

90° HYBRIDS

WIDE BANDWIDTH THROUGH HOLE MOUNT



151



102

| FREQUENCY RANGE (MHz) | INSERTION LOSS (dB) TYP/MAX | AMPLITUDE UNBALANCE (dB) TYP/MAX | PHASE UNBALANCE (Degrees) TYP/MAX | ISOLATION (dB) TYP/MIN | VSWR TYP | PACKAGE | PIN-OUT (See Below) | MODEL |
|--------------------------|-----------------------------------|--|---|------------------------------|-------------|---------|------------------------|-------------|
| 2-32 | 0.8/1.0 | 0.9/1.0 | 3.0/5.0 | 23/20 | 1.2:1 | 151 | 4 | DQP-2-16 |
| 2-250 | 1.8/2.0 | 1.1/1.3 | 4.0/6.0 | 18/15 | 1.2:1 | 151 | 4 | DQP-2-125 |
| 3-23 | 0.6/1.0 | 0.7/0.9 | 1.5/2.0 | 25/20 | 1.3:1 | 102 | 3 | DQP-2E2 |
| 3-32 | 1.0/1.5 | 0.9/1.2 | 2.0/3.0 | 25/20 | 1.3:1 | 102 | 3 | DQP-3-32 |
| 5-50 | 1.0/1.5 | 0.9/1.2 | 2.0/3.0 | 25/20 | 1.3:1 | 102 | 3 | DQP-5-50 |
| 5.5-16.5 | 0.3/0.5 | 0.8/1.0 | 1.0/3.0 | 23/20 | 1.3:1 | 102 | 2 | DQP-301 |
| 10-20 | 0.3/0.6 | 0.4/0.75 | 1.0/3.0 | 25/20 | 1.1:1 | 102 | 1 | DQP-206 |
| 10-50 | 0.8/1.0 | 0.5/0.8 | 1.5/3.0 | 30/20 | 1.3:1 | 102 | 3 | DQP-10-50 |
| 10-100 | 1.0/1.5 | 0.9/1.2 | 2.0/3.0 | 25/20 | 1.3:1 | 102 | 3 | DQP-10-100 |
| 15-150 | 1.2/1.7 | 0.9/1.2 | 2.5/4.0 | 25/17 | 1.3:1 | 102 | 3 | DQP-15-150 |
| 0-40 | 0.3/0.6 | 0.4/0.75 | 1.0/3.0 | 25/20 | 1.1:1 | 102 | 1 | DQP-201 |
| 20-60 | 0.3/0.5 | 0.8/1.0 | 1.0/3.0 | 23/20 | 1.3:1 | 102 | 2 | DQP-302 |
| 20-100 | 0.8/1.0 | 0.5/0.8 | 1.5/3.0 | 30/20 | 1.3:1 | 102 | 3 | DQP-20-100 |
| 20-200 | 1.3/1.8 | 0.9/1.2 | 2.5/4.0 | 25/17 | 1.3:1 | 102 | 3 | DQP-20-200 |
| 20-400 | 2.4/3.0 | 1.4/1.8 | 6.0/10 | 18/15 | 1.7:1 | 151 | 4 | DQP-2-200 |
| 25-50 | 0.3/0.7 | 0.7/1.5 | 1.0/3.0 | 30/20 | 1.1:1 | 102 | 1 | DQP-2F1 |
| 25-250 | 1.5/2.0 | 0.9/1.2 | 2.5/4.0 | 25/17 | 1.3:1 | 102 | 3 | DQP-25-250 |
| 30-90 | 0.3/0.6 | 0.8/1.0 | 1.0/3.0 | 23/20 | 1.3:1 | 102 | 2 | DQP-303 |
| 30-150 | 0.8/1.0 | 0.5/1.0 | 1.5/3.0 | 30/20 | 1.3:1 | 102 | 3 | DQP-30-150 |
| 30-300 | 1.5/2.0 | 1.0/1.4 | 3.0/5.0 | 25/16 | 1.3:1 | 102 | 3 | DQP-30-300 |
| 40-70 | 0.3/0.7 | 0.4/1.5 | 1.0/3.0 | 30/20 | 1.1:1 | 102 | 1 | DQP-2H1 |
| 40-80 | 0.3/0.6 | 0.4/0.75 | 1.0/3.0 | 25/20 | 1.1:1 | 102 | 1 | DQP-202 |
| 40-120 | 0.3/0.6 | 0.8/1.2 | 2.0/4.0 | 23/17 | 1.4:1 | 102 | 2 | DQP-305 |
