

Digital Step Attenuator

DAT-31575A-PN+

Typical Performance Data

TEST CONDITIONS: INPUT POWER=-10dBm, Vdd=+3V, Vss = -3.2V, TEMPERATURE=-45degC

| FREQUENCY (MHz) | STEP ATTENUATION* AT TTL CONTROL STATE (dB) | | | | | | | |
|--------------------|--|------------------|------------------|------------------|------------------|------------------|-----------------|-------------------|
| | 000000 THRU LOSS | 000001 0.5 dB | 000010 1.0 dB | 000100 2.0 dB | 001000 4.0 dB | 010000 8.0 dB | 100000 16 dB | 111111 31.5 dB |
| 10 | 0.99 | 0.52 | 1.05 | 2.05 | 4.10 | 8.16 | 16.19 | 31.62 |
| 50 | 0.99 | 0.53 | 1.04 | 2.05 | 4.10 | 8.16 | 16.19 | 31.75 |
| 100 | 1.00 | 0.53 | 1.04 | 2.05 | 4.10 | 8.15 | 16.19 | 31.77 |
| 150 | 1.01 | 0.53 | 1.04 | 2.04 | 4.10 | 8.14 | 16.18 | 31.78 |
| 200 | 1.01 | 0.53 | 1.04 | 2.05 | 4.10 | 8.15 | 16.18 | 31.78 |
| 250 | 1.01 | 0.53 | 1.04 | 2.05 | 4.10 | 8.15 | 16.19 | 31.77 |
| 300 | 1.01 | 0.53 | 1.04 | 2.05 | 4.10 | 8.16 | 16.20 | 31.84 |
| 350 | 1.01 | 0.53 | 1.05 | 2.05 | 4.11 | 8.16 | 16.20 | 31.81 |
| 400 | 1.02 | 0.53 | 1.04 | 2.05 | 4.11 | 8.16 | 16.20 | 31.77 |
| 450 | 1.04 | 0.53 | 1.04 | 2.04 | 4.10 | 8.15 | 16.19 | 31.79 |
| 500 | 1.06 | 0.53 | 1.04 | 2.04 | 4.09 | 8.14 | 16.17 | 31.72 |
| 550 | 1.07 | 0.53 | 1.04 | 2.04 | 4.09 | 8.14 | 16.17 | 31.83 |
| 600 | 1.09 | 0.52 | 1.03 | 2.03 | 4.08 | 8.12 | 16.16 | 31.82 |
| 700 | 1.12 | 0.53 | 1.03 | 2.03 | 4.07 | 8.11 | 16.15 | 31.77 |
| 800 | 1.15 | 0.52 | 1.02 | 2.02 | 4.06 | 8.09 | 16.11 | 31.55 |
| 900 | 1.17 | 0.52 | 1.02 | 2.02 | 4.05 | 8.09 | 16.13 | 31.78 |
| 1000 | 1.20 | 0.52 | 1.02 | 2.02 | 4.05 | 8.10 | 16.16 | 32.04 |
| 1100 | 1.23 | 0.51 | 1.02 | 2.02 | 4.05 | 8.09 | 16.16 | 31.96 |
| 1200 | 1.23 | 0.51 | 1.02 | 2.02 | 4.04 | 8.08 | 16.13 | 31.66 |
| 1300 | 1.23 | 0.51 | 1.02 | 2.01 | 4.04 | 8.07 | 16.07 | 31.08 |
| 1400 | 1.24 | 0.51 | 1.02 | 2.01 | 4.04 | 8.06 | 16.01 | 30.75 |
| 1500 | 1.27 | 0.51 | 1.02 | 2.02 | 4.05 | 8.09 | 16.10 | 31.39 |
| 1600 | 1.33 | 0.51 | 1.02 | 2.02 | 4.06 | 8.12 | 16.17 | 31.67 |
| 1700 | 1.35 | 0.51 | 1.02 | 2.02 | 4.07 | 8.12 | 16.18 | 31.51 |
| 1800 | 1.35 | 0.51 | 1.02 | 2.02 | 4.07 | 8.11 | 16.08 | 30.77 |
| 1900 | 1.35 | 0.51 | 1.02 | 2.02 | 4.08 | 8.11 | 16.07 | 30.56 |
| 2000 | 1.32 | 0.51 | 1.02 | 2.02 | 4.09 | 8.13 | 16.04 | 30.30 |
| 2100 | 1.30 | 0.51 | 1.03 | 2.02 | 4.10 | 8.14 | 16.02 | 29.98 |
| 2200 | 1.30 | 0.51 | 1.03 | 2.03 | 4.12 | 8.17 | 16.02 | 29.90 |
| 2300 | 1.33 | 0.51 | 1.03 | 2.04 | 4.14 | 8.23 | 16.14 | 30.47 |
| 2400 | 1.37 | 0.51 | 1.04 | 2.05 | 4.16 | 8.28 | 16.25 | 30.87 |
| 2500 | 1.34 | 0.52 | 1.04 | 2.05 | 4.18 | 8.30 | 16.21 | 30.49 |
| 2600 | 1.29 | 0.52 | 1.04 | 2.06 | 4.21 | 8.34 | 16.19 | 30.11 |
| 2700 | 1.25 | 0.52 | 1.05 | 2.07 | 4.27 | 8.41 | 16.23 | 29.92 |
| 2800 | 1.36 | 0.51 | 1.05 | 2.08 | 4.31 | 8.48 | 16.41 | 30.63 |
| 2900 | 1.72 | 0.49 | 1.03 | 2.05 | 4.30 | 8.50 | 16.61 | 31.78 |
| 3000 | 2.23 | 0.47 | 0.99 | 2.00 | 4.25 | 8.49 | 16.93 | 35.17 |

* Step Attenuation above Thru Loss (TTL Logic 000000).



