJ4109             |
| 8400-10400      | Defense                   | Dual Circulator-Isolator | 10 Watt-CW    | 5 Watt-CW    | 50Watt-peak       | 1.25    | 0.3      | 20        | PCJ9    | CJ4112             |
| 8400-10400      | Defense                   | Isolator                 | 10 Watt-CW    | 5 Watt-CW    | 50Watt-peak       | 1.25    | 0.3      | 20        | CJ9     | CJ1112             |
| 8500-10500      | Defense                   | Circulator               | 10 Watt-CW    | 10 Watt-CW   | 20Watt-peak       | 1.25    | 0.3      | 20        | CJ9     | CJ3109             |
| 8500-10500      | Defense                   | Isolator                 | 10 Watt-CW    | 1 Watt-CW    | 20Watt-peak       | 1.25    | 0.3      | 20        | CJ9     | CJ1109             |
| 8500-10500      | Defense                   | Circulator               | 10 Watt-CW    | 10 Watt-CW   | 20Watt-peak       | 1.25    | 0.3      | 20        | CJ8     | CJ3108             |
| 8500-10500      | Defense                   | Isolator                 | 10 Watt-CW    | 1 Watt-CW    | 20Watt-peak       | 1.25    | 0.3      | 20        | CJ8     | CJ1108             |
| 8500-10500      | Defense                   | Dual Circulator-Isolator | 10 Watt-CW    | 1 Watt-CW    | 20Watt-peak       | 1.25    | 0.3      | 20        | PCJ9    | CJ4109             |
| 8500-10500      | Defense                   | Dual Circulator-Isolator | 10 Watt-CW    | 5 Watt-CW    | 50Watt-peak       | 1.25    | 0.3      | 20        | PCJ9    | CJ4112             |
| 8500-10500      | Defense                   | Isolator                 | 10 Watt-CW    | 5 Watt-CW    | 50Watt-peak       | 1.25    | 0.3      | 20        | CJ9     | CJ1112             |

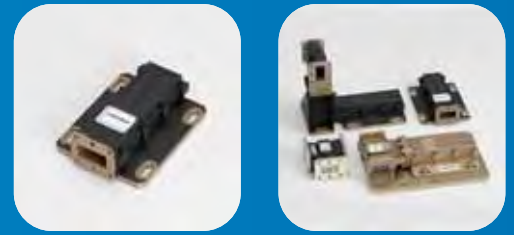


# Isolators & Circulators

Waveguide circulators & isolators  
 Differential phase shift circulators  
 Coaxial loads  
 Waveguide loads for space