| 40-200 | 0.9/1.0 | 0.5/1.0 | 2.0/4.0 | 30/18 | 1.3:1 | 102 | 3 | DQP-40-200 |
| 40-400 | 1.7/2.2 | 1.0/1.5 | 3.0/5.0 | 25/16 | 1.3:1 | 102 | 3 | DQP-40-400 |
| 45-450 | 1.7/2.2 | 1.0/1.4 | 3.0/5.0 | 25/15 | 1.3:1 | 102 | 3 | DQP-45-450 |
| 50-250 | 0.9/1.0 | 0.5/0.8 | 2.0/4.0 | 30/18 | 1.3:1 | 102 | 3 | DQP-50-250 |
| 50-500 | 1.7/2.2 | 1.0/1.4 | 3.0/5.0 | 23/13 | 1.3:1 | 102 | 3 | DQP-50-500 |
| 52-88 | 0.3/0.6 | 0.2/0.5 | 1.0/2.5 | 25/20 | 1.1:1 | 102 | 1 | DQP-220 |
| 55-90 | 0.3/0.7 | 0.6/1.2 | 1.0/3.0 | 30/20 | 1.2:1 | 102 | 1 | DQP-223 |
| 60-80 | 0.2/0.6 | 0.2/0.45 | 1.0/2.5 | 30/20 | 1.1:1 | 102 | 1 | DQP-222 |
| 60-300 | 0.9/1.0 | 0.6/0.8 | 2.0/4.0 | 30/18 | 1.3:1 | 102 | 3 | DQP-60-300 |
| 70-350 | 1.1/1.5 | 0.6/1.0 | 2.5/5.0 | 28/16 | 1.3:1 | 102 | 3 | DQP-70-350 |
| 80-120 | 0.3/0.7 | 0.7/1.5 | 1.0/3.0 | 25/18 | 1.1:1 | 102 | 1 | DQP-2A2 |
| 80-160 | 0.4/0.75 | 0.5/1.0 | 1.0/3.0 | 25/20 | 1.1:1 | 102 | 1 | DQP-203 |
| 90-270 | 0.4/0.7 | 0.8/1.2 | 2.0/4.0 | 23/17 | 1.5:1 | 102 | 2 | DQP-304 |
| 90-450 | 1.2/1.5 | 0.7/1.0 | 3.0/5.0 | 23/16 | 1.3:1 | 102 | 3 | DQP-90-450 |
| 100-200 | 0.4/0.75 | 0.5/1.0 | 1.0/3.0 | 25/20 | 1.1:1 | 102 | 1 | DQP-204 |
| 100-500 | 1.2/1.5 | 0.8/1.0 | 3.0/5.0 | 25/16 | 1.3:1 | 102 | 3 | DQP-100-500 |
| 104-176 | 0.3/0.6 | 0.2/0.6 | 1.0/2.5 | 25/20 | 1.1:1 | 102 | 1 | DQP-221 |
| 115-345 | 0.5/0.8 | 0.8/1.4 | 2.0/4.0 | 20/17 | 1.5:1 | 102 | 2 | DQP-310 |
| 150-300 | 0.4/0.75 | 0.5/1.0 | 1.0/3.0 | 25/20 | 1.1:1 | 102 | 1 | DQP-205 |
| 225-400 | 0.5/0.8 | 1.0/1.5 | 2.0/4.0 | 22/17 | 1.2:1 | 102 | 1 | DQP-207 |
| 240-720 | 0.7/1.0 | 1.2/1.6 | 3.0/5.0 | 20/15 | 1.5:1 | 102 | 2 | DQP-330 |

PIN-OUT TABLE

| | INPUT | +90° OUTPUT | 0° OUTPUT | ISOLATED* | GROUND** |
|----|-------|-------------|-----------|-----------|----------|
| #1 | 1 | 2 | 5 | 6 | 3,4,7,8 |
| #2 | 1 | 6 | 2 | 5 | 3,4,7,8 |
| #3 | 1 | 8 | 7 | 2 | 3,4,5,6 |
| #4 | 1 | 3 | 4 | 2 | 5,6 |

*Terminate isolated port with 50 ohms externally

**GROUND = Ground externally

Power Rating: 1 Watt, max.

All specifications assume 50 ohm impedance of all ports

For pin location and package outline drawings, see back pages.