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Digital Step Attenuator

DAT-31575A-PN+

Typical Performance Data

TEST CONDITIONS: INPUT POWER=-10dBm, Vdd=+3V, Vss = -3.2V, TEMPERATURE=-45degC

| FREQUENCY (MHz) | INPUT RETURN LOSS AT TTL CONTROL STATE (dB) | | | | | | | |
|--------------------|--|------------------|------------------|------------------|------------------|------------------|-----------------|-------------------|
| | 000000 0 dB | 000001 0.5 dB | 000010 1.0 dB | 000100 2.0 dB | 001000 4.0 dB | 010000 8.0 dB | 100000 16 dB | 111111 31.5 dB |
| 10 | 19.83 | 21.37 | 22.47 | 24.06 | 39.11 | 29.79 | 25.08 | 23.42 |
| 50 | 19.68 | 21.15 | 22.31 | 23.80 | 39.01 | 30.03 | 25.36 | 23.67 |
| 100 | 19.58 | 20.99 | 22.10 | 23.55 | 38.52 | 30.65 | 25.85 | 24.11 |
| 150 | 19.45 | 20.79 | 21.88 | 23.24 | 39.46 | 31.63 | 26.51 | 24.66 |
| 200 | 19.37 | 20.72 | 21.78 | 23.12 | 40.97 | 32.14 | 26.83 | 24.91 |
| 250 | 19.31 | 20.67 | 21.72 | 23.09 | 42.05 | 32.21 | 26.81 | 24.90 |
| 300 | 19.32 | 20.69 | 21.76 | 23.19 | 40.18 | 31.48 | 26.42 | 24.59 |
| 350 | 19.29 | 20.66 | 21.77 | 23.23 | 37.21 | 30.64 | 25.97 | 24.27 |
| 400 | 19.27 | 20.65 | 21.74 | 23.21 | 34.12 | 29.72 | 25.63 | 24.00 |
| 450 | 19.20 | 20.57 | 21.61 | 23.03 | 32.25 | 29.18 | 25.58 | 24.01 |
| 500 | 19.15 | 20.46 | 21.48 | 22.78 | 30.96 | 28.88 | 25.65 | 24.17 |
| 550 | 19.08 | 20.35 | 21.31 | 22.55 | 30.44 | 28.89 | 25.94 | 24.48 |
| 600 | 19.05 | 20.28 | 21.23 | 22.41 | 30.07 | 28.92 | 26.18 | 24.71 |
| 700 | 19.11 | 20.30 | 21.23 | 22.29 | 29.59 | 28.81 | 26.50 | 25.06 |
| 800 | 18.99 | 20.14 | 20.99 | 21.98 | 28.44 | 28.04 | 26.33 | 25.12 |
| 900 | 18.72 | 19.84 | 20.65 | 21.56 | 27.30 | 27.06 | 25.87 | 24.88 |
| 1000 | 18.37 | 19.42 | 20.19 | 21.05 | 26.44 | 26.43 | 25.68 | 24.86 |
| 1100 | 17.94 | 18.93 | 19.66 | 20.43 | 25.79 | 26.15 | 25.99 | 25.43 |
| 1200 | 17.54 | 18.49 | 19.16 | 19.86 | 25.48 | 26.20 | 26.82 | 26.62 |
| 1300 | 17.10 | 17.99 | 18.66 | 19.30 | 25.47 | 26.72 | 28.48 | 28.92 |
| 1400 | 16.61 | 17.46 | 18.10 | 18.74 | 25.16 | 26.96 | 30.08 | 31.87 |
| 1500 | 16.45 | 17.28 | 17.94 | 18.56 | 25.44 | 27.85 | 32.70 | 36.70 |
| 1600 | 16.62 | 17.46 | 18.09 | 18.72 | 26.31 | 29.69 | 37.97 | 47.46 |
| 1700 | 17.42 | 18.22 | 18.86 | 19.41 | 27.36 | 30.66 | 32.60 | 30.71 |
| 1800 | 18.65 | 19.37 | 19.94 | 20.39 | 26.45 | 27.65 | 26.39 | 24.86 |
| 1900 | 19.72 | 20.22 | 20.61 | 20.95 | 23.86 | 24.18 | 22.82 | 21.59 |
| 2000 | 20.35 | 20.51 | 20.73 | 21.02 | 21.31 | 21.40 | 20.20 | 19.20 |
| 2100 | 20.50 | 20.38 | 20.39 | 20.66 | 19.29 | 19.23 | 18.21 | 17.38 |
| 2200 | 20.40 | 20.10 | 20.02 | 20.24 | 18.11 | 17.91 | 16.98 | 16.24 |
| 2300 | 22.47 | 22.06 | 21.87 | 22.01 | 18.51 | 17.90 | 16.81 | 16.06 |
| 2400 | 27.23 | 25.67 | 24.50 | 23.58 | 17.92 | 16.74 | 15.62 | 14.96 |
| 2500 | 32.44 | 28.13 | 25.50 | 23.13 | 16.88 | 15.35 | 14.30 | 13.77 |
| 2600 | 24.15 | 23.26 | 21.97 | 20.25 | 15.45 | 13.88 | 12.97 | 12.57 |
| 2700 | 19.00 | 19.20 | 18.83 | 17.94 | 14.46 | 12.95 | 12.14 | 11.82 |
| 2800 | 15.05 | 15.59 | 15.76 | 15.67 | 13.64 | 12.38 | 11.71 | 11.45 |
| 2900 | 12.25 | 12.88 | 13.27 | 13.61 | 12.82 | 12.01 | 11.54 | 11.34 |
| 3000 | 10.41 | 11.02 | 11.50 | 12.05 | 12.21 | 11.90 | 11.72 | 11.62 |