## WAVEGUIDE CIRCULATORS & ISOLATORS

| Frequency (MHz) | Description & Application      | Type       | Power (Watts) |              |                | V.S.W.R | I.L (dB) | Isol (dB) | Package | Part Number Family |
|-----------------|--------------------------------|------------|---------------|--------------|----------------|---------|----------|-----------|---------|--------------------|
|                 |                                |            | Forward (CW)  | Reverse (CW) | Forward (peak) |         |          |           |         |                    |
| 2425-2475       | Professional microwave heating | Isolator   | 3000          | 3000         | NA             | 1.20    | 0.15     | 20        | WR340   | FE1021             |
| 2425-2475       | Professional microwave heating | Isolator   | 6000          | 6000         | NA             | 1.20    | 0.15     | 20        | WR340   | FE1022             |
| 2850-3300       | radar                          | Circulator | 1500          |              | 100 kW         | 1.30    | 0.30     | 18        | WR284   | FE3007             |
| 2750-3000       | radar                          | Circulator | 1600          |              | 70 kW          | 1.22    | 0.25     | 20        | WR284   | FE3011             |
| 2700-3000       | radar                          | Circulator | 2500          |              | 25 kW          | 1.15    | 0.15     | 22        | WR284   | FE3010             |
| 2993-3003       | Medical                        | Circulator | 2500          |              | 2500 kW        | 1.15    | 0.15     | 23        | WR284   | FE3001             |
| 4400-5000       | radar                          | Circulator | 1500          |              | NA             | 1.15    | 0.30     | 20        | WR187   | FG3005             |
| 5400-5900       | radar                          | Circulator | 1500          |              | 70 Kw          | 1.15    | 0.30     | 23        | WR187   | FG3007             |
| 5850-6425       | radar                          | Circulator | 3500          | 350          | NA             | 1.15    | 0.15     | 25        | WR137   | FH3006             |
| 5850-6425       | radar                          | Circulator | 6000          | 600          | NA             | 1.15    | 0.15     | 25        | WR137   | FH3007             |
| 7100-8500       | radar                          | Circulator | 20            | NA           | NA             | 1.22    | 0.20     | 20        | WR112   | FH3022             |
| 8075-8260       | space                          | Isolator   | 120           | 120          | NA             | 1.15    | 0.15     | 23        | WR112   | FH1005             |
| 7025-7750       | space                          | Isolator   | 120           | 120          | NA             | 1.15    | 0.15     | 23        | WR112   | FH1005             |
| 7900-8400       | All                            | Circulator | 200           |              | NA             | 1.20    | 0.30     | 20        | WR112   | FI3002             |
| 7900-8400       | All                            | Circulator | 1400          | 150          | NA             | 1.20    | 0.25     | 20        | WR112   | FI3005             |
| 8000-8400       | space                          | Isolator   | 120           | 120          | NA             | 1.20    | 0.20     | 23        | WR112   | FI1009             |
| 7750-7850       | space                          | Isolator   | 40            | 40           | NA             | 1.15    | 0.15     | 23        | WR112   | FI3011             |
| 8025-8400       | space                          | Isolator   | 40            | 40           | NA             | 1.15    | 0.15     | 23        | WR112   | FI3011             |
| 8380-8800       | space                          | Isolator   | 50            | 50           | NA             | 1.15    | 0.15     | 23        | WR112   | FI1009             |
| 8200-10500      | radar                          | Circulator | 25            |              | 5 kW           | 1.20    | 0.40     | 20        | WR90    | FI3007             |
| 8500-9600       | radar                          | Circulator | 500           |              | 10 kW          | 1.15    | 0.20     | 23        | WR90    | FI3004             |
| 10500-12200     | radar                          | Circulator | 25            |              | 5 kW           | 1.15    | 0.20     | 23        | WR90    | FJ3019             |