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Digital Step Attenuator

DAT-31575A-PN+

Typical Performance Data

TEST CONDITIONS: INPUT POWER=-10dBm, Vdd=+3V, Vss = -3.2V, TEMPERATURE=-45degC

| FREQUENCY (MHz) | OUTPUT RETURN LOSS AT TTL CONTROL STATE (dB) | | | | | | | |
|--------------------|---|------------------|------------------|------------------|------------------|------------------|-----------------|-------------------|
| | 000000 0 dB | 000001 0.5 dB | 000010 1.0 dB | 000100 2.0 dB | 001000 4.0 dB | 010000 8.0 dB | 100000 16 dB | 111111 31.5 dB |
| 10 | 19.61 | 21.28 | 22.02 | 23.89 | 27.52 | 30.27 | 25.14 | 23.41 |
| 50 | 19.53 | 21.12 | 21.79 | 23.67 | 27.08 | 30.49 | 25.36 | 23.67 |
| 100 | 19.26 | 20.80 | 21.41 | 23.17 | 26.29 | 31.50 | 26.01 | 24.24 |
| 150 | 19.07 | 20.56 | 21.15 | 22.83 | 25.73 | 32.79 | 26.78 | 24.86 |
| 200 | 19.05 | 20.55 | 21.13 | 22.82 | 25.74 | 33.17 | 26.92 | 24.96 |
| 250 | 19.10 | 20.60 | 21.20 | 22.92 | 25.94 | 32.90 | 26.71 | 24.80 |
| 300 | 19.12 | 20.65 | 21.29 | 23.06 | 26.23 | 31.78 | 26.15 | 24.39 |
| 350 | 18.99 | 20.53 | 21.15 | 22.93 | 26.02 | 31.08 | 25.93 | 24.20 |
| 400 | 18.72 | 20.23 | 20.84 | 22.59 | 25.43 | 30.50 | 25.88 | 24.19 |
| 450 | 18.41 | 19.84 | 20.42 | 22.09 | 24.63 | 30.33 | 26.15 | 24.52 |
| 500 | 18.15 | 19.53 | 20.08 | 21.66 | 24.00 | 30.14 | 26.52 | 24.87 |
| 550 | 18.03 | 19.36 | 19.89 | 21.38 | 23.55 | 30.07 | 26.89 | 25.28 |
| 600 | 18.01 | 19.33 | 19.84 | 21.30 | 23.33 | 30.07 | 27.21 | 25.60 |
| 700 | 18.22 | 19.54 | 20.00 | 21.44 | 23.32 | 30.40 | 27.71 | 26.02 |
| 800 | 18.62 | 19.98 | 20.41 | 21.83 | 23.55 | 30.23 | 27.66 | 25.98 |
| 900 | 19.11 | 20.48 | 20.90 | 22.32 | 23.78 | 29.27 | 27.08 | 25.56 |
| 1000 | 19.22 | 20.54 | 20.91 | 22.20 | 23.29 | 28.12 | 26.71 | 25.40 |
| 1100 | 18.96 | 20.20 | 20.47 | 21.62 | 22.41 | 27.20 | 26.60 | 25.61 |
| 1200 | 19.10 | 20.34 | 20.57 | 21.65 | 22.20 | 26.97 | 26.72 | 25.87 |
| 1300 | 19.44 | 20.70 | 20.87 | 21.90 | 22.26 | 27.11 | 26.97 | 26.24 |
| 1400 | 19.41 | 20.63 | 20.75 | 21.68 | 21.91 | 27.24 | 27.53 | 27.04 |
| 1500 | 18.90 | 20.05 | 20.14 | 20.99 | 21.26 | 27.78 | 29.17 | 29.20 |
| 1600 | 17.95 | 18.95 | 19.04 | 19.78 | 20.16 | 27.51 | 30.97 | 33.48 |
| 1700 | 17.19 | 18.10 | 18.21 | 18.92 | 19.39 | 26.60 | 30.86 | 35.62 |
| 1800 | 16.93 | 17.80 | 17.96 | 18.71 | 19.51 | 27.65 | 33.28 | 39.97 |
| 1900 | 16.95 | 17.80 | 18.05 | 18.89 | 20.20 | 29.17 | 33.26 | 32.32 |
| 2000 | 17.22 | 18.04 | 18.41 | 19.35 | 21.49 | 28.90 | 28.28 | 26.27 |
| 2100 | 17.51 | 18.29 | 18.79 | 19.80 | 22.89 | 25.80 | 23.94 | 22.38 |
| 2200 | 18.42 | 19.21 | 19.81 | 20.85 | 24.94 | 22.99 | 20.94 | 19.70 |
| 2300 | 20.71 | 21.56 | 22.33 | 23.25 | 28.13 | 20.69 | 18.67 | 17.63 |
| 2400 | 26.59 | 27.52 | 28.50 | 27.61 | 27.95 | 18.55 | 16.80 | 15.95 |
| 2500 | 52.67 | 33.00 | 30.99 | 26.37 | 22.65 | 16.55 | 15.19 | 14.50 |
| 2600 | 30.99 | 28.70 | 26.69 | 23.60 | 19.64 | 15.17 | 13.98 | 13.43 |
| 2700 | 22.23 | 23.13 | 22.37 | 21.25 | 17.50 | 14.24 | 13.13 | 12.67 |
| 2800 | 16.26 | 17.26 | 17.31 | 17.63 | 15.40 | 13.53 | 12.60 | 12.22 |
| 2900 | 12.60 | 13.50 | 13.78 | 14.56 | 13.61 | 13.04 | 12.43 | 12.15 |
| 3000 | 10.50 | 11.30 | 11.64 | 12.55 | 12.35 | 12.90 | 12.72 | 12.58 |



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The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