| 10700-12750     | space                          | Isolator   | 155           | 155          | NA             | 1.20    | 0.20     | 20        | WR75    | FJ1031             |
| 10700-11700     | space                          | Isolator   | 155           | 155          | NA             | 1.15    | 0.15     | 23        | WR75    | FJ1031             |
| 11700-12750     | space                          | Isolator   | 155           | 155          | NA             | 1.15    | 0.15     | 23        | WR75    | FJ1031             |
| 10700-11700     | All                            | Circulator | 25            |              | 2 kW           | 1.12    | 0.20     | 26        | WR75    | FJ3020             |
| 11700-12500     | All                            | Circulator | 25            |              | 2 kW           | 1.12    | 0.20     | 26        | WR75    | FJ3021             |
| 14000-14500     | All                            | Circulator | 25            |              | 2 kW           | 1.12    | 0.20     | 26        | WR75    | FJ3018             |
| 14000-14500     | All                            | Circulator | 2000          |              | NA             | 1.15    | 0.25     | 25        | WR75    | FJ3010             |
| 10950-11700     | space                          | Isolator   | 100           |              | NA             | 1.10    | 0.15     | 25        | WR75    | FJ1029             |
| 11700-12200     | space                          | Isolator   | 100           |              | NA             | 1.10    | 0.15     | 25        | WR75    | FJ1030             |
| 16000-17000     | All                            | Isolator   | 55            |              | 55 Kw          | 1.30    | 0.50     | 18        | WR62    | FJ3025             |
| 17000-18000     | All                            | Circulator | 100           |              | 400            | 1.15    | 0.15     | 23        | WR51    | FJ3038             |
| 17700-19400     | space                          | Circulator | 150           | 150          | NA             | 1.20    | 0.15     | 21        | WR51    | FJ1008             |
| 18300-20200     | space                          | Isolator   | 150           | 150          | NA             | 1.20    | 0.15     | 21        | WR51    | FJ1008             |
| 20700-20200     | space                          | Isolator   | 150           | 150          | NA             | 1.20    | 0.15     | 21        | WR51    | FJ1008             |
| 17700-21000     | space                          | Isolator   | 150           | 150          | NA             | 1.30    | 0.20     | 18        | WR51    | FJ1008             |
| 20000-22000     | space                          | Isolator   | 150           | 150          | NA             | 1.30    | 0.20     | 18        | WR51    | FJ1008             |
| 19500-21500     | space                          | Isolator   | 50            | 50           | NA             | 1.20    | 0.20     | 20        | WR51    | FJ1008             |
| 19500-21500     | space                          | Isolator   | 200           | 200          | NA             | 1.20    | 0.20     | 20        | WR51    | FJ1008             |
| 17700-19700     | All                            | Isolator   | 1             |              | NA             | 1.15    | 0.30     | 25        | WR42    | FJ3008             |
| 18000-21000     | All                            | Circulator | 1             |              | NA             | 1.15    | 0.30     | 25        | WR42    | FJ3008             |
| 20300-23600     | All                            | Circulator | 1             |              | NA             | 1.15    | 0.30     | 25        | WR42    | FJ3008             |
| 22900-23700     | space                          | Circulator | 20            | 20           | NA             | 1.15    | 0.25     | 23        | WR42    | FJ1016             |
| 25000-27000     | space                          | Isolator   | 1             | 1            | NA             | 1.20    | 0.20     | 20        | WR34    | FK1008             |
| 25000-26500     | space                          | Isolator   | 30            | 30           | NA             | 1.20    | 0.30     | 20        | WR34    | FK1019             |
| 25000-26500     | space                          | Isolator   | 60            | 60           | NA             | 1.20    | 0.30     | 20        | WR34    | FK1019             |
| 27000-32000     | All                            | Isolator   | 2             |              | 2 kW           | 1.25    | 0.50     | 20        | WR28    | FK3001             |



## WAVEGUIDE CIRCULATORS & ISOLATORS

| Frequency (MHz) | Description & Application | Type       | Power (Watts) |              |                | V.S.W.R | I.L (dB) | Isol (dB) | Package | Part Number Family |
|-----------------|---------------------------|------------|---------------|--------------|----------------|---------|----------|-----------|---------|--------------------|
|                 |                           |            | Forward (CW)  | Reverse (CW) | Forward (peak) |         |          |           |         |                    |
| 33000-37000     | All                       | Circulator | 2             |              | 2 kW           | 1.25    | 0.50     | 20        | WR28    | FK3007             |
| 35000-40000     | All                       | Circulator | 2             |              | 2 kW           | 1.25    | 0.50     | 20        | WR28    | FK3002             |
| 29500-31500     | space                     | Circulator | 1             | 1            | NA             | 1.20    | 0.30     | 20        | WR28    | FK1013             |

## DIFFERENTIAL PHASE SHIFT CIRCULATORS

| Frequency (MHz) | Description & Application | Type     | Power (Watts) |              |                | V.S.W.R | I.L (dB) | Isol (dB) | Package | Part Number Family |
|-----------------|---------------------------|----------|---------------|--------------|----------------|---------|----------|-----------|---------|--------------------|
|                 |                           |          | Forward (CW)  | Reverse (CW) | Forward (peak) |         |          |           |         |                    |
| 2700-2900       | radar                     | duplexer | 3000          |              | 1500 Kw        | 1.20    | 0.40     | 25        | WR284   | FE6004             |
| 2900-3100       | radar                     | duplexer | 10000         |              | 660 Kw         | 1.20    | 0.40     | 25        | WR284   | FE6005             |
| 2900-3100       | medical                   | duplexer | 6000          | 6000         | 6000 Kw        | 1.15    | 0.30     | 20        | WR284   | FE6001             |
| 4400-5000       | All                       | duplexer | 2000          |              | NA             | 1.12    | 0.20     | 23        | WR187   | FG4201             |
| 5925-6425       | All                       | duplexer | 1500          |              | NA             | 1.15    | 0.20     | 20        | WR137   | FH6002             |
| 5925-6425       | All                       | duplexer | 3000          |              | NA             | 1.15    | 0.20     | 20        | WR137   | FH6001             |
| 8500-9600       | radar                     | duplexer | 300           |              | 250 Kw         | 1.20    | 0.50     | 20        | WR90    | FJ6001             |
| 9600-10400      | radar                     | duplexer | 1500          |              | 50 Kw          | 1.15    | 0.30     | 20        | WR90    | FJ6013             |
| 10000-10250     | All                       | duplexer | 2500          |              | NA             | 1.15    | 0.35     | 20        | WR90    | FJ6004             |
| 14000-14500     | All                       | duplexer | 2500          |              | NA             | 1.20    | 0.30     | 22        | WR62    | FJ6001             |

## COAXIAL LOADS

| Frequency (GHz) | Description & Application | Power (Watts) |              |                       | Return loss (dB) | Package | Part Number |
|-----------------|---------------------------|---------------|--------------|-----------------------|------------------|---------|-------------|
|                 |                           | Forward (CW)  | Reverse (CW) | Peak (10% Duty Cycle) |                  |         |             |
| 3.40-4.80       | Space approved            | 110 W         | NA           | NA                    | 23               | TNC F   | BG9022      |

## WAVEGUIDE LOADS FOR SPACE

| Frequency (GHz) | Description & Application | Power (Watts) |              |                       | Return loss (dB) | Package | Part Number |
|-----------------|---------------------------|---------------|--------------|-----------------------|------------------|---------|-------------|
|                 |                           | Forward (CW)  | Reverse (CW) | Peak (10% Duty Cycle) |                  |         |             |
| 7.25-7.75       | Space approved            | 120 W         | NA           | NA                    | 26               | WR112   | FH9015      |
| 8.0-8.4         | Space approved            | 1 W           | NA           | NA                    | 25               | WR112   | FI9004      |
| 8.25-10.0       | Space approved            | 100 Mw        | NA           | NA                    | 30               | WR90    | FI9007      |
| 10.7-12.75      | Space approved            | 155 W         | NA           | NA                    | 26               | WR75    | FJ9015      |
| 10.7-12.75      | Space approved            | 25 W          | NA           | NA                    | 21               | WR75    | FJ9016      |
| 12-18.4         | vacuum ground testing     | 1 W           | NA           | NA                    | 20               | WR62    | FJ9028      |
| 13.3-13.8       | Space approved            | 20 W          | NA           | NA                    | 23               | WR62    | FJ9028      |
| 13.75-14.5      | Space approved            | 1 mW          | NA           | NA                    | 23               | WR62    | FJ9021      |
| 17.0-22.0       | Space approved            | 10 mW         | NA           | NA                    | 23               | WR51    | FJ9034      |
| 17.3-18.1       | Space approved            | 1 mW          | NA           | NA                    | 23               | WR62    | FJ9021      |
| 17.7-22         | Space approved            | 150 W         | NA           | NA                    | 20               | WR51    | FJ9018      |
| 19-21.2         | Space approved            | 10 mW         | NA           | NA                    | 23               | WR51    | FJ9034      |
| 25.0-26.5       | Space approved            | 10 mW         | NA           | NA                    | 26               | WR34    | FK9016      |
| 29.0-31.0       | Space approved            | 10 mW         | NA           | NA                    | 23               | WR28    | FK9017      |
| 28-0-30.7       | Space approved            | 5 W           | NA           | NA                    | 23               | WR34    | FK9019      |