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Digital Step Attenuator

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Typical Performance Data

TEST CONDITIONS: INPUT POWER=-10dBm, Vdd=+3V, Vss =-3.2V TEMPERATURE=+25degC

| FREQUENCY (MHz) | STEP ATTENUATION* AT TTL CONTROL STATE (dB) | | | | | | | |
|--------------------|--|------------------|------------------|------------------|------------------|------------------|-----------------|-------------------|
| | 000000 THRU LOSS | 000001 0.5 dB | 000010 1.0 dB | 000100 2.0 dB | 001000 4.0 dB | 010000 8.0 dB | 100000 16 dB | 111111 31.5 dB |
| 10 | 1.12 | 0.52 | 1.01 | 2.02 | 4.00 | 8.00 | 15.95 | 31.40 |
| 50 | 1.13 | 0.51 | 1.01 | 2.02 | 4.01 | 7.99 | 15.96 | 31.38 |
| 100 | 1.13 | 0.51 | 1.02 | 2.02 | 4.01 | 7.99 | 15.96 | 31.44 |
| 150 | 1.14 | 0.51 | 1.01 | 2.01 | 4.01 | 7.99 | 15.95 | 31.40 |
| 200 | 1.15 | 0.51 | 1.01 | 2.02 | 4.01 | 7.99 | 15.95 | 31.40 |
| 250 | 1.16 | 0.51 | 1.01 | 2.01 | 4.01 | 7.99 | 15.96 | 31.40 |
| 300 | 1.17 | 0.51 | 1.01 | 2.01 | 4.01 | 7.99 | 15.96 | 31.36 |
| 350 | 1.19 | 0.51 | 1.01 | 2.01 | 4.00 | 7.98 | 15.95 | 31.41 |
| 400 | 1.20 | 0.51 | 1.01 | 2.01 | 4.00 | 7.98 | 15.95 | 31.36 |
| 450 | 1.22 | 0.51 | 1.01 | 2.01 | 4.00 | 7.97 | 15.94 | 31.43 |
| 500 | 1.23 | 0.51 | 1.01 | 2.01 | 3.99 | 7.97 | 15.94 | 31.39 |
| 550 | 1.25 | 0.51 | 1.01 | 2.01 | 3.99 | 7.97 | 15.94 | 31.37 |
| 600 | 1.27 | 0.51 | 1.01 | 2.00 | 3.99 | 7.96 | 15.93 | 31.42 |
| 700 | 1.30 | 0.50 | 1.00 | 2.00 | 3.98 | 7.95 | 15.93 | 31.38 |
| 800 | 1.34 | 0.50 | 1.00 | 2.00 | 3.98 | 7.94 | 15.91 | 31.30 |
| 900 | 1.37 | 0.50 | 1.00 | 2.00 | 3.97 | 7.95 | 15.93 | 31.48 |
| 1000 | 1.41 | 0.50 | 1.00 | 2.00 | 3.97 | 7.95 | 15.97 | 31.74 |
| 1100 | 1.44 | 0.50 | 1.00 | 1.99 | 3.97 | 7.95 | 15.95 | 31.65 |
| 1200 | 1.46 | 0.49 | 0.99 | 1.99 | 3.96 | 7.94 | 15.91 | 31.37 |
| 1300 | 1.47 | 0.49 | 0.99 | 1.99 | 3.96 | 7.93 | 15.86 | 30.81 |
| 1400 | 1.49 | 0.49 | 0.99 | 1.98 | 3.96 | 7.93 | 15.82 | 30.65 |
| 1500 | 1.53 | 0.49 | 0.99 | 1.99 | 3.97 | 7.95 | 15.90 | 31.17 |
| 1600 | 1.59 | 0.49 | 1.00 | 1.99 | 3.99 | 7.98 | 15.97 | 31.35 |
| 1700 | 1.61 | 0.49 | 1.00 | 2.00 | 4.00 | 7.99 | 15.97 | 31.12 |
| 1800 | 1.62 | 0.49 | 0.99 | 1.99 | 4.00 | 7.97 | 15.90 | 30.47 |
| 1900 | 1.62 | 0.49 | 0.99 | 1.99 | 4.00 | 7.99 | 15.89 | 30.39 |
| 2000 | 1.60 | 0.49 | 0.99 | 1.99 | 4.01 | 8.00 | 15.87 | 30.08 |
| 2100 | 1.58 | 0.49 | 0.99 | 1.99 | 4.01 | 8.01 | 15.85 | 29.88 |
| 2200 | 1.56 | 0.49 | 1.00 | 1.99 | 4.02 | 8.04 | 15.86 | 29.87 |
| 2300 | 1.52 | 0.49 | 1.00 | 2.00 | 4.04 | 8.08 | 15.97 | 30.44 |
| 2400 | 1.46 | 0.49 | 1.01 | 2.01 | 4.07 | 8.14 | 16.04 | 30.57 |
| 2500 | 1.34 | 0.49 | 1.00 | 2.01 | 4.09 | 8.15 | 15.95 | 29.79 |
| 2600 | 1.31 | 0.49 | 1.00 | 2.01 | 4.11 | 8.18 | 15.95 | 29.73 |
| 2700 | 1.35 | 0.49 | 1.00 | 2.01 | 4.14 | 8.21 | 15.98 | 29.68 |
| 2800 | 1.55 | 0.48 | 1.00 | 2.01 | 4.16 | 8.26 | 16.15 | 30.43 |
| 2900 | 1.93 | 0.46 | 0.97 | 1.98 | 4.15 | 8.28 | 16.35 | 31.85 |
| 3000 | 2.42 | 0.44 | 0.95 | 1.95 | 4.12 | 8.27 | 16.61 | 35.01 |

* Step Attenuation above Thru Loss (TTL Logic 000000).



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Digital Step Attenuator

DAT-31575A-PN+

Typical Performance Data

TEST CONDITIONS: INPUT POWER=-10dBm, Vdd=+3V, Vss =-3.2V, TEMPERATURE=+25degC

| FREQUENCY (MHz) | INPUT RETURN LOSS AT TTL CONTROL STATE (dB) | | | | | | | |
|--------------------|--|------------------|------------------|------------------|------------------|------------------|-----------------|-------------------|
| | 000000 0 dB | 000001 0.5 dB | 000010 1.0 dB | 000100 2.0 dB | 001000 4.0 dB | 010000 8.0 dB | 100000 16 dB | 111111 31.5 dB |
| 10 | 18.77 | 19.63 | 20.28 | 20.84 | 31.02 | 36.05 | 52.17 | 37.03 |
| 50 | 18.59 | 19.49 | 20.08 | 20.74 | 30.74 | 35.53 | 54.06 | 38.37 |
| 100 | 18.54 | 19.42 | 20.02 | 20.68 | 30.44 | 34.98 | 48.78 | 38.55 |
| 150 | 18.43 | 19.28 | 19.88 | 20.52 | 29.85 | 33.91 | 44.96 | 39.45 |
| 200 | 18.34 | 19.19 | 19.78 | 20.42 | 29.37 | 33.08 | 42.13 | 39.69 |
| 250 | 18.25 | 19.09 | 19.66 | 20.28 | 28.85 | 32.21 | 40.37 | 40.46 |
| 300 | 18.19 | 19.03 | 19.59 | 20.20 | 28.46 | 31.63 | 38.93 | 40.63 |
| 350 | 18.14 | 18.96 | 19.50 | 20.11 | 28.15 | 31.12 | 37.91 | 40.77 |
| 400 | 18.15 | 18.98 | 19.54 | 20.11 | 28.00 | 30.84 | 37.47 | 40.81 |
| 450 | 18.20 | 19.02 | 19.56 | 20.13 | 27.95 | 30.68 | 37.32 | 41.72 |
| 500 | 18.28 | 19.08 | 19.63 | 20.19 | 28.00 | 30.57 | 37.18 | 41.83 |
| 550 | 18.31 | 19.14 | 19.67 | 20.20 | 27.98 | 30.51 | 37.00 | 42.34 |
| 600 | 18.38 | 19.19 | 19.72 | 20.25 | 27.97 | 30.37 | 36.62 | 42.12 |
| 700 | 18.47 | 19.27 | 19.80 | 20.29 | 27.84 | 29.93 | 35.67 | 40.80 |
| 800 | 18.41 | 19.19 | 19.72 | 20.17 | 27.19 | 28.97 | 33.56 | 37.33 |
| 900 | 18.29 | 19.04 | 19.56 | 19.99 | 26.47 | 27.82 | 31.42 | 34.11 |
| 1000 | 17.95 | 18.68 | 19.18 | 19.59 | 25.51 | 26.64 | 29.79 | 32.28 |
| 1100 | 17.35 | 18.04 | 18.51 | 18.89 | 24.29 | 25.33 | 28.23 | 30.88 |
| 1200 | 16.73 | 17.36 | 17.82 | 18.15 | 23.17 | 24.07 | 26.79 | 29.47 |
| 1300 | 16.20 | 16.79 | 17.20 | 17.49 | 22.20 | 23.02 | 25.44 | 27.85 |
| 1400 | 15.80 | 16.35 | 16.72 | 16.95 | 21.41 | 22.11 | 24.16 | 26.16 |
| 1500 | 15.79 | 16.30 | 16.65 | 16.83 | 21.29 | 21.97 | 23.76 | 25.45 |
| 1600 | 16.06 | 16.53 | 16.84 | 16.98 | 21.41 | 22.02 | 23.38 | 24.47 |
| 1700 | 16.70 | 17.10 | 17.36 | 17.42 | 21.51 | 21.99 | 22.64 | 22.97 |
| 1800 | 17.50 | 17.78 | 17.96 | 17.94 | 21.22 | 21.63 | 21.58 | 21.35 |
| 1900 | 18.19 | 18.31 | 18.41 | 18.40 | 20.54 | 20.97 | 20.48 | 19.93 |
| 2000 | 18.70 | 18.68 | 18.69 | 18.78 | 19.68 | 20.22 | 19.49 | 18.78 |
| 2100 | 18.92 | 18.79 | 18.77 | 18.99 | 18.84 | 19.42 | 18.63 | 17.82 |
| 2200 | 19.06 | 18.92 | 18.88 | 19.22 | 18.45 | 19.02 | 18.20 | 17.36 |
| 2300 | 21.11 | 20.97 | 20.96 | 21.44 | 19.62 | 19.95 | 18.83 | 17.83 |
| 2400 | 25.54 | 25.25 | 25.01 | 25.50 | 20.51 | 19.97 | 18.56 | 17.53 |
| 2500 | 45.40 | 40.26 | 33.79 | 30.33 | 20.06 | 18.53 | 17.25 | 16.44 |
| 2600 | 26.26 | 26.90 | 26.39 | 24.50 | 18.40 | 16.67 | 15.67 | 15.13 |
| 2700 | 19.68 | 20.39 | 20.68 | 20.22 | 17.05 | 15.41 | 14.62 | 14.23 |
| 2800 | 15.58 | 16.27 | 16.77 | 16.97 | 15.83 | 14.57 | 14.03 | 13.76 |
| 2900 | 12.86 | 13.52 | 14.08 | 14.58 | 14.71 | 14.00 | 13.77 | 13.62 |
| 3000 | 10.98 | 11.59 | 12.17 | 12.80 | 13.79 | 13.67 | 13.85 | 13.87 |

Digital Step Attenuator

DAT-31575A-PN+

Typical Performance Data

TEST CONDITIONS: INPUT POWER=-10dBm, Vdd=+3V, Vss = -3.2V, TEMPERATURE=+25degC

| FREQUENCY (MHz) | OUTPUT RETURN LOSS AT TTL CONTROL STATE (dB) | | | | | | | |
|--------------------|---|------------------|------------------|------------------|------------------|------------------|-----------------|-------------------|
| | 000000 0 dB | 000001 0.5 dB | 000010 1.0 dB | 000100 2.0 dB | 001000 4.0 dB | 010000 8.0 dB | 100000 16 dB | 111111 31.5 dB |
| 10 | 18.52 | 19.59 | 19.74 | 20.75 | 21.63 | 34.77 | 52.93 | 37.57 |
| 50 | 18.52 | 19.55 | 19.75 | 20.70 | 21.66 | 34.78 | 53.01 | 37.93 |
| 100 | 18.37 | 19.40 | 19.61 | 20.55 | 21.52 | 34.02 | 48.68 | 38.46 |
| 150 | 18.24 | 19.25 | 19.45 | 20.38 | 21.34 | 33.04 | 44.64 | 39.32 |
| 200 | 18.12 | 19.11 | 19.32 | 20.24 | 21.19 | 32.30 | 42.31 | 39.73 |
| 250 | 17.98 | 18.96 | 19.15 | 20.06 | 21.00 | 31.52 | 40.57 | 40.84 |
| 300 | 17.89 | 18.84 | 19.04 | 19.94 | 20.83 | 30.93 | 39.21 | 41.30 |
| 350 | 17.76 | 18.71 | 18.90 | 19.76 | 20.63 | 30.26 | 37.80 | 42.16 |
| 400 | 17.65 | 18.58 | 18.77 | 19.62 | 20.47 | 29.76 | 37.13 | 42.51 |
| 450 | 17.58 | 18.50 | 18.68 | 19.50 | 20.30 | 29.28 | 36.42 | 43.05 |
| 500 | 17.52 | 18.44 | 18.62 | 19.45 | 20.22 | 29.03 | 35.83 | 43.01 |
| 550 | 17.53 | 18.44 | 18.62 | 19.43 | 20.15 | 28.84 | 35.40 | 43.01 |
| 600 | 17.59 | 18.51 | 18.67 | 19.47 | 20.17 | 28.78 | 35.43 | 43.29 |
| 700 | 17.83 | 18.77 | 18.90 | 19.71 | 20.31 | 29.12 | 36.15 | 45.97 |
| 800 | 18.15 | 19.11 | 19.23 | 20.04 | 20.53 | 29.45 | 36.79 | 47.32 |
| 900 | 18.46 | 19.44 | 19.52 | 20.31 | 20.65 | 29.53 | 36.54 | 44.95 |
| 1000 | 18.56 | 19.52 | 19.58 | 20.34 | 20.52 | 28.85 | 34.86 | 40.94 |
| 1100 | 18.44 | 19.38 | 19.40 | 20.11 | 20.11 | 27.52 | 32.22 | 36.37 |
| 1200 | 18.37 | 19.28 | 19.26 | 19.92 | 19.75 | 26.42 | 30.38 | 33.97 |
| 1300 | 18.28 | 19.14 | 19.07 | 19.65 | 19.32 | 25.55 | 29.01 | 32.55 |
| 1400 | 18.12 | 18.91 | 18.77 | 19.24 | 18.83 | 24.63 | 27.56 | 30.71 |
| 1500 | 17.80 | 18.50 | 18.33 | 18.70 | 18.29 | 23.71 | 26.13 | 28.70 |
| 1600 | 17.05 | 17.64 | 17.48 | 17.78 | 17.48 | 22.31 | 24.14 | 25.94 |
| 1700 | 16.55 | 17.08 | 16.96 | 17.27 | 17.11 | 21.69 | 23.32 | 24.75 |
| 1800 | 16.33 | 16.84 | 16.77 | 17.11 | 17.20 | 21.72 | 23.13 | 24.11 |
| 1900 | 16.33 | 16.80 | 16.82 | 17.23 | 17.63 | 22.11 | 23.16 | 23.59 |
| 2000 | 16.59 | 17.05 | 17.16 | 17.62 | 18.52 | 22.67 | 23.12 | 22.82 |
| 2100 | 17.07 | 17.51 | 17.70 | 18.24 | 19.80 | 22.87 | 22.42 | 21.55 |
| 2200 | 18.23 | 18.60 | 18.88 | 19.44 | 21.92 | 22.72 | 21.46 | 20.29 |
| 2300 | 20.20 | 20.50 | 20.90 | 21.45 | 25.42 | 22.17 | 20.36 | 19.10 |
| 2400 | 23.93 | 24.12 | 24.76 | 25.04 | 32.18 | 21.04 | 19.06 | 17.90 |
| 2500 | 31.20 | 30.78 | 31.96 | 29.75 | 29.26 | 19.30 | 17.61 | 16.64 |
| 2600 | 32.19 | 39.63 | 35.99 | 30.93 | 23.70 | 17.95 | 16.46 | 15.69 |
| 2700 | 21.68 | 23.41 | 23.25 | 23.62 | 19.43 | 16.66 | 15.46 | 14.86 |
| 2800 | 16.27 | 17.39 | 17.55 | 18.40 | 16.32 | 15.54 | 14.75 | 14.32 |
| 2900 | 12.94 | 13.83 | 14.09 | 15.05 | 14.09 | 14.67 | 14.38 | 14.14 |
| 3000 | 10.92 | 11.68 | 11.98 | 12.95 | 12.62 | 14.19 | 14.49 | 14.48 |



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IF/RF MICROWAVE COMPONENTS

Digital Step Attenuator

DAT-31575A-PN+

Typical Performance Data

TEST CONDITIONS: INPUT POWER=-10dBm, Vdd=+3V, Vss = -3.2V,TEMPERATURE=+105degC

| FREQUENCY (MHz) | STEP ATTENUATION* AT TTL CONTROL STATE (dB) | | | | | | | |
|--------------------|--|------------------|------------------|------------------|------------------|------------------|-----------------|-------------------|
| | 000000 THRU LOSS | 000001 0.5 dB | 000010 1.0 dB | 000100 2.0 dB | 001000 4.0 dB | 010000 8.0 dB | 100000 16 dB | 111111 31.5 dB |
| 10 | 1.30 | 0.51 | 0.99 | 1.99 | 3.93 | 7.82 | 15.71 | 30.99 |
| 50 | 1.31 | 0.49 | 0.99 | 1.99 | 3.92 | 7.83 | 15.73 | 30.98 |
| 100 | 1.31 | 0.50 | 0.99 | 1.99 | 3.92 | 7.84 | 15.73 | 31.00 |
| 150 | 1.32 | 0.50 | 0.99 | 1.99 | 3.92 | 7.84 | 15.73 | 31.01 |
| 200 | 1.33 | 0.50 | 0.99 | 1.99 | 3.92 | 7.84 | 15.73 | 30.99 |
| 250 | 1.35 | 0.50 | 0.99 | 1.99 | 3.92 | 7.83 | 15.73 | 30.99 |
| 300 | 1.38 | 0.50 | 0.99 | 1.99 | 3.92 | 7.83 | 15.73 | 30.94 |
| 350 | 1.41 | 0.49 | 0.98 | 1.98 | 3.92 | 7.82 | 15.71 | 30.99 |
| 400 | 1.43 | 0.49 | 0.99 | 1.99 | 3.91 | 7.82 | 15.71 | 31.02 |
| 450 | 1.45 | 0.49 | 0.98 | 1.98 | 3.91 | 7.82 | 15.70 | 31.01 |
| 500 | 1.47 | 0.49 | 0.98 | 1.98 | 3.91 | 7.81 | 15.71 | 30.99 |
| 550 | 1.49 | 0.49 | 0.98 | 1.98 | 3.91 | 7.81 | 15.70 | 30.97 |
| 600 | 1.50 | 0.49 | 0.98 | 1.99 | 3.91 | 7.81 | 15.70 | 31.02 |
| 700 | 1.53 | 0.49 | 0.98 | 1.98 | 3.91 | 7.81 | 15.72 | 30.95 |
| 800 | 1.56 | 0.49 | 0.98 | 1.98 | 3.91 | 7.82 | 15.72 | 31.00 |
| 900 | 1.60 | 0.49 | 0.98 | 1.98 | 3.91 | 7.82 | 15.74 | 31.12 |
| 1000 | 1.65 | 0.48 | 0.98 | 1.98 | 3.91 | 7.83 | 15.77 | 31.33 |
| 1100 | 1.69 | 0.48 | 0.98 | 1.98 | 3.90 | 7.83 | 15.76 | 31.18 |
| 1200 | 1.73 | 0.48 | 0.98 | 1.98 | 3.90 | 7.82 | 15.73 | 30.92 |
| 1300 | 1.77 | 0.48 | 0.97 | 1.97 | 3.89 | 7.81 | 15.66 | 30.46 |
| 1400 | 1.81 | 0.47 | 0.97 | 1.97 | 3.90 | 7.81 | 15.66 | 30.55 |
| 1500 | 1.86 | 0.48 | 0.98 | 1.98 | 3.92 | 7.84 | 15.74 | 30.88 |
| 1600 | 1.92 | 0.48 | 0.98 | 1.99 | 3.94 | 7.88 | 15.81 | 31.05 |
| 1700 | 1.95 | 0.48 | 0.98 | 1.99 | 3.94 | 7.89 | 15.80 | 30.79 |
| 1800 | 1.96 | 0.47 | 0.98 | 1.98 | 3.95 | 7.89 | 15.73 | 30.24 |
| 1900 | 1.97 | 0.48 | 0.98 | 1.98 | 3.96 | 7.90 | 15.75 | 30.25 |
| 2000 | 1.95 | 0.47 | 0.98 | 1.98 | 3.95 | 7.91 | 15.72 | 29.99 |
| 2100 | 1.92 | 0.47 | 0.98 | 1.97 | 3.95 | 7.92 | 15.73 | 29.84 |
| 2200 | 1.87 | 0.47 | 0.97 | 1.97 | 3.96 | 7.94 | 15.73 | 29.81 |
| 2300 | 1.77 | 0.47 | 0.97 | 1.97 | 3.98 | 7.98 | 15.82 | 30.25 |
| 2400 | 1.64 | 0.47 | 0.97 | 1.97 | 3.99 | 8.00 | 15.81 | 29.94 |
| 2500 | 1.50 | 0.46 | 0.97 | 1.96 | 3.99 | 7.99 | 15.67 | 29.15 |
| 2600 | 1.49 | 0.46 | 0.97 | 1.96 | 4.02 | 8.03 | 15.73 | 29.37 |
| 2700 | 1.55 | 0.46 | 0.96 | 1.96 | 4.03 | 8.04 | 15.74 | 29.35 |
| 2800 | 1.77 | 0.45 | 0.95 | 1.95 | 4.04 | 8.07 | 15.88 | 30.11 |
| 2900 | 2.14 | 0.44 | 0.93 | 1.93 | 4.03 | 8.09 | 16.09 | 31.61 |
| 3000 | 2.60 | 0.42 | 0.91 | 1.89 | 4.01 | 8.09 | 16.31 | 34.25 |

* Step Attenuation above Thru Loss (TTL Logic 000000).



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Digital Step Attenuator

DAT-31575A-PN+

Typical Performance Data

TEST CONDITIONS: INPUT POWER=-10dBm, Vdd=+3V, Vss= -3.2V, TEMPERATURE=+105degC

| FREQUENCY (MHz) | INPUT RETURN LOSS AT TTL CONTROL STATE (dB) | | | | | | | |
|--------------------|--|------------------|------------------|------------------|------------------|------------------|-----------------|-------------------|
| | 000000 0 dB | 000001 0.5 dB | 000010 1.0 dB | 000100 2.0 dB | 001000 4.0 dB | 010000 8.0 dB | 100000 16 dB | 111111 31.5 dB |
| 10 | 17.46 | 17.89 | 18.12 | 18.15 | 22.72 | 22.96 | 24.40 | 25.95 |
| 50 | 17.34 | 17.79 | 17.98 | 18.04 | 22.63 | 22.83 | 24.45 | 26.03 |
| 100 | 17.32 | 17.77 | 17.98 | 18.07 | 22.74 | 23.00 | 24.70 | 26.34 |
| 150 | 17.23 | 17.70 | 17.94 | 18.04 | 22.71 | 23.04 | 24.80 | 26.47 |
| 200 | 17.17 | 17.64 | 17.87 | 17.99 | 22.61 | 22.97 | 24.70 | 26.36 |
| 250 | 17.07 | 17.53 | 17.75 | 17.86 | 22.33 | 22.62 | 24.27 | 25.83 |
| 300 | 17.01 | 17.44 | 17.65 | 17.74 | 22.00 | 22.22 | 23.74 | 25.19 |
| 350 | 16.95 | 17.36 | 17.54 | 17.60 | 21.68 | 21.80 | 23.17 | 24.49 |
| 400 | 16.97 | 17.36 | 17.52 | 17.54 | 21.52 | 21.52 | 22.77 | 24.04 |
| 450 | 17.03 | 17.41 | 17.54 | 17.52 | 21.39 | 21.31 | 22.47 | 23.65 |
| 500 | 17.13 | 17.49 | 17.62 | 17.54 | 21.41 | 21.23 | 22.31 | 23.47 |
| 550 | 17.25 | 17.59 | 17.71 | 17.62 | 21.47 | 21.28 | 22.31 | 23.40 |
| 600 | 17.39 | 17.72 | 17.85 | 17.74 | 21.65 | 21.41 | 22.43 | 23.52 |
| 700 | 17.74 | 18.09 | 18.23 | 18.11 | 22.25 | 22.01 | 23.06 | 24.21 |
| 800 | 17.96 | 18.35 | 18.51 | 18.42 | 22.84 | 22.64 | 23.88 | 25.22 |
| 900 | 17.89 | 18.32 | 18.52 | 18.47 | 23.08 | 22.94 | 24.43 | 26.03 |
| 1000 | 17.36 | 17.79 | 18.03 | 18.04 | 22.46 | 22.42 | 24.02 | 25.71 |
| 1100 | 16.50 | 16.92 | 17.17 | 17.20 | 21.19 | 21.23 | 22.69 | 24.23 |
| 1200 | 15.66 | 16.06 | 16.28 | 16.32 | 19.88 | 19.92 | 21.18 | 22.45 |
| 1300 | 15.03 | 15.37 | 15.57 | 15.57 | 18.76 | 18.71 | 19.70 | 20.72 |
| 1400 | 14.70 | 14.98 | 15.14 | 15.06 | 17.99 | 17.81 | 18.54 | 19.36 |
| 1500 | 14.78 | 15.00 | 15.10 | 14.95 | 17.66 | 17.36 | 17.85 | 18.48 |
| 1600 | 15.10 | 15.24 | 15.27 | 15.04 | 17.47 | 17.11 | 17.34 | 17.75 |
| 1700 | 15.62 | 15.67 | 15.61 | 15.30 | 17.36 | 16.96 | 16.94 | 17.10 |
| 1800 | 16.12 | 16.06 | 15.94 | 15.61 | 17.15 | 16.90 | 16.64 | 16.59 |
| 1900 | 16.41 | 16.27 | 16.12 | 15.86 | 16.87 | 16.85 | 16.44 | 16.21 |
| 2000 | 16.63 | 16.46 | 16.31 | 16.18 | 16.69 | 16.92 | 16.43 | 16.02 |
| 2100 | 16.91 | 16.73 | 16.59 | 16.60 | 16.65 | 17.13 | 16.54 | 15.99 |
| 2200 | 17.41 | 17.25 | 17.14 | 17.27 | 17.07 | 17.75 | 17.09 | 16.42 |
| 2300 | 19.50 | 19.34 | 19.24 | 19.50 | 18.85 | 19.76 | 18.76 | 17.79 |
| 2400 | 23.60 | 23.49 | 23.40 | 23.91 | 21.64 | 22.45 | 20.72 | 19.27 |
| 2500 | 32.81 | 34.43 | 34.64 | 36.42 | 23.14 | 22.49 | 20.67 | 19.29 |
| 2600 | 27.31 | 29.31 | 31.08 | 30.36 | 22.23 | 20.59 | 19.38 | 18.42 |
| 2700 | 20.59 | 21.59 | 22.51 | 22.65 | 20.54 | 18.84 | 18.11 | 17.53 |
| 2800 | 16.48 | 17.24 | 17.98 | 18.43 | 18.67 | 17.46 | 17.22 | 16.93 |
| 2900 | 13.70 | 14.35 | 15.03 | 15.61 | 16.98 | 16.42 | 16.67 | 16.66 |
| 3000 | 11.68 | 12.25 | 12.89 | 13.50 | 15.51 | 15.58 | 16.38 | 16.70 |



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IF/RF MICROWAVE COMPONENTS

Digital Step Attenuator

DAT-31575A-PN+

Typical Performance Data

TEST CONDITIONS: INPUT POWER=-10dBm, Vdd=+3V, Vss= -3.2V, TEMPERATURE=+105degC

| FREQUENCY (MHz) | OUTPUT RETURN LOSS AT TTL CONTROL STATE (dB) | | | | | | | |
|--------------------|---|------------------|------------------|------------------|------------------|------------------|-----------------|-------------------|
| | 000000 0 dB | 000001 0.5 dB | 000010 1.0 dB | 000100 2.0 dB | 001000 4.0 dB | 010000 8.0 dB | 100000 16 dB | 111111 31.5 dB |
| 10 | 17.39 | 17.92 | 17.78 | 18.00 | 17.83 | 22.58 | 24.49 | 26.06 |
| 50 | 17.35 | 17.89 | 17.78 | 18.07 | 17.90 | 22.73 | 24.58 | 26.24 |
| 100 | 17.37 | 17.95 | 17.83 | 18.15 | 18.02 | 22.99 | 24.93 | 26.67 |
| 150 | 17.31 | 17.90 | 17.80 | 18.15 | 18.05 | 23.09 | 25.11 | 26.88 |
| 200 | 17.14 | 17.74 | 17.65 | 18.00 | 17.94 | 22.86 | 24.88 | 26.60 |
| 250 | 16.82 | 17.41 | 17.33 | 17.67 | 17.61 | 22.24 | 24.14 | 25.70 |
| 300 | 16.54 | 17.09 | 17.00 | 17.33 | 17.25 | 21.60 | 23.30 | 24.75 |
| 350 | 16.29 | 16.81 | 16.71 | 17.01 | 16.91 | 21.01 | 22.57 | 23.84 |
| 400 | 16.17 | 16.66 | 16.58 | 16.85 | 16.71 | 20.65 | 22.07 | 23.26 |
| 450 | 16.18 | 16.65 | 16.56 | 16.79 | 16.61 | 20.43 | 21.74 | 22.87 |
| 500 | 16.28 | 16.76 | 16.63 | 16.85 | 16.63 | 20.43 | 21.67 | 22.76 |
| 550 | 16.46 | 16.94 | 16.80 | 16.99 | 16.73 | 20.51 | 21.72 | 22.79 |
| 600 | 16.69 | 17.17 | 17.00 | 17.18 | 16.92 | 20.75 | 21.93 | 22.99 |
| 700 | 17.16 | 17.66 | 17.48 | 17.67 | 17.35 | 21.43 | 22.62 | 23.70 |
| 800 | 17.58 | 18.13 | 17.94 | 18.15 | 17.80 | 22.21 | 23.48 | 24.61 |
| 900 | 17.91 | 18.51 | 18.31 | 18.55 | 18.12 | 22.89 | 24.34 | 25.61 |
| 1000 | 17.96 | 18.59 | 18.39 | 18.66 | 18.15 | 23.12 | 24.75 | 26.31 |
| 1100 | 17.67 | 18.30 | 18.12 | 18.40 | 17.80 | 22.67 | 24.45 | 26.19 |
| 1200 | 17.28 | 17.90 | 17.70 | 17.96 | 17.27 | 21.77 | 23.43 | 25.10 |
| 1300 | 16.95 | 17.50 | 17.27 | 17.44 | 16.65 | 20.66 | 22.00 | 23.37 |
| 1400 | 16.69 | 17.15 | 16.86 | 16.91 | 16.05 | 19.56 | 20.52 | 21.58 |
| 1500 | 16.47 | 16.83 | 16.47 | 16.40 | 15.53 | 18.57 | 19.23 | 20.05 |
| 1600 | 15.99 | 16.26 | 15.90 | 15.78 | 15.00 | 17.66 | 18.13 | 18.77 |
| 1700 | 15.71 | 15.92 | 15.60 | 15.48 | 14.85 | 17.34 | 17.71 | 18.20 |
| 1800 | 15.51 | 15.70 | 15.44 | 15.38 | 14.98 | 17.37 | 17.65 | 17.99 |
| 1900 | 15.49 | 15.68 | 15.50 | 15.51 | 15.40 | 17.72 | 17.88 | 18.07 |
| 2000 | 15.88 | 16.06 | 15.96 | 16.02 | 16.26 | 18.45 | 18.42 | 18.34 |
| 2100 | 16.66 | 16.81 | 16.79 | 16.88 | 17.55 | 19.37 | 19.01 | 18.61 |
| 2200 | 17.92 | 18.01 | 18.06 | 18.18 | 19.47 | 20.57 | 19.75 | 19.00 |
| 2300 | 19.51 | 19.58 | 19.74 | 19.92 | 22.23 | 21.97 | 20.59 | 19.45 |
| 2400 | 22.13 | 22.20 | 22.54 | 22.83 | 27.29 | 23.55 | 21.35 | 19.83 |
| 2500 | 25.38 | 26.02 | 26.73 | 27.61 | 36.96 | 23.95 | 21.32 | 19.71 |
| 2600 | 26.24 | 29.39 | 30.08 | 36.03 | 27.87 | 23.17 | 20.75 | 19.34 |
| 2700 | 20.95 | 22.89 | 23.03 | 25.22 | 21.12 | 21.13 | 19.65 | 18.65 |
| 2800 | 16.49 | 17.70 | 17.89 | 19.29 | 17.29 | 19.06 | 18.56 | 18.01 |
| 2900 | 13.40 | 14.30 | 14.55 | 15.69 | 14.69 | 17.36 | 17.76 | 17.65 |
| 3000 | 11.35 | 12.10 | 12.36 | 13.36 | 12.91 | 16.11 | 17.30 | 17.71 |



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